IMPORTANT NOTICE (FOR ELECTRONIC DELIVERY)

THIS OFFERING IS AVAILABLE ONLY TO INVESTORS WHO ARE EITHER (1) QUALIFIED INSTITUTIONAL BUYERS WITHIN THE MEANING OF RULE 144A UNDER THE U.S. SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT") OR (2) NON-U.S. PERSONS OUTSIDE THE UNITED STATES IN COMPLIANCE WITH REGULATION S UNDER THE SECURITIES ACT (AND, IF INVESTORS ARE RESIDENT IN A MEMBER STATE OF THE EUROPEAN ECONOMIC AREA, A QUALIFIED INVESTOR).

IMPORTANT: You must read the following before continuing. The following applies to the preliminary offering memorandum following this notice, and you are therefore advised to read this carefully before reading, accessing or making any other use of the preliminary offering memorandum. In accessing the preliminary offering memorandum, you agree to be bound by the following terms and conditions, including any modifications thereto any time you receive any information from us as a result of such access.

NOTHING IN THIS ELECTRONIC TRANSMISSION CONSTITUTES AN OFFER OF SECURITIES FOR SALE IN ANY JURISDICTION WHERE IT IS UNLAWFUL TO DO SO. THE SECURITIES HAVE NOT BEEN, AND WILL NOT BE, REGISTERED UNDER THE SECURITIES ACT, OR THE SECURITIES LAWS OF ANY STATE OF THE UNITED STATES OR OTHER JURISDICTION AND THE SECURITIES MAY NOT BE OFFERED OR SOLD WITHIN THE UNITED STATES EXCEPT PURSUANT TO AN EXEMPTION FROM, OR IN A TRANSACTION NOT SUBJECT TO, THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT AND APPLICABLE STATE OR LOCAL SECURITIES LAWS.

THE FOLLOWING PRELIMINARY OFFERING MEMORANDUM MAY NOT BE FORWARDED OR DISTRIBUTED TO ANY OTHER PERSON AND MAY NOT BE REPRODUCED IN ANY MANNER WHATSOEVER. ANY FORWARDING, DISTRIBUTION OR REPRODUCTION OF THIS DOCUMENT IN WHOLE OR IN PART IS UNAUTHORIZED. FAILURE TO COMPLY WITH THIS DIRECTIVE MAY RESULT IN A VIOLATION OF THE SECURITIES ACT OR THE APPLICABLE LAWS OF OTHER JURISDICTIONS.

Confirmation of your Representation: In order to be eligible to view the preliminary offering memorandum or make an investment decision with respect to the securities, investors must be either (1) Qualified Institutional Buyers ("QIBs") within the meaning of Rule 144A under the Securities Act ("Rule 144A") or (2) non-U.S. persons outside the United States; *provided* that investors resident in a Member State of the European Economic Area are qualified investors (within the meaning of Article 2(1)(e) of Directive 2003/71/EC (and amendments thereto, including Directive 2010/73/EU and Directive 2010/78/EU, to the extent implemented in the relevant Member State) and any relevant implementing measure in each Member State of the European Economic Area). The preliminary offering memorandum is being sent at your request. By accepting the e-mail and accessing the preliminary offering memorandum, you shall be deemed to have represented to us that:

(1) you consent to delivery of such offering memorandum by electronic transmission, and

(2) either:

  (a) you and any customers you represent are QIBs; or

  (b) (i) you and any customers you represent are not U.S. persons and (ii) the e-mail address that you gave us and to which the e-mail has been delivered is not located in the United States, its territories and possessions (including Puerto Rico, the U.S. Virgin Islands, Guam, American Samoa, Wake Island and the Northern Mariana Islands), any state of the United States or the District of Columbia; and

(3) if you are a resident in a Member State of the European Economic Area, you are not a "retail investor". For the purposes of this paragraph (3), the expression "retail investor" means a person who is one (or more) of the following:

(a) a "retail client" as defined in point (11) of Article 4(1) of Directive 2014/65/EU (as amended, "MiFID II");

(b) a customer within the meaning of Directive 2016/97/EU (as amended, the "Insurance Distribution Directive"), where that customer would not qualify as a professional client as defined in point (10) of Article 4(1) of MiFID II; or

(c) not a "qualified investor" as defined in the Prospectus Directive.

Prospective purchasers that are QIBs are hereby notified that the seller of the Notes may be relying on the exemption from the provisions of Section 5 of the Securities Act provided by Rule 144A.

You are reminded that the preliminary offering memorandum has been delivered to you on the basis that you are a person into whose possession the preliminary offering memorandum may be lawfully delivered in accordance with the laws of the jurisdiction in which you are located and you may not, nor are you authorized to, deliver the preliminary offering memorandum to any other person.

The materials relating to the offering do not constitute, and may not be used in connection with, an offer or a solicitation in any place where offers or solicitations are not permitted by law. If a jurisdiction requires that the offering be made by a licensed broker or dealer and the initial purchasers or any affiliate of the initial purchasers is a licensed broker or dealer in that jurisdiction, the offering shall be deemed to be made by the initial purchasers or such affiliate on behalf of the issuer in such jurisdiction.

The information in this preliminary offering memorandum is not complete and may be changed. Under no circumstances shall the preliminary offering memorandum constitute an offer to sell or the solicitation of an offer to buy, nor shall there be any sale of these securities in any jurisdiction in which such offer, solicitation or sale would be unlawful.

The preliminary offering memorandum has been sent to you in electronic form. You are reminded that documents transmitted via this medium may be altered or changed during the process of electronic transmission and consequently neither the initial purchasers, or any person who controls any of the initial purchasers, nor any of its or their directors, officers, employees or agents, accepts any liability or responsibility whatsoever in respect of any difference between the preliminary offering memorandum distributed to you in electronic format and the hard copy version available to you on request from the initial purchasers.

Solely for the purposes of the product approval process of the manufacturers, the target market assessment in respect of the Notes has led to the conclusion that: (i) the target market for the Notes is eligible counterparties and professional clients only, each as defined in MiFID II; and (ii) all channels for distribution of the Notes to eligible counterparties and professional clients are appropriate. Any person subsequently offering, selling or recommending the Notes (a "distributor") should take into consideration the manufacturers' target market assessment; however, a distributor subject to MiFID II is responsible for undertaking its own target market assessment in respect of the Notes (by either adopting or refining the manufacturers' target market assessment) and determining appropriate distribution channels.

The Notes described in this preliminary offering memorandum are not intended to be offered or sold to and should not be offered or sold to any retail investor in the EEA (as defined above). No key information document required by Regulation (EU) No 1286/2014 (as amended, the "PRIIPS Regulation") for offering or selling the Notes or otherwise making them available to retail investors in the EEA has been prepared. Offering or selling the Notes or otherwise making them available to any retail investor in the EEA may be unlawful under the PRIIPS Regulation.

Subject to completion, dated April 8, 2019

NOT FOR GENERAL CIRCULATION
IN THE UNITED STATES
CONFIDENTIAL

PRELIMINARY OFFERING MEMORANDUM

INEOS Finance plc

€770,000,000 % Senior Secured Notes due 2026

Guaranteed on a senior secured basis by

INEOS Group Holdings S.A., INEOS Luxembourg I S.A., INEOS Holdings Limited

and certain of their subsidiaries

INEOS Finance plc (the "Issuer") is offering (the "Offering") €770,000,000 aggregate principal amount of its % Senior Secured Notes due 2026 (the "Notes"). Interest will accrue from , 2019 and be payable semi-annually on the Notes on and of each year, beginning , 2019.

The Notes will mature on , 2026. Some or all of the Notes may be redeemed prior to , 2022, by paying 100% of the principal amount of such Notes plus a "make-whole" premium, and at any time on or after , 2022, at the redemption prices set forth in this offering memorandum. In addition, at any time on or prior to , 2022, we may redeem up to 40% of the aggregate principal amount of the Notes with the net proceeds of certain equity offerings.

Upon the occurrence of certain events constituting a "change of control," each holder of the Notes may require the Issuer to repurchase all or a portion of its Notes. All of the Notes may also be redeemed at 100% of their principal amount plus accrued interest if at any time the Issuer or any guarantor becomes obligated to pay withholding taxes as a result of certain changes in law.

The Notes will be the Issuer's senior secured obligations and will, upon issuance, (i) rank *pari passu* in right of payment with all of the Issuer's existing and future indebtedness that is not subordinated to the Notes; and (ii) be guaranteed by INEOS Group Holdings S.A. (the "Parent"), INEOS Luxembourg I S.A. ("Lux I"), INEOS Holdings Limited and certain of their subsidiaries on a senior secured basis (together, the "Guarantors"). Upon issuance, or within 30 days (or in the case of certain deposit account and security account control agreements and certain real property collateral, 60 days and 90 days, respectively) after issuance, the Notes and the guarantees will be secured by first ranking liens (subject to certain exceptions) on the same assets that secure the 2025 Senior Secured Notes, the Schuldschein Loan and the Senior Secured Term Loans as more fully described in "Description of the Collateral and Guarantees," and elsewhere in this offering memorandum.

This offering memorandum includes more detailed information on the terms of the Notes, the guarantees and the security interests as briefly described above, including redemption and repurchase prices, security, covenants and transfer restrictions and thus, the offering memorandum should be read as a whole by any prospective purchaser in making a determination as to whether to invest in the Notes.

Currently there is no public market for the Notes. Application will be made to list the Notes on the Official List of the Luxembourg Stock Exchange and for trading on the Euro MTF market of the Luxembourg Stock Exchange (the "Euro MTF Market"). There is no assurance that the Notes will be listed and admitted to trading on the Official List of the Luxembourg Stock Exchange. The Euro MTF market is not a regulated market pursuant to the provisions of Directive 2014/65/EC on markets in financial instruments. The Euro MTF market falls within the scope of Regulation (EC) 596/2014 on market abuse and Directive 2014/57/EU on criminal sanctions for market abuse.

Investing in the Notes involves risks that are described in the "Risk Factors" section beginning on page 24 of this offering memorandum.

Offering price for the Notes: % plus accrued interest from the issue date, if any.

The Notes and the guarantees have not been, and will not be, registered under the U.S. Securities Act of 1933, as amended (the "Securities Act"), or the securities laws of any other jurisdiction. The Notes are being offered and sold only to (i) qualified institutional buyers in accordance with Rule 144A under the Securities Act and (ii) non-U.S. persons outside the United States in accordance with Regulation S under the Securities Act. For further details about eligible offerees and resale restrictions, please see "Notice to Investors."

We expect that delivery of the Notes will be made to investors in book-entry form through Euroclear Bank SA/NV ("Euroclear") and Clearstream Banking, S.A. ("Clearstream") on or about , 2019. Interests in each global note will be exchangeable for the relevant definitive Notes only in certain limited circumstances. See "Book-Entry; Delivery and Form."

Joint Global Coordinators

J.P. Morgan **Barclays**

Joint Bookrunners

BNP PARIBAS **BofA Merrill Lynch** **Citigroup** **Goldman Sachs International**
ING **NatWest Markets** **Santander Corporate & Investment Banking**

The date of this offering memorandum is , 2019.

You should rely only on the information contained in this offering memorandum. None of the Issuer, the Guarantors, any other members of the Group or any of the initial purchasers (each, as defined herein) has authorized anyone to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. None of the Issuer, the Guarantors, any other members of the Group or any of the initial purchasers is making an offer of the Notes in any jurisdiction where the Offering is not permitted. You should not assume that the information contained in this offering memorandum is accurate at any date other than the date on the front of this offering memorandum. Our business, financial condition, results of operations and prospects may have changed since that date.

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IMPORTANT INFORMATION

We have prepared this offering memorandum solely for use in connection with the offer of the Notes to qualified institutional buyers under Rule 144A under the Securities Act and to non-U.S. persons (within the meaning of Regulation S under the Securities Act) outside the United States under Regulation S under the Securities Act. We have not authorized its use for any other purpose. This offering memorandum may not be copied or reproduced in whole or in part. You may not distribute this offering memorandum to any person, other than a person retained to advise you in connection with the purchase of the Notes. Delivery of this offering memorandum to anyone other than such prospective investors is unauthorized, and any reproduction of this offering memorandum, in whole or in part, is prohibited. By accepting delivery of this offering memorandum, you agree to these restrictions. Please see “Notice to Investors.”

This offering memorandum is based on information provided by us and by other sources that we believe are reliable. We cannot assure you that information included herein is accurate or complete. No representation or warranty, express or implied, is made by the initial purchasers as to the accuracy or completeness of any information set forth in this offering memorandum, and nothing contained in this offering memorandum is or shall be relied upon as a promise or representation, whether as to the past or the future. This offering memorandum summarizes certain documents and other information and we refer you to them for a more complete understanding of the discussions in this offering memorandum. We will make copies of certain documents available to you upon request. In making an investment decision, you must rely on your own examination of our company, the terms of the offering and the Notes, including the merits and risks involved.

By purchasing the Notes, you will be deemed to have made the acknowledgments, representations, warranties and agreements described under the caption “Notice to Investors” in this offering memorandum. You should understand that you may be required to bear the financial risks of your investment for an indefinite period of time.

We are not making any representation to any purchaser of the Notes regarding the legality of an investment in the Notes by such purchaser under any legal investment or similar laws or regulations. You should not consider any information in this offering memorandum to be legal, business or tax advice. You should consult your own attorney, business advisor and tax advisor for legal, business and tax advice regarding an investment in the Notes.

We reserve the right to withdraw the offering of the Notes at any time and we and the initial purchasers reserve the right to reject any commitment to subscribe for the Notes in whole or in part and to allot to any prospective purchaser less than the full amount of the Notes sought by such purchaser. The initial purchasers and certain related entities may acquire for their own account a portion of the Notes. Please see “Plan of Distribution.”

You must comply with all applicable laws and regulations in force in any applicable jurisdiction and you must obtain any consent, approval or permission required by you for the purchase, offer or sale of the Notes under the laws and regulations in force in the jurisdiction to which you are subject or in which you make such purchase, offer or sale, and neither we nor the initial purchasers will have any responsibility therefor.

This offering memorandum is not an offer to sell, or a solicitation of an offer to buy, any Notes by any person in any jurisdiction in which it is unlawful for such person to make such an offering or solicitation. No action has been, or will be, taken to permit a public offering in any jurisdiction where action would be required for that purpose.

None of the U.S. Securities and Exchange Commission (the “SEC”), any state securities commission or any other regulatory authority has approved or disapproved these securities nor have any of the foregoing authorities passed upon or endorsed the merits of the Offering or the accuracy or adequacy of this offering memorandum. Any representation to the contrary is a criminal offense.

We accept responsibility for the information contained in this offering memorandum. We have made all reasonable inquiries and confirm to the best of our knowledge, information and belief that the information contained in this offering memorandum with regard to us and our affiliates and the Notes is true and accurate in all material respects, that the opinions and intentions expressed in this offering memorandum are honestly held and that we are not aware of any other facts, the omission of which would make this offering memorandum or any statement contained herein misleading in any material respect.

The information contained under the caption "Exchange Rate Information" includes extracts from information and data publicly released by official and other sources. While we accept responsibility for accurately summarizing the information concerning exchange rate information, we accept no further responsibility in respect of such information. The information set out in relation to sections of this offering memorandum describing clearing and settlement arrangements, including the section entitled "Book-Entry; Delivery and Form," is subject to change in or reinterpretation of the rules, regulations and procedures of Euroclear or Clearstream currently in effect. While we accept responsibility for accurately summarizing the information concerning Euroclear and Clearstream, we accept no further responsibility in respect of such information.

We cannot guarantee that our application for the listing of the Notes on the Official List of the Luxembourg Stock Exchange and the admission of the Notes to trading on the Euro MTF market will be approved as of the settlement date for the Notes or at any time thereafter, and settlement of the Notes is not conditioned on obtaining this listing.

The Notes are subject to restrictions on transferability and resale and may not be transferred or resold except as permitted under the Securities Act and applicable securities laws of any other jurisdiction pursuant to registration or exemption therefrom.

Prospective purchasers should be aware that they may be required to bear the financial risks of this investment for an indefinite period of time. See "Notice to Investors."

STABILIZATION

IN CONNECTION WITH THE OFFERING, J.P. MORGAN SECURITIES PLC, (THE "STABILIZING MANAGER") (OR PERSONS ACTING ON BEHALF OF THE STABILIZING MANAGER) MAY OVER-ALLOT NOTES OR EFFECT TRANSACTIONS WITH A VIEW TO SUPPORTING THE MARKET PRICE OF THE NOTES AT A LEVEL HIGHER THAN THAT WHICH MIGHT OTHERWISE PREVAIL. HOWEVER, STABILIZATION MAY NOT NECESSARILY OCCUR. ANY STABILIZATION ACTION MAY BEGIN ON OR AFTER THE DATE ON WHICH ADEQUATE PUBLIC DISCLOSURE OF THE TERMS OF THE OFFER OF THE NOTES IS MADE AND, IF BEGUN, MAY CEASE AT ANY TIME, BUT IT MUST END NO LATER THAN THE EARLIER OF 30 DAYS AFTER THE ISSUE DATE OF THE NOTES AND 60 DAYS AFTER THE DATE OF THE ALLOTMENT OF THE NOTES. ANY STABILIZATION ACTION OR OVER-ALLOTMENT MUST BE CONDUCTED BY THE STABILIZATION MANAGER (OR PERSONS ACTING ON BEHALF OF THE STABILIZATION MANAGER) IN ACCORDANCE WITH ALL APPLICABLE LAWS AND RULES.

NOTICE TO U.S. INVESTORS

Each purchaser of the Notes will be deemed to have made the representations, warranties and acknowledgments that are described in this offering memorandum under the section titled "Notice to Investors."

The Notes and the guarantees have not been and will not be registered under the Securities Act or the securities laws of any state of the United States and are subject to certain restrictions on transfer. Prospective purchasers are hereby notified that the seller of any Note may be relying on the exemption from the provisions of Section 5 of the Securities Act provided by Rule 144A thereunder. For a description of certain further restrictions on resale or transfer of the Notes, please see "Notice to Investors."

THE NOTES MAY NOT BE OFFERED TO THE PUBLIC WITHIN ANY JURISDICTION. BY ACCEPTING DELIVERY OF THIS OFFERING MEMORANDUM, YOU AGREE NOT TO OFFER, SELL, RESELL, TRANSFER OR DELIVER, DIRECTLY OR INDIRECTLY, ANY NOTES TO THE PUBLIC.

NOTICE TO EEA INVESTORS

This offering memorandum has been prepared on the basis that all offers of the Notes will be made pursuant to an exemption under the Prospectus Directive (as defined below) from the requirement to produce a prospectus for offers of the Notes. In relation to each member state (a "Member State") of the European Economic Area (the "EEA") which has implemented the Prospectus Directive (each, a "Relevant Member State"), with effect from and including the date on which the Prospectus Directive is implemented in that Relevant Member State no offer of Notes to the public in that Relevant Member State may be made other than:

(a) to any legal entity which is a qualified investor as defined in the Prospectus Directive;

(b) to fewer than 150 natural or legal persons (other than qualified investors as defined in the Prospectus Directive), as permitted under the Prospectus Directive, subject to obtaining the prior consent of the relevant dealer or dealers nominated by the Issuer for any such offer; or

(c) in any other circumstances falling within Article 3(2) of the Prospectus Directive;

provided that no such offer of the Notes referred to in clauses (a) to (c) above shall require the publication by the Issuer or any dealer of a prospectus pursuant to Article 3 of the Prospectus Directive or a supplement to a prospectus pursuant to Article 16 of the Prospectus Directive. Accordingly, any person making or intending to make any offer within the EEA of the Notes should only do so in circumstances in which no obligation arises for the Issuer or any dealer to produce a prospectus for such offer. Neither the Issuer nor any dealer has authorized, nor do they authorize, the making of any offer of Notes through any financial intermediary, other than offers made by any dealer, which constitute the final placement of the Notes contemplated in this offering memorandum.

Solely for the purposes of the product approval process of the manufacturers, the target market assessment in respect of the Notes has led to the conclusion that: (i) the target market for the Notes is eligible counterparties and professional clients only, each as defined in Directive 2014/65/EU (as amended, "MiFID II"); and (ii) all channels for distribution of the Notes to eligible counterparties and professional clients are appropriate. Any person subsequently offering, selling or recommending the Notes (a "distributor") should take into consideration the manufacturers' target market assessment; however, a distributor subject to MiFID II is responsible for undertaking its own target market assessment in respect of the Notes (by either adopting or refining the manufacturers' target market assessment) and determining appropriate distribution channels.

The Notes described in this offering memorandum are not intended to be offered or sold to and should not be offered or sold to any retail investor in the EEA. For these purposes, a retail investor means a person who is one (or more) of: (i) a retail client as defined in point (11) of Article 4(1) of MiFID II or (ii) a customer within the meaning of Directive 2016/97/EU (as amended), where that customer would not qualify as a professional client as defined in point (10) of Article 4(1) of MiFID II. No key information document required by Regulation (EU) No 1286/2014 (as amended, the "PRIIPS Regulation") for offering or selling the Notes or otherwise making them available to retail investors in the EEA has been prepared. Offering or selling the Notes or otherwise making them available to any retail investor in the EEA may be unlawful under the PRIIPS Regulation.

For the purposes of this restriction, the expression "Prospectus Directive" means Directive 2003/71/EC (and amendments thereto, including the 2010 PD Amending Directive, to the extent implemented in the Relevant Member State), and includes any relevant implementing measure in the Relevant Member State and the expression "2010 PD Amending Directive" means Directive 2010/73/EU.

NOTICE TO GERMAN INVESTORS

The Offering is not a public offering in Germany. The Notes may only be offered, sold and acquired in accordance with the provisions of the German Securities Prospectus Act (*Wertpapierprospektgesetz*) (the "Securities Prospectus Act"), as amended, the Commission Regulation (EC) No. 809/2004 of April 29, 2004, as amended, and any other applicable German law governing the issue, offering and sale of securities. No application will be made under German law to permit a public offer of Notes in Germany. This offering memorandum has not been approved for purposes of a public offer of the Notes under the Securities Prospectus Act or the Prospectus Directive (as defined above) and accordingly the Notes are not being, and may not be, offered or advertised publicly or by public promotion in Germany. Therefore, this offering memorandum is strictly for private use and the offer is only being made to recipients to whom the document is personally addressed and does not constitute an offer or advertisement to the public. The Notes will only be available to and this offering memorandum and any other offering material in relation to the Notes is directed only at persons who are qualified investors (*qualifizierte Anleger*) within the meaning of Section 2 No. 6 of the Securities Prospectus Act. Any resale of the Notes in Germany must be made in accordance with the Securities Prospectus Act and other applicable laws. The Issuer has not filed, and does not intend to file, a securities prospectus with the German Federal Financial Supervisory Authority (*Bundesanstalt für Finanzdienstleistungsaufsicht*) ("BaFin") or obtain a notification to the BaFin from another competent authority of a member state of the European Economic Area.

NOTICE TO U.K. INVESTORS

In the United Kingdom, this offering memorandum is being distributed only to and is directed only at: (a) persons who are "investment professionals" falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (the "Order"), (b) high net worth companies, unincorporated associations and other bodies within the categories described in Article 49(2)(a) to (d) of the Order and (c) any other persons to whom an invitation or inducement to engage in investment activity (within the meaning of Section 21 of the Financial Services and Markets Act 2000 (the "FSMA")) in connection with the issue or sale of any Notes may otherwise lawfully be communicated or caused to be communicated. Each initial purchaser: (a) has only communicated or caused to be communicated and will only communicate or cause to be communicated an invitation or inducement to engage in investment activity (within the meaning of Section 21 of the FSMA) received by it in connection with the issue or sale of any Notes in circumstances in which Section 21(1) of the FSMA does not apply to the Issuer and (b) has complied and will comply with all applicable provisions of the FSMA in respect of anything done by it in relation to any Notes in, from or otherwise involving the United Kingdom.

NOTICE TO LUXEMBOURG INVESTORS

This offering memorandum has not been approved by and will not be submitted for approval to the Luxembourg regulator of the financial sector (*Commission de Surveillance du Secteur Financier*) (the "CSSF") or a competent authority in another EU Member State for notification to the CSSF, for purposes of public offering or sale of securities in the Grand Duchy of Luxembourg. Accordingly, the Notes may not be offered or sold to the public in Luxembourg directly or indirectly, and neither this offering memorandum nor any other circular, prospectus, form of application, advertisement or other material may be reproduced, distributed, or otherwise made available in or from, or published in Luxembourg, except in circumstances which do not constitute a public offer of securities to the public, subject to prospectus requirements, in accordance with the Luxembourg Act of July 10, 2005 on prospectuses for securities, as amended, nor provided to any person other than the recipient thereof.

NOTICE TO NORWEGIAN INVESTORS

This offering memorandum has not and will not be registered with the Financial Supervisory Authority of Norway. Accordingly, the Notes shall not, directly or indirectly, be sold or offered to be sold in Norway or to Norwegian tax-residents, except that the Notes may be offered:

(a) to "professional investors" as defined in Section 7-1 and Sections 10-2 to 10-5 of the Norwegian Securities Regulation of June 29, 2007 No. 876;

(b) to fewer than 150 natural or legal persons (other than "professional investors" as defined in Section 7-1 in the Norwegian Securities Regulation of June 29, 2007 No. 876), subject to obtaining the prior consent of the relevant initial purchaser for any such offer; or

(c) in any other circumstances provided that no such offer of Notes shall result in a requirement for the registration, or the publication by the Issuer or the initial purchasers, of a prospectus pursuant to the Norwegian Securities Trading Act of June 29, 2007 No. 75.

NOTICE TO DANISH INVESTORS

This offering memorandum has not been filed with or approved by the Danish Financial Supervisory Authority or any other authority in the Kingdom of Denmark. The Notes have not been offered or sold and may not be offered, sold or delivered directly or indirectly in the Kingdom of Denmark, unless in compliance with the Danish Securities Trading Act (Consolidated Act No. 1530 of 2 February 2015 on Trading of Securities etc., as amended from time to time) and any Executive Orders issued thereunder and in compliance with Executive Order no. 623 of 24 April 2015 issued pursuant to the Danish Financial Business Act (Consolidated Act No. 182 of 18 February 2015 on financial business, as amended from time to time).

NOTICE TO DUTCH INVESTORS

The Notes are not, will not and may not be, directly or indirectly, offered or acquired in the Netherlands, and this offering memorandum may not be circulated in the Netherlands, as part of an initial distribution or any time thereafter, other than to individuals or legal entities who or which qualify as qualified investors (*gekwalificeerde beleggers*) within the meaning of article 1:1 of the Financial Supervision Act (*Wet op het financieel toezicht*), as amended from time to time.

NOTICE TO SWEDISH INVESTORS

This offering memorandum is not a prospectus and has not been prepared in accordance with the prospectus requirements provided for in the Swedish Financial Instruments Trading Act (*Sw. lagen (1991:980) om handel med finansiella instrument)* nor any other Swedish enactment. Neither the Swedish Financial Supervisory Authority (*Sw. Finansinspektionen*) nor any other Swedish public body has examined, approved or registered this offering memorandum or will examine, approve or register this offering memorandum. Accordingly, this offering memorandum may not be made available, nor may the Notes otherwise be marketed and offered for sale, in Sweden other than in circumstances that constitute an exemption from the requirement to prepare a prospectus under the Swedish Financial Instruments Trading Act.

NOTICE TO SWISS INVESTORS

The Notes may not be publicly offered, sold or advertised, directly or indirectly, in, into or from Switzerland and will not be listed on the SIX Swiss Exchange Ltd. or any other exchange or regulated trading facility in Switzerland. Neither this offering memorandum nor any other offering or marketing material relating to the Notes constitutes a prospectus as such term is understood pursuant to article 652a or article 1156 of the Swiss Federal Code of Obligations or a listing prospectus within the meaning of the listing rules of the SIX Swiss Exchange Ltd., and neither this offering memorandum nor any other offering or marketing material relating to the Notes may be publicly distributed or otherwise made publicly available in Switzerland.

Neither this offering memorandum nor any other offering or marketing material relating to the Offering nor the Issuer nor the Notes has been or will be filed with or approved by any Swiss regulatory authority. The Notes are not subject to the supervision by any Swiss regulatory authority, *e.g.*, the Swiss Financial Market Supervisory Authority FINMA ("FINMA"), and investors in the Notes will not benefit from protection or supervision by such authority.

NOTICE TO ITALIAN INVESTORS

(a) This offering memorandum has not been prepared as part of a public offer in the Republic of Italy within the meaning of Article 1, paragraph 1(t) of Legislative Decree No. 58 of February 24, 1998, as amended (the "Consolidated Financial Act") and as such has not been submitted to the *Commissione Nazionale per la Societa e la Borsa* ("CONSOB") (the Italian Securities Exchange Commission) for its prior approval. Accordingly, the Notes may not, and will not, be offered, sold or delivered, nor may copies of this offering memorandum or of any other document relating to the Notes be distributed, in the Republic of Italy, except: to qualified investors (*investitori qualificati*) as defined in Article 26, paragraph 1, letter d) of CONSOB Regulation No. 16190 of October 29, 2007, as amended (the "Intermediaries Regulation"), pursuant to Article 100, paragraph 1, letter a) of the Consolidated Financial Act and Article 34-ter, paragraph 1, letter b) of CONSOB Regulation No. 11971 of May 14, 1999, as amended (the "Issuers Regulation"), *provided* that such qualified investors will act in their capacity and not as depositaries or nominee for other persons; or

(b) in any other circumstances where an express exemption from compliance with the restrictions on offers to the public applies, including, without limitation, as provided under Article 100 of the Consolidated Financial Act and Article 34-ter of the Issuers Regulation.

Any offer, sale, resale, or delivery of the Notes or distribution of copies of this offering memorandum or any other document relating to the Notes in the Republic of Italy under (a) or (b) above must be:

(a) made by an investment firm, bank or financial intermediary permitted to conduct such activities in the Republic of Italy in accordance with the Consolidated Financial Act, Legislative Decree No. 385 of September 1, 1993 (the "Banking Act"); and Regulation No. 16190 of October 29, 2007 (in each case, as amended from time to time);

(b) in compliance with Article 129 of the Banking Act, as amended, and the implementing guidelines of the Bank of Italy, as amended from time to time, pursuant to which the Bank of Italy may request information on the issue or the offer of securities in the Republic of Italy; and

(c) in compliance with any other applicable laws and regulations or requirement imposed by CONSOB or other Italian authority.

Pursuant to Art. 100 bis of the Consolidated Financial Act, any subsequent resale to the public of securities which were previously offered in the context of an offer exempted from the obligation to publish a prospectus shall be regarded as a separate offer to the public in Italy unless it is exempted from the rules on public offering Article 100 of the Consolidated Financial Act and Article 34-ter of the Issuers Regulation.

NOTICE TO SPANISH INVESTORS

The Notes may not be sold, offered or distributed to persons in Spain, except in circumstances which do not constitute a public offer (*oferta pública*) of securities in Spain, within the meaning of the Royal Legislative Decree 4/2015, of October 23, approving the amended and restated text of the

Spanish Securities Market Law (*texto refundido de la Ley del Mercado de Valores aprobado por el Real Decreto Legislativo 4/2015, de 23 de octubre*), as amended and restated, and Royal Decree 1310/2005, of November 4, on the listing of securities, public offers and applicable prospectus (*Real Decreto 1310/2005, de 4 de noviembre, por el que se desarrolla parcialmente la Ley 24/1988, de 28 de julio, del Mercado de Valores en materia de admisioń a negociacioń de valores en mercados secundarios oficiales, de ofertas públicas de venta o suscripción y del folleto exigible a tales efectos*), as amended from time to time (the "**Spanish Securities Market Law**"). Neither the Notes, this Offering nor this Offering Memorandum and its contents have been approved or registered with the Spanish Securities and Exchange Commission (*Comisioń Nacional del Mercado de Valores*), and therefore it is not intended for the public offering of Notes in Spain.

NOTICE TO FRENCH INVESTORS

This offering memorandum has not been prepared in the context of a public offering of financial securities in France within the meaning of Article L. 411-1 of the French *Code monétaire et financier* and Title I of Book II of the *Règlement Général* of the *Autoritè des marchés financiers* (the French financial markets authority ("AMF")) and, therefore, has not been approved by, or registered or filed with, the AMF and does not require a prospectus to be submitted for approval to the AMF. Consequently, the Notes may not be, directly or indirectly, offered or sold to the public in France (*offre au public de titres financiers*), and neither this offering memorandum nor any offering or marketing materials relating to the Notes may be made available or distributed in any way that would constitute, directly or indirectly, an offer to the public in France. The Notes may only be offered or sold in France pursuant to Article L. 411-2-II of the French *Code monétaire et financier* to (i) providers of investment services relating to portfolio management for the account of third parties (*personnes fournissant le service d'investissement de gestion de portefeuille pour le compte de tiers*), (ii) qualified investors (*investisseurs qualifiès*) acting for their own account or (iii) a limited group of investors (*cercle restreint d'investisseurs*) acting for their own account, all as defined in and in accordance with Articles L. 411-2, D. 411-1, D. 411-4, D. 744-1, D. 754-1 and D. 764-1 of the French *Code monétaire et financier*. Prospective investors are informed that: (i) this offering memorandum has not been and will not be submitted for clearance to the AMF; (ii) in compliance with Articles L. 411-2, D. 411-1, D. 411-4, D. 744-1, D. 754-1 and D. 764-1 of the French *Code monétaire et financier*, any investors subscribing for the Notes should be acting for their own account; and (iii) the direct and indirect distribution or sale to the public of the Notes acquired by them may only be made in compliance with applicable French laws and regulations, in particular those relating to an offer to the public (*offre au public de titres financiers*) (which are embodied in Articles L. 411-1, L. 411-2, L. 412-1 and L. 621-8 through L. 621-8-3 of the French *Code monétaire et financier*).

NOTICE TO IRISH INVESTORS

The Notes are not being offered or sold to any person in Ireland, or underwritten or placed except in conformity with the provisions of: (i) the European Communities (Markets in Financial Instruments) Regulations 2007 (Nos. 1 to 3) (as amended) of Ireland, including, without limitation, Regulations 7 and 152 thereof and any applicable codes of conduct used in connection therewith and the provisions of the Investor Compensation Act 1998 (as amended) of Ireland, (ii) the Companies Act 2014 (as amended) of Ireland, the Central Bank Acts 1942 to 2015 of Ireland (as amended) and any codes of conduct rules made under Section 117(1) of the Central Bank Act 1989 (as amended) of Ireland, (iii) the Prospectus (Directive 2003/71/EC) Regulations 2005 (as amended) of Ireland and any rules issued under Section 1363 of the Companies Act 2014 (as amended) of Ireland by the Central Bank of Ireland and (iv) the provisions of the Market Abuse Regulation (EU596/2014) (as amended) and any rules issued by the Central Bank of Ireland under Section 1370 of the Companies Act 2014 (as amended) of Ireland. This offering memorandum does not constitute a prospectus for the purposes of the Irish Prospectus Regulations and has not been approved by the Central Bank of Ireland.

NOTICE TO BELGIAN INVESTORS

No action has been taken or will be taken in Belgium to permit a public offer of the Notes in accordance with the Belgian Act of 16 June 2006 on the public offer of securities and admission of securities to trading on a regulated market (*i.e.*, the Belgian Prospectus Act) and no Notes may be offered or sold to persons in Belgium unless either such persons are qualified investors within the meaning of Article 10 of the Belgian Prospectus Act or one or more other exemptions available under Article 3 of the Belgian Prospectus Act apply. The Offering, and any materials relating to the Offering, may not be advertised, the Notes may not be offered or sold, and none of this offering memorandum or any other information circular, brochure or similar document may be distributed, directly or indirectly, to any person qualifying as a consumer within the meaning of Book VI of the Belgian Economic Law Code (the "Economic Law Code") on market practices and consumer protection, unless such sale is made in compliance with the Economic Law Code and its implementing regulation.

NOTICE TO CANADIAN INVESTORS

The Notes may only be offered or sold in the provinces of British Columbia, Alberta, Saskatchewan, Ontario, Québec, New Brunswick, Nova Scotia and Prince Edward Island to or for the benefit of a resident of these provinces pursuant to an exemption from the requirement to file a prospectus in such province in which such offer or sale is made, and only by a registrant duly registered under the applicable securities laws of that province or by a registrant that is relying in that province on the "international dealer" exemption provided by section 8.18 of National Instrument 31-103 *Registration Requirements, Exemptions and Ongoing Registrant Obligations* ("NI 31-103"). Furthermore, the Notes may only be offered or sold to residents of any such province that are purchasing, or deemed to be purchasing, as principal, that are "accredited investors" as defined in National Instrument 45-106 *Prospectus Exemptions* ("NI 45-106") or subsection 73.3(1) of the *Securities Act* (Ontario), and that are "permitted clients" as defined in NI 31-103. Each Canadian purchaser hereby acknowledges that any resale of the Notes must be made in accordance with an exemption from, or in a transaction not subject to, the prospectus requirements of applicable securities laws and that it shall be deemed to represent and warrant it is an accredited investor, was not created or used solely to purchase or hold securities as an accredited investor and is purchasing as principal (or deemed principal) in connection with any purchase of Notes hereunder.

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if this offering memorandum (including any amendment thereto) contains a misrepresentation, *provided* that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser's province or territory. The purchaser should refer to any applicable provisions of the securities legislation of the purchaser's province of residence for particulars of these rights or consult with a legal advisor.

Pursuant to section 3A.3 of NI 33-105, the underwriters are not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

We and the underwriters hereby notify prospective Canadian purchasers that: (a) we may be required to provide personal information pertaining to the purchaser as required to be disclosed in Schedule I of Form 45-106F1 under NI 45-106 (including its name, address, telephone number, email and the number and aggregate purchase price of any Notes purchased) ("personal information"), which

Form 45-106F1 may be required to be filed by us under NI 45-106, (b) such personal information may be delivered to the securities regulatory authority or regulator in the Canadian purchaser's jurisdiction (the "Applicable Canada Securities Regulator") in accordance with NI 45-106, (c) such personal information is collected indirectly by the Applicable Canada Securities Regulator under the authority granted to it under securities legislation, (d) such personal information is collected for the purposes of the administration and enforcement of the securities legislation, and (e) the contact information for the public official who can answer questions about the Applicable Canada Securities Regulator's indirect collection of such personal information may be found in Form 45-106F1. Prospective Canadian purchasers that purchase Notes in this offering will be deemed to have authorized the indirect collection of the personal information by the Applicable Canada Securities Regulator, and to have acknowledged and consented to its name, address, telephone number, email and other specified information, including the aggregate purchase price paid by the purchaser, being disclosed to other Canadian securities regulatory authorities, and to have acknowledged that such information may become available to the public in accordance with requirements of applicable Canadian laws.

Upon receipt of this document, each Canadian purchaser hereby confirms that it has expressly requested that all documents evidencing or relating in any way to the sale of the securities described herein (including for greater certainty any purchase confirmation or any notice) be drawn up in the English language only. *Par la réception de ce document, chaque acheteur canadien confirme par les présentes qu'il a expressément exigé que tous les documents faisant foi ou se rapportant de quelque manìere que ce soit a la vente des valeurs mobilieres décrites aux présentes (incluant, pour plus de certitude, toute confirmation d'achat ou tout avis) soient rédigés en anglais seulement.*

PRESENTATION OF FINANCIAL AND NON-IFRS INFORMATION

Financial Information

The audited consolidated financial statements of INEOS Group Holdings S.A. included elsewhere in this offering memorandum as of and for each of the years ended December 31, 2018, December 31, 2017 and December 31, 2016 have been audited by PricewaterhouseCoopers, *Société coopérative*. The audited consolidated financial statements have been prepared in accordance with IFRS (as defined herein). As from January 1, 2018, the Group has applied IFRS 9 Financial Instruments and IFRS 15 Revenue from Contracts with Customers for the first time. IFRS 9 contains a new classification and measurement approach for financial assets that reflects the business model in which assets are managed and their cash flow characteristics. The remeasurement of the Group's non-voting preferred partnership interest in Ineos Investments Partnership under IFRS 9 has resulted in an adjustment to opening equity of €6.1 million as at January 1, 2018. The carrying value of this financial asset measured at fair value through the profit and loss was €251.2 million as at December 31, 2018. In addition, the Group's equity investments which are held for long-term strategic purposes were previously classified as available-for-sale and held at amortised cost; however, under IFRS 9 the Group has designated these investments as financial assets at fair value through other comprehensive income. The carrying value of these financial assets measured at fair value through other comprehensive income was €28.3 million as at December 31, 2018. In applying IFRS 9 there have been no other material changes. IFRS 15 establishes a comprehensive framework for determining whether, how much and when revenue is recognised. As a result of adopting IFRS 15 there have been no material changes. For a complete description of the accounting principles applied in preparing INEOS Group Holdings S.A.'s audited consolidated financial statements, please see note 1 "Accounting Policies" to the audited consolidated financial statements, which is included elsewhere in this offering memorandum. The Group is required to adopt IFRS 16 Leases from January 1, 2019. IFRS 16 introduces a single, on-balance sheet lease accounting model for lessees. A lessee recognizes a right-of-use asset representing its right to use the underlying asset and a lease liability representing its obligation to make lease payments. Based on the information currently available, the Group estimates that it will recognize additional lease liabilities and right-of-use assets of approximately €900 million as at January 1, 2019. The impact on EBITDA before exceptionals, which is the main measure of profit, is expected to be approximately €160 million for the year ending December 31, 2019. No significant impact is expected for leases in which the Group is a lessor. The Group will apply IFRS 16 initially from January 1, 2019, using the modified retrospective approach and measuring the right of use asset equal to the lease liability. Therefore, the cumulative effect of adopting IFRS 16 will be recognised as an adjustment to the opening balance of retained earnings at January 1, 2019, with no restatement of comparative information.

This offering memorandum also includes certain unaudited consolidated financial information that has been adjusted to give *pro forma* effect to the Transactions, the February 2019 Dividend and the Schuldschein Loan as if they had taken place, with respect to unaudited *pro forma* net debt, on December 31, 2018, and, with respect to unaudited *pro forma* cash interest expense, on January 1, 2018. The unaudited consolidated *pro forma* financial information has been prepared for illustrative purposes only and does not purport to represent what the actual consolidated financial position would have been if the Transactions, the February 2019 Dividend and the Schuldschein Loan had occurred on December 31, 2018, with respect to unaudited *pro forma* net debt, or January 1, 2018, with respect to unaudited *pro forma* cash interest expense, nor does it purport to project our consolidated financial position or performance at any future date. The unaudited *pro forma* financial information set forth in this offering memorandum is based on available information and certain assumptions and estimates that we believe are reasonable but may differ from the actual amounts.

Use of Non-IFRS Financial Measures

We have presented certain information in this offering memorandum based on non-IFRS measures. As used in this offering memorandum, this information includes "EBITDA before exceptionals."

EBITDA before exceptionals represents operating profit before depreciation, amortization and impairment and exceptional items. In accordance with IFRS, we use both the first in first out ("FIFO") and weighted average cost methods of accounting for purposes of determining our inventory cost in connection with the preparation of our audited annual consolidated financial statements. EBITDA before exceptionals is based on the FIFO and weighted average cost methods of accounting for inventory used in connection with the preparation of such financial statements. EBITDA before exceptionals is derived from income statement line items calculated in accordance with IFRS on a historical cost basis.

EBITDA before exceptionals is not a measure of financial performance under IFRS. EBITDA-based measures are non-IFRS measures. We believe that the presentation of EBITDA-based measures enhances an investor's understanding of our financial performance. However, EBITDA-based measures should not be considered in isolation or viewed as a substitute for operating profit, profit, cash flows from operating activities or other measures of performance as defined by IFRS. These EBITDA-based measures, as used herein, are not necessarily comparable to other similarly titled captions of other companies due to potential inconsistencies in the method of calculation. Our management has used, and expects to use, EBITDA-based measures to assess operating performance and to make decisions about allocating resources among our various segments. In assessing our overall performance and the performance of each of our segments, management reviews EBITDA-based measures as a general indicator of performance compared to prior periods. Furthermore, management and employee bonuses can be linked to the EBITDA-based performance of the business and the region in which they work. Our EBITDA-based measures exclude items that management does not consider in assessing operating performance. Our management believes it is useful to eliminate such items because it allows management to focus on what it considers to be a more meaningful indicator of operating performance and ability to generate cash flow from operations.

EBITDA before exceptionals differs from Consolidated EBITDA, as presented in the "Description of the Notes", which includes certain cost savings as defined in the definition therein.

The information presented by EBITDA before exceptionals is unaudited and has not been prepared in accordance with IFRS or any other accounting standards. In addition, the presentation of this measure is not intended to and does not comply with the reporting requirements of the SEC; compliance with its requirements would require us to make changes to the presentation of this information.

Presentation

Rounding adjustments have been made in calculating some of the financial information included in this offering memorandum. Figures shown as totals in some tables and elsewhere may not be exact arithmetic aggregations of the figures that precede them.

In this offering memorandum, unless otherwise indicated: all references to the "EU" are to the European Union; all references to "euro" or "€" are to the lawful currency of the European Union; all references to the "U.K." are to the United Kingdom; all references to "pounds sterling," "sterling," "Sterling," "British pounds" or "£" are to the lawful currency of the United Kingdom; all references to the "United States" or the "U.S." are to the United States of America; and all references to "U.S.$," "U.S. dollars," "dollars" or "$" are to the lawful currency of the United States.

CERTAIN DEFINITIONS

Unless indicated otherwise in this offering memorandum or the context requires otherwise:

- all references to the "**2018 IGH Notes**" are to the €500,000,000 aggregate principal amount of 6½% Senior Notes due 2018 and $678,000,000 aggregate principal amount of 6⅛% Senior Notes due 2018 issued pursuant to an indenture dated May 14, 2013, which were redeemed in full on August 9, 2016;
- all references to the "**2019 IGH Notes**" are to the €600,000,000 aggregate principal amount of 5¾% Senior Notes due 2019 and $590,000,000 aggregate principal amount of 5⅞% Senior Notes due 2019 issued pursuant to the 2019 IGH Notes Indenture, which were redeemed in full on March 1, 2017;
- all references to the "**2019 IGH Notes Indenture**" are to the indenture dated February 18, 2014, between IGH, as issuer, the guarantors named therein, The Bank of New York Mellon, London Branch, as trustee, collateral agent and principal paying agent, The Bank of New York Mellon (Luxembourg) S.A., as Luxembourg paying agent, registrar and Luxembourg transfer agent, and The Bank of New York Mellon, as U.S. paying agent and transfer agent, as amended and supplemented from time to time, pursuant to which the 2019 IGH Notes were issued and which has been satisfied and discharged in connection with the redemption of the 2019 IGH Notes;
- all references to the "**2023 Senior Secured Notes**" are to the €770,000,000 aggregate principal amount of 4% Senior Secured Notes due 2023 issued pursuant to the 2023 Senior Secured Notes Indenture, which will be redeemed in full with the proceeds of the Offering;
- all references to the "**2023 Senior Secured Notes Indenture**" are to the indenture dated May 5, 2015, among INEOS Finance plc, as issuer, the guarantors named therein, The Bank of New York Mellon, London Branch, as trustee, The Bank of New York Mellon (Luxembourg) S.A., as registrar, paying agent and Luxembourg transfer agent and Barclays Bank PLC, as security trustee, as amended and supplemented from time to time, pursuant to which the 2023 Senior Secured Notes were issued;
- all references to the "**2023 Senior Secured Notes Proceeds Loan**" are to the loan advanced under the loan agreement, dated May 5, 2015, between INEOS Finance plc, as lender, and IHL, as borrower, pursuant to which the gross proceeds of the 2023 Senior Secured Notes issuance were advanced to IHL, as amended or partially repaid from time to time, including the full repayment thereof in connection with the Transactions;
- all references to the "**2024 IGH Notes**" are to the $500,000,000 aggregate principal amount of 5⅝% Senior Notes due 2024 and €650,000,000 aggregate principal amount of 5⅜% Senior Notes due 2024 issued pursuant to the 2024 IGH Notes Indenture;
- all references to the "**2024 IGH Notes Indenture**" are to the indenture dated August 9, 2016, between IGH, as issuer, the guarantors named therein, The Bank of New York Mellon, London Branch, as trustee, collateral agent and principal paying agent, The Bank of New York Mellon (Luxembourg) S.A., as Luxembourg paying agent, registrar and Luxembourg transfer agent, and The Bank of New York Mellon as U.S. paying agent and transfer agent, as amended and supplemented from time to time, pursuant to which the 2024 IGH Notes were issued;
- all references to the "**2024 IGH Notes Proceeds Loans**" are to the loans advanced under the loan agreement, dated August 9, 2016, between IGH, as lender, and IHL, as borrower, pursuant to which the gross proceeds of the 2024 IGH Notes issuance were advanced to IHL, as amended or partially repaid from time to time;

- all references to the "**2025 Senior Secured Notes**" are to the €550,000,000 aggregate principal amount of 2⅛% Senior Secured Notes due 2025 issued pursuant to the 2025 Senior Secured Notes Indenture;
- all references to the "**2025 Senior Secured Notes Indenture**" are to the indenture dated November 3, 2017, among INEOS Finance plc, as issuer, the guarantors named therein, The Bank of New York Mellon, London Branch, as trustee and principal paying agent, The Bank of New York Mellon SA/NV, Luxembourg Branch, as registrar, Luxembourg transfer agent and paying agent and Barclays Bank PLC, as security trustee, as amended and supplemented from time to time, pursuant to which the 2025 Senior Secured Notes were issued;
- all references to the "**2025 Senior Secured Notes Proceeds Loan**" are to the loan under the loan agreement, dated November 3, 2017, between INEOS Finance plc, as lender, and IHL, as borrower, pursuant to which INEOS Finance plc advanced the gross proceeds of the 2025 Senior Secured Notes to IHL;
- all references to the "**Additional Term Loans due 2024**" have the meaning ascribed to the term under the caption "Description of Other Indebtedness—Senior Secured Term Loans—Overview";
- all references to "**Borrowers**" are to the U.K. Borrower and the U.S. Borrower;
- all references to "**BP**" are to BP p.l.c. and its consolidated subsidiaries;
- all references to the "**Collateral**" have the meaning ascribed to the term under the caption "Description of the Collateral and the Guarantees";
- all references to the "**Credit Support Deed**" have the meaning ascribed to the term under the caption "Business—Agreements with BP—Related Agreements";
- all references to the "**Entrepreneurial (Refining) Business**" are to the entrepreneurial activities related to the Refining Business, which includes the sales and distribution of refining products through an entrepreneur business model;
- all references to the "**Entrepreneurial (Refining) Business JV**" are to the joint venture that, following the Refining Divestiture, operates the Entrepreneurial (Refining) Business and is owned by PetroChina (50.1%) and INEOS Investments (49.9%);
- all references to the "**Existing Indentures**" are to the 2025 Senior Secured Notes Indenture and the 2024 IGH Notes Indenture, together;
- all references to the "**Existing Notes**" are to the 2025 Senior Secured Notes and the 2024 IGH Notes, together;
- all references to the "**Existing Notes Trustees**" are to The Bank of New York Mellon, London Branch in its capacity as trustee under each of the Existing Indentures;
- all references to the "**Grangemouth Divestiture**" are to the disposals to INEOS Grangemouth plc (formerly INEOS Grangemouth Limited) (a subsidiary of INEOS Holdings AG) of the shares of INEOS Commercial Services UK Limited and INEOS Chemicals Grangemouth Limited (including the assets and liabilities relating to the petrochemical operations carried out by such entities at or in connection with the Grangemouth site) effective October 1, 2013;
- all references to the "**Guarantors**" have the meaning ascribed to the term under the caption "Description of the Collateral and the Guarantees";

- all references to “**IFRS**” are to the International Financial Reporting Standard as adopted by the European Union;
- all references to “**IGH**” or the “**Parent**” are to INEOS Group Holdings S.A. and not to any of its subsidiaries;
- all references to “**IHL**” are to INEOS Holdings Limited, the direct parent company of the Issuer and an indirect wholly owned subsidiary of INEOS Group Holdings S.A.;
- all references to “**IHL Pledged Shares**” are to 100% of the capital stock of IHL;
- all references to the “**Indenture**” are to the indenture governing the Notes;
- all references to “**INEOS AG**” are to INEOS AG, a subsidiary of INEOS Limited, one of our ultimate parent undertakings;
- all references to “**INEOS Capital**” are to INEOS Capital Limited;
- all references to “**INEOS Group**,” “**INEOS**,” “**Group**,” “**we**,” “**us**” or “**our**” are to INEOS Group Holdings S.A. and its consolidated subsidiaries;
- all references to “**INEOS Investments**” are to INEOS Investments (Jersey) Limited, an entity that is controlled by the principal shareholders of IGH, is not a member of the INEOS Group (but in which the INEOS Group holds certain ordinary shares and is and will be consolidated into our financial statements for so long as we retain the majority of the economic benefits of the entity) and, as a result of the Refining Divestiture, owns a 50.1% interest in the Refining Business JV, a 49.9% interest in the Entrepreneurial (Refining) Business JV, a 50.0% direct interest in the Infrastructure Entity and a 25.05% indirect interest in the Infrastructure Entity by virtue of its 50.1% stake in the Refining Business JV;
- all references to “**INEOS Limited**” are to INEOS Limited, one of our ultimate parent undertakings;
- all references to the “**Infrastructure Entity**” are to INEOS Infrastructure (Grangemouth) Limited, an entity that acquired certain infrastructure assets at Grangemouth, Scotland (principally a power station in Grangemouth, Scotland, and a terminal and other facilities), and which, following the Refining Divestiture, is jointly owned by INEOS Investments (50.0%) and the Refining Business JV (50.0%);
- all references to the “**initial purchasers**” are to J.P. Morgan Securities plc, Barclays Bank PLC, Banco Santander, S.A., BNP Paribas, Citigroup Global Markets Limited, Goldman Sachs International, ING Bank N.V., London Branch, Merrill Lynch International and NatWest Markets Plc;
- all references to “**Innovene**” and the “**Innovene business**” refer to (a) all of BP’s petrochemical operating units for olefins, polymers and other derivatives but excluding BP’s Pasadena LAO operations, the Gelsenkirchen naphtha cracking operations and the *Munchmunster olefins operation* (“O&D”), (b) two integrated refinery plants in Grangemouth, United Kingdom and Lavéra, France, (c) a gas fractionator located in Hobbs, New Mexico and certain related pipelines and (d) existing O&D strategic joint venture investments other than BP’s joint ventures with SECCO and in Malaysia, prior to giving effect to the Innovene Acquisition;
- all references to the “**Innovene Acquisition**” are to the purchase by the INEOS Group on December 16, 2005 of all of the shares and assets comprising the Innovene business pursuant to the Innovene Acquisition Agreement;

- all references to the "**Innovene Acquisition Agreement**" are to the Share Sale and Purchase Agreement dated October 7, 2005, as amended from time to time, among certain subsidiaries of BP, IHL, certain subsidiaries of IHL and INEOS Group Limited;
- all references to "**INOVYN**" are to INOVYN Limited, an affiliate of ours that is indirectly controlled by our controlling shareholders, and its consolidated subsidiaries;
- all references to the "**Intercreditor Deed**" are to the intercreditor deed dated May 12, 2010, as amended and restated by a first amendment deed dated December 23, 2010, as further amended by a second amendment deed dated February 18, 2011, as further amended by a third amendment deed dated February 6, 2012, as further amended and restated by a fourth amendment deed dated May 4, 2012, as further amended and restated by a fifth amendment deed dated May 8, 2013, as further amended and restated by a sixth amendment deed dated July 8, 2014, as further amended by a seventh amendment deed dated May 5, 2015, as further amended and restated by an eighth amendment deed dated January 5, 2017, as further amended and restated by a ninth amendment deed dated November 3, 2017, as further amended by a tenth amendment deed dated March 22, 2019 and as further amended in connection with the Offering, and as subsequently amended, supplemented, varied or restated from time to time, among, *inter alios*, the Issuer, the guarantors acceded thereto, the facility agent under the Senior Secured Term Loans Agreement, Barclays Bank plc, as security trustee, the Schuldschein Loan Trustee and the Existing Notes Trustees, and to which the Trustee will accede on the Issue Date;
- all references to the "**Issue Date**" are to the date on which the Notes offered hereby will be issued;
- all references to the "**Köln CoGen Facility**" are to the obligations under a €120 million loan entered into by the Group on December 22, 2017;
- all references to the "**LC Facility**" are to the on-demand letter of credit facility entered into by INEOS Treasury (UK) Limited on May 4, 2012 as may be amended, supplemented, varied or restated from time to time as further described under the caption "Description of Other Indebtedness—Letter of Credit Facility";
- all references to "**Lux I**" are to INEOS Luxembourg I S.A., which is a direct subsidiary of IGH;
- all references to "**MiFID II"** are to the Markets in Financial Instruments Directive (2014/65/EU) and the Markets in Financial Instruments Regulation (600/2014);
- all references to the "**Noretyl Facility**" are to the obligations under a €140 million loan facility assumed by the Group on July 1, 2015;
- all references to the "**Notes Proceeds Loan**" are to the loan under the loan agreement to be entered into between the Issuer, as lender, and IHL, as borrower, pursuant to which the Issuer will advance the gross proceeds of the Notes to IHL in order to allow IHL to repay the 2023 Senior Secured Notes Proceeds Loan in full;
- all references to the "**Offering**" are to the offering of the Notes hereby and the use of proceeds received therefrom as further described under the caption "Use of Proceeds";
- all references to the "**Original Term Loans due 2022**" are to credit facilities due 2022 made available under the Senior Secured Term Loans Agreement, which were converted into additional Term Loans due 2022, and which were refinanced on November 3, 2017 into Additional Term Loans due 2024;

- all references to "**PetroChina**" are to PetroChina International (London) Company Limited or one or more of its affiliates, as the context may require;
- all references to the "**Refining and Entrepreneurial JVs**" are to the Refining Business JV and the Entrepreneurial (Refining) Business JV, collectively;
- all references to the "**Refining Business**" are to the refining business, consisting principally of the crude oil refining operations carried out at the refineries located at Grangemouth, Scotland, and Lavéra, France, as reported on the historical financial statements of IGH under the Refining segment;
- all references to the "**Refining Business JV**" are to the joint venture that, following the Refining Divestiture, operates the Refining Business and is owned by PetroChina (49.9%) and INEOS Investments (50.1%);
- all references to the "**Refining Divestiture**" are to the disposal on July 1, 2011, by subsidiaries of Lux I of (i) the Refining Business and the Entrepreneurial (Refining) Business to joint ventures formed between PetroChina and INEOS Investments and (ii) the Infrastructure Entity to a joint venture formed by INEOS Investments (50.0%) and the Refining Business JV (50.0%);
- all references to the "**Schuldschein Loan**" are to the floating rate loan which has been made available under the Schuldschein Loan Agreement on March 26, 2019, as further described under the caption "Description of Other Indebtedness—Schuldschein Loan";
- all references to the "**Schuldschein Loan Agreement**" are to the assignable loan agreement dated March 22, 2019 among, *inter alios*, INEOS Finance plc, as borrower, certain subsidiaries of IGH, Deutsche Bank Aktiengesellschaft, as bank, creditor and paying agent, and Wilmington Trust SP Services (Frankfurt) GmbH, as trustee, as subsequently amended, supplemented, varied, novated, extended or replaced from time to time;
- all references to the "**Schuldschein Loan Trustee**" are to Wilmington Trust SP Services (Frankfurt) GmbH in its capacity as trustee under the Schuldschein Loan Agreement;
- all references to the "**Schuldschein Proceeds Loan**" are to the loans advanced under the loan agreement, dated March 26, 2019, between the Issuer, as lender, and IHL, as borrower, pursuant to which the gross proceeds of the Schuldschein Loan were advanced to IHL, as amended or partially repaid from time to time;
- all references to the "**Securitization Program**" are to the securitization program as further described under the caption "Description of Other Indebtedness—Securitization Program";
- all references to the "**Security Trustee**" are to Barclays Bank plc as security trustee under the Senior Secured Term Loans Agreement and the Senior Secured Notes Indentures;
- all references to the "**Senior Secured Note Documents**" have the meaning ascribed to the term in the Intercreditor Agreement, including but not limited to the Senior Secured Notes Indentures;
- all references to the "**Senior Secured Notes**" are to the 2025 Senior Secured Notes and the Notes, together;
- all references to the "**Senior Secured Notes Indentures**" are to the 2025 Senior Secured Notes Indenture and the Indenture, together;
- all references to the "**Senior Secured Notes Proceeds Loans**" are to the 2025 Senior Secured Notes Proceeds Loan and the Notes Proceeds Loan, together;

- all references to the "**Senior Secured Term Loans**" are to the credit facilities which have been made available under the Senior Secured Term Loans Agreement on November 3, 2017, as further described under the caption "Description of Other Indebtedness—Senior Secured Term Loans";
- all references to the "**Senior Secured Term Loans Agreement**" are to the credit agreement dated as of April 27, 2012, among, *inter alios*, INEOS Finance plc and INEOS US Finance LLC, as borrowers, certain subsidiaries of IGH, Barclays Bank PLC and certain lenders, as subsequently amended, supplemented, varied, novated, extended or replaced from time to time under one or more credit facilities;
- all references to the "**Senior Secured Term Loans Eurobond**" are to the eurobond entered into by IHL, as issuer, and INEOS US Finance LLC, as subscriber, pursuant to which INEOS US Finance LLC subscribed for bonds to the value of the gross proceeds of its borrowings under the Senior Secured Term Loans Agreement;
- all references to the "**Senior Secured Term Loans Euro Proceeds Loans**" are to the loans under the loan agreements entered into by INEOS Finance plc, as lender, and IHL, as borrower, pursuant to which INEOS Finance plc advanced the gross proceeds of its borrowings under the Senior Secured Term Loans Agreement;
- all references to the "**Senior Secured Term Loans Proceeds Loans**" are to the Senior Secured Term Loans Euro Proceeds Loans and to the Senior Secured Term Loans Eurobond;
- all references to "**Styrolution**" are to INEOS Styrolution Group GmbH or INEOS Styrolution Holding Limited, subsidiaries of INEOS Industries Limited through its wholly owned subsidiary, INEOS Industries Holdings Limited;
- all references to "**subsidiaries**" are to all, whether operating or non-operating, the direct and indirect subsidiaries of IGH in the Group;
- all references to the "**Term Loans due 2018**" are to credit facilities due 2018 made available under the Senior Secured Term Loans Agreement that have been repaid in full;
- all references to the "**Term Loans due 2020**" are to credit facilities due 2020 made available under the Senior Secured Term Loans Agreement that had been extended to March 2022 and converted into Term Loans due 2022, which have been repaid in full;
- all references to the "**Term Loans due 2022**" are to credit facilities due 2022 made available under the Senior Secured Term Loans Agreement, including the Original Term Loans due 2022 and the Terms Loans due 2020 which were converted into such facilities;
- all references to the "**Term Loans due 2024**" have the meaning ascribed to the term under the caption "Description of Other Indebtedness—Senior Secured Term Loans—Overview", which were refinanced on November 3, 2017 into Additional Term Loans due 2024;
- all references to the "**Transactions**" have the meaning ascribed to the term under the caption "The Transactions";
- all references to the "**Trustee**" are to The Bank of New York Mellon, London Branch in its capacity as trustee under the Indenture;
- all references to "**U.K. Borrower**" are to INEOS Finance plc; and
- all references to "**U.S. Borrower**" are to INEOS US Finance LLC.

Unless otherwise stated, references to capacities of INEOS's facilities refer to the "nameplate capacities," or theoretical maximum production capacity of such facilities; the effective capacity of such facilities may, however, in fact be more or less than the nameplate capacity due to the current operating conditions and asset configuration of each facility.

All references to "**tonnes**" are to metric tonnes.

We have provided definitions for some of the industry terms used in this offering memorandum in the "Glossary of Selected Terms" beginning on page G-1 of this offering memorandum.

EXCHANGE RATE INFORMATION

The following table sets forth, for the periods set forth below, the high, low, average and period end Bloomberg Composite Rate (New York) expressed as U.S. dollars per €1.00. The Bloomberg Composite Rate is a "best market" calculation, in which, at any point in time, the bid rate is equal to the highest bid rate of all contributing bank indications and the ask rate is set to the lowest ask rate offered by these banks. The Bloomberg Composite Rate is a mid-value rate between the applied highest bid rate and the lowest ask rate. Neither we nor the initial purchasers represent that the U.S. dollar amounts referred to below could be or could have been converted into euro at any particular rate indicated or any other rate.

	U.S. dollars per €1.00			
Year	**High**	**Low**	**Average(1)**	**Period end**
2014	1.3932	1.2098	1.3207	1.2098
2015	1.2002	1.0497	1.1031	1.0856
2016	1.1532	1.0389	1.1035	1.0520
2017	1.2036	1.0406	1.1393	1.2005
2018	1.2509	1.1218	1.1782	1.1469
2019 (through April 5, 2019)	1.1543	1.1194	1.1347	1.1218
Month	**High**	**Low**	**Average(2)**	**Period end**
October 2018	1.1593	1.1312	1.1480	1.1312
November 2018	1.1453	1.1218	1.1362	1.1320
December 2018	1.1469	1.1304	1.1376	1.1469
January 2019	1.1543	1.1303	1.1420	1.1448
February 2019	1.1459	1.1268	1.1347	1.1371
March 2019	1.1414	1.1194	1.1299	1.1217
April 2019 (through April 5, 2019)	1.1233	1.1204	1.1218	1.1218

(1) The average of the Bloomberg Composite Rates on the last business day of each month during the relevant period.

(2) The average of the exchange rates on each business day during the relevant period.

The Bloomberg Composite Rate of the euro on April 5, 2019, was U.S. $1.1218 per €1.00.

The above rates may differ from the actual rates used in the preparation of the consolidated financial statements and other financial information appearing in this offering memorandum. Our inclusion of these exchange rates is not meant to suggest that the euro amounts actually represent such dollar amounts or that such amounts could have been converted into dollars at any particular rate, if at all. For a discussion of the impact of the exchange rate fluctuations on our financial condition and results of operations, see "Operating and Financial Review and Prospects."

Unless otherwise indicated, for purposes of the presentation of financial information in this offering memorandum, transactions in foreign currencies are translated to the respective functional currencies of Group entities at the foreign exchange rate ruling at the date of the transaction. Monetary assets and liabilities denominated in foreign currencies at the reporting date are retranslated to the functional currency at the foreign exchange rate ruling at that date.

FORWARD-LOOKING STATEMENTS

This offering memorandum includes "forward-looking statements," within the meaning of the U.S. securities laws and the laws of certain other jurisdictions, based on our current expectations and projections about future events, including:

- the cyclical and highly competitive nature of our businesses;
- our significant debt service obligations, as well as our ability to generate sufficient cash flow to service our debt;
- risks associated with our structure, the Offering and our other indebtedness;
- our sales growth across our principal businesses and our strategy for controlling costs, growing margins, increasing manufacturing capacity and production levels, and making capital expenditures;
- our ability to deleverage through strategic disposals of certain assets and non-core businesses;
- raw material costs or supply arrangements;
- our technological and manufacturing assets and our ability to utilize them to further increase sales and the profitability of our businesses;
- impacts of climate change, including regulatory requirements relating to greenhouse gas emissions, the costs to purchase emissions allowances and the physical risks to our facilities from severe weather conditions;
- current or future health, safety and environmental requirements and the related costs of maintaining compliance with, and addressing liabilities under, those requirements;
- operational hazards, including the risk of accidents that result in injury to persons and environmental contamination;
- our ability to retain existing customers and obtain new customers;
- our ability to develop new products and technologies successfully;
- our ability to successfully integrate acquired businesses with our historical business and realize anticipated synergies and cost savings, including with respect to businesses acquired;
- currency fluctuations;
- our ability to attract and retain members of management and key employees;
- our relationship with our shareholders, affiliates and joint ventures; and
- general economic, social or political conditions.

All statements other than statements of historical facts included in this offering memorandum, including, without limitation, statements regarding our future financial position, risks and uncertainties related to our business, strategy, capital expenditures, projected costs and our plans and objectives for future operations, may be deemed to be forward-looking statements. These forward-looking statements are subject to a number of risks and uncertainties, including those identified under the "Risk Factors" section in this offering memorandum. Words such as "believe," "expect," "anticipate," "may," "assume," "plan," "intend," "will," "should," "estimate," "risk" and similar expressions or the negatives of these expressions are intended to identify forward-looking statements. In addition, from time to time we or our representatives, acting in respect of information provided by us, have made or may make forward-looking statements orally or in writing and these forward-looking statements may be included in but are not limited to press releases (including on our website), reports to our security holders and other communications. Although we believe that the expectations reflected in such forward-looking statements are reasonable, we can give no assurance that such expectations will prove to be correct. Any forward-looking statement speaks only as of the date on which it is made and we undertake no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise. All subsequent written and oral forward-looking statements attributable to us or to persons acting on our behalf are expressly qualified in their entirety by the cautionary statements referred to above and contained elsewhere in this offering memorandum, including those set forth under the section entitled "Risk Factors."

The risks described in the "Risk Factors" section in this offering memorandum are not exhaustive. Other sections of this offering memorandum describe additional factors that could adversely affect our business, financial condition or results of operations. Moreover, we operate in a very competitive and rapidly changing environment. New risk factors emerge from time to time and it is not possible for us to predict all such risk factors, nor can we assess the impact of all such risk factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements. Given these risks and uncertainties, you should not place undue reliance on forward-looking statements as a prediction of actual results.

TAX CONSIDERATIONS

Prospective purchasers of the Notes are advised to consult their own tax advisors as to the consequences of purchasing, holding and disposing of the Notes, including, without limitation, the application of U.S. Federal tax laws to their particular situations, as well as any consequences to them under the laws of any other taxing jurisdiction, and the consequences of purchasing the Notes at a price other than the initial issue price in the Offering. See "Certain Tax Considerations."

TRADEMARKS AND TRADE NAMES

We own or have rights to certain trademarks or trade names that we use in conjunction with the operation of our businesses. Each trademark, trade name or service mark of any other company appearing in this offering memorandum is the property of its respective holder.

HISTORICAL AND CURRENT MARKET AND INDUSTRY DATA

Historical and current market data used throughout this offering memorandum were obtained from internal company analyses, consultants' reports and industry publications. In particular, information has been provided by Nexant Limited ("Nexant"), an industry consultant. Industry surveys and publications generally state that the information contained therein has been obtained from sources believed to be reliable, but the accuracy and completeness of information contained therein is not guaranteed. While we accept responsibility for the accurate extraction and reproduction of this market data, we have not independently verified such data and cannot guarantee its accuracy or completeness. In addition, certain statements in this offering memorandum regarding the petrochemical industry, our position in that industry and our market share are based on internal company estimates, our experience and investigations of market conditions and our review of industry positions. We cannot assure you that any of the assumptions underlying those statements are accurate or correctly reflect our position in the industries. Similarly, internal company analyses, while believed by us to be reliable, have not been verified by any independent sources, and neither we nor any of the initial purchasers make any representation as to the accuracy of such information. While we are not aware of any misstatements regarding any industry or similar data presented herein, such data involve risks and uncertainties and are subject to change based on various factors, including those discussed under the "Risk Factors" section in this offering memorandum.

This offering memorandum makes reference to certain information taken from reports prepared by Nexant. These reports were generally not prepared specifically for INEOS and in most cases relate to general industry analysis.

Nexant conducted its analysis and prepared its reports utilizing reasonable care and skill in applying methods of analysis consistent with normal industry practice. All results are based on information available at the time of review. Changes in factors upon which the review was based could affect the results. Forecasts are inherently uncertain because of events or combinations of events that cannot reasonably be foreseen, including the actions of government, individuals, third parties and competitors. There is no implied warranty of merchantability or fitness for a particular purpose to apply.

Some of the information on which the Nexant reports are based has been provided by others. Nexant has utilized such information without verification unless specifically noted otherwise. Nexant accepts no liability for errors or inaccuracies in information provided by others.

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SUMMARY

This summary highlights selected information contained elsewhere in this offering memorandum. It is not complete and does not contain all the information that you should consider before investing in the Notes. The following summary should be read in conjunction with and is qualified in its entirety by the more detailed information included elsewhere in this offering memorandum. You should read the entire offering memorandum, including the more detailed information in the consolidated financial statements and the related Notes included elsewhere in this offering memorandum, before making an investment decision. See the section entitled "Risk Factors" for factors that you should consider before investing in the Notes and the section entitled "Forward-Looking Statements" for information relating to the statements contained in this offering memorandum that are not historical facts.

Overview

We are one of the world's largest chemical companies as measured by revenue. Our business has highly integrated, world-class chemical facilities and production technologies. We have leading global market positions for a majority of our key products and a strong and stable customer base. We operate 33 manufacturing sites in six countries throughout the world. We are led by a highly experienced management team with, on a combined basis, over 100 years of experience in the chemical industry. As of December 31, 2018, our total chemical production capacity was approximately 21,900 kta, of which 59% was in Europe and 41% was in North America.

We operate our business through three segments: Olefins & Polymers Europe, Olefins & Polymers North America and Chemical Intermediates. The products we manufacture are derived from crude oil and natural gas, and include olefins, polymers and various petrochemical products directly or indirectly derived from olefins. Our products serve a broad and diverse range of end markets, including packaging, construction, automotive, white goods/durables, agrochemicals and pharmaceuticals.

Our highly integrated, world class production facilities and technological know-how allow us to process raw materials into higher value added products. In Europe, we own two sites integrated with crackers and polymer units. Typically, these two sites account for approximately 76% of our European olefin and polymer volumes. The polyolefins plants on our two major sites in Europe receive more than 95% of their feedstock supply from our integrated crackers. Similarly, in the United States, much of our olefin feedstock requirements for our polymer business is supplied by either our Chocolate Bayou cracker in Texas or by integrated third party facilities, such as the Tesoro facility in Carson, California. We believe that with our highly integrated facilities we are able to capture attractive margins across the value chain, enjoy greater certainty of feedstock supply, reduce logistical costs, improve energy management and optimize our product slate.

We benefit from the cost advantages of operating large-scale, well-invested, highly integrated facilities strategically located near major transportation facilities and customer locations. Since January 1, 2007, we and our predecessors have invested approximately €6.5 billion (including investments in divested assets) in our production facilities to ensure that they operate efficiently, resulting in integrated, and state-of-the-art production units. We believe these investments allow us to operate at lower cost and higher utilization rates than most of our competitors, and enable us to maintain positive margin and cash flows even during downturns in industry cycles or customer demand. For the year ended December 31, 2018, our revenue was €16.1 billion and our EBITDA before exceptionals was €2.3 billion.

Over the past several years, we have implemented a range of strategic initiatives designed to lower our operating costs, increase our profitability and further enhance our market position. These include fixed asset investments to expand our capacity in higher value products, to enhance productivity at our existing facilities, and to reduce our fixed cost structure through headcount reductions, production line closures and system upgrades. In addition, we have shifted our product portfolio to focus on more differentiated products, exited low-margin businesses and implemented premium pricing strategies designed to improve our margins. We believe these initiatives provide us with a strong platform to drive growth, create significant operating leverage and position us to benefit from volume recovery in our end markets.

Since April 1998, when INEOS was established with the acquisition of the Belgian “Oxide” assets from Inspec plc, we have significantly expanded, both through a series of strategic acquisitions of businesses and assets from major chemical companies, and through organic growth. The combination of INEOS and Innovene in December 2005 represented a transformational milestone for our company, providing global scale and further upstream integration.

In 2011, we transferred our Refining Business, our Entrepreneurial (Refining) Business and certain infrastructure assets to three joint ventures outside the INEOS Group. Please see “Business—Refining Divestiture, Grangemouth Divestiture and Lavéra Divestiture—The Refining Divestiture” for a further description of the disposal of our Refining Business and Entrepreneurial (Refining) Business.

On October 1, 2013, we completed the Grangemouth Divestiture to a newly created subsidiary of INEOS Holdings AG, our indirect parent company. See “Business—Refining Divestiture, Grangemouth Divestiture and Lavéra Divestiture—The Grangemouth Divestiture.”

On July 1, 2014, we divested the olefins and polymers assets and Chemical Intermediates assets of the Lavéra site. See “Business—Refining Divestiture, Grangemouth Divestiture and Lavéra Divestiture—The Lavéra Divestiture.”

In 2015, we completed the purchase of the remaining 50% interest in the Noretyl ethylene cracker at Rafnes, Norway from the INOVYN group (formerly the Kerling Group), a related party. In 2015, we also acquired aromatics and cumene assets from Axiall Corporation. The acquisition comprised the world’s largest cumene plant in Pasadena, Texas. In addition, Axiall’s phenol, acetone and alpha-methylstyrene business was transferred to the INEOS phenol facility at Mobile, Alabama.

In 2016, the Group acquired 100% of the shares of WLP Holding Corporation, one of the largest high density polyethylene (HDPE) pipe manufacturers in North America. Moreover, in 2016, following a strategic review of the INEOS Technologies business, we decided to cease marketing its polyolefins licensing technology externally and to transfer the remaining parts of the INEOS Technologies business to existing businesses within the Group to provide a clearer focus on individual product lines.

Products

The table below sets forth revenue and EBITDA before exceptionals for the year ended December 31, 2018, and the key products for our primary lines of business.

Business	For the year ended December 31, 2018 Revenue[(1)]	EBITDA before exceptionals	Key Products	Key End Uses
	(€ in millions)			
O&P Europe	6,388.8	671.7	Benzene Butadiene Ethylene High-density polyethylene Linear low-density polyethylene Low-density polyethylene Polypropylene Propylene	Coatings Films flexible & rigid packaging Injection molded plastics Petrochemical feedstock
O&P North America	4,044.1	798.0	Ethylene High-density polyethylene Polypropylene Propylene	Coatings Films flexible & rigid packaging Injection molded plastics Petrochemical feedstock
Chemical Intermediates	7,855.0	818.1	Acetone Acetonitrile Acrylonitrile Alkoxylates Ammonia Cumene Ethanolamines Ethyl acetate Ethylene glycols Ethylene oxide Glycol ether esters Glycol ethers Hydrogen cyanide Linear alpha olefins Nitric acid Oxo alcohols Phenol Poly alpha olefins Propylene glycols Propylene oxide Technology & license packages Catalyst & additive supply	Agrochemicals Automobiles Coolants Electronics Fibers Fuel additives Metal extraction Nylons Oil & gas processing Packaging Paints Pharmaceuticals Resins Surfactants Synthetics lubricants Water purification General consumer applications General industrial applications

(1) Excludes intersegmental eliminations.

Olefins & Polymers Europe and Olefins & Polymers North America

In our olefins and polymers businesses, we produce olefins, other cracker products, such as butadiene and benzene, and a broad range of polyolefin polymers. We are among the largest producers of olefins and polymers in the world. The focus of our olefins business in Europe and North America is on ethylene and propylene, which are the two largest volume olefins globally and are key building blocks for polymers. The olefins we make are primarily used as feedstock for our derivatives businesses. In addition, we sell olefins to third-party customers for a variety of industrial and consumer applications, including the manufacture of plastics, rubber and fiber. In our polymers business, we focus on polyethylene and polypropylene.

We operate a total of 18 sites for olefins and polyolefins, including our large integrated olefins cracker and polyolefin facilities at Köln, Germany, Rafnes, Norway, and Chocolate Bayou, Texas, United States and seven polyethylene pipe manufacturing sites within the United States. These facilities support our highly competitive proprietary polyolefin process technologies. The technologies include our cost-effective gas phase polypropylene technology, our specialized technology for high-density polyethylene and our flexible proprietary "swing" technology for both linear low-density and high-density polyethylene.

The North American and European markets for olefins and polyolefins are quite distinct, with separate pricing structures and distribution channels. As a result, each market may experience different rates of growth and levels of return. Therefore, we operate these two businesses separately and report them as two distinct segments—INEOS Olefins & Polymers Europe and INEOS Olefins & Polymers North America. For the year ended December 31, 2018, our Olefins & Polymers Europe and Olefins & Polymers North America businesses contributed €6.4 billion and €4.0 billion of revenue and €671.7 million and €798.0 million of EBITDA before exceptionals, respectively, excluding intersegmental eliminations.

Chemical Intermediates

Chemical intermediates are higher-value-added chemical products used as key components in a wide variety of consumer and industrial products. In our Chemical Intermediates business, we utilize olefins as key raw materials and produce a wide range of products, including phenol, acetone, alpha olefins, ethylene oxide and derivatives and nitriles.

We have four main product groups within our Chemical Intermediates business: INEOS Nitriles, INEOS Oligomers, INEOS Oxide and INEOS Phenol. The activities of INEOS Enterprises are also included within Chemical Intermediates. Together they produce a wide range of products including phenol, acetone, alpha olefins, ethylene oxide and derivatives, acrylonitrile, ammonia and nitric acid. We have a total of 16 manufacturing sites globally, with many of our plants integrated either directly with their key raw materials on-site, or integrated via pipeline connection.

We are the world's leading producer of phenol, which is an essential starting material for a wide range of applications in the electrical/electronics, automotive, construction and household/furniture industries. Our main product in the nitriles sector is acrylonitrile, which is used in the production of acrylic fibers and acrylonitrile butadiene styrene plastic. We are also among the largest volume suppliers of linear and poly alpha olefins in the world. According to Nexant, we are the largest producer of ethylene oxide in Western Europe. We have a range of associated products, including ethylene glycol, propylene oxide, propylene glycol and acetate esters. We manufacture and supply high-quality catalysts and additives in support of various technologies to major companies around the world, and also to our own manufacturing assets. For the year ended December 31, 2018, our Chemical Intermediates revenue and EBITDA before exceptionals were €7.9 billion and €818.1 million, respectively, excluding intersegmental eliminations.

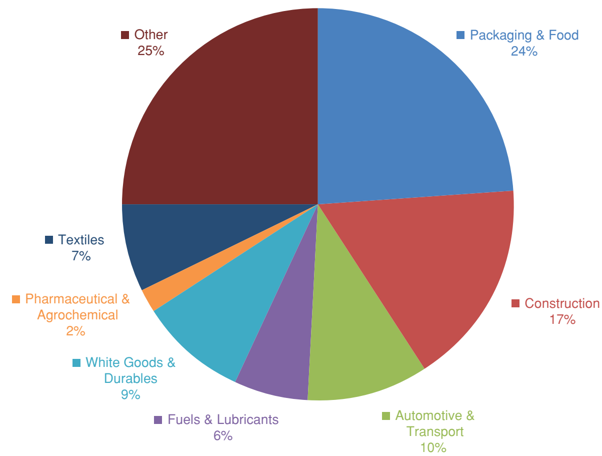
Our Competitive Strengths

We believe that the factors set forth below provide us with a competitive advantage in the markets in which we compete:

- ***Diversified Portfolio of Businesses with Leading Market Positions.*** We are one of the world's largest chemical companies. We operate 33 manufacturing sites in six countries around the world. These assets have a total production capacity of approximately 21,900 kta as of December 31, 2018. We believe we have a top 5 or better global or regional market position in 12 of our key products.

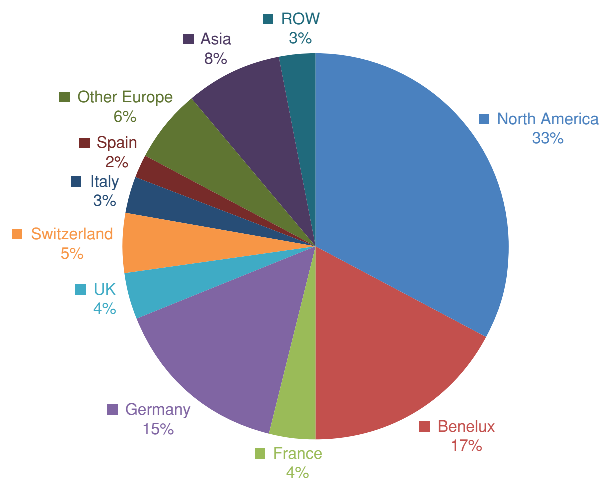
Our petrochemical products are utilized in a wide range of end-market applications. The following diagram sets forth our petrochemicals revenue by end use application in 2018.

Petrochemicals Revenue by Application 2018



Our petrochemical products are sold to customers in diverse geographic locations. The following diagram sets forth the group third party revenue by region in 2018.

Group Third Party Revenue by Region 2018



We believe that such application and market diversity reduces the effect of industry cyclicality on our results. In addition, we believe that we benefit from the fact that the supply and demand dynamics of the cycles relating to our petrochemical products are fairly independent, which helps mitigate some of the cyclicality in the industry.

- ***Vertically Integrated, World-Scale Producer.*** We have three large-scale petrochemical sites, accounting for approximately 42% of our total petrochemical production capacity as of December 31, 2018. Each of these sites is integrated with a major cracker and/or polymers and derivatives unit.

  We operate one of the largest single-site ethylene oxide/ethylene glycol plants in Europe and the two largest phenol plants in Europe, one of which is the largest in the world, as well as the largest single train phenol plant in North America. We operate the largest acrylonitrile facility in the world and one of the largest high-density polyethylene complexes in North America. We believe that our existing plants have sufficient capacity such that as our production volumes increase, we will be able to leverage our fixed cost base and increase our profitability.

Our sites are typically located near raw materials, refineries and associated pipeline infrastructure. We believe our highly integrated facilities provide us with the ability to capture margins across the value chain, enjoy certainty of feedstock supply (particularly for ethylene), reduce logistical costs, improve energy management, adjust the product slate to capture greater value (by selling olefins or, alternatively, by using them internally in the production of polymers or derivatives) and reduce our exposure to margin volatility as a result of changes in raw material prices. We operate large plants that permit us to spread fixed costs over large volumes of production, thereby reducing unit costs and enhancing profits.

- ***Well-Invested, Highly Efficient Production Facilities.*** Our large, well-invested plants benefit from economies of scale and favorable locations. Our acquisition activity has focused on acquiring businesses that complement our existing manufacturing facilities with well-invested physical assets from major chemical companies. In addition, each year we continue to invest in improving and expanding our facilities. Since January 1, 2007, we and our predecessors have invested approximately €6.5 billion (including investments in divested assets) in our production facilities to ensure that they operate efficiently, resulting in integrated and state-of-the-art production units.

- ***Extensive Portfolio of Leading Proprietary Technologies.*** We have a broad portfolio of proprietary manufacturing technologies which we use for the manufacturing of our key products. We believe that they enable us to be one of the lowest cost producers and provide us with a significant competitive advantage in terms of product quality, and we continue to improve the portfolio through focused research and technology investments.

- ***Experienced Management Team with a Strong Track Record.*** Our senior management team has been operating INEOS and our predecessors for the past 20 years and has a demonstrated track record of achieving profitable growth in the chemical industry, successfully integrating large acquisitions, dramatically reducing the fixed cost base, and deleveraging the business following such acquisitions. James A. Ratcliffe, our controlling shareholder, and the other existing shareholders have a successful record of investing in the chemical industry. Across the wider INEOS group, including our ultimate parent company and its other subsidiaries, we have completed 32 significant acquisitions since the formation of INEOS in 1998. Each of these acquisitions has been integrated effectively and we have been able to achieve significant cost-savings in the acquired businesses. Our management team has extensive experience in the chemical industry, including with leading companies such as ICI, DuPont, Dow, Degussa and BP, and a proven ability to increase productivity, reduce costs and control capital expenditures and working capital. We believe the experience of our management team is a distinct competitive advantage.

  In addition, our senior management team has demonstrated the ability to streamline our businesses by focusing on core competencies and disposing of non-core or underperforming businesses. In the past seven years, we have disposed of three non-core or underperforming businesses. We disposed of the Refining Business and the Entrepreneurial (Refining) Business in July 2011. On October 1, 2013, we completed the Grangemouth Divestiture to a newly created subsidiary of INEOS Holdings AG, our indirect parent company. See "Business—Refining Divestiture, Grangemouth Divestiture and Lavéra Divestiture—The

Grangemouth Divestiture." Most recently, on July 1, 2014, the Group completed the Lavéra Divestiture to a new subsidiary of INEOS AG, the ultimate parent company of the Group at the time of the divestiture. See "Business—Refining Divestiture, Grangemouth Divestiture and Lavéra Divestiture—The Lavéra Divestiture." The disposal of these three businesses has enabled us to focus management time on core activities, reduce our capital expenditure requirements going forward and also reduce our exposure to underperforming cash-consuming businesses.

- ***Access to Advantaged Feedstocks.*** Our Chocolate Bayou cracker installation in the U.S. uses natural gas liquids-based feedstocks, such as ethane, as its main feedstocks. This allows us to benefit from the current low-cost supply of ethane resulting from the growth in the supply of shale gas in the U.S. Ethane is also a lower-cost feedstock than naphtha in Europe, where we operate a very efficient gas olefin cracker in Rafnes. Our other olefin cracker in Europe, at Köln, is a naphtha cracker, but it has significant gas cracking flexibility. Our ability to use lower-cost feedstocks, like ethane, gives us an advantage over our competitors with crackers that cannot accept such a significant mix of gas feedstocks, and must rely on more expensive naphtha. In addition, our Chocolate Bayou cracker and our naphtha crackers in Europe can also use naphtha as a feedstock, allowing us to manage our feedstock mix in response to changes in economic and market conditions and maximize our margins. Our fleet of eight long-term chartered Dragon class ships, together with the expanded gas storage terminal in Rafnes, a deep water terminal near Philadelphia and long-term supply contracts, provides us access to the attractive U.S. ethane market for our gas-based cracker in Rafnes, Norway.

Our Business Strategy

In response to challenges resulting from the current macroeconomic environment and as part of our long-term strategic aim, we have maintained and will continue to execute a strategy consisting of the following short- and long-term elements. These are designed to help us improve our capital structure, leverage our key strengths and market opportunities and ensure ongoing cash flow generation and growth:

- ***Where and When Appropriate, and within the Confines of Our Capital Structure, to Pursue Long-term Value-added Growth Opportunities.*** As a result of our lean corporate structure, we are able to maintain a level of agility that few organizations our size are able to match. We have a highly disciplined evaluation process and a detailed series of metrics by which we measure the value creation prospects of potential projects. Opportunities for profitable growth are identified and vetted in an efficient, non-bureaucratic format, which, in many cases, we believe enables us to establish a first-mover advantage. For example, we continue to pursue options to exploit shale gas in the U.S. through the expansion of our Chocolate Bayou cracker (some capacity having already been added in 2014 and 2016), and built a new high-density polyethylene plant at our Battleground site in Texas in a joint venture with Sasol Limited, which became operational in the fourth quarter of 2017. Our O&P Europe business also has in place 15-year supply and infrastructure agreements entered into in 2012 to access ethane feedstock from the U.S. for use in its European cracker complexes. On July 1, 2015, we completed the purchase of the remaining 50% interest in the Noretyl ethylene cracker at Rafnes, Norway from the INOVYN group (formerly the Kerling Group), a related party. Subsequently, we have modernized and expanded the Noretyl gas cracker at Rafnes to its present annual capacity of 645,000 tonnes of ethylene. In addition, construction is underway for a new 420,000 tonnes linear alpha olefins plant, as well as a new 120,000 tonnes poly alpha olefins plant, both at Chocolate Bayou, Texas, which we estimate will be operational in the second quarter of 2019 and first quarter of 2020, respectively. We are currently pursuing several other projects that we believe provide opportunities for profitable growth.

- ***Maintain World-Class Health, Safety, Security and Environmental ("HSSE") Excellence.*** We are dedicated to continually improving our HSSE performance. We ensure that all employees receive appropriate training, thereby enabling them to effectively contribute to HSSE performance and HSSE improvement processes. It is our policy to design our processes and manufacture and distribute our products in a responsible manner so that our employees, customers, the public and the environment are protected from avoidable risks. Our strategy is to continue achieving injury and environmental compliance ratings better than world-class benchmarks.

- ***Generate Cost Savings and Enhance Efficiency.*** We have historically succeeded in reducing costs at our acquired businesses by making rapid reductions in underlying fixed costs and implementing an efficient corporate and management structure. We have achieved significant fixed cost reductions in businesses that we have acquired, delivering on average a reduction of 22% of inherited fixed costs in the four-year period post acquisition. Continuous improvements in the efficiency of our existing sites and opportunities for site consolidation are key aspects of this strategy, as we seek to maintain upper quartile cost positions and world-scale facilities across the majority of our operations. The control of fixed costs will continue to be a key priority for our business.

- ***Generate Strong Cash Flow.*** We intend to continue our focus on cash flow generation by maximizing the utilization of assets, leveraging existing resources, continuously improving working capital practices, following disciplined and focused capital expenditure and cost reduction plans and optimizing where possible our capital structure. In January 2015, we implemented a global restructuring of our capital to ensure the location of our interest deductions more closely matched the location of our operating cash flows. We estimate that this restructuring has reduced our cash tax expense in the United States by approximately $343 million in the three years ended December 31, 2018. We apply when possible the cash flows generated from these initiatives to help reduce our debt.

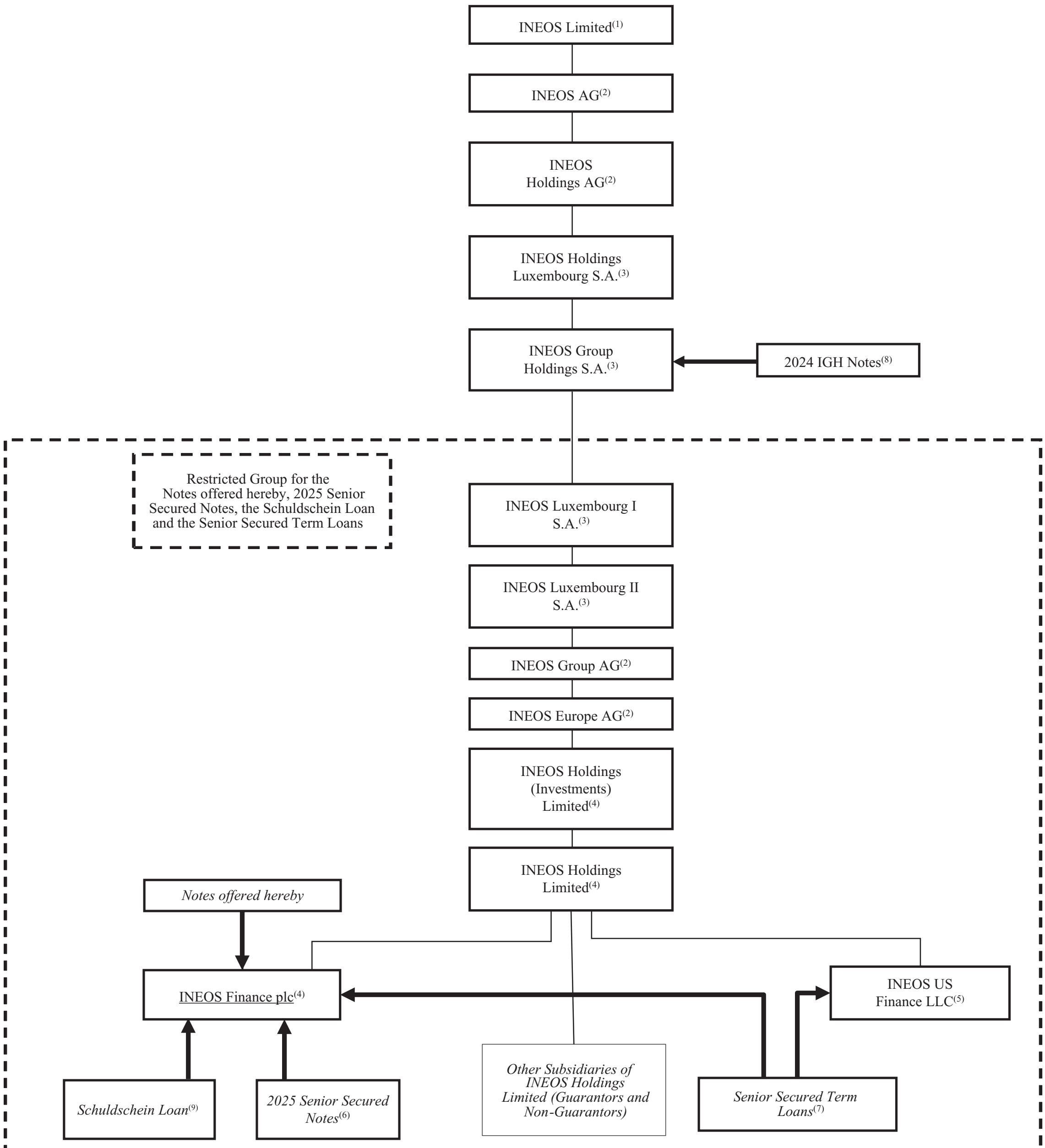
- ***Maximize Utilization of Assets.*** As a low-cost focused producer, we believe in operating our facilities at full capacity. We believe this allows us to maintain positive margins and cash flows, even during downturns in industry cycles or customer demand, more readily than some of our competitors who have higher production costs. We intend to achieve growth in production volume by improving utilization rates within the defined availability of an asset, improving availability of an asset by minimizing planned and unplanned facility downtime and improving capacity of an asset through de-bottlenecking projects. We have a strong track record of improving utilization rates of acquired assets.

- ***Maintain a Lean Corporate Structure and Incentivize Employees.*** We intend to operate our business in a manner that is consistent with the philosophy of our shareholders and maintain a simple and decentralized, flat organizational structure that minimizes corporate bureaucracy, coupled with compensation arrangements that incentivize our employees. We believe that a simple and decentralized organizational structure is cost-effective and will allow each of our management teams the freedom to use their industry knowledge to respond to market opportunities. We believe that we can increase the value of our business when our employees share in the value they create. In the past, we have granted our employees tracking shares with respect to each of our businesses and regions, with management and employee bonuses and long-term incentive plans linked to the EBITDA performance and other factors of the business in which they work.

- ***Maximize Flexibility to Use Advantaged Feedstocks.*** We remain focused on our strategy of acquiring advantaged feedstock sources and improving our flexibility to use different feedstocks to take advantage of changing market conditions. In 2017, we entered into an agreement to construct a butane tank that we believe will be the largest in Europe. The tank will be located in Antwerp, Belgium, and is planned to come on stream in 2019. The tank will allow us to import butane from the U.S. (and from all over the world) to supply material to our naphtha crackers at Köln. This agreement complements our contracts signed in 2012 and 2015 to source ethane directly from the U.S. for our Rafnes cracker. In 2015, we also completed a new ethane import tank and new ethane furnace at our Norwegian plant. Our Dragon class ships help transport these feedstocks to the Rafnes facility. We are also committed to maintaining flexibility in feedstock while expanding our olefins capacity. For example, our Chocolate Bayou plant predominantly uses liquid-based natural gas as feedstock, but has the ability to process naphtha and our Köln plant is capable of switching between naphtha and butane as a feedstock. This enables us to manage our feedstock mix in line with changing market and economic conditions.

Summary Corporate and Financing Structure

The following chart illustrates our simplified corporate structure and principal indebtedness after giving *pro forma* effect to the Transactions and the Schuldschein Loan. For a summary of the debt obligations referred to in this chart, see "Description of Other Indebtedness" and "Description of the Notes."



(1) Incorporated in Isle of Man.

(2) Incorporated in Switzerland.

(3) Incorporated in Luxembourg.

(4) Incorporated in England and Wales.

(5) Organized in Delaware, United States.

(6) Refers to the €550.0 million aggregate principal amount of 2⅛% 2025 Senior Secured Notes.

(7) Refers to the Senior Secured Term Loans borrowed under the Senior Secured Term Loans Agreement, dated as of April 27, 2012 and as amended, restated, supplemented and varied from time to time, among INEOS Finance plc and INEOS US Finance LLC, as borrowers, certain subsidiaries of IGH, Barclays Bank PLC and certain lenders.

(8) Refers to the $500.0 million aggregate principal amount of 5⅝% 2024 IGH Notes and €650.0 million aggregate principal amount of 5⅜% 2024 IGH Notes issued pursuant to the 2024 IGH Notes Indenture.

(9) Refers to the €141.0 million aggregate principal amount of the floating rate Schuldschein Loan.

† On the Issue Date, the Notes will be jointly and severally guaranteed by the Parent, Lux I, INEOS Holdings Limited and certain of their subsidiaries (the "Guarantors"), together representing 89.8% of the Parent's consolidated EBITDA before exceptionals for the year ended December 31, 2018, and holding 88.4% of the Parent's consolidated total assets as of December 31, 2018. Each Guarantor also guarantees the Senior Secured Term Loans, the 2025 Senior Secured Notes and the Schuldschein Loan on a *pari passu* basis. Each Guarantor (except IGH as the issuer) and the Issuer also guarantees the 2024 IGH Notes on a senior subordinated basis. The obligations of each Guarantor will be subject to various limitations. See "Limitations on Validity and Enforceability of the Guarantees and the Security Interests" and "Risk Factors—Risks Relating to the Notes and Our Capital Structure—Guarantees and Collateral limitations—The guarantees and pledges of Collateral will be subject to certain limitations on enforcement and may be limited by applicable laws or subject to certain defenses that may limit their validity and enforceability."

Principal Shareholders and Our Relationships with INEOS Limited

We are a wholly owned subsidiary of INEOS Holdings Luxembourg S.A. INEOS Holdings AG exercises a controlling interest over INEOS Holdings Luxembourg S.A. through its majority interest in the voting share capital. The issued share capital of INEOS Holdings AG is held by INEOS AG. The issue share capital of INEOS AG is held by INEOS Limited. See also "Management" and "Certain Relationships and Related Party Transactions."

James A. Ratcliffe, Andrew Currie and John Reece control us through shareholdings in INEOS Limited. INEOS AG, whose share capital is held by INEOS Limited, provides operational management services to us. Messrs. Ratcliffe, Currie and Reece also control INOVYN, a producer of chlor-alkali and PVC, INEOS Industries Limited, a portfolio of businesses, including Styrolution, INEOS Olefins & Polymers UK and INEOS Upstream Limited, an oil and gas exploration, production and transportation business, INEOS Enterprises Holdings Limited, a portfolio of businesses, including Melamines, Paraform, Solvents, Compounds and Calabrian and INEOS Investments, the entity which holds a 49.9%, a 50.1% and a 50.0% direct interest in the Entrepreneurial (Refining) Business JV, the Refining Business JV and the Infrastructure Entity, respectively. INEOS Investments also holds a 25.05% indirect interest in the Infrastructure Entity by virtue of its 50.1% stake in the Refining Business JV. We have entered into a number of significant transactions and arrangements with INOVYN, INEOS Industries Limited, INEOS Paraform, the Entrepreneurial (Refining) Business JV, the Refining Business JV, the Infrastructure Entity and Styrolution in the past, and the Indenture will permit us to continue to do so in the future. Please see "Certain Relationships and Related Party Transactions." In connection with the Refining Divestiture, we also entered into various arrangements with the Refining and Entrepreneurial JVs and the Infrastructure Entity, however, as a result of the Lavéra Divestiture, we no longer have contractual arrangements with the Infrastructure Entity. Please see "Business—Refining Divestiture, Grangemouth Divestiture and Lavéra Divestiture—The Refining Divestiture." Additionally, in connection with the Grangemouth Divestiture, we have entered into various arrangements with INEOS Grangemouth plc, and, in connection with the Lavéra Divestiture, we have entered into various arrangements with INEOS Europe AG and INEOS Group AG. Please see "Business—Refining Divestiture, Grangemouth Divestiture and Lavéra Divestiture—The Grangemouth Divestiture," "Business—Refining Divestiture, Grangemouth Divestiture and Lavéra Divestiture—The Lavéra Divestiture," "Business—Refining Divestiture, Grangemouth Divestiture and Lavéra Divestiture—Contractual Arrangements with the Refining and Entrepreneurial JVs," and "Business—Refining Divestiture, Grangemouth Divestiture and Lavéra Divestiture—Contractual Arrangements with the Lavéra, Sarralbe & Rosignano petrochemicals businesses."

RECENT DEVELOPMENTS

Current Trading

Based on management's preliminary analysis and certain estimates, management expects that the EBITDA before exceptionals for the three-month period ended March 31, 2019 will generally be in line with the trends observed in the year ended December 31, 2018 as set out in "Operating and Financial Review and Prospects". Management estimates that for the three-month period ended March 31, 2019, the Group's EBITDA before exceptionals was lower as compared to the three-month period ended March 31, 2018, reflecting lower ethylene margins in North America resulting from the expansion of ethylene supply in the United States as well as a planned outage at our Rafnes cracker. Management estimates that EBITDA before exceptionals for the two-month period ended February 28, 2019 has decreased by approximately 16% compared to EBITDA before exceptionals for the two-month period ended February 28, 2018.

Management estimates that the debt levels as of March 31, 2019 were higher, reflecting the incurrence of the Schuldschein Loan, than those as of December 31, 2018 and the liquidity as of March 31, 2019 was lower, reflecting the €1,450.0 million dividend the Group paid to INEOS Holdings Luxembourg S.A. in February 2019 (the "February 2019 Dividend"), than that of December 31, 2018.

The information as of and for the three-month period ended March 31, 2019 and for the two-month period ended February 28, 2019 is based solely on preliminary internal information used by management. Our interim financial statements for the quarter ended March 31, 2019 have not yet been completed. This information is preliminary and based on a number of assumptions that are subject to inherent uncertainties and may change. It may not be indicative of the actual financial quarterly results or financial condition as of quarter-end and may not be indicative of any other period. See "Forward Looking Statements."

On April 2, 2019, the Group paid INEOS Holdings Luxembourg S.A. a $296 million dividend related to the repayment of the Group's preferential interest in INEOS Investments Partnership (the successor to INEOS Investments LLP) following the sale by INEOS Investments Partnership of its assets to affiliates in March 2019.

New Ethane Cracker and Propane Dehydrogenation ("PDH") Plant in Northern Europe

On July 3, 2018, INEOS announced the commencement of a project to build a new ethane cracker and PDH plant in Northern Europe. On January 14, 2019, the location of the proposed plant was confirmed as Antwerp, Belgium.

INEOS has selected McDermott's Lummus CATOFIN® Technology as the operating technology for the PDH unit and a license agreement has been signed. In parallel, an agreement has been signed with Clariant for the long-term supply of catalyst for the unit. The PDH unit will have a nameplate capacity of 750ktpa of polymer grade propylene. The ethane cracker will have a nameplate capacity of approximately 1 mtpa.

If completed, preliminary estimates suggest that the project would represent a capital investment of approximately €3.0 billion and the plant is expected to be completed within five years. However, there can be no assurance that the project will be completed or that it would be completed within the indicated time frame or at the indicated cost. See "Forward Looking Statements."

THE OFFERING

The following overview of the Offering contains basic information about the Notes, the guarantees and the security. It is not intended to be complete and it is subject to important limitations and exceptions. For a more complete understanding of the Notes, the guarantees and the security including certain definitions of terms used in this overview, please see "Description of the Notes" and "Description of the Collateral and the Guarantees."

Issuer	INEOS Finance plc
Notes Offered	€770,000,000 aggregate principal amount of % Senior Secured Notes due 2026 (the "Notes").
Issue Date	On or about , 2019 (the "Issue Date").
Maturity Date	The Notes will mature on , 2026.
Interest Rates and Payment Dates	The interest rate on the Notes will be %, payable semi-annually in arrears on and of each year, commencing , 2019. Interest on the Notes will accrue from, and including, the Issue Date.
Denominations	The Notes will be issued in denominations of €100,000 and any integral multiple of €1,000 in excess thereof. Notes in denominations of less than €100,000 will not be available.
Ranking of the Notes	The Notes will be the general senior secured obligations of the Issuer and: • will be guaranteed on a senior secured basis by the Guarantors; • will be secured by the Collateral as set forth below under "Security; Enforcement of Security"; • will rank equally in right of payment with all existing and future obligations of the Issuer that are not subordinated to the Notes, including, without limitation, the obligations under the Senior Secured Term Loans and the Schuldschein Loan; • will rank effectively senior to all existing and future obligations of the Issuer that are unsecured or secured by liens junior to the liens securing the Notes to the extent of the value of the Collateral; • will rank senior in right of payment to all existing and future obligations of the Issuer that are expressly subordinated in right of payment to the Notes, including the Issuer's guarantee of the 2024 IGH Notes; and • will be effectively subordinated in right of payment to all of the liabilities of, including trade payables and letters of credit issued by, Lux I's subsidiaries that do not guarantee the Notes.

Guarantees	On the Issue Date, the Notes will be jointly and severally guaranteed by the Parent, Lux I, INEOS Holdings Limited and certain of their subsidiaries (the "Guarantors"), together representing 89.8% of the Parent's consolidated EBITDA before exceptionals for the year ended December 31, 2018, and holding 88.4% of the Parent's consolidated total assets as of December 31, 2018. Each Guarantor will also guarantee the Senior Secured Term Loans, the Schuldschein Loan and the 2025 Senior Secured Notes on a *pari passu* basis and each Guarantor (other than the Parent) will also guarantee the 2024 IGH Notes on a senior subordinated basis. The obligations of each Guarantor will be subject to various limitations. See "Limitations on Validity and Enforceability of the Guarantees and the Security Interests" and "Risk Factors—Risks Relating to the Notes and Our Capital Structure—Guarantees and Collateral limitations—The guarantees and pledges of Collateral will be subject to certain limitations on enforcement and may be limited by applicable laws or subject to certain defenses that may limit their validity and enforceability."
Ranking of the Guarantees	The guarantee of each Guarantor will, subject to any limitation of guarantee, be a general senior secured obligation of such Guarantor and: • will rank equally in right of payment with all existing and future obligations of such Guarantor that are not subordinated in right of payment to such guarantee, including with respect to the guarantee of the Notes by each Guarantor, obligations under the Senior Secured Term Loans Agreement, the 2025 Senior Secured Notes, the Schuldschein Loan Agreement and, with respect to the guarantee of the Notes by the Parent, the 2024 IGH Notes; • will rank effectively senior to all existing and future obligations of such Guarantor that are unsecured or secured by liens junior to the liens securing the guarantees to the extent of the value of the Collateral; • will rank senior in right of payment to all existing and future obligations of such Guarantor that are subordinated in right of payment to such guarantee, including the guarantees by Lux I and its subsidiaries of the 2024 IGH Notes; and • will be effectively subordinated to any existing and future obligations and other liabilities of such Guarantor that are secured by liens senior to the liens securing such guarantee, or secured by property and assets that do not secure such guarantee, to the extent of the value of the property and assets securing such obligations and other liabilities.

Security; Enforcement of Security . . . Subject to the terms of the security documents, no later than 30 days after the Issue Date or, in the case of certain deposit accounts and security account control agreements and certain real property collateral, 60 and 90 days after the Issue Date, respectively, the Notes and the related guarantees will be secured by first-priority liens (subject to certain exceptions) on the same assets that secure the Senior Secured Term Loans, the 2025 Senior Secured Notes and the Schuldschein Loan.

Certain security interests will, as a matter of local law, be granted as junior ranking security interests in relation to the security granted in respect of the Senior Secured Term Loans, the 2025 Senior Secured Notes and the Schuldschein Loan. Nevertheless, the Intercreditor Deed provides that as a contractual matter among Senior Secured Creditors (as defined in the Intercreditor Deed), the Notes will be secured on a *pari passu* basis with the 2025 Senior Secured Notes, the Senior Secured Term Loans, the Schuldschein Loan, certain hedging obligations and certain cash management obligations and will be treated as such for purposes of the application of proceeds from the enforcement of such Collateral.

The existing first-ranking liens securing the Senior Secured Term Loans, the 2025 Senior Secured Notes and the Schuldschein Loan that were created under New York, Luxembourg, Scottish, Norwegian and Jersey law will remain in place and will extend to secure the Notes. In some jurisdictions, the security documents creating the existing first-ranking liens securing the Senior Secured Term Loans, the 2025 Senior Secured Notes and the Schuldschein Loan will be amended to extend such liens (or, with respect to Belgian Security, to confirm that these liens extend) to the Notes (or, with respect to French and certain of the German security interests, junior ranking security interests will be granted). The existing first-ranking liens securing the Senior Secured Term Loans, the 2025 Senior Secured Notes and the Schuldschein Loan that were created under English law and Singapore law will remain in place, and new liens over the same Collateral will be created in these jurisdictions to secure the Notes. In these jurisdictions where new liens are created, the ranking of these new liens relative to the existing liens will, as a matter of general law, depend on a number of factors, such as the nature of the liens, the order of creation of the liens, compliance with the jurisdiction's perfection requirements with respect to the liens and the order of giving notices with respect to the liens, and accordingly without the Intercreditor Deed, the new liens would be likely to rank after the existing liens. However, the Intercreditor Deed provides that, as a contractual matter, the liens securing the Notes, the 2025 Senior Secured Notes, the Schuldschein Loan and the Senior Secured Term Loans will rank *pari passu* and will be treated as having equal priority with respect to the application of proceeds from the enforcement of any Collateral. See "Description of the Collateral and the Guarantees."

	The liens on the Collateral securing the Senior Secured Term Loans, the 2025 Senior Secured Notes and the Schuldschein Loan are already in place and will continue to remain in place and will either be amended to extend the security to the Notes, or, as mentioned above, new junior ranking liens will be created. In addition, the Intercreditor Deed will provide that a simple majority in aggregate amount of all senior secured debt (including the Notes, any additional Notes, certain hedging obligations, certain cash management obligations, the Senior Secured Term Loans, the Schuldschein Loan, the 2025 Senior Secured Notes and any other senior secured notes or credit facilities that are permitted to be issued under the Indenture and that the trustees or lenders in respect thereof accede to the Intercreditor Deed) under the Intercreditor Deed can instruct the Security Trustee with respect to enforcement of the security. For a description of security enforcement and other intercreditor provisions, please see "Description of Other Indebtedness—Intercreditor Deed."
Additional Amount	All payments paid by or on behalf of the Issuer, any Guarantor or any surviving entity under or with respect to the Notes or any guarantee under the Notes will be made free and clear of, and without withholding or deduction for or on account of, any present or future tax, duty, levy, impost, assessment, withholding or other governmental charges (including, without limitation, penalties, interest and other similar liabilities related thereto) of whatever nature (collectively, "Taxes"), unless such withholding or deduction is required by law or by the interpretation or administration of law, or by an applicable certification, identification, information or other reporting requirement or agreement, if entering into or complying with such requirement or agreement is required by law of a taxing authority therein or political subdivision thereof as a precondition to relief or exemption from such Tax. If any amount for, or on account of Taxes imposed or levied by or on behalf of any jurisdiction in which the Issuer, any Guarantor or, if applicable, any surviving entity is incorporated, organized or otherwise subject to Tax or from or through which any of the foregoing makes any payment on the Notes or by any taxing authority therein or political subdivision thereof, is required to be withheld or deducted from any payment made under or with respect to the Notes or any guarantee, the Issuer, Guarantor or surviving entity, as the case may be, will pay such additional amounts as may be necessary to ensure that the net amount received after such withholding or deduction will be not less than the amount that would have been received if such Taxes had not been required to be withheld or deducted, subject to certain exceptions. See "Description of the Notes—Payment of Additional Amounts."

Optional Redemption of Notes	Prior to , 2022, the Issuer may redeem all or a portion of the Notes at a redemption price equal to 100% of the principal amount of such Notes plus the applicable "make-whole" premium set forth in this offering memorandum, plus accrued and unpaid interest to the redemption date. On or after , 2022, the Issuer may redeem all or a portion of the Notes at the redemption prices set forth in this offering memorandum under the caption "Description of the Notes—Optional Redemption" plus accrued and unpaid interest to the redemption date. In addition, at any time prior to , 2022, the Issuer may redeem up to 40% of the aggregate principal amount of the Notes with the proceeds of certain equity offerings at % of the principal amount of the Notes, plus accrued interest; *provided* that at least 60% of the sum of the originally issued aggregate principal amount of the Notes and the initial aggregate principal amount of any Additional Notes issued under the Indenture after the Issue Date remains outstanding immediately after each such redemption and each such redemption occurs within 180 days after the date of the relevant equity offering. In connection with any tender offer, or other offer to purchase, all of the Notes, if holders of not less than 90% of the Notes tender their Notes and such Notes are purchased, the Issuer may redeem all (but not less than all) of the Notes that remain outstanding. Such purchase may be made at a price equal to the highest price paid to each other holder in such tender offer plus accrued and unpaid interest and Additional Amounts, if any, to, but not including, the redemption date. Please see "Description of the Notes—Optional Redemption."
Optional Redemption for Taxation Reasons	In the event of certain developments affecting taxation, the Issuer may redeem all, but not less than all, of the Notes at 100% of the principal amount thereof, plus accrued and unpaid interest to the date of redemption. Please see "Description of the Notes—Redemption upon Changes in Withholding Taxes."
Change of Control	Upon the occurrence of certain events constituting a "change of control," the Issuer is required to offer to repurchase all outstanding Notes at a purchase price in cash of 101% of the principal amount thereof on the date of purchase plus accrued and unpaid interest, if any, to the date of purchase. See "Description of the Notes—Purchase of Notes upon a Change of Control."
Certain Covenants	The Indenture will contain covenants that, among other things, limit the ability of Lux I and its restricted subsidiaries to: • incur or guarantee additional indebtedness and issue certain preferred stock;

- layer debt;
- make restricted payments, including dividends or other distributions;
- prepay or redeem subordinated debt or equity;
- make certain investments;
- create or permit to exist certain liens;
- transfer, lease or sell certain assets;
- enter into arrangements that impose restrictions on the ability of our restricted subsidiaries to pay dividends or make other payments to Lux I;
- engage in certain transactions with affiliates;
- consolidate, merge or transfer all or substantially all of our assets and the assets of our subsidiaries on a consolidated basis;
- impair the security interests for the benefit of the holders of the Notes; and
- amend certain documents.

Each of these covenants is subject to a number of important limitations and exceptions as described under "Description of the Notes—Certain Covenants."

Transfer Restrictions	The Notes and the guarantees have not been, and will not be, registered under the Securities Act or the securities laws of any other jurisdiction and may not be offered or sold, except pursuant to an exemption from, or in a transaction not subject to, the registration requirements of the Securities Act. We have not agreed to, or otherwise undertaken to, register the Notes (including by way of an exchange offer).
Use of Proceeds	The proceeds from the sale of the Notes will be used as set forth in "Use of Proceeds."
No Established Market for the Notes .	The Notes will be new securities for which there is no existing market. Although the initial purchasers have informed us that they intend to make a market in the Notes, they are not obligated to do so and they may discontinue market-making at any time without notice. Accordingly, we cannot assure you that a liquid market for the Notes will develop or be maintained.
Listing	Application will be made to list the Notes on the Official List of the Luxembourg Stock Exchange, and to have the Notes admitted to trading on the Euro MTF market.

Governing Law	The Indenture, the Notes and the guarantees are governed by the laws of the State of New York. The Intercreditor Deed is governed by English Law. The security documents are governed by the applicable local law for each security interest as described under "Description of the Collateral and the Guarantees." The application of the provisions of articles 470-1 to 470-19 of the Luxembourg law of 10 August 1915 on commercial companies, as amended is hereby expressly excluded.
Trustee	The Bank of New York Mellon, London Branch.
Principal Paying Agent and Transfer Agent	The Bank of New York Mellon, London Branch.
Registrar, Luxembourg Transfer Agent, Paying Agent and Listing Agent	The Bank of New York Mellon SA/NV, Luxembourg Branch.
Security Trustee	Barclays Bank plc, as the security trustee under the Indenture and as the senior security agent under the Intercreditor Deed.

Risk Factors

Investing in the Notes involves substantial risks. You should consider carefully all the information in this offering memorandum and, in particular, you should evaluate the specific risk factors set forth in the "Risk Factors" section of this offering memorandum before making a decision whether to invest in the Notes.

SUMMARY HISTORICAL CONSOLIDATED AND OTHER FINANCIAL INFORMATION

The following tables present the summary consolidated financial information and other financial information of INEOS Group Holdings S.A. as of and for each of the years ended December 31, 2018, 2017 and 2016, which have been extracted from (i) with respect to the information as of and for the year ended December 31, 2018, the audited consolidated financial statements of INEOS Group Holdings S.A. as of and for the year ended December 31, 2018, (ii) with respect to the information as of and for the year ended December 31, 2017, the audited consolidated financial statements of INEOS Group Holdings S.A. as of and for the year ended December 31, 2017 and (iii) with respect to the information as of and for the year ended December 31, 2016, the audited consolidated financial statements of INEOS Group Holdings S.A. as of and for the year ended December 31, 2016 unless indicated otherwise, in each case, included elsewhere in this offering memorandum. Such consolidated financial statements of INEOS Group Holdings S.A. were prepared in accordance with IFRS and have been audited by PricewaterhouseCoopers, *Société coopérative.*

The tables below also include certain unaudited consolidated financial information that has been adjusted to give *pro forma* effect to the Transactions, the February 2019 Dividend and the Schuldschein Loan as if they had taken place, with respect to unaudited *pro forma* net debt, on December 31, 2018, and, with respect to unaudited *pro forma* cash interest expense, on January 1, 2018. The unaudited consolidated *pro forma* financial information has been prepared for illustrative purposes only and does not purport to represent what the actual consolidated financial position would have been if the Transactions, the February 2019 Dividend and the Schuldschein Loan had taken place on December 31, 2018, with respect to unaudited *pro forma* net debt, or January 1, 2018, with respect to unaudited *pro forma* cash interest expense, nor does it purport to project our consolidated financial position at any future date. The unaudited *pro forma* financial information set forth in this offering memorandum is based on available information and certain assumptions and estimates that we believe are reasonable but may differ from the actual amounts.

You should read the information summarized below in conjunction with the information contained in "Presentation of Financial and Non-IFRS Information," "Use of Proceeds," "Capitalization," "Operating and Financial Review and Prospects," and the consolidated financial statements and the related notes to the financial statements of INEOS Group Holdings S.A. included elsewhere in this offering memorandum.

	For the year ended December 31,		
	2018	2017	2016
		(€ in millions)	
Income Statement:			
Revenue	**16,091.5**	**15,210.4**	**12,609.9**
Total cost of sales	(13,665.8)	(12,524.2)	(10,141.1)
Gross profit	**2,425.7**	**2,686.2**	**2,468.8**
Distribution costs	(215.0)	(206.5)	(195.3)
Total Administrative expenses	(392.1)	(418.6)	(406.9)
Operating profit	**1,818.6**	**2,061.1**	**1,866.6**
Share of (loss)/profit of associates and jointly controlled entities using the equity accounting method	(66.6)	143.5	29.3
Profit on disposal of fixed assets	—	2.6	3.7
Profit before net finance costs	**1,752.0**	**2,207.2**	**1,899.6**
Net finance (costs)/income	(277.8)	92.6	(326.0)
Profit before tax from continuing operations	**1,474.2**	**2,299.8**	**1,573.6**
Tax charge	(278.9)	(301.5)	(340.2)
Profit for the period from continuing operations	**1,195.3**	**1,998.3**	**1,233.4**

	For the year ended December 31,		
	2018	2017	2016
	(€ in millions)		
Summary Statement of Cash Flows:			
Cash flows provided by/(used in):			
Operating activities	2,050.4	2,187.5	2,278.2
Investing activities	(1,040.5)	(745.5)	(723.8)
Financing activities	(367.9)	(2,143.0)	(1,087.5)

	As of December 31,		
	2018	2017	2016
	(€ in millions)		
Summary Balance Sheet:			
Property, plant and equipment	5,046.3	4,255.4	4,007.4
Cash and cash equivalents	2,071.3	1,366.3	2,204.1
Working capital(1)	2,946.1	2,123.7	3,003.0
Total assets	12,586.5	11,048.2	11,358.5
Total equity(2)	2,917.5	1,696.8	430.1
Total interest-bearing loans and borrowings(3)	6,302.6	6,157.9	8,020.1
Total Indebtedness(4)	6,331.9	6,193.0	8,066.9
Net debt(5)	4,260.6	4,826.7	5,862.8

	For the year ended December 31,		
	2018	2017	2016
	(€ in millions)		
Other Financial Information:			
EBITDA before exceptionals(6)	2,287.8	2,529.4	2,330.8
Depreciation, amortization and impairment	469.2	468.3	442.9
Net cash interest expense(7)	204.3	264.9	362.4
Capital expenditures(8)	1,173.5	914.6	691.9

	As of and for the year ended December 31, 2018,
	(€ in millions, except for ratio)
Pro forma net debt(9)(10)	5,726.8
Pro forma net cash interest expense(10)(11)	
Ratio of pro forma net debt to EBITDA before exceptionals(6)(9)(10)	2.5x

(1) Working capital represents net current assets (current assets less current liabilities).

(2) Total equity excludes non-controlling interests.

(3) Total interest-bearing loans and borrowings represents net loans and borrowings after deducting debt issuance costs as presented in note 19 to the audited consolidated financial statements of INEOS Group Holdings S.A. as of and for the year ended December 31, 2018, included elsewhere in this offering memorandum.

(4) Total indebtedness represents long-term debt plus short-term debt, including finance lease obligations before deduction of unamortized debt issuance costs. Under IFRS, debt issuance costs are deducted from the related debt amounts for the purposes of balance sheet presentation and are amortized over the life of the debt.

(5) Net debt represents total indebtedness less cash and cash equivalents.

(6) EBITDA before exceptionals represents operating profit before depreciation, amortization and impairment and exceptional items. In accordance with IFRS, we use both the FIFO and weighted average cost methods of accounting for purposes of

determining our inventory cost in connection with the preparation of our audited annual consolidated financial information. EBITDA before exceptionals is based on the FIFO and weighted average cost methods of accounting for inventory used in connection with the preparation of such financial information. EBITDA before exceptionals is derived from income statement line items calculated in accordance with IFRS on a historical cost basis. Although our EBITDA-based measures should not be considered a substitute measure for operating profit, profit, cash flows from operating activities or other measures of performance as defined by IFRS, we believe that they provide useful information regarding our ability to meet future debt service requirements. The EBITDA-based measure presented may not be comparable to similarly titled measures used by other companies. See "Presentation of Financial and Non-IFRS Information."

The reconciliation of INEOS' operating profit to EBITDA before exceptionals is as follows:

	For the year ended December 31,		
	2018	**2017**	**2016**
Operating profit	1,818.6	2,061.1	1,866.6
Depreciation, amortization and impairment	469.2	468.3	442.9
Exceptional administrative expenses[(a)]	—	—	21.3
EBITDA before exceptionals	2,287.8	2,529.4	2,330.8

(a) Represents exceptional restructuring costs due to the cessation of new licensing activities and other restructuring within the Technologies business in 2016 primarily relating to severance and early retirement costs, included in administrative expenses.

(7) Net cash interest expense comprises interest payable on notes, interest payable on bank loans and overdrafts and interest payable on securitization, less interest income on bank balances.

(8) Capital expenditures represents payments to acquire property, plant and equipment as recorded on the consolidated cash flow statements for the periods indicated.

(9) Pro forma net debt represents total indebtedness less cash and cash equivalents as adjusted for the Transactions, the February 2019 Dividend and the Schuldschein Loan. Pro forma net debt excludes the effect of the cash received by the Group in March 2019, related to the redemption of its preferential interest in INEOS Investments Partnership (the successor to INEOS Investments LLP) in connection with the sale of the assets of the partnership to affiliates, that was then paid as a dividend to INEOS Holdings Luxembourg S.A. on April 2, 2019.

(10) Gives *pro forma* effect to the Transactions, the February 2019 Dividend and the Schuldschein Loan as if the Transactions, the February 2019 Dividend and the Schuldschein Loan had taken place, with respect to unaudited *pro forma* net debt, on December 31, 2018, and, with respect to unaudited *pro forma* cash interest expense, on January 1, 2018. For presentational purposes, euro equivalents of dollar-denominated indebtedness have been converted using an exchange rate of $1.1434 per €1.00 which was used for our balance sheet as of December 31, 2018. The Bloomberg Composite Rate on April 5, 2019, was $1.1218 per €1.00. The unaudited consolidated *pro forma* financial information has been prepared for illustrative purposes only and does not purport to represent what the actual consolidated financial position would have been if the Transactions, the February 2019 Dividend and the Schuldschein Loan had occurred on December 31, 2018, with respect to unaudited *pro forma* net debt, or January 1, 2018, with respect to unaudited *pro forma* net cash interest expense, nor does it purport to project our consolidated financial position at any future date. See "Capitalization" and "Use of Proceeds."

(11) Pro forma net cash interest expense comprises cash interest paid on unaudited *pro forma* debt balances assuming that the Transactions, February 2019 Dividend and the Schuldschein Loan had taken place on January 1, 2018. Pro forma net cash interest expense is calculated as follows:

	For the year ended December 31, 2018†
	(€ in millions)
Cash interest expense on Notes offered hereby[(a)]	
Cash interest expense on Senior Secured Term Loans[(b)]	116.0
Cash interest expense on Existing Notes[(c)]	71.2
Cash interest expense on Securitization Program	8.9
Cash interest expense on Noretyl Facility and Köln CoGen Facility[(d)]	4.2
Cash interest expense on Schuldschein Loan[(e)]	3.5
Interest income on bank balances	(3.1)
Pro forma net cash interest expense[(f)]	

† Unless otherwise indicated, euro equivalents of U.S. dollar amounts are translated at an exchange rate of $1.1434 per €1.00, which is the exchange rate used for our balance sheet as of December 31, 2018. The exchange rate of the euro on April 5, 2019 was $1.1218 per €1.00.

(a) Represents the cash interest expense in connection with the debt incurred under the Notes.

(b) Represents the cash interest expense on Senior Secured Term Loans, assuming the Senior Secured Term Loans were outstanding from January 1, 2018, applying an interest rate of 4.522% for the dollar-denominated term loans (assuming that the LIBOR of 2.522% on December 31, 2018 was applicable throughout the period) and 2.500% for the euro-denominated term loans (assuming EURIBOR of 0.5% throughout the period), in each case also assuming the LIBOR Reserve Percentage at 100% throughout the period.

(c) Represents cash interest expense on (i) the 2025 Senior Secured Notes and (ii) the 2024 IGH Notes.

(d) Represents the cash interest expense on the outstanding principal amount of the Köln CoGen Facility at the applicable rate during the period and the cash interest expense on the outstanding principal amount of the Noretyl Facility at the applicable rate during the period.

(e) Represents the cash interest expense on the Schuldschein Loan, assuming the loan agreement was entered into on January 1, 2018, applying an interest rate of 2.5% (assuming EURIBOR of 0.5% throughout the period).

(f) Pro forma net cash interest expense is based on current interest rates. Debt under the Senior Secured Term Loans, the Schuldschein Loan and the Securitization Program is floating rate debt. After giving *pro forma* effect to the Schuldschein Loan, as if the Schuldschein Loan had taken place on December 31, 2018, such floating rate debt represented €3,905.5 million, or 60.3%, of our total loans and borrowings as of December 31, 2018, translating U.S. dollar amounts at an exchange rate of $1.1434 per €1.00.

RISK FACTORS

Risks Relating to Our Businesses and Industries

Cyclicality of the petrochemical industry—Changing market demands and prices may negatively affect our operating margins and impair our cash flows, which, in turn, could affect our ability to make payments on our debt or to make further investments in our businesses.

Cyclicality and volatility in supply and demand in the petrochemical industry may affect our prices and may negatively impact our operating margins and cash flows and cause us to incur losses. For example, if industry margins in the petrochemical industry were to return to their 2001 or fourth quarter of 2008 levels or decline more significantly than they have in the past, then this may result in a material adverse effect on our business, results of operations and cash flow. Any cyclical downturn may affect our prices and may negatively impact our operating margins and cash flows and cause us to incur losses. Furthermore, increased volatility in industry margins could have a significant impact on our short-term results. In such cases, we would have to absorb any losses or borrow additional funds. If we experience significant margin volatility or if we generate losses over a prolonged period and are unable to obtain additional funds, our liquidity could be materially adversely affected and our ability to make debt payments would be impaired.

The relationship between supply and demand in the petrochemical industry in general, and in our various petrochemical segments historically, has been highly cyclical. This is primarily because product supply is driven by alternating periods of substantial capacity additions and periods in which no or limited capacity is added. Historically, the markets for some of our products have tended to follow trends in economic growth and have experienced alternating periods of constrained supply, causing prices and margins to increase, followed by periods of capacity additions, resulting in oversupply and declining prices and margins. In response, companies typically reduce capacity or limit further capacity additions, eventually causing the market to be relatively undersupplied. Any slowdown in growth for any reason could have a disproportionately negative effect on industry margins for our petrochemical products. For a discussion of the current market environment, see “Industry and Market Overview—Olefins & Polyolefins—Market Environment” and “Industry and Market Overview—Chemical Intermediates—Market Environment.”

Historically, margins in the petrochemical industry have been volatile due to a number of factors, most of which are beyond our control. These factors include:

- short-term utilization rate fluctuations due to planned and unplanned plant outages;
- political and economic conditions, which drive rapid changes in prices for our key feedstocks, including the price of crude oil, gas and naphtha;
- customers’ inventory management policies; and
- exchange rate fluctuations.

In addition, we and other petrochemical companies with large asset bases in Europe face pressures due to the fact that many of our key customers in Europe are subject to competition with low-cost producers in Asia. If our European customers are unable to successfully compete with Asian manufacturers, they could reduce their volume of purchases, including from us, or cease making such purchases altogether. To a lesser extent we are also exposed to the risk of our customers in North America being unable to compete in the global marketplace. Each of these risks could materially adversely affect our business, results of operations and financial condition.

Raw materials and suppliers—If we are unable to pass on increases in raw material prices, or to retain or replace our key suppliers, our results of operations may be negatively affected.

Our margins are largely a function of the relationship between the prices that we are able to charge for our products and the costs of the feedstocks we require to make these products. The prices for a large portion of our raw materials are cyclical. Prices fell significantly at the end of 2008, before gradually increasing from 2009 to 2011. Prices remained broadly stable during 2012 to the second half of 2014, after which the crude oil and product prices declined significantly. After a brief rise in prices in the first half of 2015, prices continued to decline in the second half of the year. Prices rose during 2016 and continued to rise during 2017 and most of 2018, before falling again towards the end of 2018.

While we attempt to match raw material price increases with corresponding product price increases, our ability to pass on increases in the cost of raw materials to our customers is, to a large extent, dependent upon our contractual arrangements and market conditions. There may be periods of time during which we are not able to recover increases in the cost of raw materials due to our contractual arrangements or to weakness in demand for, or oversupply of, our products. Specifically, timing differences in pricing between raw material prices, which may change daily, and product prices, which in many cases are negotiated only monthly or less often, sometimes with an additional lag in effective dates for increases, have had and may continue to have a negative effect on profitability. Even in periods during which raw material prices decline, we may suffer decreasing profits if raw material price reductions occur at a slower rate than decreases in the selling prices of our products. In addition, when raw material costs decrease, customers may seek relief in the form of lower sales prices. Furthermore, some of our customers take advantage of fluctuating prices by building inventories when they expect product prices to increase and reducing inventories when they expect product prices to decrease.

Further, volatility in costs and pricing can result in commercial disputes with customers and suppliers with respect to interpretations of complex contractual arrangements. Significant adverse resolution of any such disputes could also reduce our profitability.

We obtain a significant portion of our raw materials from selected key suppliers. If any of these suppliers is unable to meet its obligations under present supply agreements, we may be forced to pay higher prices to obtain the necessary raw materials and we may not be able to increase prices for our finished products. Therefore, volatility in raw material prices or interruptions in supply could place increased pressure on our margins and reduce our cash flow, which could impair our ability to make debt payments or make further investments in our business.

If we fail to maintain our relationships with our current suppliers, our suppliers offer pricing and other terms that are not satisfactory to us or a supplier fails to supply raw materials that meet our quality, quantity and cost requirements, we may be unable to fill our customers' orders on a timely and cost-effective basis or in the required quantities, which could result in order cancellations, decreased revenues or loss of market share and damage to our reputation.

Global economy—Our industry is affected by global economic factors including risks associated with a recession and our customers' access to credit.

We face risks attendant to changes in consumer demand for goods that incorporate our products, economic environments, changes in interest rates and instability in securities markets around the world, among other factors. In particular, a worsening economic climate can result in decreased industrial output and decreased consumer demand for products including automobiles, consumer goods and building materials, all of which incorporate our products. Adverse economic conditions can affect consumer and business spending generally, which would result in decreased demand for goods that incorporate our products and have an adverse effect on our results of operations.

Our financial results are substantially dependent upon the overall economic conditions in the United States, the European Union and Asia. An extended recession in any of these locations or globally—or public perceptions that result in declining economic conditions—could substantially decrease the demand for our products and adversely affect our business. For example, as a result of an economic downturn, in 2008 and 2009, we experienced decreased demand for many of our products. Moreover, many of our customers rely on access to credit to adequately fund their operations. The inability of our customers to access credit facilities may adversely affect our business by reducing our sales, increasing our exposure to accounts receivable bad debts and reducing our profitability.

Currency fluctuations—We are exposed to currency fluctuation risks in several countries that could adversely affect our profitability.

Although we report our results in euro, we conduct a significant portion of our business in countries that use currencies other than the euro, and we are subject to risks associated with currency fluctuations.

Our results of operations may be affected by both the transaction effects and the translation effects of foreign currency exchange rate fluctuations. We are exposed to transaction effects when one of our subsidiaries incurs costs or earns revenue in a currency different from its functional currency. Fluctuations in exchange rates may also affect the relative competitive position of our manufacturing facilities, as well as our ability to market our products successfully in other markets. We are exposed to currency fluctuation when we convert currencies that we may receive for our products into currencies required to pay our debt, or into currencies in which we purchase raw materials, meet our fixed costs or pay for services, which could result in a gain or loss depending on fluctuations in exchange rates. In particular, a large proportion of our manufacturing costs and our selling, general and administrative expenses are incurred in currencies other than the euro, principally the U.S. dollar and the British pound, reflecting the location of our sites and corporate and business support centers. At the same time, although many of our sales are invoiced in currencies other than the euro, our consolidated revenues are reported in euro. Therefore, our financial results in any given period are materially affected by fluctuations in the value of the euro relative to the U.S. dollar, British pound and other relevant currencies. If the value of the euro declines against currencies in which our obligations are denominated or increases against currencies in which our revenues are denominated, our results of operations and financial condition could be materially affected.

This could include the possibility of an increase in the amount of our U.S. dollar-denominated indebtedness when converted into euro, as was the case in 2014 and 2015 when the value of the euro relative to the U.S. dollar declined significantly and a decrease in the amount of our U.S. dollar-denominated revenue when converted to euro, as was the case in 2018, as compared to 2017, when the value of the U.S. dollar relative to the euro decreased.

International operations—We are exposed to risks related to conducting operations in several different countries.

We currently have manufacturing facilities located in the United Kingdom, the United States, Germany, Belgium, Norway and Canada. Notwithstanding the benefits of geographic diversification, our business is subject to risks related to the differing legal, political, social and regulatory requirements and economic conditions of many jurisdictions. Risks inherent in international operations include the following:

- general economic, social or political conditions in the countries in which we operate could have an adverse effect on our earnings from operations in those countries;
- compliance with a variety of laws and regulations in various jurisdictions may be burdensome;

- unexpected or adverse changes in laws or regulatory requirements in various jurisdictions may occur;
- the imposition of withholding taxes or other taxes or royalties on our income, or the adoption of other restrictions on foreign trade or investment, including currency exchange controls;
- adverse changes in export duties, quotas and tariffs and difficulties in obtaining export licenses;
- intellectual property rights may be more difficult to enforce;
- transportation and other shipping costs may increase;
- staffing difficulties, national or regional labor strikes or other labor disputes;
- the imposition of any price controls; and
- difficulties in enforcing agreements and collecting receivables.

Competition—We face significant competition in our industries, whether through efforts of new or current competitors or through consolidation of existing customers, which may adversely affect our competitive position, sales and overall operations.

The markets for most of our products are highly competitive. We are exposed to the competitive characteristics of several different geographic markets and industries. Competition in most of our industries is based primarily on price and, to a lesser extent, on product performance, product quality, product deliverability and customer service. Our principal competitors vary from business to business and range from large global petrochemical companies to numerous smaller regional companies. Some of our competitors are larger and more vertically integrated than we are and therefore may be able to manufacture products more economically than we can. In addition, some of our competitors have greater financial, technical, research and technology and marketing resources than we do. Furthermore, some of our competitors are fully or partially state-owned and could have broader goals than maximizing profits, such as investing in the economies of their respective countries and providing local employment and therefore may continue to provide capacity and products even at unprofitable price points creating downward pricing pressure on our products. As the markets for our products expand, we expect that existing competitors may commit more resources to the markets in which we operate, further enhancing competition. All of the above could hinder our ability to compete effectively in the markets in which we operate in the future and our competitive position and results of operations may suffer as a result. For example, in the petrochemical industry in Europe, where the majority of our petrochemical assets are concentrated, and, to a lesser extent, in North America, we face competitive pressures from companies with facilities in the Middle East, which enjoy substantial cost advantages due to access to low-cost gas feedstock available in this region. In addition, our export business in Europe faces competitive pressures from export businesses in North America (including our own North American operations) due to the abundance and use of low-cost ethane in North America. These cost advantages are particularly significant when oil prices are high, as has sometimes been the case in recent years. The competitive pressure we experience could be exacerbated if the Chinese economy fails to grow as expected, in which case more of the product manufactured in the Middle East to meet the growth expected in China could be redirected to Europe and North America, potentially resulting in greater supply to these markets and corresponding downward pricing pressure.

In addition, a number of our customers are participants in industries that are undergoing consolidation. We could lose these customers to competitors if they are acquired by, or consolidate with, other companies that have relationships with our competitors.

Customers—We are subject to the risk of loss resulting from nonpayment or nonperformance by our customers.

Our credit procedures and policies may not be adequate to minimize or mitigate customer credit risk. Our customers may experience financial difficulties, including bankruptcies, restructurings and liquidations. These and other financial problems that may be experienced by our customers, as well as potential financial weakness in our industry, may increase our risk in extending trade credit to customers. A significant adverse change in a customer relationship or in a customer's financial position could cause us to limit or discontinue business with that customer, require us to assume more credit risk relating to that customer's receivables or limit our ability to collect accounts receivable from that customer, all of which could have a material adverse effect on our business, results of operations, financial condition and liquidity.

Refining Divestiture—We are dependent on contractual arrangements with the Refining and Entrepreneurial JVs for naphtha and if we are unable to obtain this feedstock from these entities, our businesses could be adversely affected.

On July 1, 2011, we disposed of the Refining Business and the Entrepreneurial (Refining) Business to the Refining and Entrepreneurial JVs. In addition, we disposed of the Infrastructure Entity to the Refining Business JV (50.0%) and INEOS Investments (50.0%). See "Business—Refining Divestiture, Grangemouth Divestiture and Lavéra Divestiture—The Refining Divestiture" for a more detailed discussion of the Refining Divestiture.

We have entered into several contractual arrangements with the Refining and Entrepreneurial JVs to allow the INEOS Group to continue to receive the requisite feedstocks and access to entrepreneurial activities and utilities services. However, there is no guarantee that (i) the Refining and Entrepreneurial JVs will deliver the requisite feedstocks or access to entrepreneurial activities or utilities services, set forth in the contractual arrangements, (ii) we will be able to find other suppliers to cover any shortfalls in the feedstock supplies, entrepreneurial activities or utilities services that we require and (iii) any agreements we enter into with other suppliers will be on terms as favorable as those under the agreements that have been executed with the Refining and Entrepreneurial JVs. See "Business—Refining Divestiture, Grangemouth Divestiture and Lavéra Divestiture—The Refining Divestiture."

To ensure that the companies in the INEOS Group retain access to the naphtha feedstock provided by the Refining and Entrepreneurial JVs, we have entered into a long-term agreement with the Refining and Entrepreneurial JVs for the continued provision of the naphtha supply that we have historically received from the Refining Business, on substantially similar commercial terms as those that governed the inter-INEOS Group transfer for the supply of naphtha previously.

Grangemouth Divestiture—We face a risk of loss if the divested operations are unable to repay the affiliate loan facility extended to the related party.

On October 1, 2013, the Group transferred the shares of INEOS Chemicals Grangemouth Limited and INEOS Commercial Services UK Limited (including the assets, liabilities (including pension liabilities) and petrochemical business) to INEOS Grangemouth plc (formerly INEOS Grangemouth Limited), a newly created subsidiary of INEOS Holdings AG, our indirect parent company. The business redomiciled in the U.K. and became eligible for support under the U.K. government's Infrastructure Guarantee Scheme, which it has taken advantage of in relation to borrowings made to fund investment at the site. The survival plan required an improvement in the cost base at the site and a significant investment in new infrastructure to allow the site to import gas from the U.S. These facilities were completed during 2016 and the first shipment of ethane gas arrived from the U.S. into Grangemouth in September 2016.

As part of this plan, the Group had put in place a €200 million affiliate loan facility from the Group to the Grangemouth petrochemical business for, *inter alia*, its general corporate requirements. Although this loan facility was fully repaid in July 2017, its terms were amended to allow for future drawdowns.

Although during the period from 2014 to the end of 2018 the Grangemouth petrochemical business has delivered stronger financial performance than estimated in the original business case for the survival plan, if the long-term outcome of the plan is unsuccessful, INEOS Grangemouth plc may be unable to repay the outstanding balance (if any) on the affiliate loan facility, resulting in losses for the Group. See "Business—Refining Divestiture, Grangemouth Divestiture and Lavéra Divestiture—The Grangemouth Divestiture."

Acquisition of DEA UK, certain subsidiaries of Fairfield Energy and DONG Energy A/S Oil & Gas business by INEOS Upstream Limited—We face a risk of loss if INEOS Upstream Holdings Limited is unable to repay the loans extended to the related party.

INEOS Upstream Limited has acquired natural gas assets in the North Sea from a U.K. subsidiary of DEA Deutsche Erdoel AG, which is part of the LetterOne Group and from Fairfield Energy (collectively, the "2015 Upstream Acquisitions") by way of acquiring certain of its subsidiaries. INEOS Upstream Limited is a wholly-owned, oil and gas subsidiary of INEOS Limited, thereby making it an affiliate of ours. In connection with the 2015 Upstream Acquisitions, the Group advanced a loan of $623.7 million to INEOS Upstream Limited, the proceeds of which have been on-lent to certain of its subsidiaries. Following a corporate reorganization, this loan has been novated to INEOS Upstream Holdings Limited. The loan is unsecured and matures in October 2020.

On September 29, 2017, INEOS Upstream Limited acquired further natural gas assets in the North Sea through its acquisition of the entire oil and gas business of DONG Energy A/S (the "DONG Acquisition"). In connection with the DONG Acquisition, the Group advanced a loan of $376.2 million to INEOS Upstream Limited, the proceeds of which were on-lent to certain of its subsidiaries. Following a corporate reorganization, this loan has been novated to INEOS Upstream Holdings Limited. The loan is unsecured and matures in June 2022.

As at December 31, 2018, the total aggregate amount outstanding on the 2015 Upstream Acquisition loan and the DONG Acquisition loan was $617.1 million (€539.7 million).

In the event that INEOS Upstream Limited is unable to repay the 2015 Upstream Acquisitions loan or the DONG Acquisition loan, the Group will suffer losses as a result.

Inability to maximize utilization of assets—We may be adversely affected if we are unable to implement our strategy to maximize utilization of assets.

Our results of operations are materially influenced by the degree to which we utilize our assets in order to achieve maximum production volumes. We cannot guarantee that we will be able to implement our strategy of maximizing utilization of assets in accordance with our plans or at all. For example, the number and length of turnarounds (scheduled outages of a unit in order to perform necessary inspections, tests to comply with industry regulations and any maintenance activities that may be necessary) and unplanned outages have had, and may in the future have, an impact on our operating results, even if such outages are covered by insurance.

Joint ventures—Several of our petrochemical facilities are owned and operated in joint ventures with third parties. We do not control these joint ventures, and actions taken by our joint venture partners in respect of these joint ventures could materially adversely affect our business.

Several of our petrochemical facilities are owned and operated in whole or part by joint ventures with one or more third parties. These facilities include Cedar Bayou in Texas, which is operated by Chevron Phillips Chemical Company LLC ("Chevron Phillips") in a 50/50 joint venture with Chevron Phillips. We also entered into a joint venture with Sasol Limited named Gemini HDPE LLC to construct a facility to manufacture high-density polyethylene ("HDPE"), which became operational in the fourth quarter of 2017. While we have a certain amount of influence over each of these joint ventures, we do not control them and are therefore dependent on our respective joint venture partners to cooperate with us in making decisions regarding the relevant joint venture. Moreover, the day-to-day operation of the relevant facilities is the responsibility of the management team of the joint venture or our joint venture partner. Therefore, our ability to influence these operations on a day-to-day basis is limited and we may be unable to prevent actions that we believe are not in the best interests of our joint ventures or our company as a whole. Any such actions could materially adversely affect our business, results of operations and financial condition.

Climate change—Existing and proposed regulations to address climate change by limiting greenhouse gas emissions may cause us to incur significant additional operating and capital expenses.

Our operations result in emissions of greenhouse gases ("GHGs"), such as carbon dioxide and methane. Growing concern about the sources and impacts of global climate change has led to a number of regional, national and supranational legislative and administrative measures, both proposed and enacted, to monitor, regulate and limit carbon dioxide and other GHG emissions. In the EU, our emissions are regulated under the European Union Emissions Trading System ("EU ETS"), an EU-wide trading system for industrial GHG emissions. The EU ETS is expected to continue to become progressively more stringent over time, including by reducing the number of allowances to emit GHGs, including those that EU member states will allocate without charge to industrial facilities. Such measures could result in increased costs for us to: (i) operate and maintain our facilities; (ii) install new emission controls; (iii) purchase or otherwise obtain allowances to emit GHGs; and (iv) administer and manage our GHG emissions program.

In the United States, we are required to monitor and report to the U.S. Environmental Protection Agency ("EPA") annual GHG emissions from certain of our U.S. facilities. In addition, EPA has promulgated regulations under the Clean Air Act ("CAA") which subject the GHG emissions of certain newly constructed or modified facilities to pre-construction and operating permitting requirements. Pursuant to these requirements, newly constructed or modified facilities with the potential to emit certain quantities of GHGs are required to implement "best available control technology," which can include carbon efficiency standards, GHG emission concentration limits, specific technology requirements or other measures. Significant uncertainty exists as to how newer or stricter GHG regulations will in the future impact large stationary sources, such as our facilities in the United States, and what costs or operational changes these regulations may require.

In addition, EPA has issued final regulations under the CAA that establish air emission controls for oil and natural gas production and natural gas processing operations, including New Source Performance Standards to address emissions of sulfur dioxide and volatile organic compounds, or VOCs. EPA also issued a request for data and information relating to a separate set of emission standards to address hazardous air pollutants frequently associated with oil and natural gas production and processing activities in 2016, but withdrew such request in March 2017 under the Trump administration. Significant uncertainty exists as to future regulation of these activities under the CAA. We continue to monitor the situation closely.

At the international level, many nations have agreed to limit emissions of GHGs pursuant to the United Nations Framework Convention on Climate Change, also known as the "Kyoto Protocol." Methane, a primary component of natural gas, and carbon dioxide, a byproduct of the burning of oil, natural gas, and refined petroleum products, are GHGs addressed by the Kyoto Protocol. Although the United States is not participating in the Kyoto Protocol at this time, a number of EU nations are signatories. Furthermore, in December 2009, 27 nations, including the United States and China, signed the Copenhagen Accord, which includes a non-binding commitment to reduce GHG emissions. As a result of commitments made at the UN climate conference in Durban, South Africa in December 2011, certain members of the international community negotiated a treaty at the December 2015 Conference of Parties in Paris. This Paris Agreement, which entered into force in November 2016, will require developed countries to set targets for emissions reductions once the Agreement is adopted by those individual countries within their respective national or federal law. Additional measures addressing GHG emissions may also be implemented, including, for example, the EU's proposal to consider raising its commitment to reduce carbon emissions by 2020 from a 20% to a 30% reduction.

In addition, the U.S. Congress has from time to time considered adopting legislation to reduce emissions of GHGs and almost one-half of U.S. states have already taken legal measures to reduce emissions of GHGs primarily through the planned development of GHG emission inventories and or/ regional GHG gas cap-and-trade programs. Although the U.S. Congress has not adopted such legislation at this time, it, or additional U.S. states, may do so in the future, along with other countries (in addition to the EU), and we cannot yet predict the form such regulation will take (such as a cap-and-trade program, technology mandate, emissions tax or other regulatory mechanism) or, consequently, estimate any costs that we may be required to incur in respect of such requirements, for example, to install emissions control equipment, purchase emissions allowances, administer and manage our GHG emissions program, or address other regulatory obligations. Such requirements could also adversely affect our energy supply, or the costs (and types) of raw materials we use for fuel. For example, in August 2015, EPA released a final version of the Clean Power Plan ("CCP"), which seeks to reduce GHG emissions from power plants. This rule was stayed in February 2016 pending the resolution of various legal challenges and, in October 2017, EPA announced a proposal to repeal the CCP. The public comment period closed April 26, 2018. On August 21, 2018, EPA proposed the Affordable Clean Energy ("ACE") rule to replace the stayed 2015 Clean Power Plan. The ACE rule, which would establish emission guidelines for states to use in developing plans to address greenhouse gas emissions from existing coal-fired power plants, was open for public comment until the end of October 2018. At this time, it is unclear whether EPA will, ultimately, repeal the CCP or issue alternative regulations setting emissions limits on GHGs, and whether legal challenges may be brought against any such action or regulation. Whether or not these, or different, regulations controlling or limiting GHG emissions could be enacted in the future can not be predicted at this time, but any such requirements could have a material adverse impact on our business, financial condition or results of operations, including by reducing demand for our products.

Environmental matters—We will have ongoing costs and may have substantial obligations and liabilities arising from health, safety, security and environmental ("HSSE") laws, regulations and permits applicable to our operations.

Our businesses are subject to a wide range of HSSE laws and regulations in all of the jurisdictions in which we operate. These requirements govern our facilities and our operations, including the manufacture, storage, handling, treatment, transportation and disposal of hazardous substances and wastes, wastewater discharges, air emissions (including GHG emissions), noise emissions, operation and closure of landfills, human health and safety, process safety and risk management and the clean up of contaminated sites. Many of our operations require permits and controls to monitor or prevent pollution, and these permits are subject to modification, renewal and revocation by issuing authorities. We have incurred, and will continue to incur, substantial ongoing capital and operating expenditures to ensure compliance with current and future HSSE laws, regulations and permits or the enforcement of such requirements.

We expect that our operations will be subject in the future to new and increasingly stringent HSSE laws, regulations and permits and that substantial costs will be incurred by us to ensure continued compliance. We anticipate that these laws, regulations and permits will continue to require us to incur substantial costs and impose additional operating and capital obligations. For example, in November 2017, the U.K. adopted a directive governing the quality of liquid effluent discharged to controlled waters, which may cause us to incur capital expenditures to comply with applicable requirements by 2021. Similarly, we may incur substantial costs to comply with the Waste Incineration Directive at our Seal Sands, UK facility in the event that we are unable to obtain a derogation from the relevant authority that would allow us to continue to operate the affected boilers at existing limits after the June 2020 compliance deadline. If we do not predict accurately the amount or timing of costs of any future compliance, remediation requirements or private claims, our environmental provisions may be inadequate and the related impact on our business, financial condition or results of operations in any period in which such costs need to be incurred could be material. Given the nature of our business, violations of HSSE requirements, whether currently alleged or arising in the future, may result in substantial fines or penalties, the imposition of other civil or criminal sanctions, cleanup costs, claims for personal injury or property damages, the installation of costly pollution control equipment, or restrictions on, or the suspension of, our operating permits or activities.

At certain sites where we operate, regulators have alleged or we have otherwise identified potential or actual noncompliance with HSSE laws and/or the permits which authorize operations at these sites. Some of these allegations or instances of noncompliance are ongoing, and substantial amounts may need to be spent to attain and/or maintain compliance. In addition, we have in the past paid, and in the future may pay, penalties to resolve such matters. Our businesses and facilities have experienced, and in certain cases, are in the process of investigating or remediating, hazardous materials in the soil and groundwater at locations where we operate and/or adjacent properties and/or natural resources at public and private lands not owned by us.

Many of our sites have an extended history of industrial chemical processing, storage and related activities, and may currently be subject to engineering or institutional controls or restrictions or may become subject to such controls or restrictions in the future. We are currently, and from time to time have been or may be, required to investigate and remediate releases of hazardous materials or contamination at or migrating from certain of these sites, as well as properties we formerly owned, leased or operated. We are, and in the future may be, responsible for investigating and cleaning up contamination at off-site locations where we or our predecessors disposed of or arranged for the disposal or treatment of hazardous wastes. Under some environmental laws, including the U.S. Comprehensive Environmental Response, Compensation, and Liability Act, commonly referred to as "Superfund," liability can be imposed retroactively, without regard to fault or knowledge, and on a joint and several basis. In addition, we also could be subject to claims by government authorities, individuals and other third parties seeking damages for alleged personal injury or property or natural resource damages resulting from environmental contamination or hazardous exposure caused by our operations, facilities or products. The discovery of previously unknown contamination, or the imposition of new obligations to investigate or remediate contamination at our facilities, could result in substantial unanticipated costs. We could be required to establish or substantially increase financial reserves for such obligations or liabilities and, if we fail to accurately predict the amount or timing of such costs, the related impact on our business, financial condition or results of operations in any period in which such costs need to be incurred could be material. In addition, HSSE laws and regulations can impose various financial responsibility requirements on us, and pursuant to these requirements we may be required to post bonds, create trust funds or provide other assurances that we will be able to address contamination at our sites and comply with our decommissioning obligations once our facilities reach the end of their useful lives.

Our operations involve the intensive use of hazardous materials and we have been from time to time subject to claims made for damage to property or injury, including adverse health effects, to employees and other persons, resulting from our operations. Claims made in the future could have a material adverse effect on our reputation, business, financial condition or results of operations.

Our operations involve significant water usage, with expected annual industrial water costs of approximately €60 million in 2019. Changes to environmental regulations and other factors, such as water shortages as a result of climate change, could increase the cost of water, which could in turn impact our operating and production costs.

Our financial results may be adversely affected if environmental liability arises for which we are not adequately indemnified, or from a disposal of assets or businesses for which we provided a seller's indemnification in respect thereof. Although we believe that the indemnities given by the selling parties from whom we have acquired assets or businesses will help defray the costs associated with pre-acquisition environmental liabilities, our financial results may still be adversely affected to the extent that:

- the sellers do not fulfill their respective indemnification obligations;
- we breach our obligations not to undertake certain activities that may aggravate existing conditions or to mitigate associated losses;
- we incur indemnification obligations for other environmental liabilities owed as part of certain disposals of assets or businesses; or
- we incur significant costs for pre-acquisition conditions that are not covered by the indemnities.

Potential hazards—Our operations are subject to hazards which could result in significant liability to us.

Our operations are subject to hazards associated with chemical manufacturing and the related use, storage, transportation and disposal of raw materials, products and wastes. These hazards include explosions, fires, severe weather (including but not limited to floods in low-lying areas, hurricanes on the U.S. Gulf Coast or other adverse weather that may be increasing as a result of climate change) and natural disasters, accidents, mechanical failures, discharges or releases of toxic or hazardous substances or gases, transportation interruptions, human error, pipeline leaks and ruptures and terrorist activities. These hazards can cause personal injury and loss of life, severe damage to or destruction of property and equipment as well as environmental damage, and may result in suspension of operations and the imposition of civil and criminal liabilities, including penalties and damage awards. While we believe our insurance policies are in accordance with customary industry practices, such insurance may not cover all risks associated with the hazards of our business and is subject to limitations, including deductibles and maximum liabilities covered. We may incur losses beyond the limits, or outside the coverage, of our insurance policies, including liabilities for violations of environmental requirements and contamination. In addition, from time to time, various types of insurance for companies in our industries have not been available on commercially acceptable terms or, in some cases, have not been available at all. In the future, we may not be able to obtain coverage at current levels, and our premiums may increase significantly on coverage that we maintain. Costs associated with unanticipated events in excess of our insurance coverage could have a material adverse effect on our business, competitive or financial position or our ongoing results of operations. For additional related disclosure, see "Business—Health, Safety, Security and Environment."

Third parties—Our business and operations are subject to business interruption risks due to the actions of third parties, which could have a material adverse effect on our business, reputation, financial condition and results of operations.

Due to the nature of our business, we are at risk of business interruption due to the actions of third parties. For example, many of our vendors and subcontractors have operations that are also subject to HSSE risks associated with the use of hazardous materials. Any future HSSE-related incidents affecting our vendors and subcontractors may result in significant regulatory actions, fines and other penalties, including restrictions, prohibitions or sanctions on their operations, and could impair their ability to perform their contracts with us or could otherwise subject us to liability, all of which could have a material adverse effect on our business, reputation, financial condition and results of operations. In addition, if any facilities experience damage or temporary closures due to any number of hazards, including protests, caused by third parties, our reputation, business and results of operations may be adversely affected.

Product stewardship regulation—Our business could be adversely affected by chemical safety regulation of our products and raw materials.

We use and manufacture hazardous chemicals that are subject to regulation by the EU and by many national, provincial and local governmental authorities in the countries in which we operate. In order to obtain regulatory approval of certain new products and production processes, we must, among other things, demonstrate to the relevant authorities that the product is safe for its intended uses and that we are capable of manufacturing the product in accordance with applicable regulations. The process of seeking approvals can be time-consuming and subject to unanticipated and significant delays. Approvals may not be granted to us on a timely basis, or at all. Any delay in obtaining, or any failure to obtain or maintain, these approvals would adversely affect our ability to introduce new products, to continue distributing existing products and to generate revenue from those products, which could have a material adverse effect on our business and prospects. New laws and regulations may be introduced in the future that could result in additional compliance costs, confiscation, recall or monetary fines, any of which could prevent or inhibit the development, distribution and sale of our products.

In addition, some of our products (including our raw materials) are subject to extensive environmental and industrial hygiene regulations governing the registration and safety analysis of their component substances. For example, in connection with the EU's Registration, Evaluation and Authorization of Chemicals ("REACH") Regulation or the EU's Classification, Labelling and Packaging ("CLP") Regulation, any key raw material, chemical or substance, including some of our products, could be classified as having a toxicological or health-related impact on the environment, users of our products, or our employees. We manufacture, process, or use a number of substances classified as substances of very high concern under REACH, and the continued use of these substances may require authorization from the European Chemicals Agency ("ECHA"). If we cannot obtain authorization, we may need to discontinue use of such substances.

In June 2016, amendments to the U.S. Toxic Substances Control Act ("TSCA") became law. While the full impact of these amendments to TSCA remains uncertain, it is possible that they could trigger risk screening of certain of our products by EPA, and this risk screening could lead to new or more stringent regulatory obligations and/or restrictions, including, potentially, prohibitions on manufacture and sale of certain products. On December 19, 2016, EPA published a list of ten chemical substances that are the subject of EPA's initial chemical risk evaluations, as required by TSCA. This list includes multiple chemicals we manufacture, including carbon tetrachloride and methylene chloride. In order to prioritize additional chemicals for risk evaluations, by December 22, 2019, EPA must have designated at least 20 chemical substances as High-Priority and 20 chemical substances as Low-Priority. It is possible that chemicals prioritized in this process could include additional chemicals we manufacture.

In Ontario, Canada, the Toxics Reduction Act requires reduction in the use of toxic substances. Among other things, this statute requires tracking, public toxic substance reduction plans and reporting. Similar regulations are being considered in other jurisdictions, including the United States, which could result in additional requirements, including testing and record-keeping obligations, on our operations.

We are further subject to emerging laws and regulations governing workplace exposure to certain chemicals. For example, benzene has been identified as a genotoxic carcinogen. ECHA's

Committee for Risk Assessment ("RAC") recently proposed reducing the occupational exposure limit ("OEL") for benzene to .05 ppm as the maximum allowable concentration in air at workplaces in the EU. RAC also proposed a new OEL of .045 ppm for acrylonitrile, a monomer used in many plastics. Because we produce benzene and acrylonitrile, we would become subject to these OELs, if enacted. As another example, butadiene is a known carcinogen in laboratory animals at high doses and is being studied for its potential adverse human health effects. The U.S. Occupational Safety and Health Administration currently limits the permissible employee exposure to butadiene. If studies on the health effects of butadiene result in additional regulations in the United States or new regulations in Europe that further restrict or prohibit the use of, and exposure to, butadiene, we could be required to change our operations, which could affect the quality of our products and increase our costs.

The regulation or reclassification of any of our raw materials or products could adversely affect the availability or marketability of such products, result in a ban on its import, purchase or sale, or require us to incur increased costs to comply with notification, labeling or handling requirements, each of which could result in a material adverse effect on our business, financial condition and results of operations.

Litigation—We are subject to certain risks related to litigation filed by or against us, and adverse results may harm our business.

We cannot predict with certainty the cost of defense, the cost of prosecution or the ultimate outcome of litigation and other proceedings filed by or against us, including remedies or damage awards, and adverse results in any litigation and other proceedings may materially harm our business. Litigation and other proceedings may include, but are not limited to, actions relating to intellectual property, commercial arrangements, environmental, health and safety, joint venture agreements, labor and employment or other harms resulting from the actions of individuals or entities outside of our control. In the case of intellectual property litigation and proceedings, adverse outcomes could include the cancellation, invalidation or other loss of material intellectual property rights used in our business and injunctions prohibiting our use of business processes or technology that are subject to third-party patents or other third-party intellectual property rights. Litigation based on environmental matters or human exposure to hazardous substances in the workplace or from our products could result in significant liability for us. Adverse outcomes could have a material adverse effect on our business.

Product liability—We may be liable for damages based on product liability claims.

The sale of our products involves the risk of product liability claims arising out of the use of, or exposure to, our products or the chemicals in them. While most of our products have some hazardous properties, some of them, such as acrylonitrile, require specialized handling procedures due to their acute and chronic toxicity. Furthermore, our polymer products have widespread end uses in a variety of consumer industries, including food packaging and medical applications. A successful product liability claim or series of claims against us in excess of our insurance coverage for payments for which we are not otherwise indemnified or have not otherwise provided could have a material adverse effect on our business, financial condition or results of operations and cash flows. In particular, we could be required to increase our debt or divert resources from other investments in our business in order to discharge any such claims.

In addition, we have licensed our polyethylene, polypropylene, polystyrene, polyvinylchloride, vinyl chloride monomer, ethylene dichloride and acrylonitrile technologies to third parties. Generally, our licensing agreements provide that any liability arising from the implementation of such technology is retained by us during the first 18 months of the agreements. As a result, we are liable for any damages arising from the implementation by our licensees of our technology during this period.

Key personnel—Our success depends on the continued service of certain key personnel.

Our success depends in significant part upon the continued service of our shareholders, directors and senior management, including James A. Ratcliffe, Andrew Currie and John Reece and the executive officers at each of our business divisions. In addition, our future growth and success also depends on our ability to attract, train, retain and motivate skilled managerial, sales, administration, operating and technical personnel. We generally do not have employment agreements with, and we do not maintain any "key man" life insurance for, any member of our senior management. The loss of one or more of our key management or operating personnel, or the failure to attract and retain additional key personnel, could have a material adverse impact on our business, financial condition and results of operations.

Employee relations—We depend on good relations with our workforce, and any significant disruption could adversely affect us.

As of December 31, 2018, we employed approximately 7,500 people (measured as full-time equivalents ("FTEs")) in our operations around the world, not including employees of our joint ventures. The majority of our employees are unionized. In addition, a majority of our employees reside in countries in which employment laws provide greater bargaining or other rights to employees than the laws of the United States. These employment rights may require us to expend greater time and expenses in altering or amending employees' terms of employment or making staff reductions. For example, most of our employees in Europe are represented by works councils which generally must approve changes in conditions of employment, including salaries and benefits. Further, a labor disturbance or work stoppage at any of our facilities as a result of any changes to our employment terms and conditions or for any other reason could have a material adverse effect on that facility's operations and, potentially, on our business, results of operations and financial condition.

Intellectual property—The failure of our patents, trademarks and confidentiality agreements to protect our intellectual property could adversely affect our business.

Proprietary protection of our processes, apparatuses and other technology is important to our business, including our manufacturing activities. Our actions to protect our proprietary rights may be insufficient to prevent others from developing similar products to ours. In addition, the laws of many foreign countries do not protect our intellectual property rights to the same extent as the laws of the United States and the United Kingdom. Furthermore, any pending patent application filed by us may not result in an issued patent, or if patents are issued to us, such patents may not provide meaningful protection against competitors or against competitive technologies. You should be aware that the expiration of a patent or the failure of our patents to protect our formulations, processes, apparatuses, technology or proprietary know-how could result in intense competition, with consequent erosion of profit margins. In addition, our competitors and any other third parties may obtain patents that restrict or preclude our ability to lawfully manufacture and market our products in a competitive manner, which could materially adversely affect our business, results of operations and financial condition.

Some of our patents and patent applications are jointly owned with third parties. In many countries, both owners have full rights under a jointly-owned patent. In the absence of a specific agreement, such third parties may use our jointly-owned patents to compete with us or grant a license to our competitors. In addition, co-owners may not cooperate with us to enforce or to defend a jointly-owned patent where necessary to protect our rights.

We also rely upon unpatented proprietary know-how and continuing technological innovation and other trade secrets to develop and maintain our competitive position. While it is our policy to enter into confidentiality agreements with our employees and third parties to protect our intellectual property, there can be no assurances that:

- our confidentiality agreements will not be breached;
- such agreements will provide meaningful protection for our trade secrets or proprietary know-how; or
- adequate remedies will be available in the event of an unauthorized use or disclosure of these trade secrets and know-how.

In addition, there can be no assurances that others will not obtain knowledge of these trade secrets through independent development or other access by legal means.

In the past we have received communications asserting that our products or their applications infringe on a third party's proprietary rights. Currently, there is no material pending litigation against us regarding any intellectual property claim but we cannot assure you that there will not be future claims. Such claims, regardless of merit, could subject us to costly litigation and divert our technical and management personnel from their regular responsibilities. Furthermore, if such claims are adversely determined against us, we could be forced to suspend the manufacture of products using the contested intellectual property and our business, financial condition and operating results could be adversely affected if any such products are material to our business.

We may also initiate lawsuits to defend the ownership of our inventions and our intellectual property. Like defending against litigation, initiating litigation relating to intellectual property rights is costly and may divert technical and management personnel from their normal responsibilities. Furthermore, we may not prevail in any such litigation or proceeding. A determination in an intellectual property litigation or proceeding that results in a finding of a non-infringement by others to our intellectual property or an invalidation of our patents may result in the use by competitors of our technologies or processes and sale by competitors of products that resemble our products, which may adversely affect our ability to compete as well as create increased supply and corresponding downward pricing pressure.

We are subject to cyber security risks. A cyber incident could occur and result in information theft, data corruption, operational disruption and/or financial loss.

Our industry has become increasingly dependent on digital technologies to conduct certain processing activities. For example, we depend on digital technologies to perform many of our services and to process and record financial and operating data. At the same time, cyber incidents, including deliberate attacks, have increased. Our technologies, systems and networks, and those of our vendors, suppliers and other business partners, may become the target of cyberattacks or information security breaches that could result in the unauthorized release, gathering, monitoring, misuse, loss or destruction of proprietary and other information, or other disruption of business operations. In addition, certain cyber incidents, such as surveillance, may remain undetected for an extended period. Our systems for protecting against cyber security risks may not be sufficient. As cyber incidents continue to evolve, we will likely be required to expend additional resources to continue to modify or enhance our protective measures or to investigate and remediate any vulnerability to cyber incidents. Further, the General Data Protection Regulation (Regulation (EU) 2016/679) came into effect in Europe in May 2018, which has created a range of new compliance obligations, and increased financial penalties for non-compliance significantly.

Internal controls—If we fail to maintain an effective system of internal controls over financial reporting, we may not be able to accurately report our financial results or prevent fraud.

We have designed and continue to design our internal controls with the objective of providing reasonable assurance that (1) our transactions are properly authorized; (2) our assets are safeguarded against unauthorized or improper use; and (3) our transactions are properly recorded and reported, all to permit the preparation of our consolidated financial information in conformity with applicable accounting principles. We design our internal controls through the use of internal resources, external consultants and, as the case may be, with joint venture partners.

Any system of controls, however well designed and operated, can provide only reasonable, and not absolute, assurance that the objectives of the system are met. In addition, the design of any control system is based in part upon certain assumptions about the likelihood of future events. Because of these and other inherent limitations of control systems, there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions, regardless of how remote. Any failure to maintain adequate internal controls or to be able to produce accurate consolidated financial information on a timely basis could increase our operating costs and materially impair our ability to operate our business.

Feedstock supply from BP—BP provides us with a substantial proportion of our feedstock requirements, and several of our sites depend entirely on BP for their supply of raw materials.

BP accounts for a substantial proportion of our petrochemical feedstock requirements. While the substantial majority of these feedstocks are secured by long-term contracts (as generally described in the section entitled "Business—Agreements with BP"), BP may terminate each of these agreements for cause or, after the initial terms, notice of one to three years. If we lose BP as a supplier or if, as a result of operational problems at any of its facilities, BP is unable or unwilling to supply us with raw materials in the required quantities or at all, we could experience disruptions that could force us to shut down facilities. In addition, we could experience substantial delays in finding suitable replacement feedstocks on commercially viable terms. At sites that are deeply integrated with BP's facilities and therefore depend entirely on BP for the supply of raw materials, we may be unable to find a suitable alternative supplier. If BP fails to supply us with raw materials at any of these sites, we may be forced to close the affected facilities, either temporarily or permanently. If any of these risks materialize, our business, results of operations and financial condition could be materially adversely affected.

Credit Support Deed—The credit support we may be required to provide under our Credit Support Deed with BP may be substantial.

In connection with the Innovene Acquisition, we initially entered into a series of arrangements with BP, including a number of commercial and transitional support agreements, among them, a credit support arrangement, which was replaced on January 5, 2017 by a new credit support agreement (the "Credit Support Deed"). See "Business—Agreements with BP—Related Agreements."

Under the Credit Support Deed, IHL and BP agreed to provide reciprocal credit support for trade obligations under certain agreements between such parties or their affiliates if the existing credit support provided under the underlying trading agreements is no longer satisfactory. Such additional credit support may take the form of an irrevocable standby letter of credit issued by a bank meeting certain credit rating requirements or a requirement for the buyer to make payment in advance for goods or services under the relevant trading agreement and must be provided at the request of the seller in the event that (i) the existing credit support ceases to be effective in a material respect, (ii) there has been a material deterioration in the nature and/or extent of the existing credit support or (iii) there has been a material increase in the seller's exposure to the buyer under the relevant trading agreement which is not supported by the existing credit support. Further, payment obligations of various members of the Group under the trading agreements between such parties are guaranteed by IGH.

The additional credit support required of INEOS under the Credit Support Deed could be substantial. Any failure to provide such credit support under the Credit Support Deed would constitute a default under the Credit Support Deed. The Credit Support Deed provides that in the event we fail to provide such credit support, BP may suspend performance of its obligations under the relevant trading agreement between us and BP and, if such default is not remedied within specific time period, BP may terminate the relevant trading agreements.

Senior Secured Term Loans Agreement, the Schuldschein Loan Agreement, the Existing Indentures and the Indenture—Our Senior Secured Term Loans Agreement, the Schuldschein Loan Agreement and the Existing Indentures impose, and the Indenture will impose, significant operating and financial restrictions, which may prevent us from capitalizing on business opportunities and taking certain actions.

Our Senior Secured Term Loans Agreement, the Schuldschein Loan Agreement and the Existing Indentures impose, and the Indenture will impose, significant operating and financial restrictions on us. These restrictions include limitations on our ability to:

- make investments and other restricted payments, including dividends;
- incur additional indebtedness;
- sell our assets or consolidate or merge with or into other companies;
- enter into joint ventures; and
- make capital expenditures.

Our Senior Secured Term Loans Agreement, the Schuldschein Loan Agreement and the Existing Indentures contain, and the Indenture will contain, covenants that may adversely affect our ability to finance our future operations and capital needs and to pursue available business opportunities. A breach of any of these covenants could result in a default in respect of the related debt. If a default were to occur, the relevant holders or the relevant lenders (as applicable) of such debt could elect to declare the debt, together with accrued interest and other fees, immediately due and payable and, subject to certain limitations, proceed against any Collateral securing that debt. Refer to "Description of Other Indebtedness" for further information.

Future acquisitions or developments—Any future acquisitions or developments may prove difficult for us to consummate.

We have a history of making acquisitions and in the future we may acquire companies or assets engaged in similar or complementary businesses to our own if we identify appropriate acquisition targets. In addition, we may organically grow our business, including by developing new facilities such as the planned ethane cracker and PDH plant in Antwerp, Belgium. However, restrictions in the Senior Secured Term Loans Agreement, the Schuldschein Loan Agreement, the Existing Indentures and the Indenture may limit or preclude our ability to make certain acquisitions or capital expenditures. Further, we may use debt financing for any permitted acquisitions or capital expenditures, which would increase our debt service requirements. In order to manage any acquisitions or development projects we successfully complete, we will need to expand and continue to improve our operational, financial and management information systems. If making acquisitions or integrating any acquired business or development projects diverts too much management attention from the operations or our core businesses, this could adversely affect our financial condition and results of operations. Any acquisition or development project that we make could be subject to a number of risks, including, as applicable:

- problems with effective integration of operations;

- the inability to maintain key pre-acquisition business relationships;
- increased operating costs;
- costs related to achieving or maintaining compliance with laws, rules or regulations;
- the loss of key employees of the acquired company;
- exposure to unanticipated liabilities; and
- difficulties in realizing projected efficiencies, synergies and cost savings.

We cannot assure you that any acquisition or development project we consummate will ultimately provide the benefits we originally anticipate. Furthermore, we may not succeed in identifying attractive acquisition candidates or financing and completing potential acquisitions on favorable terms and development projects may experience delays and cost overruns.

Credit and capital market conditions—Adverse conditions in the credit and capital markets may limit or prevent our ability to borrow or raise capital.

While we believe we have facilities in place that should allow us to borrow or otherwise raise funds as needed, adverse conditions in the credit and financial markets could prevent us from obtaining financing, if the need arises. We have a significant amount of debt obligations maturing prior to the maturity date of the Notes. Our ability to invest in our businesses and refinance maturing debt obligations could require access to the credit and capital markets and sufficient bank credit lines to support cash requirements. If we are unable to access the credit and capital markets, we could experience a material adverse effect on our financial position or results of operations.

Pension plans—Significant changes in pension fund investment performance or assumptions relating to pension costs may adversely affect the valuation of pension obligations, the funded status of pension plans, and our pension cost.

Our funding policy for pension plans is to accumulate plan assets that, over the long run, will approximate the present value of projected benefit obligations. Our pension cost is materially affected by the discount rate used to measure pension obligations, the level of plan assets available to fund those obligations at the measurement date and the expected long-term rate of return on plan assets. Significant changes in investment performance or a change in the portfolio mix of invested assets may result in corresponding increases and decreases in the valuation of plan assets, particularly equity securities, or in a change of the expected rate of return on plan assets. Any change in key actuarial assumptions, such as the discount rate, would impact the valuation of pension obligations, affecting the reported funded status of our pension plans as well as the net periodic pension cost in the following fiscal years. Any declines in the fair values of the pension plans' assets could require additional payments by us in order to maintain specified funding levels. Any decrease in interest rates will result in an increase of pension liabilities. Our pension plans are subject to legislative and regulatory requirements of applicable jurisdictions.

Eurozone—Market perceptions concerning the instability of the euro, the potential re-introduction of individual currencies within the eurozone, or the potential dissolution of the euro entirely, could have adverse consequences for us with respect to our outstanding debt obligations that are euro-denominated.

Recent developments in the eurozone have exacerbated the ongoing instability of the financial markets. Financial markets may continue to be negatively impacted by concerns about a slowdown in growth in certain economies of the Eurozone and uncertainties regarding the overall stability of the euro and the sustainability of the euro as a single currency given the diverse economic and political circumstances in individual member states. Governments and regulators have implemented austerity programs and other remedial measures to respond to the eurozone debt crisis and stabilize the financial system, but the actual impact of such programs and measures are difficult to predict.

In the event that the Eurozone debt crisis is not resolved, it is possible that one or more countries may default on their debt obligations and/or cease using the euro and re-establish their own national currency or that the eurozone may collapse. Should the euro dissolve entirely, the legal and contractual consequences for holders of euro-denominated obligations and for parties subject to other contractual provisions referencing the euro such as supply contracts would be determined by laws in effect at such time.

The official exchange rate at which the Notes may be redenominated may not accurately reflect their value in euro. These potential developments, or market perceptions concerning these and related issues, could adversely affect the value of the Notes and could have adverse consequences for us with respect to our outstanding debt obligations that are euro-denominated, and, as we have a substantial amount of debt denominated in euro, our financial condition may be materially affected.

Furthermore, the Senior Secured Term Loans Agreement, the Schuldschein Loan Agreement and the Existing Indentures contain, and the Indenture will contain, covenants restricting our and our subsidiaries' corporate activities. See "Risks Relating to the Notes and Our Capital Structure—Restrictive covenants in our debt instruments—We are subject to restrictive debt covenants that may limit our ability to finance our future operations and capital needs and to pursue business opportunities and activities. If we default under these covenants, we will not be able to meet our payment obligations." Certain of such covenants impose limitations based on euro amounts (*e.g.*, the amount of additional indebtedness we or our subsidiaries may incur). As such, if the euro were to significantly decrease in value, the restrictions imposed by these covenants would become tighter, further restricting our ability to finance our operations and conduct our day-to-day business.

Referendum and United Kingdom withdrawal from the European Union—Our operations may be adversely affected by the potential withdrawal of the United Kingdom from the European Union.

On June 23, 2016, the U.K. held an in or out referendum on the U.K.'s membership within the EU, the result of which favored the exit of the U.K. from the EU ("Brexit"). The United Kingdom triggered Article 50 of the Treaty of Lisbon on March 29, 2017 and was expected to officially leave the European Union on March 29, 2019. Any deal negotiated between the European Union and the United Kingdom must be approved by a qualified majority of European Union member states and can be vetoed by the European Parliament. On both January 15, 2019 and March 12, 2019, the parliament of the United Kingdom rejected the proposed withdrawal agreement that the U.K. government had been negotiating with the member states of the European Union. On March 13, 2019, the parliament of the United Kingdom rejected the idea of withdrawing from the EU without an agreement, and on March 14, 2019, parliament voted in favor of delaying Brexit beyond the March 29, 2019 departure date by seeking an extension to Article 50 of the Treaty of Lisbon. On March 21, 2019, the EU agreed to an extension until at least April 12, 2019. The form of the U.K.'s expected withdrawal from, and future relations with, the EU is highly uncertain.

These developments, or the perception that any of them could occur, have had and may continue to have a material adverse effect on global economic conditions and the stability of global financial markets, and could significantly reduce global market liquidity and restrict the ability of key market participants to operate in certain financial markets. In addition, Brexit has given rise to calls for certain regions within the United Kingdom to preserve their place in the European Union by separating from the United Kingdom, as well as for the governments of other EU member states to consider withdrawal. Brexit and the uncertainty caused thereby may lead to a down-turn in the United Kingdom or other European economies and could lead to reduced access to European markets in general. The headquarters of our Group are in Europe and we maintain a significant presence in various European markets through subsidiaries operating in these countries and sales made to customers in Europe. We also have a presence in the U.K. market. To date, the U.K. has not secured trading arrangements with most of the countries with which the EU has in place trading agreements, which could result in higher tariffs for trading between the U.K. and these countries.

Given the lack of precedent, it is unclear how the withdrawal of the U.K. from the EU will affect the U.K.'s access to the EU single market and other important financial and trade relationships and how it will affect us. The withdrawal could, among other outcomes, disrupt the free movement of goods, services, capital and people between the U.K. and the EU, undermine bilateral cooperation in key policy areas and significantly disrupt trade in the U.K. and the EU markets in which we operate. Although it is not possible to predict fully the effects of the withdrawal of the U.K. from the EU, the uncertainty before, during and after the period of negotiation could be destabilizing, have a negative economic impact and increase volatility in the markets, particularly in the eurozone. Such instability, volatility and negative economic impact could, in turn, adversely affect our business, financial condition and results of operations.

Risks Relating to the Notes and Our Capital Structure

Significant indebtedness—Our level of indebtedness could adversely affect our ability to react to changes in our business, and we may be limited in our ability to fulfill our obligations with respect to the Notes and to use debt to fund future capital needs.

We are, and after the issuance of the Notes will continue to be, significantly indebted and as of December 31, 2018, after giving *pro forma* effect to the Transactions, the 2019 February Dividend and the Schuldschein Loan, we would have had total consolidated loans and borrowings of €6,472.9 million as compared to total equity of €1,467.5 million. In addition, we would have had €313.9 million available for future borrowings under the unused portion of our Securitization Program. Our substantial indebtedness could have important consequences to holders of the Notes by adversely affecting our financial position including, but not limited to:

- requiring us to dedicate all of our cash flow from operations (after the payment of operating expenses) to payments with respect to our indebtedness, thereby reducing the availability of our cash flow for working capital, capital expenditures, acquisitions, joint ventures, product research and development, and other general corporate expenditures;
- increasing our vulnerability to, and reducing our flexibility to respond to, adverse general economic or industry conditions;
- limiting our flexibility in planning for, or reacting to, competition or changes in our business or industry;
- limiting our ability to borrow additional funds and increasing the cost of any such borrowing;
- restricting us from making strategic acquisitions or exploring business opportunities; and
- placing us at a competitive disadvantage relative to competitors that have less debt or greater financial resources.

Any of these or other consequences or events could have a material adverse effect on our ability to satisfy our debt obligations, including with respect to the Notes. Our ability to make payments on and refinance our indebtedness will depend on our ability to generate cash from our operations. Our ability to generate cash from operations is subject, in large part, to general economic, competitive, legislative and regulatory factors and other factors that are beyond our control. We may not be able to generate enough cash flow from operations nor obtain enough capital to service our debt or fund our planned capital expenditures.

In addition, we may be able to incur substantial additional debt in the future, including indebtedness in connection with any future acquisition and indebtedness in connection with any inventory financing or similar arrangements. The terms of the Existing Indentures, the Schuldschein Loan Agreement and the Senior Secured Term Loans Agreement permit, and the Indenture will permit, our subsidiaries to do so, in each case, subject to certain limitations. If new debt is added to our current debt levels, the risks that we now face could intensify. Moreover, some of the debt we may incur in the future could be structurally senior to the Notes, and may be secured by collateral that does not secure the Notes.

For further information regarding our substantial leverage and for more information about our outstanding indebtedness, see also "Operating and Financial Review and Prospects" and "Description of Other Indebtedness."

Restrictive covenants in our debt instruments—We are subject to restrictive debt covenants that may limit our ability to finance our future operations and capital needs and to pursue business opportunities and activities. If we default under these covenants, we will not be able to meet our payment obligations.

The Senior Secured Term Loans Agreement, the Schuldschein Loan Agreement and the Existing Indentures contain, and the Indenture will contain, a number of significant covenants that restrict some of our and our subsidiaries' corporate activities, including our and their ability to:

- incur or guarantee additional debt and issue certain preferred stock;
- make restricted payments, including paying dividends or making other distributions and prepaying or redeeming subordinated debt or equity;
- create or incur certain liens;
- sell, lease or transfer certain assets;
- enter into arrangements that restrict dividends or other payments to us;
- create encumbrances or restrictions on the payment of dividends or other distributions, loans or advances and on the transfer of assets;
- engage in certain transactions with affiliates;
- create unrestricted subsidiaries; and
- consolidate, merge or transfer all or substantially all of our assets and the assets of our subsidiaries on a consolidated basis.

All of these limitations are or will be subject to significant exceptions and qualifications. See "Description of the Notes—Certain Covenants." The covenants to which we are subject could limit our ability to finance our future operations and capital needs and our ability to pursue business opportunities and activities that may be in our interest.

Also, the Senior Secured Term Loans Agreement and the Schuldschein Loan Agreement require us and some of our subsidiaries to comply with certain affirmative covenants. See "Description of Other Indebtedness—Senior Secured Term Loans" and "Description of Other Indebtedness—Schuldschein Loan."

Our ability to comply with these covenants and restrictions may be affected by events beyond our control. These include prevailing economic, financial and industry conditions. If we breach any of these covenants or restrictions, we could be in default under the Senior Secured Term Loans Agreement and the Schuldschein Loan Agreement. This would permit the lenders to take certain actions, including declaring all amounts that we have borrowed under the Senior Secured Term Loans Agreement and the Schuldschein Loan Agreement to be due and payable, together with accrued and unpaid interest. A failure to pay such amounts would also result in an event of default under the Existing Indentures and the Indenture. If we are unable to repay our debt to the lenders, they could proceed against the Collateral that secures the debt under the Senior Secured Term Loans Agreement, the Existing Notes, the Schuldschein Loan Agreement, certain hedging liabilities and certain cash management liabilities and the Notes. If the debt under our Senior Secured Term Loans Agreement, the Schuldschein Loan Agreement, the Existing Notes or any other material financing arrangement that we enter into were to be accelerated, our assets may be insufficient to repay in full the Notes and our other debt.

Securitization Program—We use the Securitization Program to meet some of our liquidity requirements, and are subject to various covenants under the Securitization Program, which, if we are unable to comply with them, could result in the acceleration of our debt.

Unless the maturity date of the Securitization Program is extended, the Securitization Program will mature in December 2020. We satisfy a significant amount of our short-term liquidity needs with amounts available under the Securitization Program. While we have in principle agreed to terms with our securitization providers, our ability to refinance the Securitization Program could be affected by a number of factors, including volatility in the financial markets, contractions in the availability of credit, including in interbank lending, and changes in investment markets, including changes in interest rates, exchange rates and returns from equity, property and other investments. Our liquidity will be adversely affected if we are unable to refinance the Securitization Program on acceptable terms or at all, and we can provide no assurance we will be able to do so.

The availability under the Securitization Program varies depending on the underlying receivables. For a more detailed discussion, please see "Description of Other Indebtedness—Securitization Program." In addition, the Securitization Program contains various covenants, and if we fail to comply with these covenants, a default may occur under the Securitization Program. If a default occurs under the Securitization Program, we may need to fund our working capital requirements from other sources.

No Revolving Credit Facility—We do not have a revolving credit facility, which may adversely affect our short-term liquidity.

In addition to our Securitization Program, prior to 2012 we relied upon a revolving credit facility to meet our short-term liquidity needs. However, we no longer have a revolving credit facility. While we believe we have sufficient cash on our balance sheet to meet our working capital needs, such amounts may not be sufficient. Should we require cash in an amount exceeding the cash available for cash collateralized letters of credit, our short-term liquidity will be adversely affected.

Ability to repay and service debt—To repay or refinance and service our debt, we will require a significant amount of cash.

Our ability to make principal or interest payments when due on our indebtedness, including the Notes, the Senior Secured Term Loans Agreement, the Schuldschein Loan Agreement and the Existing Notes, will depend upon our future performance and our ability to generate cash. Our ability to generate cash depends on many factors beyond our control. The ability of our subsidiaries to transfer monies upstream to us, as well as to pay operating expenses and to fund planned capital expenditures, any future acquisitions and research and development efforts, will depend on our businesses' ability to generate cash in the future, as well as limitations that may be imposed under applicable law. This, to an extent, is subject to general economic, financial, competitive, legislative, regulatory and other factors, including those factors discussed in this "Risk Factors" section or elsewhere in this offering memorandum, many of which are beyond our and our subsidiaries' control. Please see "Selected

Consolidated Financial Information" and "Operating and Financial Review and Prospects." If we sustain losses in the future, our ability to repay and service our debt may be materially impaired.

If we are unable to generate sufficient cash flow to meet our payment obligations, we may be forced to reduce or delay planned expansions or capital expenditures, sell significant assets, discontinue specified operations, obtain additional funding in the form of debt or equity capital or attempt to restructure or refinance all or a portion of our debt on or before maturity. We cannot assure you that we would be able to accomplish any of these alternatives on a timely basis or on commercially reasonable terms, if at all. In addition, the terms of our debt, including the Senior Secured Term Loans Agreement, the Schuldschein Loan Agreement, the Existing Indentures and the Indenture, will limit our ability to pursue any of these alternatives. If we are unsuccessful in any of these efforts, we may not have sufficient cash to meet our obligations.

Financing a change of control offer—We may not be able to raise the funds necessary to finance a change of control offer required by the Existing Indentures and the Indenture, and, if this occurs, we would be in default under the Existing Indentures and the Indenture.

Under the terms of the Existing Indentures, the Indenture and the Schuldschein Loan Agreement, we will be required to offer to repurchase or repay the Existing Notes or the Notes or the Schuldschein Loan, as applicable, if certain events constituting a change of control occur. Our obligations under the Senior Secured Term Loans Agreement could also be accelerated upon the occurrence of a change of control under the Existing Indentures, the Indenture or the Schuldschein Loan Agreement or other change of control events. It is possible that we may not have sufficient funds at the time of a change of control to repurchase any or all of the Existing Notes or the Notes, or repay our outstanding obligations under the Senior Secured Term Loans Agreement or the Schuldschein Loan Agreement. We expect that we would require third party financing to make an offer to purchase or repay, as applicable, the Existing Notes and the Notes and the Schuldschein Loan or to repay our outstanding obligations under the Senior Secured Term Loans Agreement upon a change of control. We cannot assure you that we would be able to obtain such financing. Our failure to repurchase or repay, as applicable, any or all of the Existing Notes and the Notes and the Schuldschein Loan would be an event of default under the Existing Indentures, the Indenture and the Schuldschein Loan Agreement, respectively, and would cause a cross default under the Senior Secured Term Loans Agreement. You should read the section titled "Description of the Notes—Purchase of Notes upon a Change of Control" for further information regarding the change of control provisions.

The change of control provisions contained in the Indenture may not protect you in the event of highly leveraged transactions and other important corporate events, including reorganizations, restructurings, recapitalizations, mergers or similar transactions that may adversely affect you, because these transactions may not involve a change in voting power or beneficial interest of the magnitude required to trigger the change of control provisions or, even if they do, may not constitute a "Change of Control" as defined in the Indenture.

Except as described under "Description of the Notes—Change of Control," the Indenture will not contain provisions that would require us to offer to repurchase or redeem the Notes in the event of a reorganization, restructuring, merger, recapitalization or similar transaction.

The definition of "Change of Control" under the Indenture will include a disposition to any person of "all or substantially all" of the assets of Lux I and its restricted subsidiaries taken as a whole. Although there is a limited body of case law interpreting the phrase "all or substantially all," there is no precise established definition of the phrase under applicable law. Accordingly, in certain circumstances, there may be a degree of uncertainty as to whether a particular transaction would involve a disposition of "all or substantially all" of the assets of Lux I and its restricted subsidiaries taken as a whole. As a result, it may be unclear as to whether a change of control has occurred and whether the Issuer is required to make an offer to repurchase the Notes.

Post-Closing Collateral—The Post-Closing Collateral will not initially secure the Notes.

When issued, the Notes will be guaranteed by the Guarantors, which represent 89.8% of the Parent's consolidated EBITDA before exceptionals for the year ended December 31, 2018 and hold 88.4% of the Parent's consolidated total assets as of December 31, 2018. Liens on Collateral to be granted by the Issuer and the Guarantors will (subject to certain limited exceptions) be granted on the Issue Date. We will agree in the Indenture to take such necessary actions so that no later than the dates so specified in the Indenture (generally 30 days after the Issue Date, but in the case of certain deposit control or security account control agreements and certain real property collateral, within 60 and 90 days after the Issue Date, respectively), certain additional collateral that secures the Senior Secured Term Loans Agreement, the Schuldschein Loan Agreement, the 2025 Senior Secured Notes, certain hedging liabilities and certain cash management liabilities will be granted to secure the Notes (the "**Post-Closing Collateral**"). See also "Description of the Collateral and the Guarantees," "Limitations on Validity and Enforceability of the Guarantees and the Security Interests" and "—Guarantees and Collateral limitations—The guarantees and pledges of Collateral will be subject to certain limitations on enforcement and may be limited by applicable laws or subject to certain defenses that may limit their validity and enforceability."

Finance Subsidiary Issuer—The Issuer is a finance company with no independent operations and is dependent on payments under the Notes Proceeds Loan to provide it with funds to meet its obligations under the Notes.

The Issuer is a wholly-owned finance company that conducts no business operations. It has limited assets, no subsidiaries and a limited ability to generate revenues. Upon completion of the Transactions, the only significant assets of the Issuer will be its rights under each of the Notes Proceeds Loan, the 2025 Senior Secured Notes Proceeds Loan, the Schuldschein Proceeds Loan and the Senior Secured Term Loans Euro Proceeds Loans made by it to IHL. The Issuer's material liabilities will include the Notes, the 2025 Senior Secured Notes, the Schuldschein Loan, the euro-denominated Senior Secured Term Loans, the guarantee of obligations under the dollar-denominated Senior Secured Term Loans, the 2024 IGH Notes and any additional debt it may incur in the future.

As such, the Issuer will be dependent upon payments from IHL in order to make any payments under the Notes. If IHL fails to make scheduled payments on the Notes Proceeds Loan, the 2025 Senior Secured Notes Proceeds Loan or the Senior Secured Term Loans Euro Proceeds Loans, it is not expected that the Issuer will have any other sources of funds that would allow it to make payments on its indebtedeness.

In addition, IHL is a holding company that conducts no independent business operations. The ability of our subsidiaries to make payments to IHL to fund payments on the Notes Proceeds Loan, the 2025 Senior Secured Notes Proceeds Loan, the Schuldschein Proceeds Loan and the Senior Secured Term Loans Proceeds Loans, and the ability of our subsidiaries to make upstream payments in general, will depend upon their cash flows and earnings which, in turn, will be affected by all of the factors discussed in these "Risk Factors" and elsewhere in this offering memorandum.

The payment of dividends and the making, or repayment, of loans and advances to IHL by IHL's direct subsidiaries and such payments by its indirect subsidiaries to their respective parent entities are subject to various restrictions. Existing and future debt of certain of these subsidiaries may prohibit the payment of dividends or the making, or repayment, of loans or advances to IHL or its parent entities. The terms of the Intercreditor Deed also restrict certain intra-group payments (other than payments under the Notes Proceeds Loan, the 2025 Senior Secured Notes Proceeds Loan, the

Schuldschein Proceeds Loan and the Senior Secured Term Loans Proceeds Loans). In addition, the ability of any of IHL's direct or indirect subsidiaries to make certain distributions may be limited by the laws of the relevant jurisdiction in which the subsidiaries are organized or located, including financial assistance rules, corporate benefit laws and other legal restrictions which, if violated, might require the recipient to refund unlawful payments.

Although the Existing Indentures, the Schuldschein Loan Agreement, and the Senior Secured Term Loans Agreement limit, and the Indenture will limit, the ability of IHL's subsidiaries to enter into future consensual restrictions on their ability to pay dividends and make other payments to IHL, there are significant qualifications and exceptions to these limitations. We cannot assure you that arrangements with IHL's subsidiaries and the funding permitted by the agreements governing existing and future indebtedness of IHL's subsidiaries will provide IHL with sufficient dividends, distributions or loans to fund payments on the Notes Proceeds Loan, the 2025 Senior Secured Notes Proceeds Loan, the Schuldschein Proceeds Loan and the Senior Secured Term Loan Euro Proceeds Loans when due. See "Description of Other Indebtedness" and "Description of the Notes."

Realization of Collateral—It may be difficult to realize the value of the Collateral securing the Notes.

The Collateral securing the Notes will be subject to any and all exceptions, defects, encumbrances, liens and other imperfections permitted under the Indenture. The existence of any such exceptions, defects, encumbrances, liens and other imperfections could adversely affect the value of the Collateral securing the Notes as well as the ability of the Trustee to realize or foreclose on such Collateral. Furthermore, the first-priority ranking of security interests can be affected by a variety of factors, including, among others, the timely satisfaction of perfection requirements, statutory liens or recharacterization under the laws of certain jurisdictions.

The security interests of the Security Trustee are subject to practical problems generally associated with the realization of security interests in the Collateral securing the Notes. For example, the Trustee or the Security Trustee may need to obtain the consent of a third party to enforce a security interest. We cannot assure you that the Trustee or the Security Trustee, as applicable, will be able to obtain any such consents. We also cannot assure you that the consents of any third parties will be given when required to facilitate a foreclosure on such assets. Accordingly, the Trustee or the Security Trustee may not have the ability to foreclose upon those assets and the value of the Collateral securing the Notes may significantly decrease.

Furthermore, under applicable law, a security interest in certain tangible and intangible assets can only be properly perfected, and its priority retained, through certain actions undertaken by the secured party and/or the grantor of the security. The liens in the Collateral securing the Notes may not be perfected with respect to the claims of the Notes if we or the Trustee or the Security Trustee fails or is unable to take the actions we are or it is required, as the case may be, to take to perfect any of these liens.

In addition, our business requires a variety of national, state and local permits and licenses. The continued operation of properties that comprise part of the Collateral and which depend on the maintenance of such permits and licenses may be prohibited. Our business is subject to regulations and permitting requirements and may be adversely affected if we are unable to comply with existing regulations or requirements or changes in applicable regulations or requirements. In the event of foreclosure, the transfer of such permits and licenses may be prohibited or may require us to incur significant cost and expense. Further, we cannot assure the holders of the Notes that the applicable governmental authorities will consent to the transfer of all such permits. If the regulatory approvals required for such transfers are not obtained or are delayed, the foreclosure may be delayed, a temporary shutdown of operations may result and the value of the Collateral may be significantly decreased.

Sufficiency of the Collateral—The Collateral may not be sufficient to secure the obligations under the Notes.

The Notes and the guarantees thereof granted under the Indenture are secured by security interests in the same Collateral that secures the obligations under the Senior Secured Term Loans, the 2025 Senior Secured Notes, the Schuldschein Loan, certain hedging liabilities and certain cash management liabilities. The Collateral may also secure additional debt to the extent permitted by the terms of the Indenture, the 2025 Senior Secured Notes Indenture, the Senior Secured Term Loans Agreement, the Schuldschein Loan Agreement and the Intercreditor Deed, including certain hedging obligations and cash management arrangements. Your rights as a holder of the Notes to the Collateral would be diluted by any increase in the first-priority debt secured by the Collateral or a reduction of the Collateral securing the Notes.

The value of the Collateral and the amount to be received upon a sale of such Collateral will depend upon many factors, including, among others, the ability to sell the Collateral in an orderly sale, the condition of the economies in which operations are located and the availability of buyers. The book value of the Collateral should not be relied on as a measure of realizable value for such assets. All or a portion of the Collateral may be illiquid and may have no readily ascertainable market value. Likewise, we cannot assure you that there will be a market for the sale of the Collateral, or, if such a market exists, that there will not be a substantial delay in its liquidation. In addition, the share pledges of an entity may be of no value if that entity is subject to an insolvency or bankruptcy proceeding. The Collateral is located in a number of countries, and the multi-jurisdictional nature of any foreclosure on the Collateral may limit the realizable value of the Collateral. The Collateral will be released in connection with an enforcement sale pursuant to the Intercreditor Deed.

Limitations on the value of the Collateral—The Notes will be secured only to the extent of the value of the assets that have been granted as security for the Notes.

If there is an event of default on the Notes, the holders of the Notes will be secured only to the extent of the value of the assets that have been granted as security for the Notes. Not all of the INEOS Group's assets secure the Notes. In addition, in the future, the obligations to provide additional guarantees and grant additional security over assets, whether as a result of the acquisition or creation of future assets or subsidiaries or otherwise, is subject to agreed security principles under the Indenture and, in certain circumstances, indirectly through the Senior Secured Term Loans Agreement and the Schuldschein Loan Agreement, subject to certain other agreed security principles. To the extent that lenders under the Senior Secured Term Loans and the Schuldschein Loan are granted security, the negative pledge in the Indenture may require such security to also be granted for the benefit of the holders of the Notes. The agreed security principles set forth in the Senior Secured Term Loans Agreement and the Schuldschein Loan Agreement contain a number of limitations on the rights of the lenders to be granted security in certain circumstances. The operation of the agreed security principles may result in, among other things, the amount recoverable under any Collateral provided being limited or security not being granted or perfected over a particular type or class of assets. Accordingly, the agreed security principles may affect the value of the security provided by the Issuer and the Guarantors.

To the extent that the claims of the holders of the Notes exceed the value of the assets securing the Notes and other obligations, those claims will rank equally with the claims of the holders of all other existing and future senior unsecured indebtedness ranking *pari passu* with the Notes. As a result, if the value of the assets pledged as security for the Notes is less than the value of the claims of the holders of the Notes, those claims may not be satisfied in full before the claims of certain unsecured creditors are paid.

Challenges to Collateral—The grant of Collateral to secure the Notes might be challenged or voidable in an insolvency proceeding.

The grant of Collateral in favor of the Security Trustee may be voidable by the grantor or by an insolvency trustee, liquidator, receiver or administrator or by other creditors, or may be otherwise set aside by a court, or be unenforceable if certain events or circumstances exist or occur, including, among others, if the grantor is deemed to be insolvent at the time of the grant, or if the grant permits the secured parties to receive a greater recovery than if the grant had not been given and an insolvency proceeding in respect of the grantor is commenced within a legally specified "clawback" period following the grant.

For example, if certain Collateral were secured after the Issue Date and the grantor of such security interest were to become subject to a bankruptcy or winding up proceeding after the Issue Date, then any mortgage or security interest in Collateral delivered after the Issue Date would face a greater risk than security interests in place on the Issue Date of being avoided by the grantor or by its trustee, receiver, liquidator, administrator or similar authority, or otherwise set aside by a court, as a preference under insolvency law. To the extent that the grant of any security interest is voided, you would lose the benefit of the security interest. See "Limitations on Validity and Enforceability of the Guarantees and the Security Interests."

Structural subordination—The Notes and each guarantee will be structurally subordinated to the liabilities and any preferred stock of the non-Guarantor subsidiaries.

Some, but not all, of our subsidiaries will guarantee the Notes. Unless a subsidiary is a Guarantor of the Notes, our subsidiaries do not have any obligation to pay amounts due on the Notes or to make funds available for that purpose. Accordingly, you should only rely on the guarantees of the Notes to provide credit support in respect of payments of principal or interest on the Notes.

Our operating subsidiaries are separate and distinct legal entities and those of our subsidiaries that do not guarantee the Notes have no obligation, contingent or otherwise, to pay any amounts due pursuant to the Notes or to make any funds available therefor, whether by dividends, loans, distributions or other payments, and do not guarantee the payment of interest on, or principal of, the Notes. Generally, claims of creditors of a non-Guarantor subsidiary, including trade creditors, and claims of any preferred stockholders of the subsidiary, will have priority with respect to the assets and earnings of the subsidiary over the claims of creditors of its parent entity, including claims against IHL by the Issuer under the Notes Proceeds Loan, the 2025 Senior Secured Notes Proceeds Loan, the Schuldschein Proceeds Loan and Senior Secured Term Loans Euro Proceeds Loans and by noteholders under the guarantees. In the event of any foreclosure, dissolution, winding-up, liquidation, reorganization, administration or other bankruptcy or insolvency proceeding of any of our non-Guarantor subsidiaries, the creditors of the Guarantors (including the holders of the Notes) will have no right to proceed against such subsidiary's assets and holders of their indebtedness and their trade creditors and preferred stockholders will generally be entitled to payment in full of their claims from the assets of those subsidiaries before any Guarantor, as direct or indirect shareholder, will be entitled to receive any distributions from such subsidiary. As such, the Notes, each guarantee, the Notes Proceeds Loan, the 2025 Senior Secured Notes Proceeds Loan, the Schuldschein Proceeds Loan and the Senior Secured Term Loans Euro Proceeds Loans are each structurally subordinated to the creditors (including trade creditors) and any preferred stockholders of our non-Guarantor subsidiaries.

Decisions regarding Collateral—Holders of the Notes will not control certain decisions regarding the Collateral.

No later than 30 days after the Issue Date or, in the case of certain deposit control account and security control account agreements and certain real property collateral, 60 and 90 days after the Issue Date, respectively, the Notes will be secured by the same Collateral that secures the Senior Secured Term Loans, the Schuldschein Loan and the 2025 Senior Secured Notes. In addition, under the terms of the Indenture, we will be permitted in the future to incur additional indebtedness and other obligations that may share in the liens on the Collateral securing the Notes and the liens on the collateral securing our other secured debt.

The Intercreditor Deed provides that a common security trustee, who will serve as the Security Trustee for the secured parties under the Senior Secured Term Loans Agreement, the Schuldschein Loan Agreement, the 2025 Senior Secured Notes Indenture and the Indenture will (subject to certain limited exceptions) act with respect to the Collateral only at the direction of creditors holding a simple majority of the aggregate amount of outstanding first-priority secured debt (including the Notes, any additional notes, the Senior Secured Term Loans, the 2025 Senior Secured Notes, the Schuldschein Loan, certain hedging liabilities, certain cash management liabilities and any other senior secured notes or credit facilities that are permitted to be issued under the Indenture and that the trustees or lenders in respect thereof accede to the Intercreditor Deed) and only such creditors will be able to instruct the Security Trustee to enforce the security. No noteholder will have any separate right to enforce or to require the enforcement of the Collateral. See "Description of Other Indebtedness—Intercreditor Deed." As a result, the holders of the Notes will not be able to force a sale of such Collateral or otherwise independently pursue the remedies of a secured creditor under the relevant security documents for so long as any amounts under any other first priority senior secured debt (including the debt outstanding under the Senior Secured Term Loans, the Schuldschein Loan, the 2025 Senior Secured Notes and any other senior secured notes or debt that are permitted to be issued under the Indenture, and that the trustees or lenders in respect thereof accede to, the Intercreditor Deed) remains outstanding in an amount equal to or greater than 50% of the aggregate principal amount of the total first-priority senior secured debt. The creditors under the Senior Secured Term Loans and the Schuldschein Loan and the holders of the 2025 Senior Secured Notes may have interests that are different from the interests of holders of the Notes and they may not elect to pursue their remedies under the security documents at a time when it would otherwise be advantageous for the holders of the Notes to do so.

In addition, if the Security Trustee sells the shares of our subsidiaries that have been pledged as Collateral through an enforcement of their security interest in accordance with the Intercreditor Deed, claims under the guarantees of the Notes by such subsidiaries and the liens over any other assets of such subsidiaries securing the Notes and the guarantees may be released. See "Description of Other Indebtedness—Intercreditor Deed" and "Description of the Notes—Security."

It is possible that disputes may occur between the holders of the Notes, the holders of the 2025 Senior Secured Notes, the lenders under the Schuldschein Loan Agreement and the lenders under the Senior Secured Term Loans Agreement as to the appropriate manner of pursuing enforcement remedies with respect to the Collateral. In such an event, the holders of the Notes will be bound by any decisions of the creditors holding a simple majority of the aggregate amount of outstanding first-priority secured debt (including the Notes, any additional notes, the 2025 Senior Secured Notes, the Senior Secured Term Loans, the Schuldschein Loan, certain hedging liabilities, certain cash management liabilities and any other senior secured notes or credit facilities that are permitted to be issued under the Indenture and that the trustees or lenders in respect thereof accede to the Intercreditor Deed), which may result in enforcement actions against the Collateral that are not approved by the holders of the Notes or that may be adverse to you. See "Description of Other Indebtedness—Intercreditor Deed."

Further, the security interests in the Collateral that will constitute security for the obligations of the Issuer under the Notes and the Indenture will not be granted directly to the holders of the Notes, but rather to the Security Trustee on behalf of the holders of the Notes. The Indenture will also operate so-called "Parallel Debt" obligations to satisfy a requirement under the laws of Belgium, Germany, Switzerland and France (and any other applicable jurisdictions with similar requirements) that the Security Trustee, as grantee of certain types of Collateral, be a creditor of the relevant security provider or, in regard to Germany, the secured claim. The Parallel Debt is in the same amount and payable at the same time as the obligations of the Issuer and the Guarantors under the Indenture and the Notes (the "Principal Obligations"). Any payment in respect of the Principal Obligations shall discharge the corresponding Parallel Debt and any payment in respect of the Parallel Debt shall discharge the corresponding Principal Obligations. Although the Security Trustee will have, pursuant to the Parallel Debt, a claim against the Issuer and the Guarantors for the full principal amount of the Notes, holders of the Notes bear some risks associated with a possible insolvency or bankruptcy of the Security Trustee. In addition, there is no assurance that such a structure will be effective before courts in the governing law jurisdictions of the security documents as there is no judicial or other guidance as to its efficacy, and therefore the ability of the Security Trustee to enforce the Collateral may be restricted. See "Limitations on Validity and Enforceability of the Guarantees and the Security Interests."

Release of Collateral and Guarantees—There are circumstances other than repayment or discharge of the Notes under which the Collateral securing the Notes and the guarantees will be released automatically and under which the guarantees will be released automatically, without your consent or the consent of the Trustee.

Under various circumstances, Collateral securing the Notes and the guarantees granted thereunder will be automatically and unconditionally released and discharged, including:

- in connection with any sale, assignment, transfer or other disposition of the property or assets to a Person that is not the Parent, a Parent Intermediate Holdco (as defined under "Description of the Notes—Certain Definitions"), Lux I or a Restricted Subsidiary (as defined under "Description of the Notes—Certain Definitions") or, subject to certain requirements, any other Person that is not the Issuer or a Guarantor, in each case, if the sale or other disposition does not violate the requirements described under "Description of the Notes—Certain Covenants—Limitation on Sale of Assets" or is otherwise permitted in accordance with the Indenture;
- if such Collateral is an asset of a Guarantor (other than the Parent any Parent Intermediate Holdco or Lux I) or any of its Subsidiaries (as defined under "Description of the Notes—Certain Definitions"), in connection with any sale, assignment, transfer or other disposition of capital stock of that Guarantor or Subsidiary (or of the capital stock of any direct or indirect parent company of such Guarantor or Subsidiary, in each case, other than the Parent, any Parent Intermediate Holdco, Lux I or the Issuer) as a result of which such Guarantor or such Subsidiary ceases to be a Restricted Subsidiary, if such sale, assignment, transfer or other disposition does not violate the requirements of the covenant set forth under "Description of the Notes—Certain Covenants—Limitation on Sale of Assets" or is otherwise permitted in accordance with the Indenture;
- in the case of any Guarantor that is released from its Guarantee (as defined under "Description of the Notes—Certain Definitions") pursuant to the terms of the Indenture, the Security Documents (as defined under "Description of the Notes—Certain Definitions"), the Intercreditor Deed or any additional intercreditor deed (which release shall be of the liens on the property and assets, and capital stock, of such Guarantor);

- in connection with any Permitted Receivables Financing (as defined in the "Description of the Notes—Certain Definitions"), which release shall be of the liens on receivable assets transferred in connection therewith;
- if Lux I designates any Restricted Subsidiary to be an Unrestricted Subsidiary in accordance with the applicable provisions of the Indenture (which release shall be of the liens on the property and assets, and capital stock, of such Subsidiary);
- upon legal defeasance, covenant defeasance or satisfaction and discharge of the Indenture as described under "Description of the Notes—Defeasance or Covenant Defeasance of Indenture" and "Description of the Notes—Satisfaction and Discharge";
- as described under "Description of the Notes—Modifications and Amendments" and "Description of the Notes—Certain Covenants—Limitation on Liens";
- in connection with an enforcement sale pursuant to or other sales contemplated and permitted by the Intercreditor Deed;
- upon written notice by the Issuer to the Trustee if the Collateral is intended to secure Indebtedness incurred under (i) certain capital lease obligations or purchase money obligations or other Indebtedness of the Parent (to the extent consistent with the covenant described under "Description of the Notes—Certain Covenants—Limitation on Parent and Parent Intermediate Holdcos Activities"), Lux I or any Restricted Subsidiary incurred for the purpose of funding all or a part of the acquisition, development, construction or improvement of real or personal, movable or immovable, property or assets (including Capital Stock) used or to be used in the business of Lux I and its Restricted Subsidiaries, or any refinancing of any such Indebtedness, or (ii) lines of credit, bilateral facilities, working capital or overdraft facilities or other operating facilities permitted to be incurred by the covenant described under "Description of the Notes—Certain Covenants—Limitation on Indebtedness"; *provided* that the Fair Market Value (as defined in "Description of the Notes—Certain Definitions") of all the property or assets released from liens under this clause (i) (excluding any portion thereof to the extent liens thereon subsequently granted in favor of the Security Trustee, for the benefit of the holders of the Notes, and with the Fair Market Value of any property or assets being measured at the time of the release and without giving effect to subsequent changes in value) does not exceed €50.0 million in the aggregate;
- in the case of any Escrowed Proceeds (as defined in "Description of the Notes—Certain Definitions"), in accordance with the release provisions set forth in the applicable security documents creating liens thereon;
- with respect to liens on any Proceeds Loan (as defined under "Description of the Notes—Certain Definitions"), upon the payment in full or other discharge of such Proceeds Loan;
- to release and/or re-take any lien on any Collateral to the extent otherwise permitted by the terms of the Indenture, the security documents governing the Collateral or the Intercreditor Deed or any additional intercreditor agreement;
- in connection with any merger, consolidation, sale, assignment, conveyance, transfer or other disposition made in compliance with the covenant described under "Description of the Notes—Certain Covenants—Consolidation, Merger, Sale of Assets";
- in accordance with the covenant described under "Description of the Notes—Certain Covenants—Impairment of Security Interests";

- upon the full and final payment and performance of all obligations of the Issuer under the Notes and the Indenture;
- in connection with a Permitted Reorganization (as defined in "Description of the Notes—Certain Definitions");
- in the case of a Guarantor that is released from its Guarantee pursuant to the terms of the Indenture, the release of the property and assets, and Capital Stock, of such Guarantor;
- in connection with any inventory financing or similar arrangements incurred pursuant to clause (22) of the definition of Permitted Indebtedness (as defined in "Description of the Notes—Certain Covenants—Limitation on Indebtedness") (which release shall be of the Liens on the inventory transferred in connection therewith);
- if the Lien granted in favor of each of the Senior Secured Credit Facilities, the Schuldschein Loan and the 2025 Senior Secured Notes and, to the extent applicable, the 2024 IGH Notes is released (only to the extent that there is no other Indebtedness secured by a Lien on the assets constituting such Collateral that would result in the requirement for the Notes and/or the Guarantees to be secured on such property or assets pursuant to the covenant described under the caption "Description of the Notes—Certain Covenants—Limitation on Liens", it being understood that the foregoing limitation will not be applicable to the extent that such Indebtedness is secured by a Permitted Lien, provided that, for the purposes of this provision only, clauses (a) and (bb) of the definition of "Permitted Liens" in the Description of the Notes shall not apply and clause (hh) of the definition of "Permitted Liens" in the Description of the Notes shall not apply to any Indebtedness that was outstanding on the Issue Date); and
- in connection with the funding of, or by, German pension trusts or in respect of sale and leaseback transactions funded directly or indirectly by any such pension trusts.

Under various circumstances, guarantees will be automatically and unconditionally released and terminated, including:

- with respect to any Guarantor that is a Restricted Subsidiary of Lux I (a "Subsidiary Guarantor"), in connection with any sale, assignment, transfer (including any transfer to certain joint ventures) or other disposition (including by way of merger or consolidation) of all or substantially all of the assets of such Subsidiary Guarantor (determined after giving effect to any substantially concurrent sales, assignments, transfers or other dispositions to Lux I, a Guarantor or a Restricted Subsidiary) to a person that is not (after giving effect to such transaction or any related transaction) Lux I, a Guarantor or a Restricted Subsidiary, if such sale, assignment, transfer or other disposition does not violate the requirements of the covenant set forth under "Description of the Notes—Certain Covenants—Limitation on Sale of Assets";
- with respect to any Subsidiary Guarantor, in connection with any sale, assignment, transfer (including any transfer to certain joint ventures) or other disposition of the capital stock of such Subsidiary Guarantor (or of the capital stock of any direct or indirect parent company of such Subsidiary Guarantor (other than the Parent, any Parent Intermediate Holdco, Lux I or the Issuer) that results in such Subsidiary Guarantor ceasing to be a Restricted Subsidiary, if such sale, assignment, transfer or other disposition does not violate the requirements of the covenant set forth under the heading "Description of the Notes—Certain Covenants—Limitation on Sale of Assets";
- with respect to any Subsidiary Guarantor, if such Subsidiary Guarantor is designated as an "Unrestricted Subsidiary" in accordance with the applicable provisions of the Indenture;

- with respect to any Guarantor, upon covenant defeasance as provided under "Description of the Notes—Defeasance or Covenant Defeasance of Indenture";
- with respect to any Guarantor, upon legal defeasance or satisfaction and discharge of the Indenture as provided under "Description of the Notes—Defeasance or Covenant Defeasance of Indenture" and "—Satisfaction and Discharge";
- with respect to any Guarantor, as described under "Description of the Notes—Consolidation, Merger, Sale of Assets," "—Certain Covenants—Limitation on Issuance of Guarantees of Indebtedness by Restricted Subsidiaries" and "—Modifications and Amendments";
- with respect to any Subsidiary Guarantor that is an Immaterial Subsidiary (as defined under "Description of the Notes—Certain Definitions"), upon written notice from Lux I to the Trustee so long as no Event of Default has occurred and is continuing;
- with respect to any Subsidiary Guarantor, upon written notice from Lux I to the Trustee, so long as no Event of Default has occurred and is continuing; *provided* that prior to or substantially concurrently with such release, such Subsidiary Guarantor is unconditionally released and discharged from its liabilities, if any, with respect to the Senior Secured Term Loans, the Schuldschein Loan, the 2025 Senior Secured Notes and the 2024 IGH Notes; *provided further* that, after giving effect to such release, the Consolidated EBITDA (as defined in the Senior Secured Term Loans Agreement) of the Guarantors is at least 85% of the Consolidated EBITDA of the Parent, Lux I and its Restricted Subsidiaries and the consolidated total assets of the Issuer and the Guarantors is at least 85% of the consolidated total assets of the Parent, Lux I and its Restricted Subsidiaries, in each case, calculated in accordance with, and in the manner provided by, the Senior Secured Term Loans Agreement as in effect on the Issue Date (but excluding the Consolidated EBITDA and consolidated total assets of any Project Finance Entity (as defined under "Description of the Notes—Certain Definitions") and INEOS Belgium (as defined under "Description of the Notes—Certain Definitions") and their respective subsidiaries);
- other than the Guarantee of the Company, to the extent that such Guarantor is released from its guarantee of the Senior Secured Credit Facilities, the Schuldschein Loan, the 2025 Senior Secured Notes and the 2024 IGH Notes; *provided* that no Event of Default has occurred and is continuing or would be caused thereby, the Notes have achieved Investment Grade status and no other Indebtedness is at that time guaranteed by the relevant Guarantor that would otherwise have given rise to a requirement to guarantee payment of the Notes pursuant to the covenant described under "Description of the Notes—Certain Covenants—Limitation on Issuance of Guarantees of Indebtedness by Restricted Subsidiaries" had the relevant Guarantor not already been a Guarantor;
- upon the full and final payment and performance of all obligations of the Issuer under the Notes and the Indenture; and
- with respect to any Guarantor, upon written notice from the Company to the Trustee, as part of any Permitted Reorganization (as defined under "Description of the Notes—Certain Definitions").

Post-petition interest—The value of the Collateral securing the Notes may not be sufficient to secure post-petition interest in the United States.

In the event of a bankruptcy, liquidation, dissolution, reorganization or similar proceeding against us in the United States, holders of the Notes will only be entitled to post-petition interest under the United States Bankruptcy Code to the extent that the value of their security interest in the

Collateral is greater than their pre-bankruptcy claim. Holders of the Notes that have a security interest in Collateral with a value equal or less than their pre-bankruptcy claim will not be entitled to post-petition interest under the United States Bankruptcy Code. No appraisal of the fair market value of the Collateral has been prepared in connection with this Offering and therefore the value of the noteholders' interest in the Collateral may not equal or exceed the principal amount of the Notes.

Controlling shareholders—The interests of our principal shareholders may conflict with your interests.

Messrs. Ratcliffe, Currie and Reece own INEOS Limited, our ultimate parent holding company. Mr. Ratcliffe controls INEOS Limited. Our controlling shareholder has power to elect all of the directors of our companies, to change their management, to approve any changes to their organizational documents, and to approve any acquisitions or dispositions. As a result, his actions can affect our strategic decisions, including the payment of dividends the size of which may change or increase from time to time and may not necessarily be in line with past practice, our legal and capital structure and our day-to-day operations. In addition, our principal shareholders may have an interest in pursuing acquisitions, divestitures or other transactions, including repurchases of our debt, on the open market or otherwise, that, in their judgment, could enhance their equity investment, even though these transactions might involve risks to you. In the event of a conflict of interest between you and our principal shareholders, their actions could affect our ability to meet our payment obligations to you.

Enforcement in multiple jurisdictions—Enforcing your rights as a noteholder or under the guarantees granted under the Indenture or security across multiple jurisdictions may prove difficult.

The Notes will be issued by the Issuer, a company incorporated under the laws of England and Wales, and will be guaranteed by the Guarantors, which are incorporated or organized under the laws of Belgium, England and Wales, Germany, Jersey, Luxembourg, Norway, Singapore, Switzerland, certain provinces of Canada and certain states in the United States. In the event of a bankruptcy, insolvency or similar event, proceedings could be initiated in Belgium, Canada, England and Wales, Germany, Jersey, Luxembourg, Norway, Singapore, Switzerland and certain states in the United States. Proceedings could also be initiated in France or Scotland to enforce noteholders' rights against Collateral located in France or Scotland. Such multi-jurisdictional proceedings are likely to be complex and costly for creditors and otherwise may result in greater uncertainty and delay regarding the enforcement of your rights. Your rights under the Notes, the guarantees and the Collateral will be subject to the insolvency and administrative laws of several jurisdictions and there can be no assurance that you will be able to effectively enforce your rights in such complex, multiple bankruptcy, insolvency or similar proceedings.

In addition, the bankruptcy, insolvency, administrative and other laws of the Guarantors' jurisdictions of organization may be materially different from, or in conflict with, each other and those of the United States, including in the areas of rights of creditors, priority of governmental and other creditors, ability to obtain post-petition interest and duration of the proceeding. The application of these laws, or any conflict among them, could call into question whether any particular jurisdiction's law should apply, adversely affect your ability to enforce your rights under the Notes, the guarantees and the security in those jurisdictions or limit any amounts that you may receive. See "Limitations on Validity and Enforceability of the Guarantees and the Security Interests" with respect to certain of the jurisdictions mentioned above.

Moreover, in certain jurisdictions, it is unclear whether all security interests in the Collateral give the Security Trustee a right to prevent other creditors from foreclosing on and realizing the Collateral or whether certain security interests only give the Security Trustee and the holders of the Notes priority (according to their rank) in the distribution of any proceeds of such realization. Accordingly, the Security Trustee and the holders of the Notes may not be able to avoid foreclosure by other creditors (including unsecured creditors) on the Collateral.

The laws of certain of the jurisdictions in which the Guarantors are organized limit the ability of these subsidiaries to guarantee debt of, or provide security for, other companies. See "Limitations on Validity and Enforceability of the Guarantees and the Security Interests."

Prior ranking security interests—Any creditors with prior ranking liens will have prior access to proceeds of certain Collateral and your rights to enforce your security over the Collateral are limited.

To the extent that holders of other secured debt or third parties enjoy liens (including statutory liens) or other prior ranking security interests, whether or not permitted by the Indenture, such holders or third parties may have rights and remedies with respect to certain Collateral securing the Notes and the guarantees that, if exercised, could reduce the proceeds available to satisfy the obligations under the Notes and the guarantees. In addition, certain security interests will, as a matter of local law, be granted as junior ranking security interests in relation to the security granted in respect of the Senior Secured Term Loans, the Schuldschein Loan and the 2025 Senior Secured Notes. The existing first-ranking liens securing the Senior Secured Term Loans, the Schuldschein Loan and the 2025 Senior Secured Notes that were created under Luxembourg, Scottish, Norwegian, New York and Jersey law will remain in place and will extend to secure the Notes. In some jurisdictions, the Security Documents creating the existing first-ranking liens securing the Senior Secured Term Loans, the Schuldschein Loan and the 2025 Senior Secured Notes will be amended to extend such liens to the Notes (or, with respect to French and certain of the German security, junior ranking security interests will be granted). The existing first-ranking liens securing the Senior Secured Term Loans, the Schuldschein Loan and the 2025 Senior Secured Notes that were created under English law and Singapore law will remain in place, and new liens over the same Collateral will be created in these jurisdictions to secure the Notes. In these jurisdictions where new liens are created, the ranking of these new liens relative to the existing liens will, as a matter of general law, depend on a number of factors, such as the nature of the liens, the order of creation of the liens, compliance with the jurisdiction's perfection requirements with respect to the liens and the order of giving notices with respect to the liens, and accordingly without the Intercreditor Deed, the new liens would be likely to rank after the existing liens. Therefore, you may not be able to recover on such security interests or, in respect of security interests under German law, accessory security interests, because the beneficiaries of the senior ranking security interests will have a prior claim to all proceeds from the enforcement of the same, although the Intercreditor Deed provides for certain *pari passu* rules of allocation agreed as between the parties to it. See the specific local law security interests described under "Description of the Collateral and the Guarantees—Summary of the Collateral and the Guarantees and Collateral for the Notes," "Limitations on Validity and Enforceability of Guarantees and the Security Interests" and "Description of Other Indebtedness—Intercreditor Deed."

Enforcement of French share pledges—Under the security interests governed by French law, you may be required to pay a "soulte" in the event you decide to enforce the pledges of the shares by judicial or contractual foreclosure of the Collateral consisting of shares of INEOS France SAS or INEOS Technologies France SAS rather than by a sale of such Collateral in a public auction.

The pledges over shares of French companies may be enforced at the option of the secured creditor either by a sale of the pledged shares in a public auction (the proceeds of the sale being paid to the secured creditors), by judicial foreclosure (*attribution judiciaire*) or by contractual foreclosure (*attribution conventionnelle*) of the shares to the secured creditor, following which the secured creditor is the legal owner of the pledged shares. A judge (in the context of a judicial foreclosure) or an expert (in the context of a contractual foreclosure pre-contractually agreed or appointed by a judge), will value the Collateral (in this case, the pledged shares) and if the value of the Collateral exceeds the amount of secured debt, the secured creditors may be required to pay the obligor a *soulte* equal to the difference between the value of the shares and the amount of the secured debt. This is true regardless of the actual amount of proceeds ultimately received by the secured creditors from a subsequent sale of the Collateral.

Consequently, in the event (i) the lenders under the Senior Secured Term Loans, the lenders under the Schuldschein Loan, the holders of the 2025 Senior Secured Notes or the holders of the Notes decide to, and are entitled to, enforce the share pledges over the shares of INEOS France SAS and INEOS Technologies France SAS through a judicial or contractual foreclosure and (ii) the value of such shares exceeds the amount of the secured debt, such lenders under the Senior Secured Term Loans, the lenders under the Schuldschein Loan, the holders of the 2025 Senior Secured Notes or the holders of the Notes may be required to pay to the pledgor a *soulte* equal to the amount by which the value of such shares exceeds the amount of secured debt.

If the value of such shares is less than the amount of the secured debt, the relevant amount owed to the relevant creditors will be reduced by an amount equal to the value of such shares, and the remaining amount owed to such creditors will be unsecured.

Security interests governed by French law may only secure payment obligations and may only be enforced following a payment default (including following acceleration) and up to the secured amount that is due and remaining unpaid.

Sufficiency of liens—We will not have the U.S. mortgage documents delivered at the Issue Date.

In order to ensure that each of the U.S. mortgage liens secures the obligations under the Notes, several of the mortgages already existing on the Issue Date may need to be amended and searches in the real property records where the owned U.S. real property is located may need to be conducted. There can be no assurance as of the Issue Date that, among other things, (i) the U.S. mortgages definitively secure the obligations under the Notes, (ii) the U.S. real property encumbered by each mortgage includes all of the relevant U.S. property that it was intended to include, (iii) we own the rights to the owned properties that we purport to own in each mortgage and that our title to such owned U.S. real property is not encumbered by liens not permitted by the Indenture and (iv) no encroachments, adverse possession claims, or other restrictions exist with respect to such owned U.S. real properties which could result in a material adverse effect on the value or utility of such owned U.S. real properties.

Value of Collateral—The Collateral is subject to casualty risks.

We intend to continue to maintain insurance or otherwise insure against hazards in the manner described in this offering memorandum. There are, however, certain losses that may be either uninsurable or not economically insurable, in whole or in part. Insurance proceeds may not compensate us fully for our losses. If there is a complete or partial loss of any of the Collateral, the insurance proceeds may not be sufficient to satisfy all of the secured obligations, including the Notes and the guarantees. In addition, even if there is sufficient insurance coverage, if there is a total or partial loss of certain Collateral, there may be significant delays in obtaining replacement Collateral.

Perfection of security interests—Your rights in the Collateral may be adversely affected by the failure to perfect security interests in the Collateral.

Under applicable law, a security interest in certain tangible and intangible assets can only be properly perfected, and its priority retained, through certain actions undertaken by the secured party or the grantor, as applicable, of the security. The liens in the Collateral securing the Notes may not be perfected with respect to the claims of the Notes if we or the Security Trustee fails or is unable to take the actions we are or it is required, as the case may be, to take to perfect any of these liens. In addition, applicable law requires that certain property and rights acquired after the grant of a general security interest, such as real property, equipment subject to a certificate and certain proceeds, can only be perfected at or promptly following the time such property and rights are acquired and identified.

The Trustee and the Security Trustee will not monitor, or we may not comply with our obligations to inform the Trustee or the Security Trustee of, any future acquisition of property and rights by us, and the necessary action may not be taken to properly perfect the security interest in such after-acquired property or rights. Such failure may result in the invalidity of the security interest in the Collateral or adversely affect the priority of the security interest in favor of the Notes against third parties. Neither the Trustee nor the Security Trustee has any obligation to monitor the acquisition of additional property or rights by us or the perfection of any security interest.

Guarantees and Collateral limitations—The guarantees and pledges of Collateral will be subject to certain limitations on enforcement and may be limited by applicable laws or subject to certain defenses that may limit their validity and enforceability.

The Indenture will provide that certain guarantees will be limited to the maximum amount that can be guaranteed by the relevant Guarantor without rendering the relevant guarantee voidable or otherwise ineffective under applicable law and enforcement of each guarantee would be subject to certain generally available defenses. These laws and defenses include those that relate to corporate benefit, fraudulent transfer or conveyance, voidable preference, financial assistance, corporate purpose, capital maintenance or similar laws, regulations or defenses affecting the rights of creditors generally. See "Limitations on Validity and Enforceability of the Guarantees and the Security Interests."

Although laws differ among various jurisdictions, in general, under fraudulent conveyance and other laws, a court could subordinate or void the guarantees and, if payment had already been made under a guarantee, require that the recipient return the payment to the relevant Guarantor, if the court were to find that:

- the relevant guarantee was incurred with actual intent to hinder, delay or defraud creditors or shareholders of the Guarantor or, in certain jurisdictions, even when the recipient was simply aware that the Guarantor was insolvent when it granted the relevant guarantee;
- the Guarantor did not receive fair consideration or reasonably equivalent value for the relevant guarantee and the Guarantor was: (i) insolvent or rendered insolvent because of the relevant guarantee; (ii) undercapitalized or became undercapitalized because of the relevant guarantee; or (iii) intended to incur, or believed that it would incur, indebtedness beyond its ability to pay at maturity;
- the relevant guarantees were held to exceed the corporate objects of the Guarantor or not to be in the best interests or for the corporate benefit of the Guarantor; or
- the amount paid or payable under the relevant guarantee was in excess of the maximum amount permitted under applicable law.

The measures of insolvency for purposes of fraudulent transfer laws vary depending upon applicable governing law. Generally, an entity would be considered insolvent if, at the time it incurred indebtedness:

- the sum of its debts, including contingent liabilities, is greater than the fair value of all its assets;
- the present fair saleable value of its assets is less than the amount required to pay the probable liability on its existing debts and liabilities, including contingent liabilities, as they become due; or
- it cannot pay its debts as they become due.

If a court were to find that the issuance of the Notes or a guarantee of the Notes was a fraudulent conveyance or held it unenforceable for any other reason, the court could hold that the payment obligations under the Notes or such guarantee are ineffective, or require the holders of the Notes to repay any amounts received with respect to the Notes or such guarantee. In the event of a finding that a fraudulent conveyance occurred, you may cease to have any claim in respect of the relevant Guarantor and would be a creditor solely of the Issuer and, if applicable, of the other Guarantors under any guarantees which have not been declared void.

Additionally, any future pledge of Collateral in favor of the Security Trustee, including pursuant to security documents delivered after the date of the Indenture, might be avoidable by the pledgor (as debtor-in-possession) or by its trustee in bankruptcy if certain events or circumstances exist or occur, including, among others, if the pledgor is insolvent at the time of the pledge, the pledge permits the holders of the Notes to receive a greater recovery than if the pledge had not been given and a bankruptcy proceeding in respect of the pledgor is commenced within 90 days following the pledge, or in certain circumstances, a longer period.

In addition, under the terms of the Indenture, we will be permitted in the future to incur additional indebtedness and other obligations that may share in the liens on the Collateral securing the Notes and the liens on the collateral securing our other secured debt. The granting of new security interests may require the releasing and retaking of security or otherwise create new hardening periods in certain jurisdictions. The applicable hardening period for these new security interests will run from the moment each new security interest has been granted or perfected. At each time, if the security interest granted or recreated were to be enforced before the end of the respective hardening period applicable in such jurisdiction, it may be declared void or ineffective or it may not be possible to enforce it. Further, certain security documents governing the security interests granted by the Guarantors will provide that the amounts guaranteed by such security interests will be limited to the extent of the amount guaranteed by such Guarantor. Therefore, limitations in the guarantees will also serve to limit the amounts guaranteed by the pledges of Collateral.

Insolvency laws—Relevant insolvency laws in England, Luxembourg and other jurisdictions may provide you with less protection than U.S. bankruptcy law.

We and certain of the Guarantors are incorporated under the laws of England and Wales. Therefore, any insolvency proceedings by or against the Issuer or such Guarantors would likely be based on English insolvency laws. IGH and certain of the other Guarantors are incorporated under the laws of Luxembourg. Therefore, any insolvency proceedings by or against IGH or such other Guarantors would likely be based on Luxembourg insolvency laws. The other Guarantors are incorporated or organized or have assets located in Belgium, Canada, France, Germany, Jersey, Norway, Scotland, Singapore, Switzerland and the United States. See “Limitations on Validity and Enforceability of the Guarantees and the Security Interests” for a description of the insolvency laws in Luxembourg, Belgium, Canada, England and Wales, France, Germany, Jersey, Norway, Scotland, Singapore, Switzerland and the United States, which could limit the enforceability of the guarantees and the security interests.

The procedural and substantive provisions of the insolvency laws in many of the jurisdictions in which the Guarantors are organized are generally more favorable to secured creditors than comparable provisions of U.S. law and afford debtors and unsecured creditors only limited protection from secured creditors. The lenders under the Senior Secured Term Loans, the lenders under the Schuldschein Loan and the holders of the 2025 Senior Secured Notes have, and the holders of the Notes will have, first ranking security on substantially all of the assets of IHL and substantially all of the assets of the Guarantors. As a result, after the enforcement of the assets securing the Senior Secured Term Loans, the Schuldschein Loan, the 2025 Senior Secured Notes or the Notes, the Senior Security Agent (as defined in the Intercreditor Deed) at the request of the senior creditors under the Intercreditor Deed whose senior credit participations constitute the simple majority in aggregate principal amount of the total senior credit participations will have effective control of and the right to direct the disposition of the assets of IHL and those subsidiaries.

In the event that any one or more of the Issuer, the Guarantors, any future Guarantors, if any, or any other of our subsidiaries experienced financial difficulty, it is not possible to predict with certainty in which jurisdiction or jurisdictions insolvency or similar proceedings would be commenced, or the outcome of such proceedings. Guarantees and security provided by entities organized in jurisdictions not discussed in this offering memorandum are also subject to material limitations pursuant to their terms, by statute or otherwise. Any enforcement of the guarantees or security after bankruptcy or an insolvency event in such other jurisdictions will be subject to the insolvency laws of the relevant entity's jurisdiction of organization or other jurisdictions. The insolvency and other laws of each of these jurisdictions may be materially different from, or in conflict with, each other, including in the areas of rights of secured and other creditors, the ability to void preferential transfer, priority of governmental and other creditors, ability to obtain post-petition interest and duration of the proceeding. The application of these laws, or any conflict among them, could call into question whether any particular jurisdiction's laws should apply, adversely affect your ability to enforce your rights under the guarantees or the security in these jurisdictions and limit any amounts that you may receive.

Enforcement of civil liabilities—You may not be able to recover in civil proceedings for U.S. securities law violations.

We and most of the Guarantors are companies incorporated outside the United States. Most of our directors and executive officers and the directors and executive officers of the Guarantors are non-residents of the United States. Although we and the Guarantors have submitted to the jurisdiction of certain New York courts in connection with any action under U.S. securities laws, you may be unable to effect service of process within the United States on our directors and executive officers or the directors and executive officers of the Guarantors. In addition, as most of our assets and those of our directors and executive officers are located outside of the United States, you may be unable to enforce against them judgments obtained in the U.S. courts predicated upon civil liability provisions of the Federal securities laws of the United States. In addition, we have been informed that it is questionable whether certain non-U.S. courts would accept jurisdiction and impose civil liability if proceedings were commenced in such non-U.S. jurisdictions predicated solely upon U.S. Federal securities laws. See "Service of Process and Enforcement of Judgments."

Lack of public market—There may not be an active trading market for the Notes, in which case your ability to sell your Notes may be limited.

There is no existing market for the Notes. We cannot assure you as to:

- the liquidity of any market in the Notes;
- your ability to sell your Notes; or
- the prices at which you would be able to sell your Notes.

The initial purchasers of the Notes have informed us that they intend to make a market in the Notes after completing this Offering. However, the initial purchasers are not obligated to make a market in the Notes and may cease market-making at any time. In addition, changes in the overall market for high yield securities and changes in our financial performance or in the markets where we operate may adversely affect the liquidity of the trading market in these Notes and the market price quoted for these Notes. As a result, we cannot assure you that an active trading market will actually develop for these Notes.

Historically, the markets for non-investment grade debt such as the Notes have been subject to disruptions that have caused substantial volatility in their prices. Future trading prices for the Notes will depend on many factors, including, among other things, prevailing interest rates, our operating results and the market for similar securities. The market, if any, for the Notes may be subject to similar disruptions. Any disruptions may have an adverse effect on the holders of the Notes, regardless of our prospects and financial performance. As a result, there is no assurance that there will be an active trading market for the Notes. If no active trading market develops, you may not be able to resell your holding of the Notes at a fair value, if at all.

Although an application will be made for the Notes to be listed on the Official List of the Luxembourg Stock Exchange and admitted to trading on the Euro MTF market, we cannot assure you that the Notes will become or remain listed. Although no assurance is made as to the liquidity of the Notes as a result of the admission to trading on the Euro MTF market, failure to be approved for listing or the delisting of the Notes, as applicable, from the Official List may have a material effect on a holder's ability to resell the Notes in the secondary market.

In addition, the Indenture will allow the Issuer to issue additional Notes in the future which could adversely impact the liquidity of the Notes.

Transfer of the Notes—The transfer of the Notes is restricted.

The Notes and the guarantees thereof have not been registered under the Securities Act or the securities laws of any jurisdiction and, unless so registered, may not be offered or sold except pursuant to an exemption from, or transaction not subject to, the registration requirements of the Securities Act and any other applicable laws. See "Notice to Investors." We have not agreed to or otherwise undertaken to register the Notes, and neither we nor the Issuer have any intention to do so. In addition, by acceptance of delivery of any Notes, the holder thereof agrees on its own behalf and on behalf of any investor account for which it has purchased the Notes that it shall not transfer the Notes in an aggregate principal amount of less than €100,000. It is your obligation to ensure that your offers and sales of Notes comply with these transfer restrictions and applicable law.

Book-entry interests—Certain considerations relating to book-entry interests.

Unless and until Notes in definitive registered form, or Definitive Registered Notes, are issued in exchange for book-entry interests, owners of book-entry interests will not be considered owners or holders of the Notes. The common depositary for Euroclear and Clearstream (or its nominee) will be the sole holder of the global notes representing the Notes. After payment to the common depositary, the Issuer will have no responsibility or liability for the payment of interest, principal or other amounts to the owners of book-entry interests. Accordingly, if you own a book-entry interest, you must rely on the procedures of Euroclear or Clearstream, as applicable, and if you are not a participant in Euroclear or Clearstream, on the procedures of the participant through which you own your interest, to exercise any rights of a holder under the Indenture. See "Book-Entry; Delivery and Form."

Unlike the holders of the Notes themselves, owners of book-entry interests will not have the direct right to act upon the Issuer's solicitations for consents, requests for waivers or other actions from holders of the Notes. Instead, if you own a book-entry interest, you will be permitted to act only to the extent you have received appropriate proxies to do so from Euroclear or Clearstream. There can be no assurance that procedures implemented for the granting of such proxies will be sufficient to enable you to vote on any consents, requests for waivers or other actions on a timely basis.

Similarly, upon the occurrence of an Event of Default under the Indenture, unless and until Definitive Registered Notes are issued in respect of all book-entry interests, if you own a book-entry interest, you will be restricted to acting through Euroclear or Clearstream. The Issuer cannot assure you that the procedures to be implemented through Euroclear or Clearstream will be adequate to ensure the timely exercise of rights under the Notes. See "Book-Entry; Delivery and Form."

Foreign currency exchange risks—You may face currency exchange risks by investing in the Notes.

The Notes are denominated and payable in euro. If you measure your investment returns by reference to a currency other than the euro, investment in such Notes entails foreign currency exchange-related risks due to, among other factors, possible significant changes in the value of the euro relative to the currency you use to measure your investment returns, caused by economic, political and other factors which affect exchange rates and over which we have no control. Depreciation of the euro against the currency by reference to which you measure your investment returns would cause a decrease in the effective yield of the Notes below their stated coupon rates and could result in a loss to you when the return on the Notes is translated into the currency by reference to which you measure your investment returns. There may be tax consequences for you as a result of any foreign currency exchange gains or losses resulting from your investment in the Notes. You should consult your tax advisor concerning the tax consequences to you of acquiring, holding and disposing of the Notes.

Interest rate risks—Certain of our borrowings bear interest at floating rates that could rise significantly, increasing our interest cost and reducing cash flow.

A substantial part of our indebtedness, including borrowings under the Senior Secured Term Loans Agreement, bears or will bear interest at per annum rates equal to EURIBOR, LIBOR and similar benchmarks, in each case adjusted periodically, plus a spread. Furthermore, we may incur additional indebtedness that bears interest at a floating rate. These interest rates could rise significantly in the future, thereby increasing our interest expenses associated with these obligations, reducing cash flow available for capital expenditures and hindering the Issuer's ability to make payments on the Notes.

Changes or uncertainty in respect of LIBOR or other interest rate benchmarks may affect our sources of funding.

Some of our sources of funding are linked to LIBOR. See "Description of Other Indebtedness—Senior Secured Term Loans". Various interest rate benchmarks (including LIBOR) are the subject of recent national and international regulatory guidance and proposals for reform. Some reforms are already effective while others are still to be implemented including the EU Benchmarks Regulation (Regulation (EU) 2016/1011) (the "Benchmarks Regulation"). In addition, the sustainability of LIBOR has been questioned by the U.K. Financial Conduct Authority ("FCA") as a result of the absence of relevant active underlying markets and possible disincentives (including possibly as a result of regulatory reforms) for market participants to continue contributing to such benchmarks. On July 27, 2017, the FCA announced that it will no longer persuade or compel banks to submit rates for the calculation of the LIBOR rates after 2021 (the "FCA July Announcement"). In addition, on November 29, 2017, the Bank of England and the FCA announced an initiative to catalyze a broad transition to the Sterling Over Night Index Average rate ("SONIA") across sterling bond, loan and derivatives markets so that SONIA is established as the primary sterling interest rate benchmark by the end of 2021 (the "FCA November Announcement" and, together with the FCA July Announcement, the "FCA Announcements"), which could cause benchmarks such as LIBOR to disappear entirely, to perform differently than in the past (as a result of a change in methodology or otherwise), create disincentives for market participants to continue to administer or participate in certain benchmarks or have other consequences which cannot be predicted. On April 23, 2018, the Bank of England took over administration of SONIA and issued a series of reforms as part of its implementation as a replacement to LIBOR. From April 2018, the Bank of England has been setting the interest rate benchmark using SONIA. It is not possible to predict the effect of the FCA Announcements, any changes in the methods pursuant to which the LIBOR rates are determined and any other reforms to LIBOR, including to the rules promulgated by the FCA in relation thereto, that will be enacted in the UK and elsewhere, which may adversely affect the loan and bond markets in respect of LIBOR-based debt instruments, or result in the phasing out of LIBOR as a reference rate for debt instruments. In addition, any changes announced by the FCA (including the FCA Announcements), ICE Benchmark Administration Limited as independent administrator of LIBOR or any other successor governance or oversight body, or future change adopted by such body, in the method pursuant to which the LIBOR rates are determined may result in a sudden or prolonged increase or decrease in the reported LIBOR rates.

More generally, any of the above matters or any other significant change to the setting or existence of LIBOR or other interest rate benchmarks could affect the ability of amounts available to us to meet our obligations under our sources of funding and/or could have a material adverse effect on the value or liquidity of, and the amount payable under, our sources of funding, including our ability to make payments on the Notes. Changes in the manner of administration of LIBOR or other interest rate benchmarks could result in adjustment to the conditions applicable to our sources of funding or other consequences as relevant to our sources of funding including, without limitation, early redemption, discretionary valuation, delisting or other consequences. No assurance can be provided that relevant changes will not be made to LIBOR or any other relevant benchmark rate and/or that such benchmarks will continue to exist. Furthermore, under the Senior Secured Term Loans Agreement, the administrative agent and the Borrower are required to endeavor to establish an alternate rate of interest to LIBOR in certain circumstances such as when the administrative agent determines that LIBOR is not available or if the supervisor for the administrator of LIBOR or a governmental authority having jurisdiction over the administrative agent publicly announces a specific date after which LIBOR shall no longer be used for determining interest rates for loans denominated in the applicable currency.

The Group may incur additional indebtedness, which indebtedness could increase its leverage and may have terms that are more or less favorable than the terms of the Group's existing indebtedness.

The Group or its subsidiaries may incur substantial additional debt. Prior to the maturity of the Notes, we will be required to refinance or repay certain other debt, including our obligations under the Senior Secured Term Loans Agreement and the Existing Indentures. In connection with the Group's financial strategy, the Group continually evaluates different financing alternatives, and the Group may decide to enter into new credit facilities, access the debt capital markets or incur other indebtedness from time to time. Any such offering or incurrence of debt will be made at the Group's election or the election of its relevant subsidiaries, and if such debt is in the form of securities, would be offered and sold pursuant to, and on the terms described in, an additional offering memorandum. The interest rate with respect to any such additional debt will be set at the time of the pricing or incurrence of such debt and may be less than or greater than the interest rate applicable to the Group's existing debt, including, in the case of a refinancing, the debt that is being refinanced, which would have a corresponding effect on the Group's cash interest expense on a *pro forma* basis. In addition, the maturity date of any such additional debt will be set at the time of pricing or incurrence of such debt and may be earlier or later than the maturity date of the Group's existing debt. The other terms of such additional debt would be as agreed with the relevant lenders or holders thereof and could be more or less favorable than the terms of the Group's existing indebtedness. There can be no assurance that the Group will elect to raise any such additional debt or that any effort to raise such debt will be successful, and there can be no assurance as to the timing of such offering or incurrence, the amount or terms of any such additional debt. If the Group incurs new debt in addition to its current debt, the related risks that the Group now faces, even in a refinancing transaction, as described above and elsewhere in these "Risk Factors," could intensify. If we are unable to obtain new debt financing as needed, we would have to consider other options, such as selling assets; restructuring all or a portion of our debt before maturity; obtaining additional equity capital; foregoing opportunities such as acquisitions; or reducing or delaying our business activities and capital investments.

THE TRANSACTIONS

On April 8, 2019, we issued a conditional redemption notice with respect to the outstanding 2023 Senior Secured Notes. We expect the redemption date for such 2023 Senior Secured Notes to be May 1, 2019, or if the Refinancing Condition (as defined below) is not satisfied or waived by April 30, 2019, the Business Day following the satisfaction of the Refinancing Condition, but no later than June 7, 2019. The redemption of the 2023 Senior Secured Notes (the "Redemption") is conditional upon the completion of one or more financing transactions by the Issuer for the purpose of redeeming the 2023 Senior Secured Notes, which financing transactions must be reasonably satisfactory to the Issuer in its discretion (the "Refinancing Condition"). We intend to use the proceeds from the Notes offered hereby to redeem the 2023 Senior Secured Notes in full. See "Use of Proceeds". From the Issue Date until the date that the 2023 Senior Secured Notes are redeemed in full and the 2023 Senior Secured Notes Indenture is satisfied and discharged (on or about May 1, 2019), the 2023 Senior Secured Notes will remain outstanding and will rank pari passu with the Notes and will be secured by the same collateral securing the Notes.

The Redemption and the Offering are collectively referred to herein as the "Transactions".

We are carrying out the Transactions in order to improve our liquidity. Please see "Description of Other Indebtedness".

USE OF PROCEEDS

The gross proceeds from the sale of the Notes are expected to be €770 million. The proceeds of the Notes offered hereby, together with cash on hand, will be applied in permanent repayment of 2023 Senior Secured Notes in the aggregate principal amount of €770 million and to pay the related transaction fees and expenses.

Sources and Uses

The following table sets forth the expected estimated sources and uses of funds with respect to the Transactions. Actual amounts are subject to adjustments and may vary from estimated amounts depending on several factors, including differences from our estimates of fees and other expenses. Any changes in these amounts may be reflected as an increase or decrease, as applicable, in the amount of cash on balance sheet used.

Sources of Funds	(€ in millions)	Uses of Funds	(€ in millions)
Notes offered hereby	770.0	Prepayment of the 2023 Senior Secured Notes	770.0
Cash on hand	15.2	Estimated transaction fees and expenses(1)	15.2
Total sources	785.2	**Total uses**	785.2

(1) Includes underwriting discounts, fees and expenses and the prepayment premium payable with respect to the prepayment of 2023 Senior Secured Notes in the aggregate principal amount of €770 million.

CAPITALIZATION

The following table sets forth our cash and cash equivalents and consolidated capitalization as of December 31, 2018, and on an adjusted basis after giving *pro forma* effect to the Transactions, the February 2019 Dividend and the Schuldschein Loan, as if they had taken place on December 31, 2018. This table should be read in conjunction with "Presentation of Financial and Non-IFRS Information," "Use of Proceeds," "Operating and Financial Review and Prospects," "Description of Other Indebtedness" and the consolidated financial statements of INEOS Group Holdings S.A. and related notes thereto included elsewhere in this offering memorandum.

Actual amounts may vary from estimated amounts depending on several factors, including differences from our estimate of fees and expenses, fluctuations in cash on hand between December 31, 2018, and the Issue Date and fluctuations in applicable exchange rates.

	At December 31, 2018	
	Actual[1]	**As Adjusted[1]**
	(€ in millions)	
Cash and cash equivalents[2]	**2,071.3**	**746.1[3]**
Loans and borrowings[4]		
Senior Secured Term Loans[5]	3,476.7	3,476.7
2023 Senior Secured Notes	770.0	—
2025 Senior Secured Notes	550.0	550.0
2024 IGH Notes[6]	1,087.3	1,087.3
Notes offered hereby	—	770.0
Securitization Program	287.8	287.8
Köln CoGen Facility	120.0	120.0
Noretyl Facility	27.5	27.5
Schuldschein Loan[7]	—	141.0
Other[8]	12.6	12.6
Total loans and borrowings	**6,331.9**	**6,472.9**
Total equity	**2,917.5**	**1,467.5**
Total capitalization[9]	**9,249.4**	**7,940.4**

(1) Unless otherwise indicated, euro equivalents of U.S. dollar amounts are translated at an exchange rate of $1.1434 per €1.00, which is the exchange rate used for our balance sheet as of December 31, 2018. The Bloomberg Composite Rate on April 5, 2019 was $1.1218 per €1.00.

(2) Includes restricted cash used as collateral against bank guarantees and letters of credit. As of December 31, 2018, the outstanding amount of such obligations was €223.9 million.

(3) Includes the effect of the February 2019 Dividend and net proceeds from the drawdown of the Schuldschein Loan, as well as the use of cash on hand to pay estimated fees and expenses in connection with the Transactions. Excludes the effect of the cash received by the Group in March 2019, related to the redemption of its preferential interest in INEOS Investments Partnership (the successor to INEOS Investments LLP) in connection with the sale of the assets of the partnership to affiliates, that was then paid as a dividend to INEOS Holdings Luxembourg S.A. on April 2, 2019.

(4) For purposes of this table, amounts presented are gross of unamortized debt issuance costs.

(5) Represents €2,039.4 million and $1,643.4 million aggregate principal amount of Senior Secured Term Loans, with a carrying value of €3,476.7 million-equivalent of Senior Secured Term Loans denominated in euro and dollars, with the dollar-denominated Senior Secured Term Loans translated at an exchange rate of $1.1434 per €1.00 as of December 31, 2018.

(6) Represents $500 million principal amount of dollar-denominated 2024 IGH Notes, translated at an exchange rate of $1.1434 per €1.00 and €650 million principal amount of euro-denominated 2024 IGH Notes.

(7) Represents the aggregate principal amount under the Schuldschein Loan Agreement.

(8) Reflects finance lease liabilities and other loans.

(9) Total capitalization includes total loans and borrowings and total equity.

SELECTED CONSOLIDATED FINANCIAL INFORMATION

The following tables present the summary consolidated financial information and other financial information of INEOS Group Holdings S.A. as of and for each of the years ended December 31, 2018, 2017 and 2016, which have been extracted from (i) with respect to the information as of and for the year ended December 31, 2018, the audited consolidated financial statements of INEOS Group Holdings S.A. as of and for the year ended December 31, 2018, (ii) with respect to the information as of and for the year ended December 31, 2017, the audited consolidated financial statements of INEOS Group Holdings S.A. as of and for the year ended December 31, 2017 and (iii) with respect to the information as of and for the year ended December 31, 2016, the audited consolidated financial statements of INEOS Group Holdings S.A. as of and for the year ended December 31, 2016 unless indicated otherwise, in each case, included elsewhere in this offering memorandum. Such consolidated financial statements of INEOS Group Holdings S.A. were prepared in accordance with IFRS and have been audited by PricewaterhouseCoopers, *Société coopérative.*

You should read the information summarized below in conjunction with the information contained in "Presentation of Financial and Non-IFRS Information," "Use of Proceeds," "Capitalization," "Operating and Financial Review and Prospects," and the consolidated financial statements and the related notes to the financial statements of INEOS Group Holdings S.A. included elsewhere in this offering memorandum.

	For the year ended December 31,		
	2018	2017	2016
	(€ in millions)		
Income Statement:			
Revenue	**16,091.5**	**15,210.4**	**12,609.9**
Total cost of sales	(13,665.8)	(12,524.2)	(10,141.1)
Gross profit	**2,425.7**	**2,686.2**	**2,468.8**
Distribution costs	(215.0)	(206.5)	(195.3)
Total Administrative expenses	(392.1)	(418.6)	(406.9)
Operating profit	**1,818.6**	**2,061.1**	**1,866.6**
Share of (loss)/profit of associates and jointly controlled entities using the equity accounting method	(66.6)	143.5	29.3
Profit on disposal of fixed assets	—	2.6	3.7
Profit before net finance costs	**1,752.0**	**2,207.2**	**1,899.6**
Net finance (costs)/income	(277.8)	92.6	(326.0)
Profit before tax from continuing operations	**1,474.2**	**2,299.8**	**1,573.6**
Tax charge	(278.9)	(301.5)	(340.2)
Profit for the period from continuing operations	**1,195.3**	**1,998.3**	**1,233.4**

	For the year ended December 31,		
	2018	2017	2016
	(€ in millions)		
Summary Statement of Cash Flows:			
Cash flows provided by/(used in):			
Operating activities	2,050.4	2,187.5	2,278.2
Investing activities	(1,040.5)	(745.5)	(723.8)
Financing activities	(367.9)	(2,143.0)	(1,087.5)

	As of December 31,		
	2018	2017	2016
	(€ in millions)		
Summary Balance Sheet:			
Property, plant and equipment	5,046.3	4,255.4	4,007.4
Cash and cash equivalents	2,071.3	1,366.3	2,204.1
Working capital(1)	2,946.1	2,123.7	3,003.0
Total assets	12,586.5	11,048.2	11,358.5
Total equity(2)	2,917.5	1,696.8	430.1
Total interest-bearing loans and borrowings(3)	6,302.6	6,157.9	8,020.1
Total Indebtedness(4)	6,331.9	6,193.0	8,066.9
Net debt(5)	4,260.6	4,826.7	5,862.8

	For the year ended December 31,		
	2018	2017	2016
	(€ in millions)		
Other Financial Information:			
EBITDA before exceptionals(6)	2,287.8	2,529.4	2,330.8
Depreciation, amortization and impairment	469.2	468.3	442.9
Net cash interest expense(7)	204.3	264.9	362.4
Capital expenditures(8)	1,173.5	914.6	691.9

(1) Working capital represents net current assets (current assets less current liabilities).

(2) Total equity excludes non-controlling interests.

(3) Total interest-bearing loans and borrowings represents net loans and borrowings after deducting debt issuance costs as presented in note 19 to the audited consolidated financial statements of INEOS Group Holdings S.A. as of and for the year ended December 31, 2018, included elsewhere in this offering memorandum.

(4) Total indebtedness represents long-term debt plus short-term debt, including finance lease obligations before deduction of unamortized debt issuance costs. Under IFRS, debt issuance costs are deducted from the related debt amounts for the purposes of balance sheet presentation and are amortized over the life of the debt.

(5) Net debt represents total indebtedness less cash and cash equivalents.

(6) EBITDA before exceptionals represents operating profit before depreciation, amortization and impairment and exceptional items. In accordance with IFRS, we use both the FIFO and weighted average cost methods of accounting for purposes of determining our inventory cost in connection with the preparation of our audited annual consolidated financial information. EBITDA before exceptionals is based on the FIFO and weighted average cost methods of accounting for inventory used in connection with the preparation of such financial information. EBITDA before exceptionals is derived from income statement line items calculated in accordance with IFRS on a historical cost basis. Although our EBITDA-based measures should not be considered a substitute measure for operating profit, profit, cash flows from operating activities or other measures of performance as defined by IFRS, we believe that they provide useful information regarding our ability to meet future debt service requirements. The EBITDA-based measure presented may not be comparable to similarly titled measures used by other companies. See "Presentation of Financial and Non-IFRS Information."

The reconciliation of INEOS' operating profit to EBITDA before exceptionals is as follows:

	For the year ended December 31,		
	2018	2017	2016
Operating profit	1,818.6	2,061.1	1,866.6
Depreciation, amortization and impairment	469.2	468.3	442.9
Exceptional administrative expenses[(a)]	—	—	21.3
EBITDA before exceptionals	2,287.8	2,529.4	2,330.8

(a) Represents exceptional restructuring costs due to the cessation of new licensing activities and other restructuring within the Technologies business in 2016 primarily relating to severance and early retirement costs, included in administrative expenses.

(7) Net cash interest expense comprises interest payable on notes, interest payable on bank loans and overdrafts and interest payable on securitization, less interest income on bank balances.

(8) Capital expenditures represents payments to acquire property, plant and equipment as recorded on the consolidated cash flow statements for the periods indicated.

OPERATING AND FINANCIAL REVIEW AND PROSPECTS

The following discussion is based upon the consolidated financial statements of INEOS Group Holdings S.A. and should be read in conjunction with the consolidated financial statements of INEOS Group Holdings S.A. and related notes thereto included elsewhere in this offering memorandum. The consolidated financial statements of INEOS Group Holdings S.A. have been prepared in accordance with IFRS. The consolidated financial statements of INEOS Group Holdings S.A. as of and for each of the years ended December 31, 2018, December 31, 2017 and December 31, 2016 have been audited by PricewaterhouseCoopers, Société coopérative.

The following discussion contains forward-looking statements that reflect our plans, estimates and beliefs. Our actual results could differ materially from those discussed in these forward-looking statements. Factors that could cause or contribute to these differences include, but are not limited to, those discussed below and elsewhere in this offering memorandum, particularly in "Risk Factors" and "Forward-Looking Statements."

Overview

We are one of the world's largest chemical companies as measured by revenue. Our business has highly integrated, world-class chemical facilities and production technologies. We have leading global market positions for a majority of our key products and a strong and stable customer base. We operate 33 manufacturing sites in six countries throughout the world. We are led by a highly experienced management team with, on a combined basis, over 100 years of experience in the chemical industry. As of December 31, 2018 our total chemical production capacity was approximately 21,900 kta, of which 59% was in Europe and 41% was in North America.

We operate our business through three segments: Olefins & Polymers Europe, Olefins & Polymers North America and Chemical Intermediates. The products we manufacture are derived from crude oil and natural gas, and include olefins, polymers and various petrochemical products directly or indirectly derived from olefins. Our products serve a broad and diverse range of end markets, including packaging, construction, automotive, white goods/durables, agrochemicals and pharmaceuticals.

Our highly integrated, world class production facilities and technological know-how allow us to process raw materials into higher value added products. In Europe we own two sites integrated with crackers and polymer units. Typically, these two sites account for approximately 76% of our European olefin and polymer volumes. The polyolefins plants on our two major sites in Europe receive more than 95% of their feedstock supply from our integrated crackers. Similarly, in the United States, much of our olefin feedstock requirements for our polymer business is supplied by either our Chocolate Bayou cracker in Texas or by integrated third party facilities, such as the Tesoro facility in Carson, California. We believe that with our highly integrated facilities we are able to capture attractive margins across the value chain, enjoy greater certainty of feedstock supply, reduce logistical costs, improve energy management and optimize our product slate.

We benefit from the cost advantages of operating large-scale, well-invested, highly integrated facilities strategically located near major transportation facilities and customer locations. Since January 1, 2007, we and our predecessors have invested approximately €6.5 billion (including investments in divested assets) in our production facilities to ensure that they operate efficiently, resulting in integrated and state-of-the-art production units. We believe these investments allow us to operate at lower cost and higher utilization rates than most of our competitors, and enable us to maintain positive margin and cash flows even during downturns in industry cycles or customer demand. For the year ended December 31, 2018, our revenue was €16.1 billion and our EBITDA before exceptionals was €2.3 billion.

Over the past several years, we have implemented a range of strategic initiatives designed to lower our operating costs, increase our profitability and further enhance our market position. These include fixed asset investments to expand our capacity in higher value products, to enhance productivity at our existing facilities, and to reduce our fixed cost structure through headcount reductions, production line closures and system upgrades. In addition, we have shifted our product portfolio to focus on more differentiated products, exited low-margin businesses and implemented premium pricing strategies designed to improve our margins. We believe these initiatives provide us with a strong platform to drive growth, create significant operating leverage and position us to benefit from volume recovery in our end markets.

Since April 1998, when INEOS was established with the acquisition of the Belgian "Oxide" assets from Inspec plc, we have significantly expanded, both through a series of strategic acquisitions of businesses and assets from major chemical companies, and through organic growth. The combination of INEOS and Innovene in December 2005 represented a transformational milestone for our company, providing global scale and further upstream integration.

In 2011, we transferred our Refining Business, our Entrepreneurial (Refining) Business and certain infrastructure assets to three joint ventures outside the INEOS Group. Please see "Business—Refining Divestiture, Grangemouth Divestiture and Lavéra Divestiture—The Refining Divestiture" for a further description of the disposal of our Refining Business and Entrepreneurial (Refining) Business.

On October 1, 2013, we completed the Grangemouth Divestiture to a newly created subsidiary of INEOS Holdings AG, our indirect parent company. See "Business—Refining Divestiture, Grangemouth Divestiture and Lavéra Divestiture—The Grangemouth Divestiture."

On July 1, 2014, we divested the olefins and polymers assets and Chemical Intermediates assets of the Lavéra site. See "Business—Refining Divestiture, Grangemouth Divestiture and Lavéra Divestiture—The Lavéra Divestiture."

In 2015, we completed the purchase of the remaining 50% interest in the Noretyl ethylene cracker at Rafnes, Norway from the INOVYN group (formerly the Kerling Group), a related party. In 2015 we also acquired aromatics and cumene assets from Axiall Corporation. The acquisition comprised the world's largest cumene plant in Pasadena, Texas. In addition, Axiall's phenol, acetone and alpha-methylstyrene business was transferred to the INEOS phenol facility at Mobile, Alabama.

In 2016, the Group acquired 100% of the shares of WLP Holding Corporation, one of the largest high density polyethylene (HDPE) pipe manufacturers in North America. Moreover, in 2016, following a strategic review of the INEOS Technologies business, we decided to cease marketing its polyolefins licensing technology externally and to transfer the remaining parts of the INEOS Technologies business to existing businesses within the Group to provide a clearer focus on individual product lines.

Key Factors Affecting Our Results of Operations

Our results of operations are driven by a combination of factors affecting the petrochemical and chemical intermediate markets generally, including general economic conditions, prices of raw materials, global supply and demand for our products and environmental legislation, including climate change initiatives. Our results of operations are also impacted by company-specific structural and operational factors. Set forth below is an overview of the key drivers that have affected the historical results of operations, and are expected to affect our future results of operations.

Supply and Demand in the Petrochemical Industry

Margins in the petrochemical industry are strongly influenced by industry utilization. As demand for petrochemical products approaches available supply, utilization rates rise, and prices and margins typically increase. Historically, this relationship has been highly cyclical due to fluctuations in supply resulting from the timing of new investments in capacity and general economic conditions affecting the relative strength or weakness of demand. Generally, capacity is more likely to be added in periods when current or expected future demand is strong and margins are, or are expected to be, high. Investments in new capacity can result, and in the past frequently have resulted, in overcapacity, which typically leads to a reduction of margins. In response, petrochemical producers typically reduce capacity or limit further capacity additions, eventually causing the market to be relatively undersupplied.

Nexant's current analysis of the global supply and demand for ethylene indicates that the rate of capacity addition will slightly exceed consumption growth in the near term, reducing the global operating rate from 91% in 2018 to 83% in 2023. This reflects the expected completion of several large new crackers in the United States, several MTO units in China, and new liquids-based crackers in China and other parts of Asia. Nevertheless, the rate of margin recovery in the petrochemical industry is highly dependent on the actual speed of global macro-economic growth. In addition to the global petrochemical cycle, margins are also susceptible to potentially significant swings in the short term. This volatility, which may be global or isolated in individual regions, can be caused by a number of factors, including fluctuations in utilization rates due to planned or unplanned plant outages, political and economic conditions driving rapid changes in prices for key feedstocks, exchange rate fluctuations and changes in inventory management policies by petrochemical customers (such as inventory building or de-stocking in periods of expected price increases).

Asset Utilization

Our results of operations are materially influenced by the degree to which we utilize our assets in order to achieve maximum production volumes. As a low-cost producer, we believe in operating our facilities at full capacity. We believe this allows us to maintain positive margins and cash flows, even during downturns in industry cycles or customer demand, more readily than some of our competitors who have higher production costs. We intend to achieve growth in production volume by improving utilization rates within the defined availability of an asset, improving availability of an asset by minimizing planned and unplanned facility downtime and improving capacity of an asset through de-bottlenecking projects.

For example, the number and length of turnarounds (scheduled outages of a unit in order to perform necessary inspections and testing to comply with industry regulations and to permit us to carry out any maintenance activities that may be necessary) carried out in any given period can impact operating results. When possible, we seek to schedule the timing of turnarounds to coincide with periods of relatively low demand for the products of the relevant units. Olefins crackers typically undergo major turnarounds every four or five years, with each turnaround lasting four to six weeks. Turnarounds for polymers and derivatives units are more frequent, typically every one to two years, but generally last only seven to 10 days. Likewise, unplanned outages, such as the impact of Hurricane Ike in autumn 2008 and Hurricane Harvey in autumn 2017, the lightning strike at the Chocolate Bayou site in November 2010 and the power outage at the Rafnes, Norway site resulting in a fire in October 2016, can impact our operating results, even if such outages are covered by insurance. Similarly, planned or unplanned outages of our competitors can positively affect our operating results by decreasing the supply of product in the market.

Oil and Gas Price Movements

Feedstock costs are a significant component of the operating costs of our petrochemical business. The costs of the feedstocks we require to make our petrochemical products (naphtha, ethane, butane and propane) are principally driven by the price of oil and natural gas. According to the US Energy Information Administration, the spot price for Brent crude oil decreased from approximately $92 per barrel in January 2008 to approximately $57 per barrel in December 2018, while the natural gas Citygate price in Texas decreased from $8.23 per thousand cubic feet in January 2008 to $4.61 per thousand cubic feet in December 2018. During 2018 the crude oil price increased throughout most of year before decreasing in the last two months of 2018, finishing the year at approximately $57 per barrel as compared to approximately $64 per barrel at the end of 2017. The average price of crude oil, and thus the price of petrochemical products, increased to an average of approximately $71 per barrel in 2018 as compared to an average of approximately $54 per barrel for the year ended December 31, 2017.

Our ability to pass on price increases for crude is limited due to the impact of time lags resulting from the repricing intervals of our contracts with suppliers and customers, particularly in the petrochemical business. While most of our feedstock contracts reprice daily, our contracts with customers generally reprice on a monthly basis. A further limitation is that many of our customers take advantage of fluctuating prices by building inventories when they expect product prices to increase and reducing inventories when they expect prices to decrease. The effect of these time lags and our customers' inventory management policies on our ability to pass through feedstock price increases is magnified in periods of high volatility. In addition, changes in oil and gas prices have a direct impact on our working capital levels. In general, increases in feedstock prices lead to an increase in our working capital and decreases in feedstock prices lead to a decrease in our working capital.

Implementation of Cost Reduction

We have historically focused on implementing our strategies of reducing costs by making rapid reductions in underlying fixed costs and implementing an efficient corporate and management structure and maximizing the utilization of our assets. Our ability to continue to reduce costs will impact, among other things, our profitability and capacity plans.

WL Plastics Acquisition

On November 1, 2016, the Group acquired 100% of the shares of WLP Holding Corporation, one of the largest high density polyethylene (HDPE) pipe manufacturers in North America. WL Plastics has over 500 million pounds of annual production capacity and provides HDPE pipe for use in oil, gas, industrial, mining, conduit, and municipal water and sewer applications.

Debt Structure

As of December 31, 2018, we had €6,331.9 million (December 31, 2017: €6,193.0 million) of indebtedness. Our future results of operations, and in particular our net finance charges, will be significantly affected by the amount of indebtedness, including the interest we pay on our indebtedness. The servicing of this indebtedness will impact, among other things, our cash flows and our cash balance. See "Summary Historical Consolidated and Other Financial Information."

On February 28, 2017, the Group completed a refinancing of the Senior Secured Term Loans. The Term Loans due 2018 were repaid in full, the Term Loans due 2020 were extended to March 2022 and a new tranche of €1.4 billion Term Loans due 2024 (in both euro and dollar amounts) were issued. On March 1, 2017, the Group redeemed in full the 2019 IGH Notes with the proceeds from the issuance of the Term Loans due 2024.

In November 2017, the Group borrowed additional Term Loans due 2024 (in both euro and dollar amounts) and issued the 2025 Senior Secured Notes. The proceeds from the borrowings and the issuance (together with cash received from INEOS Styrolution) were used to repay the outstanding Term Loans due 2022 and 2024.

Foreign Exchange Rate Fluctuations

Our results of operations may be affected by both the transaction effects and translation effects of foreign currency exchange rate fluctuations. A substantial portion of our revenue is generated in, or linked to, the U.S. dollar and euro. In our European petrochemical business, product prices, certain feedstock costs and most other costs are denominated in euro and British pounds. In our U.S. petrochemical and chemical intermediates businesses, product prices, raw material costs and most other costs are primarily denominated in U.S. dollars. We generally do not enter into foreign currency exchange instruments to hedge our foreign currency exposure, although we have done so in the past and we may do so in the future. We also believe that we benefit from natural hedging to the extent that we have been able to match the currencies of our cash flows and long-term indebtedness.

Our reporting currency is the euro, and our results of operations will be impacted by the relative strength of the euro against other currencies, including the U.S. dollar and the British pound. In 2014, the value of the euro relative to the U.S. dollar declined significantly. In 2016, the value of the euro relative to the U.S. dollar remained similar to 2015 levels, then increased significantly by the end of 2017, before increasing again in 2018. Following the U.K. referendum regarding the EU, the respective values of the euro and the U.S. dollar relative to the British pound increased significantly.

Environmental Considerations

Our results of operations are affected by environmental laws and regulations, including those relating to GHG and other air emissions, and environmental risks and goals generally. We have invested, and will continue to invest, a significant amount of financial and technical resources in order to achieve and maintain compliance with environmental requirements. From time to time, we also incur remediation and decommissioning costs at our current and former production facilities, as well as at other locations.

Environmental considerations can also impact the markets in which we operate, including our position with respect to our competitors.

Results of Operations

The consolidated financial information of INEOS is prepared in accordance with IFRS. The income statement data for the years ended December 31, 2018, December 31, 2017 and December 31, 2016 represent the consolidated results of the Group.

Description of Key Line Items

Set forth below is a brief description of the composition of the key line items of our consolidated income statement accounts:

- *Revenue.* Group revenue represents the invoiced value of products sold or services provided to third parties net of sales discounts and value-added taxes. It also excludes our share of joint venture revenue. The pricing for products sold is determined by market prices (market contracts and arrangements) or is linked by a formula to published raw material prices plus an agreed additional amount (formula contracts). Services provided to third parties include administrative and operational services provided to other chemical companies with units on our sites, and services under tolling arrangements. Under tolling arrangements, customers pay for or provide raw materials to be converted into a certain specified product, for which we charge a toll fee.
- *Total cost of sales.* Cost of sales includes fixed and variable production costs. Such production costs typically include the costs of raw materials, packaging, utilities, direct wages and salaries, repairs and maintenance, waste disposal and effluent treatment, consumables,

attributable depreciation charges and directly attributable overheads, including wages and salaries, depreciation charges and overheads that are attributable to production. Fixed costs included in the cost of sales are rent, depreciation, repairs and maintenance, while variable costs include raw materials, packaging, consumables and wages and salaries.

- *Distribution costs.* Distribution costs typically include the costs of warehousing, carriage and freight, together with sales and distribution wages and salaries and depreciation on property, plant and equipment used for sales and distribution.
- *Administrative expenses before exceptional items.* Administrative expenses typically include indirect wages and salaries and indirect overheads. Indirect overheads would include such items as insurance costs, legal and professional fees and office supplies. Administrative expenses also include the depreciation of property, plant and equipment not directly attributable to production or sales and distribution. Other operating expenses and other operating income are also included within administrative expenses.
- *Exceptional administrative expenses.* Exceptional administrative expenses are those expenses which, because of their size or nature, are disclosed to give a proper understanding of the underlying results for the period. These expenses are mainly related to business restructuring and the provision for severance payments.
- *Share of (loss)/profit of associates and jointly controlled entities using the equity accounting method.* Share of (loss)/profit of associates and jointly controlled entities using the equity accounting method relates to the results from the investment in associated undertakings and joint ventures.
- *Total finance income.* Total finance income includes interest receivable on funds invested, expected return on defined benefit pension plan assets, net fair value gain on derivatives and net foreign exchange gains.
- *Finance costs before exceptional items.* Finance costs includes interest payable, finance charges on finance leases, unwinding of the discount on provisions, net fair value losses derivatives and net foreign exchange losses.
- *Exceptional finance costs.* Exceptional finance costs are those costs which, because of their size or nature, are disclosed to give a proper understanding of the underlying results for the period. These costs are mainly related to call premia and the write-off of unamortized debt issue costs following modification or redemption of debt.

Year on Year Comparisons

The following table sets forth, for the periods indicated, revenue and expenses and such amounts as a percentage of revenue:

	INEOS Group Holdings S.A.					
	For the year ended December 31,					
	2018		2017		2016	
	€m	%	€m	%	€m	%
Revenue	**16,091.5**	**100.0**	**15,210.4**	**100.0**	**12,609.9**	**100.0**
Total cost of sales	(13,665.8)	(84.9)	(12,524.2)	(82.3)	(10,141.1)	(80.4)
Gross profit	**2,425.7**	**15.1**	**2,686.2**	**17.7**	**2,468.8**	**19.6**
Distribution costs	(215.0)	(1.3)	(206.5)	(1.4)	(195.3)	(1.5)
Administrative expenses before exceptional items	(392.1)	(2.4)	(418.6)	(2.8)	(385.6)	(3.1)
Exceptional administrative expenses	—	—	—	—	(21.3)	(0.2)
Operating profit	**1,818.6**	**11.3**	**2,061.1**	**13.6**	**1,866.6**	**14.8**
Share of (loss)/profit of associates and jointly controlled entities before exceptional items	(66.6)	(0.4)	143.5	0.9	29.3	0.2
Profit on disposal of fixed assets	—	—	2.6	—	3.7	—
Profit before finance costs	**1,752.0**	**10.9**	**2,207.2**	**14.5**	**1,899.6**	**15.1**
Total finance income	117.3	0.7	491.9	3.2	200.0	1.6
Finance costs before exceptional item	(395.1)	(2.5)	(355.2)	(2.3)	(505.3)	(4.0)
Exceptional finance costs	—	—	(44.1)	(0.3)	(20.7)	(0.2)
Profit before tax from continuing operations	**1,474.2**	**9.2**	**2,299.8**	**15.1**	**1,573.6**	**12.5**
Tax charge	(278.9)	(1.7)	(301.5)	(2.0)	(340.2)	(2.7)
Profit after tax from continuing operations	**1,195.3**	**7.4**	**1,998.3**	**13.1**	**1,233.4**	**9.8**

Year Ended December 31, 2018 Compared With Year Ended December 31, 2017

Consolidated Results

Revenue. Revenue increased by €881.1 million, or 5.8%, to €16,091.5 million for the year ended December 31, 2018 as compared to €15,210.4 million for the year ended December 31, 2017. The increase in revenues was driven primarily by an increase in selling prices which followed the rise in crude oil prices which increased to an average of $71/bbl for the year ended December 31, 2018 as compared to $54/bbl in the same period in 2017. In addition the Group experienced increased sales volumes for the year ended December 31, 2018 as compared to the same period in 2017, driven by the O&P North America, Nitriles and Oligomers businesses.

Cost of sales. Cost of sales increased by €1,141.6 million, or 9.1%, to €13,665.8 million for the year ended December 31, 2018 as compared to €12,524.2 million for the year ended December 31, 2017. The increase in cost of sales is largely due to the rise in crude oil prices, which has meant higher feedstock prices, together with an increase in volumes across the Group for the year ended December 31, 2018, as compared to same period in 2017.

Gross profit. Gross profit decreased by €260.5 million, or 9.7%, to €2,425.7 million for the year ended December 31, 2018 as compared to €2,686.2 million for the year ended December 31, 2017. The decrease in profitability was primarily driven by lower margins and the depreciation of the US dollar against the euro. The depreciation of the US dollar by approximately 5% against the euro in the year ended December 31, 2018 as compared to the same period of 2017 has decreased the reported euro profitability. Margins in the O&P Europe segment declined due to weaker market conditions compared to the strong conditions in 2017, with lower underlying market demand and increased competition from higher levels of imports. The decrease in gross profit was also due to inventory holding losses within the O&P segments, which were losses of approximately €26 million in the year ended December 31, 2018, as compared to inventory holding gains of approximately €87 million in the same period in 2017. Partially offsetting the decrease was increased profitability in the Nitriles business primarily due to higher margins and increased sales volumes as the business experienced increased demand and stronger pricing from market tightness in all sectors.

Distribution costs. Distribution costs increased by €8.5 million, or 4.1%, to €215.0 million for the year ended December 31, 2018 as compared to €206.5 million for the year ended December 31, 2017. The increase in distribution costs in the Group reflects the increase in sales volumes for the Group for the year ended December 31, 2018, as compared to same period in 2017.

Administrative expenses before exceptional items. Administrative expenses before exceptional items decreased by €26.5 million, or 6.3%, to €392.1 million for the year ended December 31, 2018 as compared to €418.6 million for the year ended December 31, 2017. The decrease in administrative expenses is primarily due to a decrease in research and development costs and an increase in other operating income for the year ended December 31, 2018 as compared to the same period in 2017. In addition, the depreciation of the US dollar by approximately 5% against the euro in the year ended December 31, 2018 as compared to the same period in 2017 has decreased the reported euro expenses of the US businesses.

Operating profit. Operating profit decreased by €242.5 million, or 11.8%, to €1,818.6 million for the year ended December 31, 2018 as compared to €2,061.1 million for the year ended December 31, 2017.

Share of (loss)/profit of associates and jointly controlled entities. Share of (loss)/profit of associates and jointly controlled entities was a loss of €66.6 million for the year ended December 31, 2018 as compared to a profit of €143.5 million for the year ended December 31, 2017. The share of loss primarily reflects our share of the results of the Refining joint venture with PetroChina. The European refining market has seen margins weaken in the year ended December 31, 2018 as compared to the same period in 2017.

Profit on disposal of fixed assets. Profit on disposal of fixed assets was €2.6 million for the year ended December 31, 2017.

Profit before net finance costs. Profit before net finance costs decreased by €455.2 million, or 20.6%, to €1,752.0 million for the year ended December 31, 2018 as compared to €2,207.2 million for the year ended December 31, 2017.

Finance income. Finance income decreased by €374.6 million, or 76.2%, to €117.3 million for the year ended December 31, 2018 as compared to €491.9 million for the year ended December 31, 2017. The decrease is largely due to lower foreign exchange gains associated with short term intra-group funding which was a gain of €15.3 million for the year ended December 31, 2018, as compared to a gain of €408.1 million for the year ended December 31, 2017. In addition, the Group has interest income on the investment in INEOS Investments Partnership, together with interest income from loans to INEOS Upstream Limited, a related party.

Finance costs before exceptional item. Finance costs before exceptional item increased by €39.9 million, or 11.2%, to €395.1 million for the year ended December 31, 2018 as compared to €355.2 million for the year ended December 31, 2017. The increase in finance costs reflects an increase in foreign exchange losses associated with short term intra-group funding which was a loss of €148.3 million for the year ended December 31, 2018, as compared to a loss of €45.2 million for the year ended December 31, 2017. Partially offsetting this increase was a full year benefit of two refinancing transactions completed by the Group in February 2017 and November 2017 which resulted in the weighted average interest rate on the Group's debt being lower.

Exceptional finance costs. Exceptional finance costs were €44.1 million for the year ended December 31, 2017. In February 2017, the Group completed a refinancing of the Senior Secured Term Loans and the redemption of the 2019 IGH Notes. Due to the substantial modification of the Senior Secured Term Loans, the unamortised issue costs of €23.6 million were written off as exceptional finance costs during the year ended December 31, 2017. In addition, following the early redemption of the 2019 IGH Notes, an exceptional finance cost of €20.5 million was recognised during the year ended December 31, 2017, which included an early prepayment premium of €16.7 million and the write-off of deferred issue costs associated with the redeemed 2019 IGH Notes of €3.8 million.

Profit before tax from continuing operations. Profit before tax from continuing operations decreased by €825.6 million, or 35.9%, to €1,474.2 million for the year ended December 31, 2018 as compared to €2,299.8 million for the year ended December 31, 2017.

Tax charge. Tax charge decreased by €22.6 million, or 7.5%, to a charge of €278.9 million for the year ended December 31, 2018 as compared to a charge of €301.5 million for the year ended December 31, 2017. The decrease in tax charge was primarily due to the decreased profitability of the Group and US tax reforms, which have reduced the overall US tax rate (federal and state) from 38% to 22% with effect from January 1, 2018. This decrease was partially offset by a tax credit in the year ended December 31, 2017 following a reduction in the Group's deferred tax liabilities as a consequence of the reduction in corporate tax rates, primarily in the USA and Belgium. The effective tax rates for the Group for the years ended December 31, 2018 and December 31, 2017 were lower than the standard rate in Luxembourg of 26.01% (2017: 27.08%) as profits were made in regions with significantly lower rates (such as UK, USA and Switzerland) which more than offset profits made in regions with higher rates than the standard rate (such as Germany).

Profit after tax from continuing operations. Profit after tax from continuing operations decreased by €803.0 million, or 40.2%, to €1,195.3 million for the year ended December 31, 2018, as compared to €1,998.3 million for the same period in 2017.

Business Segments

The Group reports under three business segments: O&P North America, O&P Europe and Chemical Intermediates.

The following table provides an overview of the historical revenue and EBITDA before exceptionals of each of the business segments for the periods indicated:

	For the year ended December 31,	
	2018	2017
	(€ in millions)	
Revenue		
Continuing operations		
O&P North America	4,044.1	3,573.9
O&P Europe	6,388.8	5,896.7
Chemical Intermediates	7,855.0	7,589.4
Eliminations	(2,196.4)	(1,849.6)
	16,091.5	15,210.4
EBITDA before exceptionals		
Continuing operations		
O&P North America	798.0	896.0
O&P Europe	671.7	814.0
Chemical Intermediates	818.1	819.4
	2,287.8	2,529.4

O&P North America

Revenue. Revenue in the O&P North America segment increased by €470.2 million, or 13.2%, to €4,044.1 million for the year ended December 31, 2018, as compared to €3,573.9 million for the year ended December 31, 2017. The increase was driven primarily by higher volumes. Sales volumes increased in the year ended December 31, 2018 as compared to the same period in 2017 by approximately 21% driven by higher sales volumes of olefins and polyethylene, partially offset by lower polypropylene volumes. The higher olefin sales were mainly driven by higher feedstock sales whilst the higher polyethylene sales were driven by higher production levels from the Gemini HDPE joint venture. The strong oil and gas markets also resulted in an increase in volumes for the pipe business. The 2017 sales volumes were adversely impacted by Hurricane Harvey in August 2017, which led to some lost production volumes. Partially offsetting the increase was the adverse impact of the depreciation of the US dollar by approximately 5% against the euro in 2018 as compared to 2017, which has decreased reported euro revenues.

EBITDA before exceptionals. EBITDA before exceptionals in the O&P North America segment decreased by €98.0 million, or 10.9%, to €798.0 million for the year ended December 31, 2018, as compared to €896.0 million for the year ended December 31, 2017. The business has continued to benefit from its flexibility to be able to utilize cheaper gas feedstock to maintain healthy margins with both ethane and propane continuing to be advantaged feedstocks during 2018. The US cracker business environment continued with high operating rates throughout the year ended December 31, 2018, although increased supply from new industry capacity coming on line during the year led to some reduction in margins. During 2018 the business experienced lower overall margins than the year ended December 31, 2017, driven primarily by lower olefin margins, which were partially offset by higher polyethylene and polypropylene margins. There were inventory holding losses of approximately €28 million for the year ended December 31, 2018, as compared to inventory holding gains of approximately €33 million in the same period in 2017. Partially offsetting this decrease was higher sales volumes of olefins and polyethylene along with increased volumes for the pipe business following strong demand in the oil and gas markets.

O&P Europe

Revenue. Revenue in the O&P Europe segment increased by €492.1 million, or 8.3%, to €6,388.8 million for the year ended December 31, 2018, as compared to €5,896.7 million for the year ended December 31, 2017. The increase in revenue was driven by higher selling prices partially offset by lower sales volumes for the year ended December 31, 2018 as compared to the same period in 2017. The increase in revenues for the business was driven by the general price environment which was higher in 2018 as compared to 2017 as crude oil prices rose to an average of $71/bbl for the year ended December 31, 2018 as compared to an average of $54/bbl for the year ended December 31, 2017, which led to a rise in prices across a number of product lines. The propylene price increased by approximately 19% due to strong underlying demand and a tight market due to refinery and cracker outages in the first half of 2018. During the second half of the year the market became more balanced. The ethylene market was tight and demand was strong at the start of 2018 before lengthening in the second half of the year. The butadiene price decreased by approximately 9% in the year ended December 31, 2018 as compared to the same period in 2017 as the butadiene market was exceptionally strong in spring 2017 due to improved demand as a result of a heavy turnaround season which restricted supply. The benzene price in 2018 was approximately 14% lower than in 2017 as a result of a more competitive market due to new capacities coming online which has increased benzene supply. As compared to 2017, the polymers prices did not change significantly, although the polypropylene price increased by approximately 9%. During 2018, the polymers market was characterised by a balanced-to-long market with steady import volumes in the first half year of the year; however the second half of 2018 saw weakening demand due to destocking and over supply from increased competition from imports. Partially offsetting the impact of higher prices was a decrease in sales volume of approximately 8% in the year ended December 31, 2018 as compared to the same period in 2017 as volumes were adversely impacted by persistently low water levels on the Rhine due to hot weather conditions. This led to constrained volumes and logistical restrictions within inland Europe which adversely impacted the operation rates of the Köln polymer and olefin assets. Polymers volumes were also lower during the year ended December 31, 2018 as compared to the same period in 2017 due to increased imports into Europe from the Middle East, South Korea and the US. Olefin sales volumes were also lower during the year ended December 31, 2018 as compared to the same period in 2017 due to an aromatics turnaround and some unplanned outages on the Köln assets during the year.

EBITDA before exceptionals. EBITDA before exceptionals in the O&P Europe segment decreased by €142.3 million, or 17.5%, to €671.7 million for the year ended December 31, 2018, as compared to €814.0 million for the year ended December 31, 2017. The results for the year ended December 31, 2018 have decreased compared to the same period in 2017, primarily due to lower margins, lower inventory holding gains and higher fixed costs. Margins were lower in the year ended December 31, 2018 as compared to the same period in 2017 as increased cracker margins at Rafnes due to advantageous US ethane market conditions were offset by decreased cracker margins at Köln due to the market environment and higher naphtha prices. Butadiene margins were lower during the year ended December 31, 2018 as market conditions weakened compared to the exceptionally strong conditions experienced in 2017. Aromatics margins were also lower in the year ended December 31, 2018 as compared to the same period in 2017 due to a long European market and higher level of imports. Polymer margins were down from 2017 levels as the market experienced a weaker underlying demand trend and increased competition from higher imports. The business results for the year ended December 31, 2018 as compared to the same period in 2017 were also adversely impacted by a decrease in inventory holding gains to approximately €2 million in the year ended December 31, 2018 as compared to gains of approximately €54 million in the year ended December 31, 2017. Fixed costs were higher in the year ended December 31, 2018 as compared to the same period in 2017, primarily due to the additional costs within the Trading and Shipping business, although this increase was more than offset by additional margins generated by the Trading and Shipping business during the year ended December 31, 2018 as compared to the same period in 2017.

Chemical Intermediates

Revenue. Revenue in the Chemical Intermediates segment increased by €265.6 million, or 3.5%, to €7,855.0 million for the year ended December 31, 2018, as compared to €7,589.4 million for the year ended December 31, 2017. Revenues of the Phenol business decreased in the year ended December 31, 2018 as compared to the same period in 2017, driven by lower sales volumes partially offset by higher prices. Sales volumes were lower by approximately 6% in the year ended December 31, 2018 as compared to the same period in 2017, driven by lower acetone sales and to a lesser extent lower phenol sales. The increase in the price of finished goods was driven by higher average acetone prices which increased by approximately 6% in the year ended December 31, 2018 as compared to the same period in 2017, following higher propylene prices in both Europe and the US. This was partially offset by a decrease in average phenol prices which moved in line with the underlying raw material price of benzene which decreased in both the US and Europe in the year ended December 31, 2018 as compared to the same period in 2017. The Oxide business revenues increased in the year ended December 31, 2018 as compared to the same period in 2017, driven by higher prices partially offset by lower volumes. Overall prices increased by approximately 8% in the year ended December 31, 2018 as compared to the same period in 2017, as pricing closely followed the rise in underlying raw material costs of ethylene and propylene which followed the increase in crude oil prices. Glycol products experienced a very strong start to 2018 with a demand pull from Asia, in particular China, however in the second half of 2018 pricing reduced sharply, which meant that average glycol prices only increased by 4% in the year ended December 31, 2018 as compared to the same period in 2017. For most EO and derivatives the increase in ethylene and propylene price were passed onto customers. The propylene glycol pricing peaked in 2018 due to a very long and cold winter, which kept prices up throughout the summer as well. Alkox experienced some price erosion due to some pre-marketing and tolling done in preparation for the new Alkoxylate 6 unit coming on stream in 2019 which will add further Alkox capacity to the portfolio. Despite some significant turnarounds on assets at Antwerp, Köln and Hull, sales volumes only decreased by approximately 1% in the year ended December 31, 2018 as compared to the same period in 2017. The first half of 2018 saw very high sales volumes as a result of a very buoyant European market and lots of export opportunities whilst the second half of 2018 experienced lower sales volumes as a result of a number of planned turnarounds and the cooling down of the economic environment due to mounting geopolitical pressures. Nitriles revenues increased in the year ended December 31, 2018 as compared to the same period in 2017 driven by higher selling prices and increased sales volumes. The average acrylonitrile sales price rose approximately 18% in the year ended December 31, 2018 as compared to the same period in 2017, reflecting tight supply conditions due to a heavy competitor turnaround schedule in Asia. Sales volumes of acrylonitrile increased approximately 7% in the year ended December 31, 2018 as compared to the same period in 2017, due to strong demand from the US export market into the ABS and acrylic fibre sectors, a tight US domestic market in the acrylamide sector from fracking and enhanced oil recovery and a tight market for acrylic fibre in Europe. Supply limitations due to Hurricane Harvey recovery, propylene supply restrictions and industry outages have kept the supply/demand balance tight. The Oligomers business revenues were higher in the year ended December 31, 2018 as compared to the same period in 2017, mainly as a result of higher volumes and to a lesser extent higher prices. The overall demand trend was solid with overall sales volumes up approximately 4% in the year ended December 31, 2018 as compared to the same period in 2017. Both LAO and PAO products set annual volume records during 2018. LAO global comonomer sales were strong with continued market growth and tight hexene and oxene markets through most of 2018. Oilfield sales were slightly softer with instability of crude oil prices, especially impacting North American sales. Europe and Asia sales were higher in 2018 as compared to 2017 on strengthening market conditions and production issues at Shell, a major competitor who announced the permanent closure of their Stanlow plant. Sales of PAO during 2018 were strong in major core products with increased automotive demand and competitor supply issues. Hi-Viscosity sales set a new annual record during 2018, with transition to our own production successfully completed mid-year. During 2017 both LAO and PAO sales benefitted from filling Hurricane Harvey related competitor shortages. SO demand was lower in 2018 in North America and Europe, and higher in Asia. Sales were strong in CP and IA, on normal market growth, with CP additionally benefitting from competitor production issues. The largest SO product, DIB, had lower sales in 2018 as compared to 2017 due largely to significant market oversupply. All three products were challenged by product and supply shortfalls with the low Rhine river levels. The higher sales prices followed the increase in the underlying raw material prices since feedstock related contract prices make up the majority of the Oligomers pricing arrangements.

EBITDA before exceptionals. EBITDA before exceptionals in the Chemical Intermediates segment decreased by €1.3 million, or 0.2%, to €818.1 million for the year ended December 31, 2018, as compared to €819.4 million for the year ended December 31, 2017. The Phenol business profitability decreased in the year ended December 31, 2018 as compared to the same period in 2017 primarily due to lower margins driven by lower acetone returns in the US and Europe and the adverse impact of lower benzene prices on phenol margins. The Oxide business results in the year ended December 31, 2018 decreased compared with the same period in 2017, mainly driven by lower sales volumes and higher fixed costs, partially offset by higher margins. Sales volumes decreased in the year ended December 31, 2018 as compared with the same period in 2017, mainly driven by significant turnarounds at the Antwerp, Köln and Hull sites. Fixed costs were also higher in the year ended December 31, 2018 as compared with the same period in 2017, driven by investment within the sales organisation and higher maintenance costs. Partially offsetting these decreases was higher margins in the year ended December 31, 2018 as compared to the same period in 2017 due to an exceptionally strong first half of 2018 which saw very strong glycol pricing and top of cycle margins across the business. The second half of 2018 experienced some margin pressure on almost all product groups, especially commodities although ENB and Alkoxylate achieved historical highs during 2018. The Nitriles business experienced an increase in profitability in the year ended December 31, 2018 as compared to the same period in 2017, primarily due to higher margins and increased sales volumes. Overall margins were higher during the year ended December 31, 2018 as compared to the same period in 2017, as the business experienced increased demand and stronger pricing from market tightness in all sectors. Sales volumes of acrylonitrile increased approximately 7% in the year ended December 31, 2018 as compared to the same period in 2017, due to a stronger US market and a tight market for acrylic fibre in Europe. The Oligomers business profitability was lower in the year ended December 31, 2018 as compared to the same period in 2017 primarily due to higher fixed costs and lower margins, partially offset by higher sales volumes. Fixed costs increased during the year ended December 31, 2018 as compared to the same period in 2017 due to increased support costs associated with the new LAO and PAO plants before their planned start up in 2019 and early 2020, respectively. Margins during the year ended December 31, 2018 were lower than the same period in 2017 primarily due to higher raw material costs which were not fully passed onto customers resulting in some margin erosion. Partially offsetting these decreases was an increase in overall sales volumes, which were approximately 4% higher in the year ended December 31, 2018 as compared to the same period in 2017.

Year Ended December 31, 2017 Compared with Year Ended December 31, 2016

Consolidated Results

Revenue. Revenue increased by €2,600.5 million, or 20.6%, to €15,210.4 million for the year ended December 31, 2017 as compared to €12,609.9 million for the year ended December 31, 2016. The increase in revenues was driven primarily by an increase in selling prices which followed the rise in crude oil prices, which increased to an average of $54/bbl for the year ended December 31, 2017 as compared to $44/bbl in the same period in 2016. In addition all businesses within the Group experienced increased sales volumes for the year ended December 31, 2017 as compared to the same period in 2016, with strong underlying demand across most products.

Total cost of sales. Cost of sales increased by €2,383.1 million, or 23.5%, to €12,524.2 million for the year ended December 31, 2017 as compared to €10,141.1 million for the year ended December 31, 2016. The increase in cost of sales is largely due to the rise in crude oil prices, which has meant higher feedstock prices, together with an increase in volumes across the Group for the year ended December 31, 2017, as compared to same period in 2016.

Gross profit. Gross profit increased by €217.4 million, or 8.8%, to €2,686.2 million for the year ended December 31, 2017 as compared to €2,468.8 million for the year ended December 31, 2016. The increase reflects improved margins in the O&P Europe segment for the year ended December 31, 2017 as compared to the year ended December 31, 2016 due to higher olefin margins driven by exceptionally good butadiene market conditions and higher cracker margins at Rafnes, Norway, which benefitted from stable imported U.S. feedstocks costs in a higher crude oil price environment. In addition, there was an increase in inventory holding gains within the O&P North America and O&P Europe segments, which were approximately €87 million for the year ended December 31, 2017, as compared to inventory holding gains of approximately €44 million for the year ended December 31, 2016. The Chemicals Intermediate segment experienced an improved performance across most of the businesses for the year ended December 31, 2017 as compared to the same period in 2016. The Oxide business had a strong performance for the year ended December 31, 2017 and benefitted from both stable volumes and higher margins for most products, supported by some supply side issues at a number of competitors. The Phenol business performance improved following increased volumes and improved acetone returns, whilst the Nitriles business benefitted from higher margins due to stronger demand and some industry supply side issues during the year ended December 31, 2017. A number of the Group's facilities in Texas were impacted by Hurricane Harvey in August 2017, resulting in lost production volumes, particularly in the O&P North America segment.

Distribution costs. Distribution costs increased by €11.2 million, or 5.7%, to €206.5 million for the year ended December 31, 2017 as compared to €195.3 million for the year ended December 31, 2016. The increase in distribution costs in the Group reflects the increase in sales volumes for the Group for the year ended December 31, 2017, as compared to same period in 2016.

Administrative expenses before exceptional items. Administrative expenses before exceptional items increased by €33.0 million, or 8.6%, to €418.6 million for the year ended December 31, 2017 as compared to €385.6 million for the year ended December 31, 2016. The increase in administrative expenses is primarily due to the additional administrative costs associated with the WL Plastics business which was acquired by the Group in November 2016 and a decrease in other operating income for the year ended December 31, 2017 as compared to the same period in 2016.

Exceptional administrative expenses. Exceptional administrative expenses were nil in the year ended December 31, 2017 as compared to €21.3 million for the year ended December 31, 2016. In 2016 following a strategic review of the Technologies business the Group took a decision to cease marketing its polyolefins licensing technology externally and to transfer the remaining parts of the Technologies business to existing businesses within the Group to provide a clearer focus on individual product lines. This resulted in an exceptional administrative charge of €21.3 million being incurred during 2016 as a result of the cessation of new licensing activities and other restructuring within the Technologies business primarily relating to severance and early retirement costs.

Operating profit. Operating profit increased by €194.5 million, or 10.4%, to €2,061.1 million for the year ended December 31, 2017 as compared to €1,866.6 million for the year ended December 31, 2016.

Share of (loss)/profit of associates and jointly controlled entities. Share of (loss)/profit of associates and jointly controlled entities increased by €114.2 million, to €143.5 million for the year ended December 31, 2017 as compared to €29.3 million for the year ended December 31, 2016. The share of profit primarily reflects our share of the results of the Refining joint venture with PetroChina. The European refining market has seen margins strengthen in the year ended December 31, 2017 as compared to the same period in 2016.

Profit on disposal of fixed assets. Profit on disposal of fixed assets was €2.6 million for the year ended December 31, 2017 as compared to €3.7 million for the year ended December 31, 2016.

Profit before net finance costs. Profit before net finance costs increased by €307.6 million, or 16.2%, to €2,207.2 million for the year ended December 31, 2017 as compared to €1,899.6 million for the year ended December 31, 2016.

Finance income. Finance income increased by €291.9 million, or 146.0%, to €491.9 million for the year ended December 31, 2017 as compared to €200.0 million for the year ended December 31, 2016. The increase is largely due to foreign exchange gains associated with short term intra-group funding which was a gain of €408.1 million for the year ended December 31, 2017, as compared to a gain of €84.5 million for the year ended December 31, 2016. In addition the Group has interest income on the investment in INEOS Investments Partnership, together with interest income from loans to related parties (including Styrolution, INEOS Upstream and Grangemouth).

Finance costs before exceptional item. Finance costs before exceptional item decreased by €150.1 million, or 29.7%, to €355.2 million for the year ended December 31, 2017 as compared to €505.3 million for the year ended December 31, 2016. The decrease in finance costs reflects a decrease in foreign exchange losses associated with short term intra-group funding, which was a loss of €45.2 million for the year ended December 31, 2017, as compared to a loss of €92.6 million for the year ended December 31, 2016. In addition, the refinancing transactions completed in August 2016, February 2017 and November 2017 by the Group have resulted in the weighted average interest rate on the Group's debt being lower during the year ended December 31, 2017 as compared to the same period in 2016.

Exceptional finance costs. Exceptional finance costs were €44.1 million for the year ended December 31, 2017 as compared to €20.7 million for the year ended December 31, 2016. In February 2017, the Group completed a refinancing of the Senior Secured Term Loans and the redemption of the 2019 IGH Notes. Due to the substantial modification of the Senior Secured Term Loans, the unamortised issue costs of €23.6 million were written off as exceptional finance costs during the year ended December 31, 2017. In addition, following the early redemption of the 2019 IGH Notes, an exceptional finance cost of €20.5 million was recognized during the year ended December 31, 2017, which included an early prepayment premium of €16.7 million and the write-off of deferred issue costs associated with the redeemed 2019 IGH Notes of €3.8 million. As a result of the early redemption of the 2018 IGH Notes, an exceptional finance cost of €20.7 million was recognized during the year ended December 31, 2016, which included an early prepayment premium of €17.5 million and the write-off of deferred issue costs associated with the redeemed Notes of €3.2 million.

Profit before tax from continuing operations. Profit before tax from continuing operations increased by €726.2 million, or 46.1%, to €2,299.8 million for the year ended December 31, 2017 as compared to €1,573.6 million for the year ended December 31, 2016.

Tax charge. Tax charge decreased by €38.7 million, or 11.4%, to a charge of €301.5 million for the year ended December 31, 2017 as compared to a charge of €340.2 million for the year ended December 31, 2016. The decrease in tax charge was primarily due to a reduction in the Group's deferred tax liabilities as a consequence of the reduction in corporate tax rates, primarily in the USA and Belgium. The effective tax rates for the Group for the years ended December 31, 2017 and December 31, 2016 were lower than the standard rate in Luxembourg of 27.08% (2016: 29.2%) as profits were made in regions with significantly lower rates (such as U.K. and Switzerland), which more than offset profits made in regions with higher rates than the standard rate (such as USA).

Profit after tax from continuing operations. Profit after tax from continuing operations increased by €764.9 million, or 62.0%, to €1,998.3 million for the year ended December 31, 2017, as compared to €1,233.4 million for the same period in 2016.

Business Segments

The Group reports under three business segments: O&P North America, O&P Europe and Chemical Intermediates.

The following table provides an overview of the historical revenue and EBITDA before exceptionals of each of the business segments for the periods indicated:

	For the year ended December 31,	
	2017	**2016**
	(€ in millions)	
Revenue		
Continuing operations		
O&P North America	3,573.9	2,855.9
O&P Europe	5,896.7	4,966.5
Chemical Intermediates	7,589.4	6,204.3
Eliminations	(1,849.6)	(1,416.8)
	15,210.4	12,609.9
EBITDA before exceptionals		
Continuing operations		
O&P North America	896.0	956.4
O&P Europe	814.0	708.7
Chemical Intermediates	819.4	665.7
	2,529.4	2,330.8

O&P North America

Revenue. Revenue in the O&P North America segment increased by €718.0 million, or 25.1%, to €3,573.9 million for the year ended December 31, 2017, as compared to €2,855.9 million for the year ended December 31, 2016. The increase was driven primarily by higher volumes and higher selling prices. Sales volumes increased in the year ended December 31, 2017 as compared to the same period in 2016, driven by higher sales volumes of olefins and polyethylene due to higher production levels as the Gemini HDPE joint venture became fully operational in the fourth quarter of 2017. Sales volumes were impacted by Hurricane Harvey in August 2017, which led to some lost production volumes. In addition, volumes in 2016 were also impacted by a scheduled major turnaround on one of the crackers at the Chocolate Bayou, Texas site. The weighted average sales price for the whole business was approximately 6% higher in the year ended December 31, 2017 as compared to the same period in 2016, driven by higher commodity prices.

EBITDA before exceptionals. EBITDA before exceptionals in the O&P North America segment decreased by €60.4 million, or 6.3%, to €896.0 million for the year ended December 31, 2017, as compared to €956.4 million for the year ended December 31, 2016. The business has continued to benefit from its flexibility to be able to utilize cheaper gas feedstock to maintain healthy margins with both ethane and propane continuing to be advantaged feedstocks during 2017. The U.S. cracker business environment continued to be solid with healthy margins and high operating rates throughout the year ended December 31, 2017. During 2017, the business experienced lower overall margins than the year ended December 31, 2016, driven primarily by lower polypropylene and olefin margins, which were partially offset by higher polyethylene margins. There were inventory holding gains of approximately €33 million for the year ended December 31, 2017, as compared to inventory holding gains of approximately €30 million in the same period in 2016.

O&P Europe

Revenue. Revenue in the O&P Europe segment increased by €930.2 million, or 18.7%, to €5,896.7 million for the year ended December 31, 2017, as compared to €4,966.5 million for the year ended December 31, 2016. The increase in revenues was mainly driven by higher selling prices and to a lesser extent higher sales volumes for the year ended December 31, 2017 as compared to the same period in 2016. The increase in revenues for the business was driven by the general price environment, which was higher in 2017 as compared to 2016 as crude oil prices rose to an average of $54/bbl for the year ended December 31, 2017 as compared to an average of $44/bbl for the year ended December 31, 2016, which led to a rise in prices across most product lines. Butadiene prices showed the largest increase, up approximately 74%, as the market recovered from the weakness seen in the last few years due to improved demand and a heavy turnaround season in spring 2017 restricting supply. Polypropylene prices also increased approximately 17% in the year ended December 31, 2017 as compared to the same period in 2016. In addition, sales volumes increased by approximately 11% in the year ended December 31, 2017 as compared to the same period in 2016, aided by the weak euro compared to other major currencies, together with continued low oil prices, which benefitted European markets by minimising imports and facilitating export opportunities. In addition, volumes in the fourth quarter of 2016 were adversely impacted by an unscheduled outage of the cracker at Rafnes, Norway.

EBITDA before exceptionals. EBITDA before exceptionals in the O&P Europe segment increased by €105.3 million, or 14.9%, to €814.0 million for the year ended December 31, 2017, as compared to €708.7 million for the year ended December 31, 2016. The results for the year ended December 31, 2017 have increased compared to the same period in 2016, primarily due to higher margins, increased inventory holding gains and increased sales volumes, partially offset by higher fixed costs. Margins increased in the year ended December 31, 2017 as compared to the same period in 2016 due to higher olefin margins driven by exceptionally good butadiene market conditions and higher cracker margins at Rafnes, Norway which benefitted from stable imported U.S. feedstocks costs in a higher crude oil price environment. Polymer margins remained good, albeit down from the exceptional levels experienced in 2016 as a result of a more balanced market. In addition, there were increased sales volumes due to improved market demand in the year ended December 31, 2017, as compared to the same period in 2016, partially offset by a major scheduled turnaround of one of the crackers in Köln in the third and fourth quarter of 2017. The business also benefitted from inventory holding gains of approximately €54 million in the year ended December 31, 2017 as compared to gains of approximately €14 million in the year ended December 31, 2016. Partially offsetting these increases were higher fixed costs in the year ended December 31, 2017 as compared to the same period in 2016, primarily due to the additional costs of having more Dragon ships operational in 2017 as compared to 2016, along with the associated U.S. infrastructure costs in respect of shipping ethane from the U.S. to Europe.

Chemical Intermediates

Revenue. Revenue in the Chemical Intermediates segment increased by €1,385.1 million, or 22.3%, to €7,589.4 million for the year ended December 31, 2017, as compared to €6,204.3 million for the year ended December 31, 2016. Revenues of the Phenol business increased in the year ended December 31, 2017 as compared to the same period in 2016, primarily driven by higher prices and to a lesser extent increased sales volumes. The significant increase in prices of finished goods moved in line with the underlying raw material prices, which have risen in the year ended December 31, 2017 as compared to the same period in 2016. Benzene prices increased in the U.S. and Europe, which in total led to higher phenol prices of approximately 21% in the year ended December 31, 2017 as compared to the same period in 2016. In addition, the average acetone price increased by approximately 35% in the year ended December 31, 2017 as compared to the same period in 2016, following higher propylene prices in both Europe and the US. Sales volumes were also higher by approximately 3% in the year ended December 31, 2017 as compared to the same period in 2016, driven by increased phenol and acetone sales. The Oxide business revenues increased in the year ended December 31, 2017 as compared to the same period in 2016, driven by higher prices and to a lesser extent increased volumes. Overall prices increased by approximately 17% in the year ended December 31, 2017 as compared to the same period in 2016, as pricing closely followed the rise in underlying raw material costs of ethylene and propylene which followed the increase in crude oil prices. Glycol products experienced a more significant rise in prices due to very high prices in Asian markets following strong demand, especially in China. The solvents business also experienced higher prices due to the impact of some competitor outages during the year. In addition, sales volumes increased in the year ended December 31, 2017 as compared to the same period in 2016, as all EO and PO related products experienced reliable sales during 2017, which were only partially offset by lower solvent sales due to some operational issues at the Hull, England plant. Nitriles revenues increased in the year ended December 31, 2017 as compared to the same period in 2016 driven by both higher selling prices and increased volumes. The average acrylonitrile sales price rose approximately 27% in the year ended December 31, 2017 as compared to the same period in 2016, reflecting the rise in the feedstock costs of propylene, strengthening demand, tight supply conditions and the impact of some new sales contracts. Sales volumes of acrylonitrile increased approximately 7% in the year ended December 31, 2017 as compared to the same period in 2016, due to increased demand as a result of tight market conditions following some industry supply side issues and Chinese government imposed environmental and safety permitting restrictions. The Oligomers business revenues were higher in the year ended December 31, 2017 as compared to the same period in 2016, mainly as a result of higher volumes and to a lesser extent higher prices. The overall demand trend was strong in most sectors, with robust demand in the polyethylene co-monomer and drilling segments with overall sales volumes up approximately 8% in the year ended December 31, 2017 as compared to the same period in 2016. The higher sales prices followed the increase in the underlying raw material prices since feedstock related contract prices make up the majority of the Oligomers pricing arrangements.

EBITDA before exceptionals. EBITDA before exceptionals in the Chemical Intermediates segment increased by €153.7 million, or 23.1%, to €819.4 million for the year ended December 31, 2017, as compared to €665.7 million for the year ended December 31, 2016. The Phenol business profitability increased in the year ended December 31, 2017 as compared to the same period in 2016, primarily due to higher margins driven by better acetone returns and the positive impact of higher benzene prices on phenol margins, together with an increase in sales volumes following improved demand. The Oxide business results in the year ended December 31, 2017 increased as compared with the same period in 2016, mainly driven by higher margins. The significant increase in margins in the year ended December 31, 2017 as compared to the same period in 2016 was due to improved raw material procurement as the ethylene tank in Antwerp helped to achieve higher discounts for ethylene, a steep increase in glycol pricing due to improved demand from China and buoyant European markets, especially for solvents helped by operational issues of competitors which shortened the market. The Nitriles business experienced a significant increase in profitability in the year ended December 31, 2017 as compared to the same period in 2016, primarily due to higher margins. Overall margins were significantly higher during the year ended December 31, 2017 as compared to the same period in 2016, as the business experienced strong underlying demand across all sectors; tight supply conditions due to a number of industry outages in the U.S. and Asia and the positive impact of some new sales contracts in 2017. The Oligomers business profitability was lower in the year ended December 31, 2017 as compared to the same period in 2016 primarily due to lower margins, partially offset by higher sales volumes. Demand was strong across most products and in most sectors leading to higher sales volumes in the year ended December 31, 2017 as compared to the same period in 2016. However, margins were lower in the year ended December 31, 2017 as compared to the same period in 2016. Overall LAO margins were lower reflecting raw material price variability as North American margin advantage from production at the Joffre site was reduced as USGC ethylene prices which underlie LAO prices declined more rapidly than Joffre production costs. LAO European margins benefitted from strong ethylene third party price discounts, resulting in higher margins for most of the year as compared to the same period in 2016. PAO margins were lower in the year ended December 31, 2017 as compared to the top of cycle margins experienced in the same period in 2016. Core demand continued to be strong in all regions with solid sales of high margin HiViscosity products, which benefitted from additional sales to meet the market product shortfall caused by a major competitor outage as a result of Hurricane Harvey. SO margins were lower in the year ended December 31, 2017 as compared to the same period in 2016, as higher raw material costs led to reduced margins despite higher sales volumes.

Liquidity and Capital Resources

Capital Resources

Our historical liquidity requirements have arisen primarily from the need for us to meet our debt service requirements, to fund capital expenditures for the general maintenance and expansion of our production facilities and for new facilities, and to fund growth in our working capital.

Our primary sources of liquidity are cash flows from operations of subsidiaries, cash on our balance sheet and borrowings under the Securitization Program. Our ability to generate cash from our operations depends on future operating performance, which is in turn dependent, to some extent, on general economic, financial, competitive market, legislative, regulatory and other factors, many of which are beyond our control.

We believe that our operating cash flows, together with the cash resources and future borrowings under the Securitization Program and other debt instruments, will be sufficient to fund our working capital requirements, anticipated capital expenditures and debt service requirements as they become due, although this may not be the case.

We have also historically paid dividends to our shareholders. We may make strategic decisions, including the payment of dividends, the size of which may change or increase from time to time and may not necessarily be in line with past practice. In addition, we may engage in strategic transactions, including future debt incurrence in the capital and leverage finance markets, including inventory financing or similar arrangements, or repurchases of our debt (on the open market or otherwise) with cash on hand or the proceeds of future debt incurrences, which may impact the availability of cash resources.

Financing Arrangements

The Group's capital structure includes a mixture of secured term loans and secured notes, together with unsecured notes. These various debt instruments are denominated in both euros and U.S. dollars where appropriate, to approximately match the main currencies of the cash flows generated by the Group's operations.

The Group has a €800.0 million Securitization Program in place, which matures in December 2020.

The Group has a Letter of Credit facility for €300.0 million. Under the terms of the facility, the Group undertakes to provide cash collateral to cover any letters of credit, guarantees, bonds or indemnities issued under the facility.

Following the Group's purchase of the remaining 50% interest in the Noretyl ethylene cracker at Rafnes, Norway from the Kerling group in July 2015, the Group assumed the obligations of a €140.0 million loan facility of Noretyl AS. The facility matures in November 2019.

As part of a project at the Group's Köln site to replace part of its incineration or cogeneration unit, the Group has entered into a €120.0 million loan facility. The facility matures in December 2024.

As of December 31, 2018, the Group had a total of €3,476.7 million euro-equivalent Senior Secured Term Loans, €770.0 million 2023 Senior Secured Notes, €1,087.3 million euro-equivalent 2024 IGH Senior Notes and €550.0 million 2025 Senior Secured Notes outstanding.

Capital Expenditures

As part of our strategy to focus capital investments on improving returns, we have instituted measures to ensure the most efficient uses of capital investment. We intend to manage capital expenditures to maintain our well-invested asset base.

During the years ended December 31, 2018, 2017 and 2016, net capital expenditures analyzed by business segment were as follows:

	For the year ended December 31,		
	2018	**2017**	**2016**
	(€ in millions)		
O&P North America	389.0	279.7	273.2
O&P Europe	210.9	236.1	142.2
Chemical Intermediates	573.6	398.8	276.5
Total	1,173.5	914.6	691.9

The main capital expenditures for the year ended December 31, 2018 related to expenditure within the O&P North America segment on a furnace replacement project, debottleneck on one of the crackers and a number of smaller turnarounds and projects. The main capital expenditures in the O&P Europe segment were at the Köln site on a cogeneration project and new office buildings, together with turnarounds at the Köln and Lillo sites. The main expenditure in the Chemical Intermediates segment was additional growth expenditure by the Oligomers business on the LAO platform, railcars and a barge dock at Chocolate Bayou, USA. There was also expenditure within the Oxide business at the Antwerp, Belgium site in respect of EO storage projects and a new alkox and boiler unit, as well as a turnaround at the Hull site. The remaining capital expenditure related primarily to sustenance expenditure.

The main capital expenditures for the year ended December 31, 2017 related to expenditure within the O&P North America segment on a cogeneration project at the Chocolate Bayou site, together with expenditure on a polyethylene new line expansion, a mini turnaround and debottleneck on one of the crackers and other linked projects as well as the acquisition of the Marina View headquarters building in Texas, USA. The main capital expenditures in the O&P Europe segment were at the Köln site on a cogeneration project, office buildings, lifecycle project and turnarounds on a cracker and LLDPE unit. The main expenditure in the Chemical Intermediates segment was additional growth expenditure by the Oligomers business on the LAO platform at Chocolate Bayou, USA and on the PAO HiVis plant at LaPorte, USA, which began commissioning in July 2017. There was also expenditure within the Oxide business at the Antwerp, Belgium site in respect of third party co-sited shared services and EO storage projects and within the Nitriles business on a turnaround at the Green Lake, USA site. The remaining capital expenditure related primarily to sustenance expenditure.

The main capital expenditures for the year ended December 31, 2016 related to expenditure within the O&P North America segment on a cogeneration project at the Chocolate Bayou site, together with expenditure for a scheduled major cracker turnaround at the same site. There were also a number of smaller projects within the O&P North America and O&P Europe segments. There was additional growth expenditure by the Oligomers business on a DIB debottlenecking project at the site in Köln, Germany and growth expenditure on the PAO HiVis plant at La Porte, USA and on the LAO platform at Chocolate Bayou, Texas together with a turnaround on the LAO plants at Joffre, Canada and Feluy, Belgium. There was also expenditure within the Oxide business in relation to third party and EO storage projects at the Antwerp, Belgium site. In addition, there were also turnarounds at the Nitriles sites in Lima, USA and Seal Sands, United Kingdom and at the Phenol site in Antwerp, Belgium. The remaining capital expenditure related primarily to sustenance expenditure.

We expect that our aggregate capital expenditure for 2019 will be approximately €1.2 billion, which includes significant growth capital expenditure relating largely to projects in the O&P North America, O&P Europe, Oxide, Oligomers and Phenol businesses and maintenance expenditures (including turnarounds) across the Group's manufacturing facilities.

Working Capital

We anticipate that our working capital requirements will vary due to changes in raw material costs, which affect inventory and account receivables levels, and sales volumes. Working capital levels typically develop in line with raw material prices, although timing factors can affect flows of capital. We expect to fund our working capital requirements with cash generated from operations and drawings under our Securitization Program.

Cash Flows

During the 2018, 2017 and 2016 years ended December 31, our net cash flow was as follows:

	For the year ended December 31,		
	2018	2017	2016
	(€ in millions)		
Cash flow from operating activities	2,050.4	2,187.5	2,278.2
Cash flow from investing activities	(1,040.5)	(745.5)	(723.8)
Cash flow from financing activities	(367.9)	(2,143.0)	(1,087.5)

Cash Flows from Operating Activities

Net cash flow from operating activities was an inflow of €2,050.4 million for the year ended December 31, 2018, compared to an inflow of €2,187.5 million for the year ended December 31, 2017. The inflow was due to the profit generated from operations, partially offset by working capital outflows of €27.8 million for the year ended December 31, 2018, as compared to an outflow of €192.3 million for the year ended December 31, 2017. The working capital outflow for the year ended December 31, 2018 primarily reflected the rise in raw material costs as crude oil prices increased to an average of $71/bbl for the year ended December 31, 2018, as compared to an average of $54/bbl for the year ended December 31, 2017.

Net cash flow from operating activities was an inflow of €2,187.5 million for the year ended December 31, 2017, compared to an inflow of €2,278.2 million for the year ended December 31, 2016. The inflow was due to the profit generated from operations, partially offset by working capital outflows of €192.3 million for the year ended December 31, 2017, as compared to an inflow of €179.2 million for the year ended December 31, 2016. The working capital outflow for the year ended December 31, 2017 primarily reflected the rise in raw material costs as crude oil prices increased to an average of $54/bbl for the year ended December 31, 2017, as compared to an average of $44/bbl for the year ended December 31, 2016.

Taxation payments of €202.1 million were made for the year ended December 31, 2018, compared to payments of €143.1 million for the year ended December 31, 2017. The payments for the year ended December 31, 2018 primarily reflect payments made to the tax authorities in the US and to a lesser extent the UK, Germany, Canada and Belgium. In addition, there was a tax refund from the US tax authorities in relation to overpayments made in prior years.

Taxation payments of €143.1 million were made for the year ended December 31, 2017, compared to payments of €221.8 million for the year ended December 31, 2016. The payments for the year ended December 31, 2017 primarily reflected payments made to the tax authorities in the U.S. and U.K. and to a lesser extent Belgium, Canada and Germany. An overpayment in relation to US taxes in 2016 resulted in a decrease in taxes paid in 2017.

Cash Flows from Investing Activities

On November 1, 2016, the Group acquired 100% of the shares of WLP Holding Corporation, one of the largest high density polyethylene (HDPE) pipe manufacturers in North America, for an initial cash consideration of €135.4 million. Cash balances acquired with the business were €10.1 million. During the year ended December 31, 2018, the Group paid a further €7.4 million (December 31, 2017: €2.5 million). This payment was the second instalment of the contingent consideration which will be paid out over a three-year period, subject to the acquired business achieving certain targets.

For the year ended December 31, 2018, no loans (December 31, 2017: €315.7 million, December 31, 2016: €289.9 million) were granted to related parties and loan repayments of €105.4 million (December 31, 2017: €497.7 million, December 31, 2016: €343.3 million) were received from related parties.

During 2015, the Group provided a loan of $623.7 million (€568.4 million) to INEOS Upstream Limited, a related party, in connection with its acquisition of natural gas assets in the North Sea. The loan facility is unsecured, matures on October 26, 2020 and bears interest at 7% per annum. In September 2017, INEOS Upstream Limited, a related party, acquired further natural gas assets in the North Sea through its acquisition of the entire oil and gas business of DONG Energy A/S. In connection with the DONG Acquisition, the Group advanced a loan of $376.2 million (€315.7 million) to INEOS Upstream Limited, the proceeds of which were on-lent to certain of its subsidiaries. The loan is unsecured, matures in June 2022 and bears interest at 7% per annum. During 2018, net loan repayments of $122.5 million (€105.4 million) were received (2017: net loan repayments of $142.7 million (€121.4 million), 2016: net loan repayments of $117.6 million (€103.4 million)), leaving $617.1 million (€539.7 million) outstanding under the facility as at December 31, 2018 (2017: $739.6 million (€619.5 million), 2016: $506.1 million (€482.5 million)). During the year ended December 31, 2018, INEOS Upstream Limited paid €41.6 million (December 31, 2017: €36.6 million, December 31, 2016: €38.3 million) of interest relating to the loan.

Following the divestment of the Grangemouth petrochemical business in 2013, the Group put in place a €200 million shareholder loan facility to fund the ongoing operations and investments required at the site. This facility matures on July 28, 2021 and is secured on a second lien basis on the assets of the Grangemouth petrochemical business. As at December 31, 2016, €125.4 million was outstanding under the facility, which included €14.3 million of capitalised interest. During the year ended December 31, 2017, INEOS Grangemouth plc repaid the Group €127.0 million in full repayment (including accrued interest) of the shareholder loan facility.

During 2014, a related party group acquired the remaining 50% of the Styrolution joint venture which was previously a joint venture between INEOS Industries Holdings Limited, a related party, and BASF. As part of the funding for the acquisition the Group provided INEOS Styrolution Holding GmbH ("INEOS Styrolution"), a related party, with a Second Lien PIK Toggle Loan of €200.0 million. The loan bore interest at a rate per annum of 9.5% for cash interest payments or 10.25% for PIK interest and matured in November 2020. During the year ended December 31, 2016, INEOS Styrolution paid €22.5 million of interest relating to the Second Lien PIK Toggle Loan. During 2016, INEOS Styrolution refinanced its capital structure and repaid the €200.0 million Second Lien PIK Toggle Loan. The Group used the proceeds from the loan, together with €50.0 million of cash in hand, to invest €250.0 million in the INEOS Styrolution term loan facility, which was issued during September 2016. The new term loan was secured on the assets of INEOS Styrolution, bore interest at a rate per annum equal to EURIBOR (subject to a floor of 1.00% per annum) plus a margin of 3.75% and had a maturity date of September 30, 2021. In October 2017, the term loan was fully repaid to the Group resulting in an inflow of €249.3 million. During the year ended December 31, 2017, INEOS Styrolution paid €7.7 million of interest relating to the term loan debt.

In July 2014, the Group set up a joint venture with Sasol Limited named Gemini HDPE LLC to build and operate an HDPE plant at the Battleground site in Texas, USA The Group invested €12.9 million into the joint venture during the year ended December 31, 2018 (December 31, 2017 €57.8 million, December 31, 2016 €28.3 million). The plant became fully operational in the fourth quarter of 2017.

There were no other significant cash flows from investing activities in the years ended December 31, 2018, 2017 and 2016 other than the acquisition of property, plant and equipment (see "—Capital Expenditures" above).

Cash Flows from Financing Activities

Interest payments of €227.8 million were made in the year ended December 31, 2018, compared to €310.6 million for the year ended December 31, 2017. The interest payments during the year ended December 31, 2018 related primarily to monthly cash payments in respect of the Senior Secured Term Loans, semi-annual interest payments on the 2023 Senior Secured Notes, 2024 IGH Notes and 2025 Senior Secured Notes.

Interest payments of €310.6 million were made in the year ended December 31, 2017 compared to €404.0 million for the year ended December 31, 2016. The interest payments during the year ended December 31, 2017 related primarily to monthly cash payments in respect of the Senior Secured Term Loans, semi-annual interest payments on the 2023 Senior Secured Notes and 2024 IGH Notes and a final interest payment and early prepayment premium of €16.7 million on the 2019 IGH Notes, which were redeemed in February 2017. The interest payments during the year ended December 31, 2016 related primarily to monthly cash payments in respect of the Senior Secured Term Loans, semi-annual interest payments on the 2019 IGH Notes and 2023 Senior Secured Notes and a final interest payment and early prepayment premium of €17.5 million on the 2018 IGH Notes which were redeemed in August 2016.

As part of the Köln project to replace part of its incineration or cogeneration unit, the Group has entered into a €120 million loan facility which was fully drawn during the year ended December 31, 2018.

In February 2017, the Group completed a refinancing of the Senior Secured Term Loans. The Term Loans due 2018 were repaid in full from cash balances, the Term Loans due 2020 were extended to March 2022 and a new tranche of €1.4 billion Term Loans due 2024 were issued. The Term Loans due 2018 of €1,228.4 million, Term Loans due 2020 of €1,917.1 million and Term Loans due 2022 of €1,408.9 million were replaced by new Term Loans due 2022 of €3,081.3 million and new Term Loans due 2024 of €1,394.1 million, resulting in a net outflow of €79.0 million for the year ended December 31, 2017. As part of the refinancing, the Group also redeemed in full the 2019 IGH Notes of €1,151.9 million with part of the proceeds from the issuance of the Term Loans due 2024. The Group paid associated debt issue costs of €10.0 million in relation to refinancing of the Senior Secured Term Loans during the year ended December 31, 2017.

In November 2017, the Group issued new Term Loans due 2024 of €2,060.0 million and $1,660.0 million (€1,427.6 million) and new 2025 Senior Secured Notes of €550 million. The proceeds from the issuances (together with cash received from INEOS Styrolution) were used to repay the outstanding Term Loans due 2022 and Term Loans due 2024 of €2,580.5 million and $1,990.0 million (€1,711.2 million), resulting in a net outflow of €804.1 million in relation to the refinancing of the Senior Secured Term Loans. During the year ended December 31, 2017, the Group paid associated debt issue costs of €10.5 million in relation to refinancing of the Senior Secured Term Loans and the issuance of the 2025 Senior Secured Notes.

In December 2017, the Group entered into an amendment agreement to extend the maturity of the Securitization Program to December 2020 and paid associated debt issue costs of €1.2 million in relation to the Securitization Program amendment. During the year ended December 31, 2016, the Group paid debt issue costs of €0.3 million in relation to the Securitization Program amendment agreement which happened in December 2015.

In June 2016, the Group entered into a separate bank loan agreement to fund specific capital expenditure on a freight rail car fleet covering North America for the Oligomers business, resulting in an inflow of €13.1 million for the year ended December 31, 2016. The Group has subsequently made scheduled repayments of €0.5 million (December 31, 2017: €0.5 million, December 31, 2016: €0.4 million) on the bank loan agreement during the year ended December 31, 2018.

In August 2016, the Group issued €650 million and $500 million of 2024 IGH Notes resulting in an inflow of €1,101.1 million. The proceeds of the 2024 IGH Notes together with cash on hand were used to redeem in full the 2018 IGH Notes of €1,111.7 million. The Group paid associated debt issue costs of €10.2 million in relation to the issue of the 2024 IGH Notes during the year ended December 31, 2016.

The Group made a repayment of €1.2 million (December 31, 2017: €0.1 million, December 31, 2016: €130.5 million) on the Securitization Program during the year ended December 31, 2018.

The Group made scheduled repayments of €34.8 million (December 31, 2017: €33.0 million, December 31, 2016: €272.0 million) on the Senior Secured Term Loans during the year ended December 31, 2018. The 2016 repayments included the final payment on the Term Loan due 2016 of €224.4 million, which matured in December 2016.

The Group also made scheduled repayments of €27.5 million (December 31, 2017 €27.5 million, December 31, 2016 €27.5 million) on the Noretyl Facility during the year ended December 31, 2018.

During the year ended December 31, 2018, the Group made the final repayments of €1.8 million (December 31, 2017: €3.6 million, December 31, 2016: €3.6 million) on a bilateral bank loan agreement which funded some specific capital expenditure at the Köln, Germany site.

The Company made dividend payments of €193.8 million in the year ended December 31, 2018 (December 31, 2017: €260.9 million, December 31, 2016: €241.3 million).

Net debt

Total net debt as at December 31, 2018 was €4,260.6 million (December 31, 2017: €4,826.7 million). The Group held net cash balances of €2,071.3 million as at December 31, 2018 (December 31, 2017: €1,366.3 million) which included restricted cash of €223.9 million used as collateral against bank guarantees and letters of credit. The Group had availability under undrawn working capital facilities of €313.9 million as at December 31, 2018. Following the year ended December 31, 2018, in February 2019, the Group paid a dividend of €1,450.0 million to INEOS Holdings Luxembourg S.A., resulting in a corresponding increase in total net debt. See "Recent Developments—Current Trading."

Total net debt as at December 31, 2017 was €4,826.7 million (December 31, 2016: €5,862.8 million). The Group held net cash balances of €1,366.3 million as at December 31, 2017 (December 31, 2016: €2,204.1 million), which included restricted cash of €214.5 million used as collateral against bank guarantees and letters of credit. The Group had availability under undrawn working capital facilities of €365.0 million as at December 31, 2017.

Off-Balance Sheet Arrangements

We use various customary off-balance sheet arrangements, such as operating leases, to finance our business. None of these arrangements has or is likely to have a material effect on our results of operations, financial condition or liquidity.

Quantitative and Qualitative Disclosures about Market Risk

In the ordinary course of our business, we are exposed to a variety of market risks arising from fluctuations in foreign currency exchange rates, interest rates and commodity prices. To manage these risks effectively, we may enter into hedging transactions and use derivative financial instruments, pursuant to established internal guidelines and policies, to mitigate the adverse effects of these market risks. We do not enter into financial instruments for trading or speculative purposes.

In the case of commodities, this exposure principally arises from movements in the prices of the feedstocks we require to make our products. To manage this exposure, we generally acquire raw materials and sell finished products at posted or market-related prices, which are typically set on a quarterly, monthly or more frequent basis in line with industry practice. We seek to minimize reductions in our margins by passing through feedstock cost increases to our customers through higher prices for our products.

Our cash flows and earnings are subject to exchange rate fluctuations. In our European petrochemical business, product prices, certain feedstock costs and most other costs are denominated in euro and British pounds. From time to time, we may enter into foreign currency exchange instruments to minimize the short-term impact of movements in foreign exchange rates.

Critical Accounting Estimates and Judgments

We have reviewed our selection and application of principal accounting policies and related financial disclosures. The preceding discussion of past performance is based upon our consolidated financial information, which was prepared in accordance with IFRS. Our significant accounting policies are described in note 1 to the audited consolidated financial statements, included elsewhere in this offering memorandum. The application of these accounting policies requires that management make estimates and judgments. On an ongoing basis, we evaluate our estimates, which are based on historical experience and market and other conditions, and on assumptions that we believe to be reasonable. Actual results may differ from these estimates due to actual market and other conditions, and assumptions being significantly different than was anticipated at the time of the preparation of these estimates. Such differences may affect our financial results. We have chosen to highlight certain policies that we consider critical to the operations of our business and understanding our consolidated financial information. These policies have been discussed and agreed upon with our audit committee. We believe the following estimates affect the application of our most critical accounting policies and require our most significant judgments.

The following areas are considered to involve a significant degree of judgment or estimation (this section should be read in conjunction with note 31 to the consolidated financial statements of INEOS Group Holdings S.A. as of and for the year ended December 31, 2018, included elsewhere in this offering memorandum).

Fair Value Measurement on Business Combination

The amount of goodwill initially recognized as a result of a business combination is dependent on the allocation of the purchase price to the fair value of the identifiable assets and liabilities acquired. The determination of the fair value of the acquired assets and liabilities is to a considerable extent based upon management's judgment, and estimates and assumptions made.

Allocation of the purchase price affects the results of the Group as intangible assets are amortized over their estimated useful lives, whereas goodwill is not amortized. This could lead to differing amortization charges based on the allocation to indefinite and finite lived intangible assets.

On acquisition of a business, the identifiable intangible assets may include customer contracts, customer relationships and preferential supply contracts. The fair value of these assets is determined by discounting estimated future net cash flows generated by the asset. The use of different estimates and assumptions for the expectations of future cash flows and the discount rate would change the valuation of these intangible assets.

Taxation

Management is required to estimate the tax payable in each of the jurisdictions in which the Group operates. This involves estimating the actual current tax charge or credit, together with assessing temporary differences resulting from differing treatment of items for tax and accounting purposes.

These differences result in deferred tax assets and liabilities, which may be included on the consolidated balance sheet of the Group. Management has performed an assessment as to the extent to which future taxable profits will allow the deferred asset to be recovered. The calculation of the Group's total tax charge necessarily involves a significant degree of estimation in respect of certain items whose tax treatment cannot be finally determined until resolution has been reached with the relevant tax authority, or, as appropriate, through a formal legal process.

The Group has, from time to time, contingent tax liabilities arising from trading and corporate transactions in the United Kingdom and overseas jurisdictions. After appropriate consideration, management makes provision for these liabilities based on the probable level of economic loss that may be incurred and which is reliably measurable.

The breadth of the Group's structure with operations in many geographic locations makes the use of estimates and assumptions more challenging. The resolution of issues is not always within the control of the Group and can be reliant upon the efficiency of the legal processes in the relevant jurisdictions in which the Group operates, and as a result issues can, and often do, take many years to resolve.

Post-Retirement Benefits

The Group operates a number of defined benefit post employment schemes. Under IAS 19 Revised Employee Benefits, management is required to estimate the present value of the future defined benefit obligation of each of the defined benefit schemes. The costs and year end obligations under defined benefit schemes are determined using actuarial valuations. The actuarial valuations involve making numerous assumptions, including future rate of increase in salaries, inflation rate projections, discount rate for scheme liabilities and expected rate of return on the scheme assets.

Provisions

Provisions are recognized for the cost of remediation works where there is a legal or constructive obligation for such work to be carried out. Where the estimated obligation arises upon initial recognition of the related asset, the corresponding debit is treated as part of the cost of the related asset and depreciated over its estimated useful life. Other provisions are recognized in the period when it becomes probable that there will be a future outflow of funds resulting from past operations or events that can be reasonably estimated. The timing of recognition requires the application of judgment to existing facts and circumstances, which can be subject to change.

Estimates of the amounts of provisions recognized are based on current legal and constructive requirements, technology and price levels. Because actual outflows can differ from estimates due to changes in laws, regulations, public expectations, technology, prices and conditions, and can take place many years in the future, the carrying amounts of provisions are regularly reviewed and adjusted to take account of such changes.

In relation to remediation costs, the estimated interest rate used in discounting the cash flows is reviewed at least annually. The interest rate used to determine the obligation in the balance sheet at December 31, 2018 was 4% (2017: 4%, 2016: 4%). The nature and amount of provisions included within the financial statements are detailed in note 22 to the consolidated financial statements of INEOS Group Holdings S.A. as of and for the year ended December 31, 2018, included elsewhere in this offering memorandum.

Impairment Reviews

IFRS requires management to test for impairment of goodwill and other intangible assets with indefinite lives, on an annual basis, and of tangible and intangible assets with finite lives if events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable.

An impairment test requires an assessment as to whether the carrying value of assets can be supported by its recoverable amount. Management calculates the recoverable amount based on the net present value of the future cash flows derived from the relevant assets, using cash flow projections which have been discounted at an appropriate discount rate.

In calculating the net present value of the future cash flows, certain assumptions and estimates are required to be made in respect of highly uncertain matters, such as management's expectations of future margins, growth rates of various revenue streams and long-term growth rates.

As at December 31, 2018 the Group has property, plant and equipment with a carrying value of €5,046.3 million (2017: €4,255.4 million, 2016: €4,007.4 million) as disclosed in note 10 and intangible assets with a carrying value of €744.8 million (2017: €731.6 million, 2016: €763.9 million) as disclosed in note 11 to the consolidated financial statements of INEOS Group Holdings S.A. as of and for the year ended December 31, 2018, included elsewhere in this offering memorandum. All of these assets are assessed annually for impairment as described above.

For the purpose of impairment testing (when required), to assess whether any impairment exists, estimates are made of the future cash flows expected to result from the use of the asset and its eventual disposal. Actual outcomes could vary significantly from such estimates of discounted future cash flows. Factors such as changes in the planned use of buildings, plant or equipment, or closure of facilities, the presence or absence of competition, lower than expected asset utilization from events, such as unplanned outages, strikes and hurricanes, technical obsolescence or lower than anticipated sales of products with capitalized intellectual property rights, could result in shortened useful lives or impairment. Changes in the discount rates used could also lead to impairments. Further details on the impairment review performed on the goodwill and intangible assets, including sensitivity analysis in relation to key assumptions, are provided in note 11 to the consolidated financial statements of INEOS Group Holdings S.A. as of and for the year ended December 31, 2018, included elsewhere in this offering memorandum.

Segment Aggregation

IFRS 8 "Operating Segments" permits two or more operating segments to be aggregated into one for disclosure purposes when individual segments have characteristics so similar that they can be expected to have essentially the same future prospects. Management applies this judgment when aggregating the businesses within the Chemical Intermediates segment. In doing so they take into account that the businesses all have similar economic characteristics, similar products, services and types of customers and similar past cyclical financial performance.

Investments

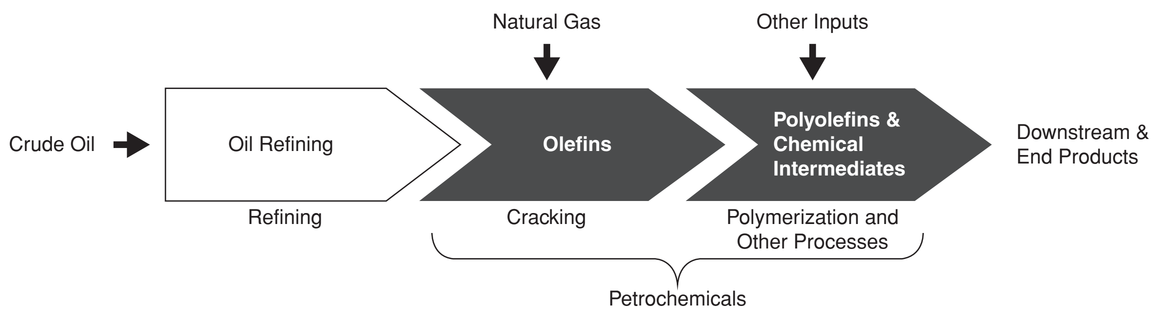
The Group applies IFRS 11 to all joint arrangements. Under IFRS 11 investments in joint arrangements are classified as either joint operations or joint ventures depending on the contractual rights and obligations of each investor. The Group has assessed the nature of its joint arrangements and determined them to be joint ventures. Joint ventures are accounted for using the equity method.

INDUSTRY AND MARKET OVERVIEW

Certain parts of the projections and other information set forth in this section have been derived from external sources including reports of Nexant, an independent consultant to the chemical industry, among others. Industry surveys and publications generally state that the information contained therein has been obtained from sources believed to be reliable, but that the accuracy and completeness of such information is not guaranteed. We believe that these industry publications, surveys and forecasts are reliable but we have not independently verified them and cannot guarantee their accuracy or completeness. See "Historical and Current Market and Industry Data."

Overview

The petrochemicals markets comprise all products derived from crude oil and natural gas, and include olefins, polymers and various petrochemical chemical intermediate products directly or indirectly derived from olefins. We participate in the majority of these market segments, with a significant proportion of our profitability being derived from the chemical intermediates sector.



In the refining industry, crude oil is refined into a number of products, including naphtha and liquid petroleum gas, a significant proportion of which is used as feedstock for the production of olefins, such as ethylene and propylene. In turn, a significant portion of these olefins are used as feedstock for the manufacture of polymers and petrochemical derivatives, such as chemical intermediates.

Olefins are the basic building blocks used to create a variety of petrochemical products. Petrochemicals are widely used in consumer and industrial applications ranging from plastics and packaging to construction and cosmetics. Owing to their physical properties and affordability, petrochemicals and their derivatives continue to replace more traditional materials, such as metal, glass, ceramics and wood, in an expanding list of end-use applications.

Chemical intermediates are high value-added chemical products used as key components in a wide variety of consumer and industrial products. The chemical intermediates industry is less cyclical than the olefins industry; however, demand for chemical intermediate products is affected by trends in demand in the various industries that are end users of the products.

The industry overview detailed below summarizes the outlook for our key activities in the petrochemical and chemical intermediates industries.

Olefins & Polyolefins

Overview

Olefins are the basic building blocks used to create a wide variety of petrochemical products. The key olefins manufactured by the petrochemical industry are ethylene and propylene and these olefins are in turn used to produce polyolefins and other olefin derivatives, such as ethylene oxide, acrylonitrile, vinyl chloride monomer, cumene and oxo-alcohols. Butadiene, benzene and other aromatics are co-products of olefin manufacture, produced primarily from steam cracking of naphtha. Polyolefins is the term used to collectively describe polypropylene and polyethylene polymers, the world's most widely used plastic materials. Polyolefins are manufactured by the process of polymerization whereby individual molecules of ethylene and propylene are aggregated in polymer chains.

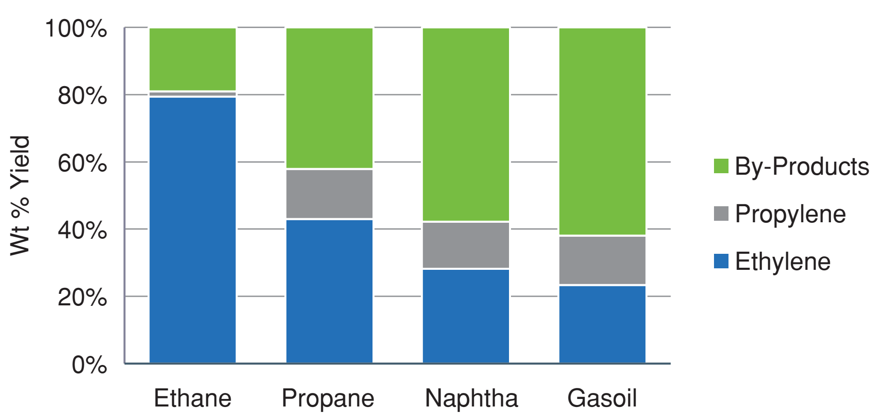
Manufacturing

Olefins are produced primarily by the steam cracking of hydrocarbon feedstocks. In steam cracking, a gaseous or liquid hydrocarbon feed, such as naphtha, liquefied petroleum gas or ethane, is diluted with steam and briefly heated in a furnace without the presence of oxygen. Typically, the reaction temperature is very high, at around 850°C, but the reaction is only allowed to take place very briefly. In modern cracking furnaces, the reaction time is further reduced to milliseconds, resulting in gas velocities faster than the speed of sound, to improve yield. After the cracking temperature has been reached, the gas is quickly quenched to stop the reaction in a transfer line heat exchanger. The products produced in the reaction depend on the composition of the feed, the hydrocarbon-to-steam ratio and on the cracking temperature and furnace residence time.

Light hydrocarbon feeds, such as ethane, liquefied petroleum gas or light naphtha, yield product streams rich in the lighter alkenes, including ethylene, propylene and butadiene. Heavier hydrocarbon feeds (full-range and heavy naphthas, as well as other refinery products) yield some of these products too, but also yield products rich in aromatic hydrocarbons and hydrocarbons suitable for inclusion in gasoline or fuel oil. Higher cracking temperatures (also referred to as higher levels of "severity") favor the production of ethylene and benzene, whereas lower cracking temperatures (lower levels of "severity") produce higher amounts of propylene, C4-hydrocarbons and liquid products.

Depending on feedstock, varying levels of ethylene, propylene and other by-products are achieved. Ethane produces the most ethylene but the least propylene. Naphtha produces substantially less ethylene, roughly one-third of that of ethane, but produces more propylene and significantly more by-products.

Product Yield by Feedstock



Source: Nexant—2018

The main polyolefins are the thermoplastics, polyethylene and polypropylene, which are produced by the polymerization of the olefin monomers ethylene and propylene, respectively. Polyolefins can either be homopolymers (a combination of the same monomers) or copolymers, (polymers that are produced from a combination of two or more monomers).

Polyolefins are produced using a number of different technologies that are widely available, including one high-pressure process and three low-pressure processes (Solution, Slurry and Gas Phase). All of the technologies are constantly being adapted to improve product qualities and reduce production costs. For commodity products, produced on modern scale technology, the cost structure of these technologies is similar. Increased cost structures for producing specialty products are typically justified by premium margins.

The following is a summary of the four processes:

High-Pressure Process

This was the original process used to produce polyethylene and is still in use today. This process is a free radical polymerization that does not require the use of a catalyst, operating at pressures above 1,000 and up to 3,500 bar and temperatures from 150° to 340°C. Originally conducted in a high-pressure autoclave, current processes more commonly use a tubular reactor. This process is used to produce low-density polyethylene, characterized by long-chain branching, considerable flexibility and clarity. Because of the high-pressures involved, this process involves higher risk than low-pressure processes and requires expensive and specialized equipment; consequently, fewer high-pressure processes have been constructed in recent years.

Low-Pressure Processes

These processes typically operate below 200 bar and have lower capital intensity but require the aid of a catalyst. In addition, it is common to add a comonomer (butene or hexene in the case of polyethylene, and ethylene in the case of polypropylene) to tailor the resultant polymer properties.

- ***Solution Process.*** This process operates at temperatures above the melting point of the polyolefin (above 130°C for polyethylene and above 140°C for polypropylene) and employs metallocene or Ziegler-Natta catalysts and a solvent to dissolve the growing polymer chains. This process is best suited to make high-density polyethylene (having very few chain branches, and those branches that do exist are short-only a few carbon atoms in length) and linear low-density polyethylene (having many short-chain branches, which may be contrasted to low-density polyethylene with many long-chain branches). Solution processes have the ability to produce narrow molecular weight distribution polyolefins.
- ***Slurry (or Suspension) Process.*** This process is a continuous low temperature (60°-105°C, 20-35 bar for polyethylene or 60°-85°C, 35-50 bar for polypropylene) process in which polymer forms as a solid particle in the presence of a catalyst while suspended in a liquid slurry. In the case of polyethylene, the polymerization takes place in an inert liquid carrier such as isobutane. In the case of polypropylene, the polymerization takes place in liquid hexane, heptane, or even liquid propylene monomer. When propylene is utilized as the carrier liquid, the process is often referred to as "bulk slurry." The carrier liquid serves to aid in the removal of heat as it carries the growing polymer particles through the reaction process. The catalyst may be chromium on silica (polyethylene only), Ziegler-Natta, or metallocene. The reactor may be a stirred tank or a pipe-loop reactor, in either case jacketed to aid in removal of the heat of reaction. One or more reactors may be placed in series to broaden the molecular weight distribution and produce bimodal polyolefins. This process is best suited to making high-density polyethylene and homopolymer polypropylene. One advantage of this process over other high-density polyethylene processes is the ability to make rapid grade transitions, which makes it particularly well suited to the manufacture of specialty polyethylene products.
- ***Gas Phase.*** As the name implies, polymerization occurs with the solid polymer particles produced on a heterogeneous catalyst in the gas phase. Like the slurry process, the catalyst

may be chromium on silica (polyethylene only), Ziegler-Natta, or metallocene. In the reactor, the growing polyolefin particles are fluidized and cooled by the gaseous reactants and/or nitrogen, or sub-fluidized and mechanically agitated. Liquid monomer may be added and flashed to aid in the removal of heat. The reaction takes place at low temperature (80°-100°C for polyethylene and about 60°-85°C for polypropylene) and pressure (15-35 bar). A gas phase process has advantages over slurry and solution processes in that the heat of reaction is very effectively removed and operates with lower hydrocarbon inventories. In addition, high-ethylene content copolymers of polypropylene can be produced in this process. This process is best suited to the manufacture of linear low-density polyethylene, high-density polyethylene and all types of polypropylene, including homopolymer, random copolymer, impact copolymer and soft thermoplastic polyolefin.

Post-polymerization, any catalyst is deactivated, the polyolefin is freed of any solvent, unreacted monomer or liquid diluent, and the resulting polyolefin flake or crumb is combined with additives and extruded into pellets prior to sale to downstream fabricators.

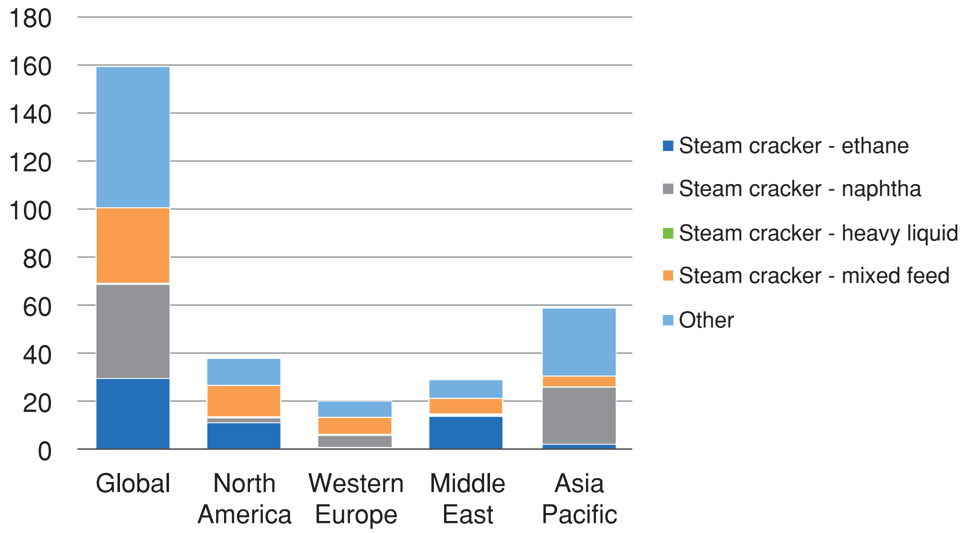
Several of these technologies have recently been adapted to run multiple reactions in series, yielding a product with a wider bi-modal molecular weight distribution that provides superior strength or unique characteristics such as high-impact resistance.

All polyolefin groups participate in mature markets and therefore larger plants of all process technologies are being built with capacities of 300,000-500,000 tonnes per year.

Feedstock

The predominant feedstock for Europe and North East Asia is naphtha. The Middle East predominantly uses natural gas liquids ("NGLs"), although there is very little very low cost ethane available for new crackers, which are designed to crack a range of the heavier NGLs (*i.e.*, propane, butane and heavier condensates). These feedstocks are tradable as fuel, and thus have a significant opportunity value, which earlier tranches of essentially "distressed" ethane did not (ethane is not practically tradable as a fuel). North American crackers have always had considerable in-built feedstock flexibility, enabling operators to select the most economic feedstock (be it NGLs or naphtha) on the day. The recent widespread exploitation of shale gas has caused fuel gas prices to fall well below those of other regions and has also given rise to an abundance of associated NGLs (mainly ethane and propane). These NGLs are currently available to local cracker operators at a fraction of the equivalent cost of naphtha, thus bestowing a large commercial advantage on North American NGL-based cracker operators. NGLs are the predominant feedstock for North American crackers.

Ethylene Source by Feedstock
2018 Estimate—Thousand tons of Ethylene

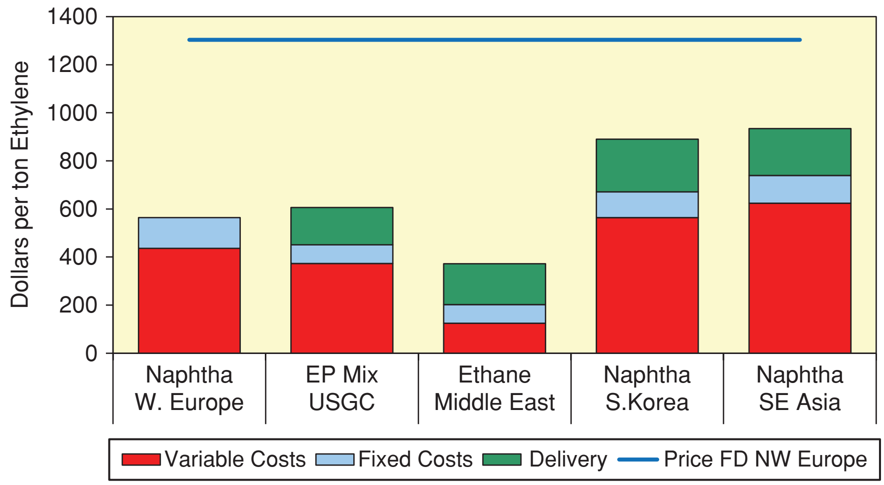


Source: Nexant—2018

The prices of naphtha and NGLs are influenced by numerous factors, including the balance between supply and demand, oil and gas prices, and geopolitical factors. Because gas is not as readily transportable between regions as oil, and the amount of interregional trade in gas is therefore limited, gas prices tend to vary by geographic region. In an environment of relatively high oil prices, olefin facilities located in the Middle East enjoy the advantage of direct access to gas feedstocks, which are priced lower than naphtha. Producers who are back-integrated to refineries have the ability to capture margins across the value chain and to optimize feedstock types.

The relative costs of the various raw material sources in the manufacture of ethylene, compared to current fully delivered Northwest European pricing for ethylene are as follows:

World Ethylene Manufacturing and Delivered Cost Competitiveness
Q4 2018—Dollars per ton of Ethylene



Source: Nexant—2018

Products

According to Nexant, worldwide demand for petrochemical products has grown at a rate greater than the growth rate of GDP over the last 15 years, reflecting in part the ongoing substitution of thermoplastics for other industrial materials, including paper, wood, glass and metal, and the change in consumption patterns of developing nations. Nexant projects demand growth for petrochemical products to be moderate as compared to historical levels, but nonetheless to grow slightly faster than GDP on a worldwide basis as this penetration matures in established markets, and despite petrochemical growth rates which can be below GDP growth rates for certain products in North America and Western Europe. Between 2018 and 2023, Nexant projects GDP to grow at an average annual growth rate of 2.3% in North America, 1.8% in Western Europe and 4.1% in Northeast Asia. According to Nexant, in Northeast Asia, China's economic growth over 2018-2023 is expected to ease to 5.5%, but the growth is still expected to be higher than the other countries in the region.

Supply-and-demand tightness is expected to drive the trend toward higher margins, as demand growth is forecasted to recover and further investments in key regions are not expected. The actual pace of the recovery in margins will be heavily dependent on the pace of recovery in end-user product demand.

Nexant's view of GDP and demand growth rates for petrochemical products varies by region and product type, as detailed in the table below:

	Average annual GDP and demand growth rates (%)							
	2010-2018				2018-2023(2)			
	North America	Western Europe	Northeast Asia	Global	North America	Western Europe	Northeast Asia	Global
GDP(1)	2.1	1.3	4.9	2.8	2.3	1.8	4.1	3.0
Ethylene	3.3	0.1	3.2	3.3	3.1	(0.6)	4.0	3.2
Propylene	0.3	(0.3)	6.8	4.1	2.6	0.5	4.5	4.1
Butadiene	(1.8)	0.5	3.2	2.2	0.1	0.7	2.2	2.5
Polyethylene	1.9	1.1	4.9	3.7	2.9	0.8	4.4	3.8
High-density polyethylene	2.2	0.8	4.9	3.7	3.0	0.8	4.1	3.8
Low-density polyethylene	(0.5)	(0.1)	3.7	2.1	1.2	0.4	3.5	2.7
Linear low-density polyethylene	2.8	3.0	5.7	4.9	3.4	1.3	5.2	4.6
Polypropylene	1.4	1.5	6.3	4.7	3.6	0.9	4.9	4.6

Source: Nexant—2018

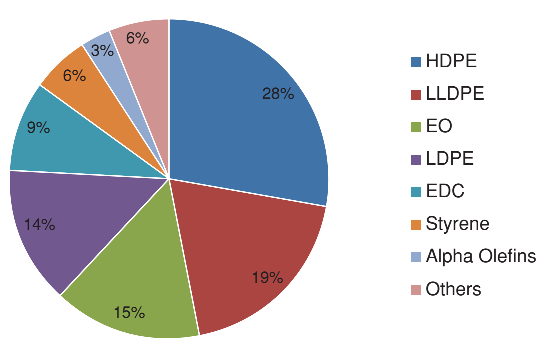
(1) The GDP growth figure for each region refers to gross domestic product for the countries in the region. The growth rates for products for each region reflect the growth of domestic demand in that region.

(2) Nexant's expected growth rates.

Set forth below is a description of the principal petrochemical products detailed above and their applications.

- ***Ethylene.*** According to Nexant, ethylene is the world's most widely used petrochemical in terms of volume, accounting for over one-third of the global production of primary petrochemicals. It is the key building block used to produce a large number of higher value added chemicals, including polyethylene, polyvinyl chloride via ethylene dichloride and styrene via ethylbenzene. Ethylene is a flammable gas and is a primary olefin obtained through a cracking process, as described above. Because ethylene is a gas, it must be transported either by pipeline or in the form of a highly pressurized and refrigerated liquid, which is an expensive means of transportation.

Global Ethylene Demand
2018—Estimated

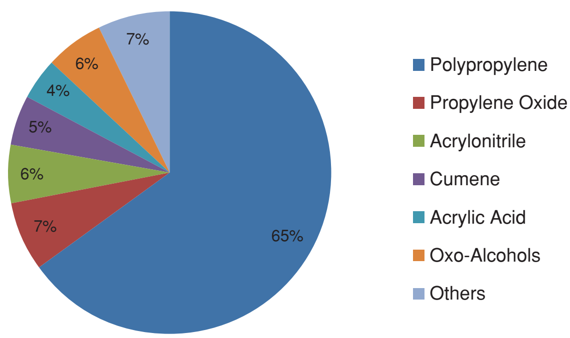


Source: Nexant—2018

While ethylene itself has no consumer applications, demand for ethylene is driven essentially by its use as feedstock for various thermoplastics, including polyethylene and other polymer derivatives. Thermoplastics are plastics that soften when heated and harden again when cooled. Aside from being the feedstock for polyethylene production, demand for ethylene is also driven by the manufacture of ethylene oxide and derivatives, ethylene dichloride and ethyl benzene. These products are in turn used mainly in the production of other thermoplastics; PET, PVC and polystyrene, respectively. According to Nexant, the global market for ethylene is forecast to grow at 3.2% per annum through 2023 versus forecast GDP growth of 3.0% during the same period, driven by polyethylene applications such as high-density polyethylene and linear low-density polyethylene.

- ***Propylene.*** Propylene is a flammable gas which is derived as a co-product either of the refinery fluid catalytic cracker process used to make gasoline or of the steam cracking process used to make ethylene. More recently, propylene is also being produced from processes such as propane dehydrogenation and metathesis. Propylene is an important feedstock for a significant number of industrial products and is the main feedstock for polypropylene and acrylonitrile. Propylene is marginally easier to transport than ethylene and may be shipped by pipeline, road, rail or ship.

Global Chemical and Polymer Grade Propylene Demand 2018—Estimated



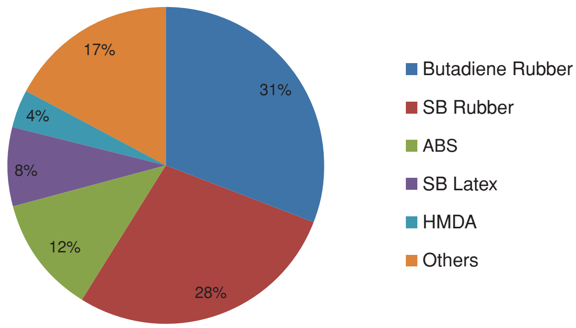
Source: Nexant—2018

Global propylene demand is driven essentially by its use as feedstock for various thermoplastics and by the level of demand for propylene derivatives, particularly polypropylene, propylene oxide, acrylonitrile, oxo-alcohols, cumene and acrylic acid. Growth in the demand for polypropylene has stemmed from the substitution of non-polymers (paper, wood, glass and metal, etc.) for polypropylene due to its relative cost advantage and superior performance. According to Nexant, the global market for propylene is projected to grow at 4.1% per annum through 2023, driven mainly by polypropylene demand.

- ***Butadiene.*** Butadiene is a gas and is one of the co-products of the steam cracking process used to manufacture ethylene and propylene. Butadiene is used primarily in the production of polymers, principally synthetic rubbers such as styrene-butadiene rubber, which is used to make tires and other rubber products. Other polymers made from butadiene include acrylonitrile-butadiene styrene and styrene-butadiene latex. Butadiene is also used to make ethylidene norbornene monomer.

Butadiene demand is driven primarily by growth in consumption of synthetic rubber. According to Nexant, the global market for butadiene is projected to grow at an average of 2.5% per annum through 2023. Demand is tightly linked to the market for synthetic rubber, which is, in turn, mainly consumed in the automotive sector.

Global Butadiene Demand
2018—Estimated

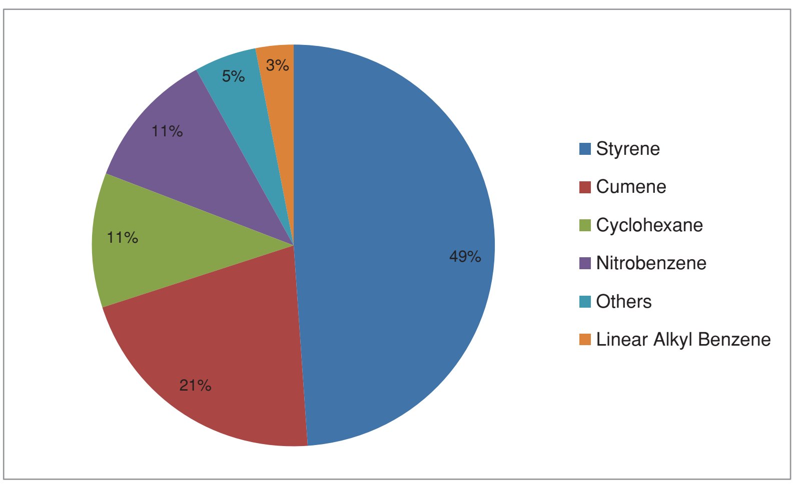


Source: Nexant—2018

- ***Benzene.*** Benzene is used to produce a number of petrochemical intermediates, such as styrene, cumene for phenol and acetone, cyclohexane and nitrobenzene. It is mainly produced from refinery processes or as a co-product of steam cracker operations.

  Styrene is the largest chemical outlet for benzene at around 49% of demand. The second largest outlet for benzene, accounting for 20% of demand, is cumene, which is nearly all consumed in phenol production with acetone formed as a co-product. For 2018, Nexant estimated the global benzene demand to be 48.4 million tons, with approximately 70% being consumed in the production of ethylbenzene for the styrenics industry and cumene for the phenolics industry. Nexant forecasts an average global growth rate in demand of approximately 2.1% per year in the 2018-2023 period.

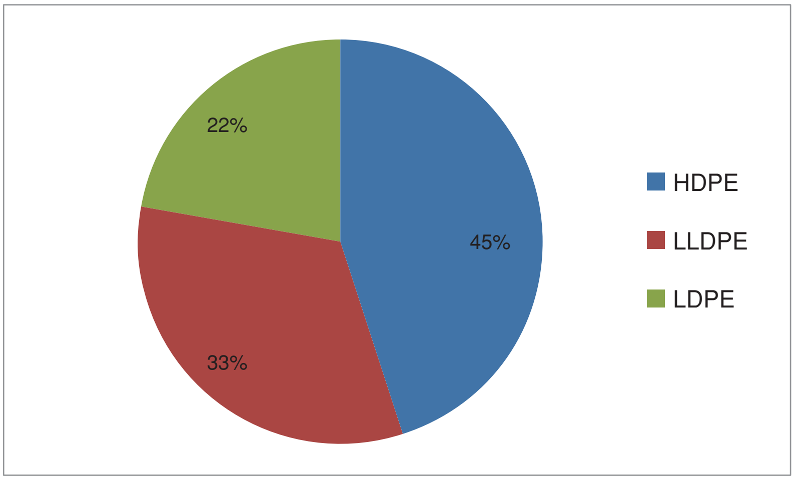
Global Benzene Demand
2018—Estimated



Source: Nexant—2018

- ***Polyethylene.*** Polyethylene is the world's most widely used thermoplastic and is made by the polymerization of ethylene. Polyethylene is often classified by its density, because greater density corresponds with greater material rigidity.

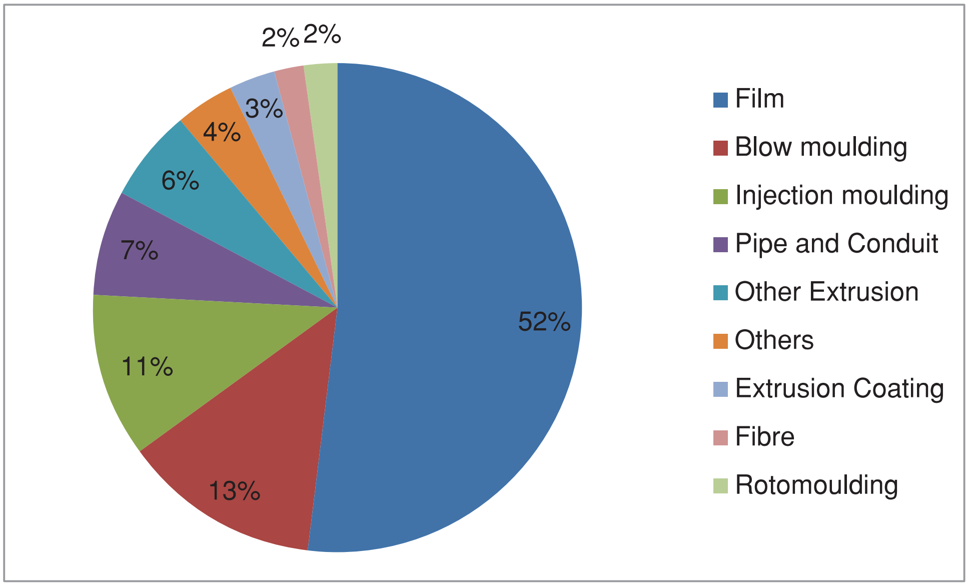
Global Polyethylene Demand by Product
2018—Estimated



Source: Nexant—2018

The world's largest volume polyethylene is high density polyethylene (HDPE), which has a relatively high degree of tensile strength. Plastic containers represent the most common household use of high density polyethylene. At the opposite end of the spectrum is low density polyethylene (LDPE), which was the first type of polyethylene to be developed. Flexible packaging represent the most common household use of low density polyethylene. Both high density polyethylene and low density polyethylene are also commonly used for molding applications. Linear low density polyethylene (LLDPE), which was developed in the 1970s, can usually be manufactured at a slightly lower cost than low density polyethylene and has similar basic properties. While low density polyethylene and linear low density polyethylene are to a certain extent substitutable for each other, one may be more suitable than the other for a specific application.

Global Polyethylene Demand by Application
2018—Estimated

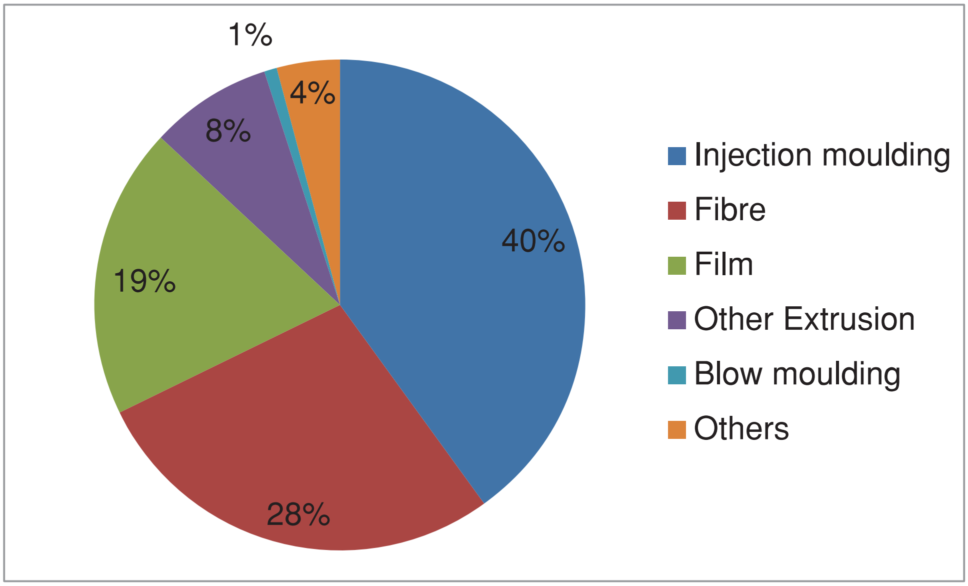


Source: Nexant—2018

Film is the largest single use of global polyethylene production and the primary driver of demand, representing approximately one half of worldwide polyethylene consumption. Film includes a myriad of end use applications, from food packaging to trash bags, stretch films and shrink films. Blow molding and injection molding are the next largest uses and are also important demand drivers. In the blow molded category, blow molded bottles are the single largest end use. Nexant forecasts an average global growth rate in demand of approximately 3.8% per year in the 2018-2023 period.

- ***Polypropylene.*** Polypropylene is the world's second most widely used thermoplastic after polyethylene and is among the fastest growing categories of thermoplastics. It is manufactured by the polymerization of propylene. The rapid growth of polypropylene-based products reflects the superior cost and performance characteristics of this material. As one of the industry's most versatile polymers, polypropylene is achieving a portion of its growth by displacing other polymers, such as polyethylene and polystyrene.

Global Polypropylene Demand by Applications
2018—Estimated



Source: Nexant—2018

The largest end use segment of the polypropylene industry is injection molding, followed by film and sheet applications. Injection molded polypropylene includes a wide variety of end uses, such as packaging, automotive and appliances. End use segments for films and sheets include food bags, tape and wrappings for consumer goods. Polypropylene is a thermoplastic characterized by its rigidity and resistance to high temperatures, chemicals and fatigue combined with a greater density. Polypropylene has a heat distortion temperature of 140°C to 200°C, which makes it particularly suitable for "hot fill" applications, which are manufactured using injection molding. As a result, polypropylene is the most significant material used in molded containers and automotive applications. Polypropylene fibers are also used in fabrics and carpets.

According to Nexant, the global polypropylene market is projected to grow at 4.6% per annum through 2023. Nexant expects that the demand for polypropylene in Asia will continue to grow at higher rates than North America and Europe, primarily as a result of growth in the Chinese market.

Market Environment

Although the major costs of production are related to the costs of the relevant feedstocks and the scale of operation, the olefins industry is primarily regional. This is due to high transportation costs. Prices are also indirectly arbitraged by the trade flows in olefin derivatives (principally polymers), the markets for which are becoming increasingly global. Polyolefins, in common with other segments of the chemicals industry, are subject to cyclical supply and demand, although polyolefin demand growth has been historically strong, driven by the broadening range of end uses.

The petrochemical industry is highly commoditized. Some polyolefins have subgrades that have properties enabling them to be differentiated from commodity grades. These products account for a small portion of the overall market, but carry a premium in the market and allow differentiation in the sector.

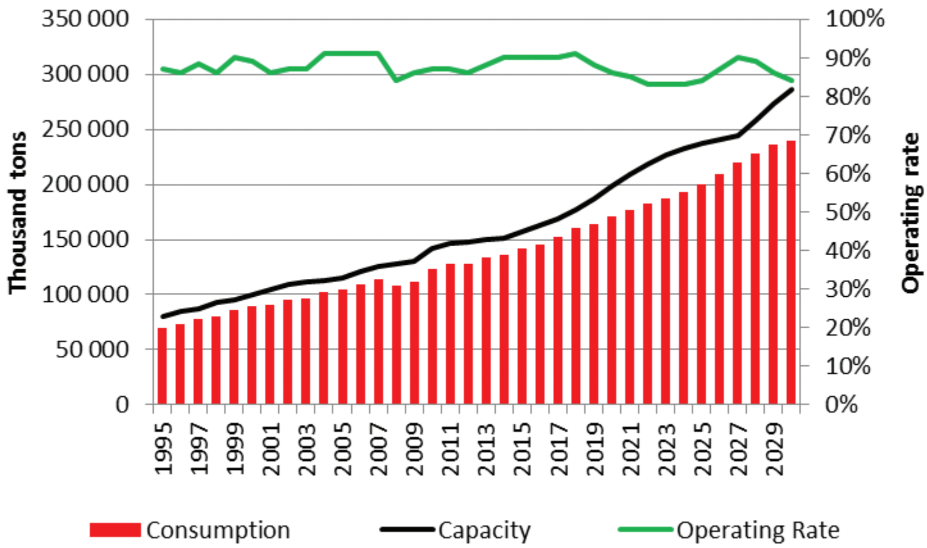
The construction of a new olefin manufacturing unit takes approximately five years from initial design to completion. Producers are more likely to add capacity in periods when current or expected future demand is strong and margins are, or are expected to be, high. Investments in new capacity can result in overcapacity, which typically leads to a reduction of margins. In response to falling margins, producers typically shut uncompetitive assets or limit further capacity additions, eventually causing the market to be relatively undersupplied. The alternation between periods of substantial capacity addition and periods of limited capacity addition or reduction results in recognizable swings in petrochemical capacity utilization, which typically result in swings in industry margins. This long-term pattern is often referred to as the petrochemical cycle. The point in time of a given cycle with the lowest average margin across a product line is referred to as the "bottom of the cycle." The point with the highest average margin is called the "peak of the cycle."

The petrochemical industry cycle is defined by the relative growth in capacity and consumption which causes operating rates and profitability to rise and fall. Ethylene is the largest of the basic petrochemical markets, and its operating rate cycle serves as a bellweather for the industry as a whole. According to Nexant, the bottom of the last ethylene cycle was reached in 2008, but the sharp recovery in 2009 was partly funded by unsustainable levels of borrowing, leading to a second short downturn in consumption growth and operating rates in 2012. Consumption has been increasing since, with global GDP growth recovering towards trend levels.

According to Nexant, capacity growth of 4.6% in 2018, versus consumption growth of 5.1% in the ethylene industry increased global operating rates by just under 1% in 2018. The North American petrochemical industry has benefitted greatly due to the abundance of low NGL feedstocks, as well as low energy costs. While U.S. gas prices have historically shown a strong correlation with oil prices, they have now decoupled due to the abundant supply from shale gas exploitation. Despite lower crude oil prices since 2014, US NGL-based ethylene production has remained highly competitive. The growth in NGL supply in North America sparked a wave of investment in new capacity in the United States which is expected to be at its most intense over 2019-2020. In a market where the marginal production is from oil-based capacity, the cost basis for oil-based production sets the global price level. Margins for U.S. producers have decreased since the drop in crude oil prices in late 2014, and will decrease further as the new crackers create increased competition for ethane in the U.S. Gulf. While Europe suffers from stubbornly slow demand growth, and high energy costs, its producers have benefitted from high valuations from the heavier steam cracker co-products. Several steam crackers in Europe have been closed, but capacity is now broadly stable, and the improved competitiveness of those crackers using imported NGL feedstock is now allowing both production and capacity to increase. INEOS has taken the lead in securing ethane exports from the United States, now followed by SABIC and Borealis. Furthermore, ExxonMobil and TOTAL Petrochemicals will also now purchase ethane from the new storage facilities built by INEOS in Europe. The development of the new U.S. ethane-based crackers has been slower than expected due—*inter alia*—to permit difficulties resulting in part from environmental concerns. The capacity build is now however toward the higher range of expectations. With little additional low-priced feedstock available in the Middle East, Chinese capacity developments occupy an increasing share of forecast capacity growth. Addition of methanol-to-olefins (MTO) capacity in China is now reaching its peak according to Nexant, and the next major phase of capacity growth in China will stem from several new and very large refinery-integrated steam crackers.

The following table sets forth the historical and projected supply-and-demand trends for ethylene globally.

Global Ethylene Supply and Demand



Source: Nexant—2018

Addition of new ethylene capacity has been relatively modest since 2010, with installed capacity increasing just 11% to 2014. Expansion of the supply base in recent years has been largely due to new investments in Asia and the Middle East. In Nexant's view, Asia will continue to lead global capacity investments in the coming years because of MTO and steam cracker developments in China. The ethylene capacity base in Asia will expand by a total of 26 million tons per year over 2018-2023, while capacity growth in North America will be around 9 million tons per year. Nexant forecasts that 18% of ethylene production in China will be from methanol by 2020 (includes speculative capacity). MTO capacity addition has continued despite the fall in crude oil prices, partly due to the chronic oversupply of coal in China which resulted in government-enforced cutbacks in coal production in 2015. Some MTO plants based on purchased methanol have however been uneconomical and have halted production.

Management believes this to be an optimistic view because coal based technology is carbon intensive and therefore seemingly runs counter to the stated goal of the Chinese Government to improve air quality for its citizens. Furthermore, the fall in oil prices and improvement in naphtha-based cracker economics has undermined the relative economic competitiveness of coal-based olefins and MTO production in China, and this further supports management view that much of the speculative ethylene capacity may not be built. Investments in North America, stimulated by abundant supplies of low cost NGL are driving a resurgence in new capacity. Nexant states that U.S. ethylene capacity has increased by 7.7 million tons per year since 2010, and that nearly 9 million tons of new U.S. ethylene capacity may be seen in the U.S. by 2023. Ethylene is consumed in many diverse products and industry sectors, however overall consumption is largely driven by economic activity. It is important to note that the world needs approximately 5.5 million tons per annum of new capacity to meet growth at the rate that Nexant predicts at 3.2% per annum over 2018-2023. This means 4 to 5 new crackers per year just to meet global growth. The U.S. capacity developments should be viewed in this perspective, particularly if it stalls the intentions of producers in other regions to initiate new cracker projects. Exports of surplus ethane are driving modifications of existing crackers in other regions, and also one new mid-size cracker is under development in China, which is to be based on imported ethane and propane. Reduced availability of advantaged feedstocks will restrict future investments in the Middle East, and following that startup of Sadara, there are now no active cracker projects in Saudi Arabia. Ethylene supply growth in Iran is contingent on a significant near-term increase in ethane supply, which allowed increased production in 2017.

Nexant's forecast shows global operating rates declining slowly to a trough around 83% by 2023, with the implication that cracker operators will experience pressure on margins with the long-standing relationship between profitability and operating rates maintained. However, Nexant also forecasts that operating rates will then recover to a peak of 90% by 2027. Although it is difficult to forecast the general state of the global economy in 2019, management believes that Nexant's view may be pessimistic as the rate of new capacity additions may be lower (for the reasons stated above) and also our belief that the rate of closure in regions such as Europe are likely to increase. The average age of many naphtha crackers in Europe and Asia is now around 40 years and these older assets are becoming increasingly expensive to maintain in a safe and economic operating condition. Often, the need for a major scheduled turnaround (typically every 3 to 5 years) is the point at which the viability of these aging assets is reassessed and a pragmatic decision is taken to close them. There have been several such closures in Europe in recent years (including the company's old "G4" naphtha cracker unit at Grangemouth). Increasing imports from new capacity in the United States will only increase this pressure on the older assets. In addition, the high incidence of unplanned outages of petrochemical assets in all regions has over the last two years been a major feature influencing the supply/demand balance of many products (including, ethylene, polyolefins, acrylonitrile and phenol). As existing plants continue to age it will become more difficult to forecast an aggregate improvement in industry reliability, and thus, this may be expected to affect the actual supply/demand balance and thus the margins for the affected products. Nexant also notes that the cyclical nature of the industry is likely to continue, but timing is notoriously difficult to forecast and is largely based on assumptions of an eight year business cycle longer term.

While margins are primarily determined by the position in the cycle and relative feedstock/ product positions, they are also susceptible to potentially significant swings in the short term. This volatility, which may be global or isolated in individual regions, can be caused by a number of factors, including fluctuations in utilization rates due to planned or unplanned plant outages, political and economic conditions driving rapid changes in prices for key feedstocks, exchange rate fluctuations and changes in inventory management policies by petrochemical customers (such as inventory building or restocking). According to Nexant, integrated polyolefin margins in Western Europe remain very strong, but continue to show some volatility due to fluctuations in steam cracker feedstock and coproduct prices. Production reliability has improved considerably after the rush to realize a long-awaited recovery in profitability, restoring a lengthy supply base. European producers face increased pressures from low cost imports, with high cost naphtha remaining the dominant feedstock even after further penetration of imported NGLs. Abundant supplies of NGL feedstock will continue to provide a strong cost advantage to U.S. producers, with a quantity of ethane rejection into natural gas set to remain despite increasing demand for new domestic crackers and export infrastructure. Integrated polyolefin margins in the United States will ease from their recent record highs as an increasing supply surplus seeks more distant export markets outside traditional opportunities in South America. Resin prices are set to fall below European prices and approach the floor set in Asia. Management believes that new plant builds are likely to be less than those expected by Nexant and due to aging of industry assets, industry reliability is considered unlikely to improve in the medium term. Consequently, the supply/demand balance—the key driver of industry profitability—is likely to be better than that assumed by Nexant.

Chemical Intermediates

Overview

Chemical intermediates are higher-value-added chemical products used as key components in a wide variety of consumer and industrial products. Olefins are a key raw material and are used to produce a wide range of products, including phenol, acetone, alpha olefins, ethylene oxide and derivatives and nitriles.

Manufacturing

Chemical intermediates are manufactured without exception in built-for-purpose plants that utilize technology specific to the product or products produced. Integration or close proximity to raw materials is not absolutely essential, but we believe it offers a strategic advantage by reducing logistics costs because large volumes of raw materials are often required. We also believe that scale is often critical to the successful manufacture of chemical intermediates because manufacturing costs per tonne produced decrease as plant size increases. Competition therefore tends to drive research and technology efforts toward developing technologies which support larger plant outputs as well as higher yields. Therefore, successive generations of plants are typically larger than previous generations and often produce higher yields.

Feedstock

For most processes, feedstock costs are the most significant cost item. The costs of the feedstocks required (such as, ethylene, propylene, and benzene) are principally driven by the price of oil and natural gas.

Products

The worldwide demand growth rates for our principal chemical intermediates are summarized below:

	Average annual demand growth rates (%)							
	2010-2018				2018-2023			
	North America	Western Europe	Northeast Asia	Global	North America	Western Europe	Northeast Asia	Global
Acrylonitrile	1.9	(0.3)	2.2	1.8	2.9	1.9	2.6	2.5
Ethylene oxide	1.6	1.4	6.6	4.0	6.1	(1.9)	3.0	3.2
Propylene oxide	1.4	0.6	6.0	3.7	2.1	0.5	4.2	3.0
Mono ethylene glycol	0.2	2.3	6.7	5.2	1.7	0.4	4.8	4.5
Phenol	(1.7)	0.2	4.9	2.3	0.9	0.2	4.3	2.7

Source: Nexant—2018

Set forth is a description of the principal chemical intermediates we provide, their applications and their demand outlook:

- ***Ethylene Oxide and Derivatives.*** This range includes ethylene oxide, ethylene glycol, propylene oxide and propylene glycols.

  Ethylene oxide is a highly hazardous product to transport. As a result, customers and end-use applications tend to be co-located or closely located to ethylene oxide production facilities. This leads to a regional market place for ethylene oxide with many opportunities for differentiation.

The most common derivative of ethylene oxide is ethylene glycol. This is very safe to transport and is viewed as a commodity petrochemical. As such, the market place for ethylene glycol is global, with pricing highly influenced by supply-demand balances. Ethylene glycol is primarily used in the manufacture of polyesters and antifreeze/coolants.

Propylene oxide is also a hazardous product to transport, but is moved routinely over modest distances. It is sold into a regional market with opportunities for differentiation.

The major application of propylene oxide is in the manufacture of polyols followed by propylene glycol, which in turn is primarily used to produce polyesters, paints and coatings, aircraft de-icing chemicals, antifreeze and industrial coolants. Propylene glycol is a safe product to transport and trades in a commodity market place.

Other ethylene oxide derivatives are manufactured by reacting ethylene oxide with bases, such as glycol, ammonia and other alcohols.

Ethylene oxide demand is driven by the market requirement for ethylene oxide derivatives, principally ethylene glycol. As a result of increased consumption of polyester, ethylene glycol has become the second largest application for ethylene after polyethylene. Similarly, propylene oxide demand is driven by the market requirement for propylene oxide derivatives, principally propylene glycol.

Nexant forecasts that global demand for ethylene oxide will continue to grow steadily however increasing penetration of coal/oxalate based mono ethylene glycol ("MEG") production in China will curtail growth rates below those seen historically. Nexant also believes that 40% of Chinese MEG will be produced from coal by 2019, displacing conventional production from ethylene oxide. Catalyst improvements enabled a major increase in MEG production via the coal/oxalate route in 2016, notably reducing China's import requirement for MEG by over one million tons versus 2015. Jiutai New Material is building a new 1 million tons per year MEG plant in China, using a new Davy syngas/methanol/formaldehyde based MEG process. The process potentially offers a lower cost route from coal to MEG, without the restrictions of small line size which affect the economics of the coal/oxalate process. Management disagrees with Nexant's forecast because the coal to glycol route has not yet been fully technically proven at the global scale and the factors mentioned above pertaining to coal to olefins technology also apply to coal to glycol. A period of relatively modest investment in ethylene oxide capacity has added 30% to the global capacity base since 2010, contrasting with the sharp over-investment seen in downstream polyester markets. Capacity addition in 2015 was high however, and slightly depressed operating rates which have subsequently started to recover. New capacity developments are set to accelerate in coming years, swelling capacity by just under a quarter to 2022. Asia will lead investment in new supply, followed by a resurgence in North American supply on the back of the Shale gas boom. More limited development of capacity in the Middle East will result in migration away from traditional MEG exports. Global operating rates will drop towards 82% by 2022. Management notes that the Company's business is not particularly sensitive to the supply/demand dynamics of Glycol because the Company's Oxide Business is primarily a specialties business, adding value to ethylene oxide, and is therefore not particularly sensitive to changes in glycol supply/demand.

- ***Acrylonitrile.*** Acrylonitrile is a well-established commodity that has been in commercial use for more than 70 years. It is used in the production of acrylic fiber, acrylonitrile butadiene styrene and styrene-acrylonitrile. Acrylic fiber is used in a wide variety of consumer products, including clothing and carpets. Acrylonitrile is manufactured from propylene, ammonia and air with the use of a purpose-made special catalyst. Acrylonitrile is toxic, flammable and, unless chemical stabilizers are added for storage and shipment, explosive. The building of new production plants for acrylonitrile is particularly expensive.

Historically, acrylonitrile demand has been driven by demand for acrylic fiber. More recently, acrylonitrile butadiene styrene (ABS) and styrene-acrylonitrile polymers have taken over as the main drivers of demand for acrylonitrile. As with other petrochemicals, the growth in demand for acrylonitrile butadiene styrene and styrene-acrylonitrile polymers has been greatest in Asia, while demand in North America and Europe has declined. Currently, Asia is a major net importer of acrylonitrile and derivatives, with a significant proportion of the Asian imports coming from North America. Acrylonitrile is sometimes viewed as a mature product, with global annual demand growth rate forecast at an average of 2.5% through to 2023 according to Nexant.

- ***Alpha olefins.*** Alpha olefins include linear alpha olefins and poly alpha olefins. Linear alpha olefins are hydrocarbons in a chain formation with physical characteristics and commercial uses that vary according to the length of the hydrocarbon chain. Ethylene is the primary feedstock for the production of linear alpha olefins, and linear alpha olefins, in turn, are important feedstocks for the manufacture of certain types of polyethylene. Linear alpha olefins have many applications in the petrochemical industry, including as surfactant intermediates, base oil for synthetic lubricants and drilling fluids. Demand for linear alpha olefins has increased substantially since they first became commercially available.

  Poly alpha olefins, which are made by merging several linear alpha olefins together, are primarily used as synthetic lubricants. Poly alpha olefins are value-added products as compared with linear alpha olefins, and, accordingly, command higher margins. However, poly alpha olefins account for only approximately 10% of the overall market for alpha olefins.

  Producers of linear alpha olefins may be divided into two groups: "full-range" producers, which manufacture the entire range of linear alpha olefins and "on purpose" or "single product" producers, which specialize in those linear alpha olefins which historically have experienced the fastest growth. Demand for linear alpha olefins has experienced an increasing divergence between demand for linear alpha olefins with shorter carbon chains, which has grown more quickly, and demand for linear alpha olefins with higher carbon chains, which on average has experienced slower growth. As a result, the industry has focused on developing single product technologies to target the fastest growing linear alpha olefins. Demand for poly alpha olefins is driven by the need for higher performing lubricants offering improved fuel economy, lower emissions, improved cold start properties and longer drain intervals.

- ***Phenol and acetone.*** Phenol and acetone are produced simultaneously from cumene in the four-stage Hock production process and are essential starting materials for a wide range of applications in the electrical/electronics, automotive, construction and household/furniture industries. In the production of downstream substances, neither phenol nor acetone may be substituted. The markets for phenol and acetone are traditionally viewed as regional because of the physical difficulty of transporting and storing phenol and the resulting high freight costs, with regional production responding mainly to regional demand. Individual regions experience independent cost bases, though there are limits to interregional price differentials, set by freight costs.

  Nexant projects global phenol demand to grow on average at 2.7% per annum to 2023. Current announced capacity additions indicate that the global industry will operate at between 88% and 91% of capacity between now and 2023. More capacity—as yet unannounced—may be added, but we believe that this will not significantly adversely affect the supply and demand balance.

Market Environment

Chemical intermediates are sometimes classified within the generic description of petrochemical products, essentially because they, like polyolefins, tend to utilize olefins or olefins derivatives as their primary feedstock. However, unlike polyolefins, the market place for chemical intermediate products often involves a global customer base. There are also far fewer competitors for each product, with technology ownership and scale of operation being key to obtaining leading market positions. Access to the whole global market may, in some cases, not be possible when margins are insufficient to accommodate incremental freight costs to distant regions.

The relationship between supply and demand for chemical intermediates tends to be cyclical, although to a lesser extent than for olefins and polymers. Suppliers tend to have more ability to pass cost increases through to their customers. Margins typically increase when demand approaches available supply. This is primarily because product supply is driven by periods of substantial capacity additions and followed by periods in which no or limited capacity is added.

In addition, product demand fluctuates with overall economic conditions. Market volatility for chemical intermediates varies by product, with the wide range of applications for the different products providing a natural hedge for demand across the range.

BUSINESS

*In this offering memorandum, all references to "**INEOS Group**," "**INEOS**," "**we**," "**us**" or "**our**" are to INEOS Group Holdings S.A. and its consolidated subsidiaries. Any projections and other forward-looking statements in this section are not guarantees of future performance and actual results could differ materially from current expectations. Numerous factors could cause or contribute to such differences. See "Risk Factors" and "Forward-Looking Statements."*

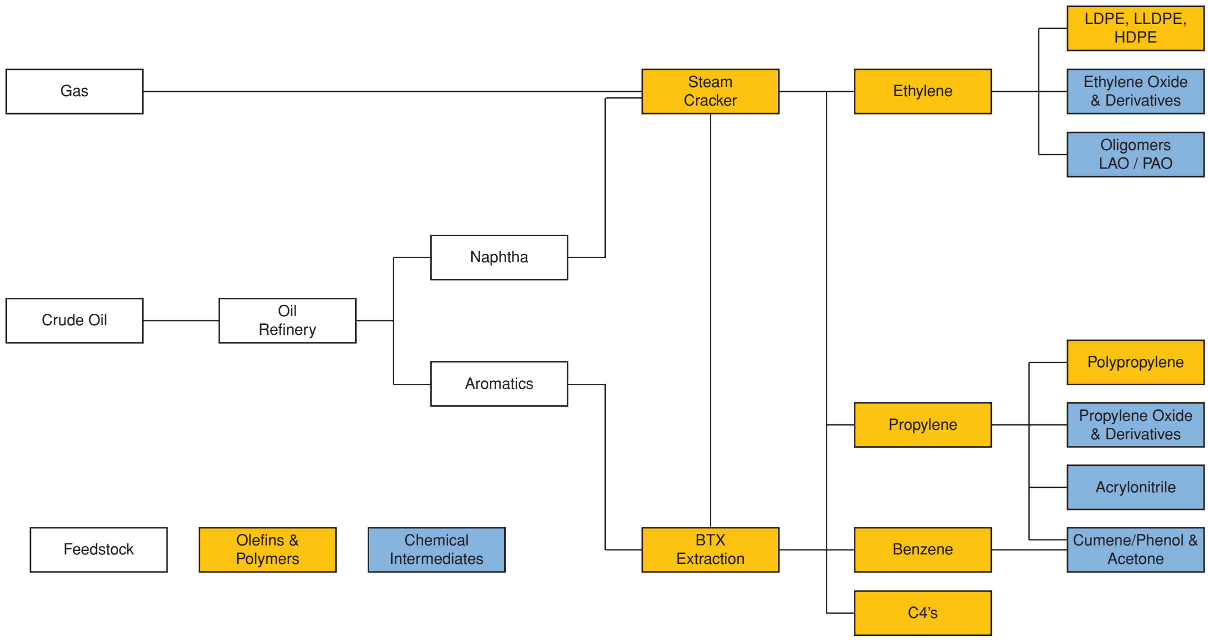
Introduction

We are one of the world's largest chemical companies as measured by revenue. Our business has highly integrated, world-class chemical facilities and production technologies. We have leading global market positions for a majority of our key products and a strong and stable customer base. We operate 33 manufacturing sites in six countries throughout the world. We are led by a highly experienced management team with, on a combined basis, over 100 years of experience in the chemical industry. As of December 31, 2018 our total chemical production capacity was approximately 21,900 kta, of which 59% was in Europe and 41% was in North America.

We operate our business through three segments: Olefins & Polymers Europe, Olefins & Polymers North America and Chemical Intermediates. The products we manufacture are derived from crude oil and natural gas, and include olefins, polymers and various petrochemical products directly or indirectly derived from olefins. Our products serve a broad and diverse range of end markets, including packaging, construction, automotive, white goods/durables, agrochemicals and pharmaceuticals.

Our highly integrated, world class production facilities and technological know-how allow us to process raw materials into higher value added products. In Europe we own two sites integrated with crackers and polymer units. Typically, these two sites account for approximately 76% of our European olefin and polymer volumes. The polyolefins plants on our two major sites in Europe receive more than 95% of their feedstock supply from our integrated crackers. Similarly, in the United States, much of our olefin feedstock requirements for our polymer business is supplied by either our Chocolate Bayou cracker in Texas or by integrated third party facilities, such as the Tesoro facility in Carson, California. We believe that with our highly integrated facilities we are able to capture attractive margins across the value chain, enjoy greater certainty of feedstock supply, reduce logistical costs, improve energy management and optimize our product slate.

The extent of our business integration from upstream to downstream for our major products is summarized as follows:



We benefit from the cost advantages of operating large-scale, well-invested, highly integrated facilities strategically located near major transportation facilities and customer locations. Since January 1, 2007, we and our predecessors have invested approximately €6.5 billion (including investments in divested assets) in our production facilities to ensure that they operate efficiently, resulting in integrated, and state-of-the-art production units. We believe these investments allow us to operate at lower cost and higher utilization rates than most of our competitors, and enable us to maintain positive margin and cash flows even during downturns in industry cycles or customer demand. For the year ended December 31, 2018, our revenue was €16.1 billion and our EBITDA before exceptionals was €2.3 billion.

Over the past several years, we have implemented a range of strategic initiatives designed to lower our operating costs, increase our profitability and further enhance our market position. These include fixed asset investments to expand our capacity in higher value products, to enhance productivity at our existing facilities, and to reduce our fixed cost structure through headcount reductions, production line closures and system upgrades. In addition, we have shifted our product portfolio to focus on more differentiated products, exited low-margin businesses and implemented premium pricing strategies designed to improve our margins. We believe these initiatives provide us with a strong platform to drive growth, create significant operating leverage and position us to benefit from volume recovery in our end markets.

Since April 1998, when INEOS was established with the acquisition of the Belgian "Oxide" assets from Inspec plc, we have significantly expanded, both through a series of strategic acquisitions of businesses and assets from major chemical companies, and through organic growth. The combination of INEOS and Innovene in December 2005 represented a transformational milestone for our company, providing global scale and further upstream integration.

In 2011, we transferred our Refining Business, our Entrepreneurial (Refining) Business and certain infrastructure assets to three joint ventures outside the INEOS Group. Please see "Business—

Refining Divestiture, Grangemouth Divestiture and Lavéra Divestiture—The Refining Divestiture" for a further description of the disposal of our Refining Business and Entrepreneurial (Refining) Business.

On October 1, 2013, we completed the Grangemouth Divestiture to a newly created subsidiary of INEOS Holdings AG, our indirect parent company. See "Business—Refining Divestiture, Grangemouth Divestiture and Lavéra Divestiture—The Grangemouth Divestiture."

On July 1, 2014, we divested the olefins and polymers assets and Chemical Intermediates assets of the Lavéra site. See "Business—Refining Divestiture, Grangemouth Divestiture and Lavéra Divestiture—The Lavéra Divestiture."

In 2015, we completed the purchase of the remaining 50% interest in the Noretyl ethylene cracker at Rafnes, Norway from the INOVYN group (formerly the Kerling Group), a related party. In 2015 we also acquired aromatics and cumene assets from Axiall Corporation. The acquisition comprised the world's largest cumene plant in Pasadena, Texas. In addition, Axiall's phenol, acetone and alpha-methylstyrene business was transferred to the INEOS phenol facility at Mobile, Alabama.

In 2016, the Group acquired 100% of the shares of WLP Holding Corporation, one of the largest high density polyethylene (HDPE) pipe manufacturers in North America. Moreover, in 2016, following a strategic review of the INEOS Technologies business, we decided to cease marketing its polyolefins licensing technology externally and to transfer the remaining parts of the INEOS Technologies business to existing businesses within the Group to provide a clearer focus on individual product lines.

The following table provides an overview of our capacity, global market position and leading regional market positions with respect to our key petrochemical products.

Key products	Full-year capacity as of December 31, 2018[(1)]	Selected market positions[(1)]
	(Kilotonnes)	
Ethylene	4,837	#1 in Western Europe #6 in U.S.
Propylene	1,517	#5 in Western Europe #12 in U.S.
Butadiene	422	#1 in Western Europe
Polyethylene	3,289	#1 in Western Europe #5 in U.S.
Polypropylene	1,721	#5 in Western Europe #5 in U.S.
Ethylene Oxide	935	#1 in Western Europe #8 Globally
Ethanolamines	233	#3 in U.S.* #3 Globally* #3 in Western Europe*
Phenol	1,870	#1 Globally #1 in Western Europe #1 in U.S.
Acetone	1,139	#1 Globally #1 in Western Europe #1 in U.S.
Acrylonitrile	1,324	#1 Globally #1 in Western Europe #1 in U.S.
Linear Alpha Olefins	652	#3 Globally #1 in Western Europe
Poly Alpha Olefins	230	#2 Globally #1 in Western Europe #2 in U.S.

Sources: Nexant and INEOS—December 2018

* Merchant market sales

(1) The assets of INEOS Chemicals Grangemouth Limited and INEOS Commercial Services UK Limited were transferred out of IGH on October 1, 2013 in connection with the Grangemouth Divestiture, and the Lavéra Divestiture assets were transferred out of IGH on July 1, 2014; therefore, their capacity has been excluded from the full year capacity figures. However, for the estimation of market ranking for IGH their capacities have been included since these assets remain within the broader INEOS family of companies and there has been no restriction to, or change in, the competitive dynamic that the assets exercise within the European market as a part of the INEOS family of companies. Therefore, in management's view, it is helpful to consider the Grangemouth and Lavéra assets in order to reflect the relative overall commercial strength of the INEOS family of companies, which is the same as that of O&P Europe within IGH.

Olefins & Polymers Europe and Olefins & Polymers North America

In our olefins and polymers businesses, we produce olefins, other cracker products, such as butadiene and benzene, and a broad range of polyolefin polymers. We are among the largest producers of olefins and polymers in the world. The focus of our olefins business in Europe and North America is on ethylene and propylene, which are the two largest volume olefins globally and are key building blocks for polymers. The olefins we make are primarily used as feedstock for our derivatives businesses. In addition, we sell olefins to third-party customers for a variety of industrial and consumer applications, including the manufacture of plastics, rubber and fiber. In our polymers business, we focus on polyethylene and polypropylene.

We operate a total of 18 sites for olefins and polyolefins, including our large integrated olefins cracker and polyolefin facilities at Köln, Germany, Rafnes, Norway, and Chocolate Bayou, Texas, United States and seven polyethylene pipe manufacturing sites within the United States. These facilities support our highly competitive proprietary polyolefin process technologies. The technologies include our cost-effective gas phase polypropylene technology, our specialized technology for high-density polyethylene and our flexible proprietary "swing" technology for both linear low-density and high-density polyethylene.

The North American and European markets for olefins and polyolefins are quite distinct, with separate pricing structures and distribution channels. As a result, each market may experience different rates of growth and levels of return. Therefore, we operate these two businesses separately and report them as two distinct segments—INEOS Olefins & Polymers Europe and INEOS Olefins & Polymers North America. For the year ended December 31, 2018, our Olefins & Polymers Europe and Olefins & Polymers North America businesses contributed €6.4 billion and €4.0 billion of revenue and €671.7 million and €798.0 million of EBITDA before exceptionals, respectively, excluding intersegmental eliminations.

Chemical Intermediates

Chemical intermediates are higher-value-added chemical products used as key components in a wide variety of consumer and industrial products. In our Chemical Intermediates business, we utilize olefins as key raw materials and produce a wide range of products including phenol, acetone, alpha olefins, ethylene oxide and derivatives and nitriles.

We have four main product groups within our Chemical Intermediates business: INEOS Nitriles, INEOS Oligomers, INEOS Oxide and INEOS Phenol. The activities of INEOS Enterprises are also included within Chemical Intermediates. Together they produce a wide range of products including phenol, acetone, alpha olefins, ethylene oxide and derivatives, acrylonitrile, ammonia and nitric acid. We have a total of 16 manufacturing sites globally, with many of our plants integrated either directly with their key raw materials on-site, or integrated via pipeline connection.

We are the world's leading producer of phenol, which is an essential starting material for a wide range of applications in the electrical/electronics, automotive, construction and household/ furniture industries. Our main product in the nitriles sector is acrylonitrile, which is used in the production of acrylic fibers and acrylonitrile butadiene styrene plastic. We are also among the largest volume suppliers of linear and poly alpha olefins in the world. According to Nexant, we are the largest producer of ethylene oxide in Western Europe. We have a range of associated products, including ethylene glycol, propylene oxide, propylene glycol and acetate esters. We manufacture and supply high-quality catalysts and additives in support of various technologies to major companies around the world, and also to our own manufacturing assets. For the year ended December 31, 2018, our Chemical Intermediates revenue and EBITDA before exceptionals were €7.9 billion and €818.1 million, respectively, excluding intersegmental eliminations.

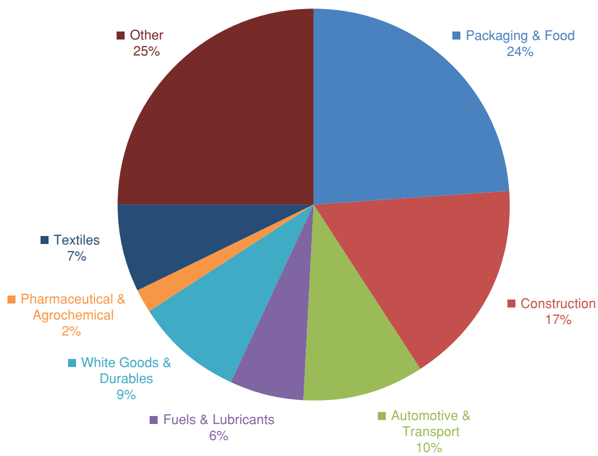
Our Competitive Strengths

We believe that the factors set forth below provide us with a competitive advantage in the markets in which we compete:

- ***Diversified Portfolio of Businesses with Leading Market Positions.*** We are one of the world's largest chemical companies. We operate 33 manufacturing sites in six countries around the world. These assets have a total production capacity of approximately 21,900 kta as of December 31, 2018. We believe we have a top 5 or better global or regional market position in 12 of our key products.

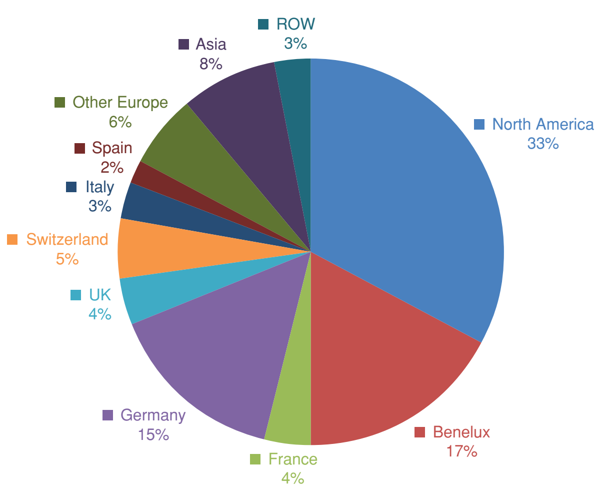
  Our petrochemical products are utilized in a wide range of end-market applications. The following diagram sets forth our petrochemicals revenue by end use application in 2018.

  Petrochemicals Revenue by Application 2018

  Our petrochemical products are sold to customers in diverse geographic locations. The following diagram sets forth the group third party revenue by region in 2018.

  Group Third Party Revenue by Region 2018

  We believe that such application and market diversity reduces the effect of industry cyclicality on our results. In addition, we believe that we benefit from the fact that the supply and demand dynamics of the cycles relating to our petrochemical products are fairly independent, which helps mitigate some of the cyclicality in the industry.

- ***Vertically Integrated, World-Scale Producer.*** We have three large-scale petrochemical sites, accounting for approximately 42% of our total petrochemical production capacity as of December 31, 2018. Each of these sites is integrated with a major cracker and/or polymers and derivatives unit.

  We operate one of the largest single-site ethylene oxide/ethylene glycol plants in Europe and the two largest phenol plants in Europe, one of which is the largest in the world, as well as the largest single train phenol plant in North America. We operate the largest acrylonitrile facility in the world and one of the largest high-density polyethylene complexes in North America. We believe that our existing plants have sufficient capacity such that as our production volumes increase, we will be able to leverage our fixed cost base and increase our profitability.

  Our sites are typically located near raw materials, refineries and associated pipeline infrastructure. We believe our highly integrated facilities provide us with the ability to capture margins across the value chain, enjoy certainty of feedstock supply (particularly for ethylene), reduce logistical costs, improve energy management, adjust the product slate to capture greater value (by selling olefins or, alternatively, by using them internally in the production of polymers or derivatives) and reduce our exposure to margin volatility as a result of changes in raw material prices. We operate large plants that permit us to spread fixed costs over large volumes of production, thereby reducing unit costs and enhancing profits.

- ***Well-Invested, Highly Efficient Production Facilities.*** Our large, well-invested plants benefit from economies of scale and favorable locations. Our acquisition activity has focused on acquiring businesses that complement our existing manufacturing facilities with well-invested physical assets from major chemical companies. In addition, each year we continue to invest in improving and expanding our facilities. Since January 1, 2007, we and our predecessors have invested approximately €6.5 billion (including investments in divested assets) in our production facilities to ensure that they operate efficiently, resulting in integrated, and state-of-the-art production units.

- ***Extensive Portfolio of Leading Proprietary Technologies.*** We have a broad portfolio of proprietary manufacturing technologies which we use for the manufacturing of our key products. We believe that they enable us to be one of the lowest cost producers and provide us with a significant competitive advantage in terms of product quality, and we continue to improve the portfolio through focused research and technology investments.

- ***Experienced Management Team with a Strong Track Record.*** Our senior management team has been operating INEOS and our predecessors for the past 20 years and has a demonstrated track record of achieving profitable growth in the chemical industry, successfully integrating large acquisitions, dramatically reducing the fixed cost base, and deleveraging the business following such acquisitions. James A. Ratcliffe, our controlling shareholder, and the other existing shareholders have a successful record of investing in the chemical industry. Across the wider INEOS group, including our ultimate parent company and its other subsidiaries, we have completed 32 significant acquisitions since the formation of INEOS in 1998. Each of these acquisitions has been integrated effectively and we have been able to achieve significant cost-savings in the acquired businesses. Our management team has extensive experience in the chemical industry, including with leading companies such as ICI, DuPont, Dow, Degussa and BP, and a proven ability to increase productivity, reduce costs and control capital expenditures and working capital. We believe the experience of our management team is a distinct competitive advantage.

In addition, our senior management team has demonstrated the ability to streamline our businesses by focusing on core competencies and disposing of non-core or underperforming businesses. In the past seven years, we have disposed of three non-core or underperforming businesses. We disposed of the Refining Business and the Entrepreneurial (Refining) Business in July 2011. On October 1, 2013, we completed the Grangemouth Divestiture to a newly created subsidiary of INEOS Holdings AG, our indirect parent company. See "Business—Refining Divestiture, Grangemouth Divestiture and Lavéra Divestiture—The Grangemouth Divestiture." Most recently, on July 1, 2014, the Group completed the Lavéra Divestiture to a new subsidiary of INEOS AG, the ultimate parent company of the Group at the time of the divestiture. See "Business—Refining Divestiture, Grangemouth Divestiture and Lavéra Divestiture—The Lavéra Divestiture." The disposal of these three businesses has enabled us to focus management time on core activities, reduce our capital expenditure requirements going forward and also reduce our exposure to underperforming cash consuming businesses.

- ***Access to Advantaged Feedstocks.*** Our Chocolate Bayou cracker installation in the U.S. uses natural gas liquids-based feedstocks, such as ethane, as its main feedstocks. This allows us to benefit from the current low-cost supply of ethane resulting from the growth in the supply of shale gas in the U.S. Ethane is also a lower-cost feedstock than naphtha in Europe, where we operate a very efficient gas olefin cracker in Rafnes. Our other olefin cracker in Europe, at Köln, is a naphtha cracker, but it has significant gas cracking flexibility. Our ability to use lower-cost feedstocks, like ethane, gives us an advantage over our competitors with crackers that cannot accept such a significant mix of gas feedstocks, and must rely on more expensive naphtha. In addition, our Chocolate Bayou cracker and our naphtha crackers in Europe can also use naphtha as a feedstock, allowing us to manage our feedstock mix in response to changes in economic and market conditions and maximize our margins. Our fleet of eight long-term chartered Dragon class ships, together with the expanded gas storage terminal in Rafnes, a deep water terminal near Philadelphia and long-term supply contracts, provides us access to the attractive U.S. ethane market for our gas-based cracker in Rafnes, Norway.

Our Business Strategy

In response to challenges resulting from the current macroeconomic environment and as part of our long-term strategic aim, we have maintained and will continue to execute a strategy consisting of the following short- and long-term elements. These are designed to help us improve our capital structure, leverage our key strengths and market opportunities and ensure ongoing cash flow generation and growth:

- Where and When Appropriate, and Within the Confines of Our Capital Structure, to Pursue Long-term Value-added Growth Opportunities. As a result of our lean corporate structure, we are able to maintain a level of agility that few organizations our size are able to match. We have a highly disciplined evaluation process and a detailed series of metrics by which we measure the value creation prospects of potential projects. Opportunities for profitable growth are identified and vetted in an efficient, non-bureaucratic format, which, in many cases, we believe enables us to establish a first-mover advantage. For example, we continue to pursue options to exploit shale gas in the U.S. through the expansion of our Chocolate Bayou cracker (some capacity having already been added in 2014 and 2016), and built a new high-density polyethylene plant at our Battleground site in Texas in a joint venture with Sasol Limited, which became operational in the fourth quarter of 2017. Our O&P Europe business also has in place 15-year supply and infrastructure agreements entered into in 2012 to access ethane feedstock from the U.S. for use in its European cracker complexes. On July 1, 2015, we completed the purchase of the remaining 50% interest in the Noretyl ethylene cracker at Rafnes, Norway from the INOVYN group (formerly the Kerling Group), a related party. Subsequently, we have modernized and expanded the Noretyl gas cracker at Rafnes to its present annual capacity of 645,000 tonnes of ethylene. In addition, construction is underway for a new 420,000 tonnes linear alpha olefins plant, as well as a new 120,000 tonnes poly alpha olefins plant, both at Chocolate Bayou, Texas, which we estimate will be operational in the second quarter of 2019 and first quarter 2020, respectively. We are currently pursuing several other projects that we believe provide opportunities for profitable growth.

- ***Maintain World-Class Health, Safety, Security and Environmental ("HSSE") Excellence.*** We are dedicated to continually improving our HSSE performance. We ensure that all employees receive appropriate training, thereby enabling them to effectively contribute to HSSE performance and HSSE improvement processes. It is our policy to design our processes and manufacture and distribute our products in a responsible manner so that our employees, customers, the public and the environment are protected from avoidable risks. Our strategy is to continue achieving injury and environmental compliance ratings better than world-class benchmarks.

- ***Generate Cost Savings and Enhance Efficiency.*** We have historically succeeded in reducing costs at our acquired businesses by making rapid reductions in underlying fixed costs and implementing an efficient corporate and management structure. We have achieved significant fixed cost reductions in businesses that we have acquired, delivering on average a reduction of 22% of inherited fixed costs in the four-year period post acquisition. Continuous improvements in the efficiency of our existing sites and opportunities for site consolidation are key aspects of this strategy, as we seek to maintain upper quartile cost positions and world-scale facilities across the majority of our operations. The control of fixed costs will continue to be a key priority for our business.

- ***Generate Strong Cash Flow.*** We intend to continue our focus on cash flow generation by maximizing the utilization of assets, leveraging existing resources, continuously improving working capital practices, following disciplined and focused capital expenditure and cost reduction plans and optimizing where possible our capital structure. In January 2015, we implemented a global restructuring of our capital to ensure the location of our interest deductions more closely matched the location of our operating cash flows. We estimate that this restructuring has reduced our cash tax expense in the United States by approximately $343 million in the three years ended December 31, 2018. We apply when possible the cash flows generated from these initiatives to help reduce our debt.

- ***Maximize Utilization of Assets.*** As a low-cost focused producer, we believe in operating our facilities at full capacity. We believe this allows us to maintain positive margins and cash flows, even during downturns in industry cycles or customer demand, more readily than some of our competitors who have higher production costs. We intend to achieve growth in production volume by improving utilization rates within the defined availability of an asset, improving availability of an asset by minimizing planned and unplanned facility downtime and improving capacity of an asset through de-bottlenecking projects. We have a strong track record of improving utilization rates of acquired assets.

- ***Maintain a Lean Corporate Structure and Incentivize Employees.*** We intend to operate our business in a manner that is consistent with the philosophy of our shareholders and maintain a simple and decentralized, flat organizational structure that minimizes corporate bureaucracy, coupled with compensation arrangements that incentivize our employees. We believe that a simple and decentralized organizational structure is cost-effective and will allow each of our management teams the freedom to use their industry knowledge to respond to market opportunities. We believe that we can increase the value of our business when our employees share in the value they create. In the past, we have granted our employees tracking shares with respect to each of our businesses and regions, with management and employee bonuses and long-term incentive plans linked to the EBITDA performance and other factors of the business in which they work.
- ***Maximize Flexibility to Use Advantaged Feedstocks.*** We remain focused on our strategy of acquiring advantaged feedstock sources and improving our flexibility to use different feedstocks to take advantage of changing market conditions. In 2017, we entered into an agreement to construct a butane tank that we believe will be the largest in Europe. The tank will be located in Antwerp, Belgium, and is planned to come on stream in 2019. The tank will allow us to import butane from the U.S. (and from all over the world) to supply material to our naphtha crackers at Köln. This agreement complements our contracts signed in 2012 and 2015 to source ethane directly from the U.S. for our Rafnes cracker. In 2015, we also completed a new ethane import tank and new ethane furnace at our Norwegian plant. Our Dragon class ships help transport these feedstocks to the Rafnes facility. We are also committed to maintaining flexibility in feedstock while expanding our olefins capacity. For example, our Chocolate Bayou plant predominantly uses liquid-based natural gas as feedstock, but has the ability to process naphtha and our Köln plant is capable of switching between naphtha and butane as a feedstock. This enables us to manage our feedstock mix in line with changing market and economic conditions.

Business Segments

Set forth below is a discussion of our business along the segment lines of Olefins & Polymers Europe, Olefins & Polymers North America and Chemical Intermediates in the following areas: products, manufacturing, raw materials and energy, transportation, customers and contracts, research and intellectual property and competition.

Olefins and Polymers

We operate two Olefins and Polymers businesses: Olefins & Polymers Europe and Olefins & Polymers North America. Set forth below is a general discussion of the products, manufacturing, research and intellectual property, transportation and competition, followed by a more detailed review of the products, manufacturing, raw materials and energy and customers and contracts, of our Olefins & Polymer Europe business and our Olefins & Polymers North America business.

Products

The following table provides an overview of our key olefin and polymer products and their principal applications. All market positions are provided by Nexant, as measured by average annual capacity assessed as of December 31, 2018.

Key products	Principal applications	Selected market positions[(4)]
Olefins and related products		
Ethylene[(1)]	Polyethylene, polyvinyl chloride, ethylene oxide and styrene	#1 in Western Europe #6 in U.S.
Propylene[(2)]	Polypropylene, acrylonitrile, cumene and propylene oxide	#5 in Western Europe #12 in U.S.
Butadiene	Synthetic rubbers and acrylonitrile butadiene styrene	#1 in Western Europe
Benzene	Styrene, cumene and nylon	#6 in Western Europe
Polymers		
Polyethylene (high-density polyethylene, low-density polyethylene, linear low-density polyethylene)	Films for packaging, agricultural applications, molded products, pipes and coatings	#1 in Western Europe[(3)] #5 in U.S.
Polypropylene	Molded products, filaments, fibers and films	#5 in Western Europe #5 in U.S.

(1) In Europe, we consume more ethylene than we produce, which allows us to operate our crackers in Europe at higher operating rates than the industry average. In North America, the olefin crackers at our Chocolate Bayou facility manufacture substantially more ethylene than is required by our polymers and derivatives units in the Gulf Coast region. As a result, we sell substantial amounts of the ethylene that we produce to customers in the Gulf Coast region of the United States.

(2) In Europe and North America, we consume more propylene than we produce. Our propylene consumption is primarily related to the production of polypropylene, propylene oxide, oxo-alcohols, phenol and acrylonitrile.

(3) According to Nexant, measured by average annual capacity, we are the second largest manufacturer of high-density polyethylene in Europe and the third largest manufacturer of linear low-density polyethylene in Europe.

(4) The assets of INEOS Chemicals Grangemouth Limited and INEOS Commercial Services UK Limited were transferred out of IGH on October 1, 2013 in connection with the Grangemouth Divestiture, and the Lavéra Divesture assets were transferred out of IGH on July 1, 2014. However, for the estimation of market ranking for IGH their capacities have been included since these assets remain within the broader INEOS family of companies and there has been no restriction to, or change in, the competitive dynamic that the assets exercise within the European market as a part of the INEOS family of companies. Therefore, in management's view, it is helpful to consider the Grangemouth and Lavéra assets in order to reflect the relative overall commercial strength of the INEOS family of companies, which is the same as that of O&P Europe within IGH.

Source for market positions: Nexant and INEOS.

Set forth below is a description of the principal petrochemical products and their applications.

Olefins and related products:

- ***Ethylene.*** According to Nexant, ethylene is the world's most widely used petrochemical in terms of volume, accounting for over one-third of the global production of primary petrochemicals. It is the key building block used to produce a large number of higher value added chemicals, including polyethylene, polyvinyl chloride via ethylene dichloride and styrene via ethylbenzene. Ethylene is a flammable gas and is a primary olefin obtained in a cracking process, as described above. Because ethylene is a gas, it must be transported either by pipeline or in the form of a highly pressurized and refrigerated liquid, which is expensive.

While ethylene itself has no consumer applications, demand for ethylene is driven essentially by its use as feedstock for various thermoplastics, which are plastics that soften when heated and harden again when cooled, including polyethylene and other polymer derivatives. Aside from being the feedstock for polyethylene production, demand for ethylene is also driven by the manufacture of ethylene oxide and derivatives, ethylene dichloride and ethyl benzene. According to Nexant, the global market for ethylene is forecast to grow at 3.7% per annum through 2022 versus forecast GDP growth of 3.2% during the same period, driven by polyethylene applications such as high-density polyethylene and linear low-density polyethylene.

- ***Propylene.*** Propylene is a flammable gas which is derived as a co-product either of the refinery fluid catalytic cracker process used to make gasoline or of the steam cracking process used to make ethylene. More recently, propylene is also being produced from processes such as propane dehydrogenation and metathesis. Propylene is an important feedstock for a significant number of industrial products and is the main feedstock for polypropylene and acrylonitrile. Propylene is marginally easier to transport than ethylene and may be shipped by pipeline, road, rail or ship.

  Global propylene demand is driven essentially by its use as feedstock for various thermoplastics and by the level of demand for propylene derivatives, particularly polypropylene, propylene oxide, acrylonitrile, oxo-alcohols, cumene and acrylic acid. Growth in the demand for polypropylene has stemmed from the substitution of non-polymers (paper, wood, glass and metal, etc.), due to a relative cost advantage and superior performance. According to Nexant, the global market for propylene is projected to grow at 4.1% per annum through 2023, driven by polypropylene demand.

- ***Butadiene.*** Butadiene is a gas and is one of the co-products of the steam cracking process used to manufacture ethylene and propylene. Butadiene is used primarily in the production of polymers, principally synthetic rubbers such as styrene-butadiene rubber, which is used to make tires and other rubber products. Other polymers made from butadiene include acrylonitrile-butadiene styrene and styrene-butadiene latex. Butadiene is also used to make ethylidene norbornene monomer.

  Butadiene demand is driven primarily by growth in consumption of synthetic rubber. According to Nexant, the global market for butadiene is projected to grow at an average of 2.5% per annum through 2023.

- ***Benzene.*** Benzene is used to produce a number of petrochemical intermediates, such as styrene, cumene for phenol and acetone, cyclohexane and nitrobenzene. It is mainly produced from refinery processes or as a co-product of steam cracker operations.

  Styrene is the largest chemical outlet for benzene at around 49% of demand. The second largest outlet for benzene, accounting for 20% of demand, is cumene, which is nearly all consumed in phenol production with acetone formed as a co-product. For 2018, Nexant estimated the global benzene demand to be almost 48.4 million tons, with approximately 70% being consumed in the production of ethylbenzene for the styrenics industry and cumene for the phenolics industry. Nexant forecasts an average global growth rate in demand of approximately 2.1% per year in the 2018-2023 period.

Polymers:

- ***Polyethylene.*** Polyethylene is the world's most widely used thermoplastic and is made by the polymerization of ethylene. Polyethylene is often classified by its density, because greater density corresponds with greater material rigidity.

Film is the largest single use of global polyethylene production and the primary driver of demand, representing approximately one half of worldwide polyethylene consumption. Film includes a myriad of end use applications, from food packaging to trash bags, stretch films and shrink films. Blow molding and injection molding are the next largest uses and are also important demand drivers. In the blow molded category, blow molded bottles are the single largest end use. Nexant forecasts an average global growth rate in demand of approximately 3.8% per year in the 2018-2023 period.

- ***Polypropylene.*** Polypropylene is the world's second most widely used thermoplastic after polyethylene and is among the fastest growing categories of thermoplastics. It is manufactured by the polymerization of propylene. The rapid growth of polypropylene-based products reflects the superior cost and performance characteristics of this material. As one of the industry's most versatile polymers, polypropylene is achieving a portion of its growth by displacing other polymers, such as polyethylene and polystyrene.

  Various industry experts expect the demand for ethylene and other cracker products and derivatives to grow at an average rate of around 4.0% to 4.5% per annum (subject to macroeconomic assumptions), in the period up to 2018, with higher growth rates in the developing economies and lower growth rates in the more mature OECD economies. According to Nexant, the global polypropylene market is projected to grow at 4.6% per annum through 2023. Nexant expects that the demand for polypropylene in Asia will continue to grow at higher rates than North America and Europe, primarily as a result of growth in the Chinese market.

Manufacturing

Olefins are produced primarily by the steam cracking of hydrocarbon feedstocks. In steam cracking, a gaseous or liquid hydrocarbon feed, such as naphtha, liquefied petroleum gas or ethane, is diluted with steam and briefly heated in a furnace without the presence of oxygen. Typically, the reaction temperature is very high, at around 850°C, but the reaction is only allowed to take place very briefly. In modern cracking furnaces, the reaction time is further reduced to milliseconds, resulting in gas velocities faster than the speed of sound, to improve yield. After the cracking temperature has been reached, the gas is quickly quenched to stop the reaction in a transfer line heat exchanger. The products produced in the reaction depend on the composition of the feed, the hydrocarbon-to-steam ratio and on the cracking temperature and furnace residence time.

Light hydrocarbon feeds, such as ethane, liquefied petroleum gas or light naphtha, yield product streams rich in the lighter alkenes, including ethylene, propylene and butadiene. Heavier hydrocarbon feeds (full-range and heavy naphthas, as well as other refinery products) yield some of these products too, but also yield products rich in aromatic hydrocarbons and hydrocarbons suitable for inclusion in gasoline or fuel oil. Higher cracking temperatures (also referred to as higher levels of "severity") favor the production of ethylene and benzene, whereas lower cracking temperatures (lower levels of "severity") produce higher amounts of propylene, C4-hydrocarbons and liquid products.

Depending on feedstock, varying levels of ethylene, propylene and other by-products are achieved. Ethane produces the most ethylene but the least propylene. Naphtha produces substantially less ethylene, roughly one-third of that of ethane, but produces more propylene and significantly more by-products.

The main polyolefins are the thermoplastics, polyethylene and polypropylene, which are produced by the polymerization of the olefin monomers ethylene and propylene, respectively. While the majority of polyethylene and polypropylene are homopolymers (a combination of the same monomers), a growing proportion is copolymers (polymers that are produced from a combination of two or more monomers).

Polyolefins are produced using a number of different technologies that are widely available, including one high-pressure process and three low-pressure processes (Solution, Slurry and Gas Phase). All of the technologies are constantly being adapted to improve product qualities and reduce production costs. For commodity products, produced on modern scale technology, the cost structure of these technologies is similar. Increased cost structures for producing specialty products are typically justified by premium margins.

The following is a summary of the four processes:

High-Pressure Process.

This was the original process used to produce polyethylene and is still in use today. This process is a free radical polymerization that does not require the use of a catalyst, operating at pressures above 1,000 and up to 3,500 bar and temperatures from 150° to 340°C. Originally conducted in a high-pressure autoclave, current processes more commonly use a tubular reactor. This process is used to produce low-density polyethylene, characterized by long-chain branching, considerable flexibility and clarity. Because of the high-pressures involved, this process involves higher risk than low-pressure processes and requires expensive and specialized equipment; consequently, fewer high-pressure processes have been constructed in recent years.

Low-Pressure Processes.

These processes typically operate below 200 bar and have lower capital intensity but require the aid of a catalyst. In addition, it is common to add a comonomer (butene or hexene in the case of polyethylene, and ethylene in the case of polypropylene) to tailor the resultant polymer properties.

- ***Solution Process.*** This process operates at temperatures above the melting point of the polyolefin (above 130°C for polyethylene and above 140°C for polypropylene) and employs metallocene or Ziegler-Natta catalysts and a solvent to dissolve the growing polymer chains. This process is best suited to make high-density polyethylene (having very few chain branches, and those branches that do exist are short—only a few carbon atoms in length) and linear low-density polyethylene (having many short-chain branches, which may be contrasted to low-density polyethylene with many long-chain branches). Solution processes have the ability to produce narrow molecular weight distribution polyolefins.
- ***Slurry (or Suspension) Process.*** This process is a continuous low temperature (60°-105°C, 20-35 bar for polyethylene or 60°-85°C, 35-50 bar for polypropylene) process in which polymer forms as a solid particle in the presence of a catalyst while suspended in a liquid slurry. In the case of polyethylene, the polymerization takes place in an inert liquid carrier such as isobutane. In the case of polypropylene, the polymerization takes place in liquid hexane, heptane, or even liquid propylene monomer. When propylene is utilized as the carrier liquid, the process is often referred to as "bulk slurry." The carrier liquid serves to aid in the removal of heat as it carries the growing polymer particles through the reaction process. The catalyst may be chromium on silica (polyethylene only), Ziegler-Natta, or metallocene. The reactor may be a stirred tank or a pipe-loop reactor, in either case jacketed to aid in removal of the heat of reaction. One or more reactors may be placed in series to broaden the molecular weight distribution and produce bimodal polyolefins. This process is best suited to making high-density polyethylene and homopolymer polypropylene.

  One advantage of this process over other high-density polyethylene processes is the ability to make rapid grade transitions, which makes it particularly well suited to the manufacture of specialty polyethylene products.

- ***Gas Phase.*** As the name implies, polymerization occurs with the solid polymer particles produced on a heterogeneous catalyst in the gas phase. Like the slurry process, the catalyst may be chromium on silica (polyethylene only), Ziegler-Natta, or metallocene. In the reactor, the growing polyolefin particles are fluidized and cooled by the gaseous reactants and/or nitrogen, or sub-fluidized and mechanically agitated. Liquid monomer may be added and flashed to aid in the removal of heat. The reaction takes place at low temperature (80°-100°C for polyethylene and about 60°-85°C for polypropylene) and pressure (15-35 bar). A gas phase process has advantages over slurry and solution processes in that the heat of reaction is very effectively removed and operates with lower hydrocarbon inventories. In addition, high-ethylene content copolymers of polypropylene can be produced in this process. This process is best suited to the manufacture of linear low-density polyethylene, high-density polyethylene and all types of polypropylene, including homopolymer, random copolymer, impact copolymer and soft thermoplastic polyolefin.

Post polymerization, any catalyst is deactivated, the polyolefin is freed of any solvent, unreacted monomer or liquid diluent, and the resulting polyolefin flake or crumb is combined with additives and extruded into pellets prior to sale to downstream fabricators.

Several of these technologies have recently been adapted to run multiple reactions in series, yielding a product with a wider bi-modal molecular weight distribution that provides superior strength or unique characteristics such as high-impact resistance.

All polyolefin groups participate in mature markets and therefore larger plants of all process technologies are being built with capacities of 300,000-500,000 tonnes per year.

Research and Intellectual Property

Our olefins and polymers businesses are supported by technology centers in Houston (United States), Brussels (Belgium), Rosignano (Italy) and Lavéra (France), which in turn support the following highly competitive proprietary process technologies that we believe together form one of the most comprehensive technology packages available in the olefins and polymers industry.

- *Gas phase polypropylene technology.* Our gas phase polypropylene technology enables the cost-effective production of high-performance polypropylene plastics. This technology has been licensed to 23 companies worldwide, excluding INEOS companies.
- *High-density polyethylene technology.* We own specialized technology for the manufacture of high-density polyethylene that is characterized by low capital investments and low operating costs and is particularly well-adapted to the manufacture of high-performance materials such as high pressure pipe, one of the fastest growing segments of the high-density polyethylene market. This technology has been licensed to 21 companies worldwide, excluding INEOS companies.
- *Gas phase polyethylene technology.* This technology is designed to serve the linear low-density polyethylene and high-density polyethylene markets, which are the fastest growing segments of the commodity polyethylene markets. The technology is characterized by low capital investment, low operating cost, low emissions and waste, and no requirement for the use of additional solvents. This technology has been licensed to 30 petrochemical companies worldwide, excluding INEOS companies. The technology allows the manufacturer to "swing" the use of installed production capacity between the two grades of polyethylene.

In 2016, following a strategic review of the INEOS Technologies business, the Group decided to cease licensing of its polyolefins technology externally, and to transfer the remaining parts of the INEOS Technologies business to existing businesses within the Group to provide a clearer focus on individual product lines. However, all existing license contracts remain in force and will be serviced as required over the coming years to ensure contractual commitments are fulfilled and the associated income streams are collected. There is consequently no change to the income streams expected to be received from licenses already sold, and no change to liabilities associated with these licenses. Typically, when a license is sold, contractual liabilities are limited to no more than the value of the license. However, during the period in which INEOS has actively licensed its polyolefin technologies, no payment with respect to contractual liabilities has ever been made. Although INEOS has ceased licensing of polyolefins technology, it continues to manufacture and sell polyolefin catalysts to third parties. Management believes that the polyolefin catalyst business continues to have significant growth prospects, that it is complementary to the polyolefins business, and does not adversely affect INEOS's competitive position in its polyolefin markets. The catalyst business is managed within the Olefins and Polymers business in Europe.

Transportation

We have access to a comprehensive transportation network and associated logistics infrastructure through a combination of ownership and long-term contracts. We believe that this network enables us to move feedstocks and products at competitive rates and provides us with access to the merchant market, enabling us to manage demand and supply imbalances across the petrochemical value chain in response to market conditions.

Because pipelines are the most efficient and least expensive mode of transportation, we consider them to be of strategic importance. We own some of the pipelines we use, while others are consortium-owned pipelines in which we hold a stake or are provided to us by dedicated operators under long-term contracts. Other pipelines in Europe may be accessed without a contract as long as the appropriate tariff is paid.

Where we are reliant on access to shipping channels, we either own or hold stakes in the relevant terminals and storage facilities or have secured access to them through long-term contracts. However, we do not own any of the ships we use and instead rely on an extensive network of third-party shipping companies which make capacity available to us on a spot or term contract basis that is managed by our own in-house Marine Assurance Service.

Competition

We face intense competition in the olefins and polymers markets in which we compete. Given that most of the products are commodities, the main competitive criterion is price. In certain segments of the polyethylene and polypropylene markets, where products must satisfy specified technical performance criteria, competition is also based on performance, quality and customer service. A key competitive factor is the ability to manage costs successfully, which requires management focus on reducing unit costs and improving efficiency. The main drivers in this respect include technology, scale, feedstock access, asset utilization, logistics and the ability to execute capital projects efficiently.

Because polymers are easily transported in bulk shipping containers or rail cars, there is significant trade between regions. Globally we compete against a large number of polymer companies, many of which have capacity in multiple regions and who market their products in Europe, Asia and North America. Our competitors include Lyondell Basell, Sabic, Dow and ExxonMobil.

Olefins & Polymers Europe

Set forth below is a discussion of the products, manufacturing, raw materials and energy, transportation and customers and contracts, for our Olefins & Polymers Europe business.

Overview

The following table provides a breakdown of the revenues and EBITDA before exceptionals for the Olefins & Polymers Europe business for the dates indicated:

	For the year ended December 31,		
	2018	**2017**	**2016**
		(€ in millions)	
Revenue[1]	6,388.8	5,896.7	4,966.5
EBITDA before exceptionals[2]	671.7	814.0	708.7

(1) Revenue excludes revenue from discontinued operations. Excludes intersegmental eliminations.

(2) For more information on how we calculate EBITDA before exceptionals, see "Presentation of Financial and Non-IFRS Information—Use of Non-IFRS Financial Measures."

Products

In our olefins business, we manufacture ethylene, propylene, butadiene, raffinate 1, benzene, toluene and gasoline blending components. The majority of our ethylene and propylene is either used for polyolefins production or sold to other INEOS businesses as feedstock. Our butadiene, raffinate 1, benzene, toluene and gasoline blending components are sold to other INEOS businesses as well as other producers of synthetic rubber, ABS plastics, oligomers, cumene, styrene and polyurethanes and are traded on the open markets. Olefins & Polymers Europe is one of the largest olefin and polyolefin producers in Europe.

In our polymers business we manufacture High Density Polyethylene (HDPE), Low Density Polyethylene (LDPE), Linear Low Density Polyethylene (LLDPE) and Polypropylene (PP).

In HDPE we are active in car fuel tank, milk bottle, high performance pipe and blow moulding applications, most of which require lengthy customer approval processes. Sales from our HDPE asset have grown significantly since 2013.

Our low-density polyethylene products are particularly well-suited to specialty applications in the wire and cable, medical and coatings sectors which also require lengthy customer approval processes. Our coating customers form the back bone of our LDPE business and we also have a significant volume of medical product sales and other specialty grades which generate high margins.

Our linear low-density polyethylene production is primarily sold to customers in the film sector, and, thanks to the use of our proprietary metallocene technology, we have sales of both commodity and specialty grades into film applications like super-tough and sealable films.

In polypropylene our focus has been in high modulus pipe and related applications, highly reinforced impact copolymers for injection moulding, medical and heat sealable BOPP films, where we have a strong global position in sealant material.

Manufacturing

Olefins & Polymers Europe operates large integrated olefins cracker and polymer sites with a total capacity of 5,050 kilotonnes per annum for the production of ethylene, propylene, butadiene, benzene, polyethylene and polypropylene. We own and operate a large naphtha cracker complex in Köln, Germany, and a large gas cracker in Rafnes, Norway. Until the end of 2015, the gas cracker at Rafnes, received all of its feedstock from gas sources in the North Sea but from 2016 the majority of Rafnes feedstock is ethane sourced from U.S. shale gas fields. The naphtha cracker complex at Köln includes two naphtha crackers and a small integrated ethane cracker which consumes ethane produced by the naphtha crackers. The naphtha crackers are also able to consume butane as part of their feed-slate and this flexibility enables the management of feedstock mix in response to changes in economic and market conditions, resulting in the maximization of margins. Both of these cracker sites are either co-located with, or connected by pipeline to, polyolefin plants and to other olefin-derivative units, with market leading economies of scale and operational optionality that permits us to maximise our margins across a broad portfolio of olefin-derivatives.

The cracker complex in Köln, Germany, benefits from being located in the centre of one of the key industrial clusters of Germany, whilst also being able to access feedstocks by pipeline and barge from the Antwerp and Rotterdam area in the Netherlands; one of the world's most competitive naphtha supply regions. It is the third largest cracker complex in Europe, and the largest in Germany. With a proven track record of operational excellence, this very reliable asset benefits from considerable downstream integration with a wide portfolio of olefin derivatives on- and off-site, including polyethylene, ethylene oxide, nitriles, oligomers, ABS engineering plastic and synthetic rubber. It can also sell its excess ethylene and propylene to the merchant market via pipelines and the site can also sell propylene by barge using its own jetties on the river Rhine and by rail. In particular, the Köln site is connected to Europe's largest ethylene pipeline network owned by ARG, a company jointly owned by INEOS and four other European petrochemical companies.

The Noretyl gas cracker in Rafnes has been modernized and recently expanded to its present annual capacity of 645,000 tonnes of ethylene. It is also co-located with on-site derivatives assets, namely O&P Europe's LDPE plant and EDC/VCM plants owned by INOVYN, a related company. In addition, the cracker is connected to dedicated, wholly owned ethylene liquefaction and export terminals from which it exports products to INEOS derivatives and the merchant market in North West Europe.

While our two standalone polyethylene and polypropylene sites in Lillo and Geel in Belgium are not co-located on cracker sites, they are connected to major olefin pipelines. Our Lillo site also benefits from connection to INEOS' ethylene terminal, which is Europe's largest, at the INEOS Oxide site in Zwijndrecht, Antwerp and indirectly with the greater ARG pipeline. In both cases, this infrastructure provides these facilities with flexibility in sourcing feedstock. Both of these sites benefit from easy access to large polyolefin markets.

Since acquiring Olefins & Polymers Europe, we have undertaken a significant improvement and restructuring program across our assets to enhance their long-term cost-competitiveness. In general, cost efficiencies have been substantially improved across all aspects of the business. The asset base has also been added to via the acquisition in 2007 of a 50% share in the Noretyl gas cracker at Rafnes and full ownership of the associated polyolefins at Bamble in Norway. On July 1, 2015, we acquired the other 50% share in the Noretyl gas cracker from INOVYN, a related party.

Significant investments have been made to enhance our assets' capabilities, including the building of a swing furnace on the Köln cracker and the conversion of its linear low density polyethylene unit to highly differentiated metallocene production (a proprietary catalyst technology that permits the production of super-tough film grades). A key improvement theme of our polyolefins business has been to creep capacities and reduce plant costs. We aim to run our downstream assets as close to their maximum capacity as is operationally prudent while seeking to constantly improve the sales portfolio by focusing on products that can command sustainably higher margins in bottom of cycle conditions over commodity grades, which we refer to as "differentiated" products. We take advantage of our proprietary process technologies, such as at Lillo (Innovene S), at Geel (Innovene P) and at Köln (Innovene G). These state of the art advanced technologies allow us to manufacture distinctive resins.

The most substantial recent investment that was made in our assets was in 2015 at Rafnes, with the completion of a new ethane import tank and new ethane furnace. These investments were timed to coincide with the commission of NGL/LPG export facilities in the U.S. through which we have secured long-term, advantaged U.S. gas feedstock, associated with the shale oil and gas developments in that country. This new source of ethane complements our existing local sources of feedstocks.

Our manufacturing facilities are periodically shut down for scheduled turnarounds, to carry out necessary inspections, testing to comply with industry regulations and any maintenance activities that may be necessary. Olefins crackers typically undergo major turnarounds every five to six years, with each turnaround lasting four to six weeks. Our Rafnes gas cracker is on a seven to nine year turnaround cycle. Polymers units are subject to more frequent maintenance shutdowns, typically one turnaround every one or two years, but in this case each turnaround lasts only seven to 10 days. A significant focus in prior years was placed on enhancing process safety and further improving reliability by initiating a series of process safety audits and reliability reviews to give assurance about the adequacy of our critical safety management systems and that the necessary plans are in place to drive very high levels of reliability.

Raw Materials and Energy

The primary feedstocks for our olefin crackers are naphtha and natural gas liquids, namely ethane, propane and butane. The use of naphtha results in the production of a significant amount of co-products such as propylene, butadiene and benzene, as well as Raffinate 1 and gasoline blending components. The use of natural gas liquids results in the production of a smaller amount of these co-products. From 2016, our Köln naphtha requirements have been sourced from several external suppliers under contract, with the balance being purchased in the open market.

We continue to look for sources of attractive feedstock and in 2012 we announced the completion of supply and infrastructure agreements that secured a significant volume of ethane feedstock from the U.S. for use in our Norwegian cracker. Since then, further ethane and LPG supply agreements have been secured from these advantaged US shale gas sources to complement our existing local sources. In addition, a new infrastructure contract was signed in 2015 which allowed us to export feedstocks from the new Enterprise facility at Morgan's Point on the Texas coast. Contracts for eight "Dragon" vessels to transport these feedstocks to Europe were signed in 2013, with all ships having now been delivered and fully operational.

The first shipment of ethane from the Marcus Hook Facility in Pennsylvania was exported from the U.S. in March 2016 on the JS INEOS Intrepid, and the first ethane cargo from Morgan's Point was exported in September 2016 on the JS INEOS Insight.

Although energy is generated at several of our sites, including as part of petrochemical manufacturing processes, we are a significant net purchaser of both electricity and gas. In the past we have typically procured our requirements from local producers or utilities at local market prices; however, we are increasingly moving to a more integrated process to take more advantage of our scale and changing energy markets across the wider INEOS Group, including our ultimate parent company and its other subsidiaries.

Customers and Contracts

In total, we had approximately 970 customers worldwide, during the twelve-month period ended December 31, 2018, who are serviced by an in-house team of business, sales and technical service personnel. Customers of our olefins business tend to be major European petrochemical companies, who use our products to make a wide range of polymers, synthetic rubber, intermediates and specialty chemicals. In our downstream business we sell to a large number of companies in a variety of plastic conversion industries involving rigid and flexible packaging, pipe, car fuel systems, rotomoulding, wire and cable, medical and other industrial and consumer products. In Olefins & Polymers Europe as a whole, in the twelve-month period ended December 31, 2018, no single customer accounted for more than 10% of our annual revenues and our top 10 customers accounted for less than 33% of our annual revenues.

In our olefins business the majority of our ethylene, propylene, raffinate 1 and benzene production is sold to other INEOS olefin-derivative businesses at market-related transfer prices. For the twelve-month period ended December 31, 2018, approximately 64% of the olefin requirements of our downstream polyolefin business was satisfied by internal supply from our own crackers, while the rest was sourced from the open market. Our remaining production of ethylene, propylene, butadiene, raffinate 1, benzene, toluene and gasoline blends are sold directly to customers predominately via contracts of one to three years duration, with pricing either freely negotiated, cost-plus or market-referenced such as ICIS or Platts. Product pricing can therefore change daily or monthly.

In our polymers business sales are mainly conducted under contract. The majority of these contracts are annual with longer durations by exception. Pricing in these contracts is cost plus or based on market references, such as ICIS or Platts, or negotiated on a monthly basis.

Olefins & Polymers North America

Set forth below is a discussion of the products, manufacturing, new materials and energy and customers and contracts, for our Olefins & Polymers North America business.

Overview

The following table provides a breakdown of the revenues and EBITDA before exceptionals for the Olefins & Polymers North America business for the dates indicated:

	For the year ended December 31,		
	2018	2017	2016
	(€ in millions)		
Revenue[(1)]	4,044.1	3,573.9	2,855.9
EBITDA before exceptionals[(2)]	798.0	896.0	956.4

(1) Revenue excludes revenue from discontinued operations. Excludes intersegmental eliminations.

(2) For more information on how we calculate EBITDA before exceptionals, see "Presentation of Financial and Non-IFRS Information."

Products

Our olefin products—ethylene, propylene, butadiene, mixed butenes, and crude benzene—are the basic building blocks for a vast family of petrochemicals produced by our chemical manufacturing customers. A significant portion of our olefin output serves as feedstock for our polymers production, while the remaining output is sold to affiliates and third parties.

The type of polyethylene we currently manufacture in Olefins & Polymers North America is slurry loop high-density polyethylene. Our high-density polyethylene products are sold to customers for use in manufacturing food packaging, household chemical containers, pipe, injection-molded products such as caps and closures, and crates and pails. Our polypropylene is transformed into crates and trays, roofing membranes, food packaging, carpets, automotive products, DVD cases, rope and toys. During the twelve-month period ended December 31, 2018, consumables such as caps, closures, film and packaging represented a majority of our polymer sales volume.

O&P North America also manufactures polyethylene pipe through our subsidiary, WL Plastics. WL Plastics was acquired in November 2016 and is solidly positioned as a leader in the North American plastic pipe industry. WL Plastics is a leading manufacturer and distributor of HDPE tubular products for fluid and material transfer applications primarily for energy and industrial infrastructure applications with a deep product mix of pipe diameters of ½ inch to 54 inches.

Manufacturing

The key assets of Olefins & Polymers North America include the following:

- the Chocolate Bayou, Texas, facility, one of the largest cracker installations in North America;
- the Battleground, Texas, facility, one of the largest North American high-density polyethylene facilities and integrated with the Chocolate Bayou site through a company-owned pipeline system;
- a 50% joint venture in the Horizon high-density polyethylene plant located at Chevron Phillips' Cedar Bayou, Texas, site;
- the Carson polypropylene plant—integrated with the Tesoro refinery at Carson, California;
- the Hobbs fractionation unit, which can process 1,455 kta of natural gas liquids feedstock for our Chocolate Bayou cracker;
- the Gemini HDPE joint venture with Sasol Limited, a world-scale polyethylene line at the Battleground manufacturing facility on the Houston ship channel that started-up at the end of 2017; and
- the WL Plastics acquisition added several new plant fabrication and distribution locations including Casper, Wyoming; Rapid City, South Dakota; Cedar City, Utah; Elizabethtown, Kentucky; Snyder, Texas; and Bowie, Texas. The Canadian plant in Crossfield, Alberta was closed in 2017 and the new Statesboro, Georgia plant came online in 2017.

All of the olefins crackers are either co-located with, or connected by pipeline to, polymers units, enabling them to realize economies of scale, improve their facilities' energy management and minimize logistics costs.

In North America, our olefins and polymers business comprises five sites including major facilities in Chocolate Bayou, Texas, and Battleground, Texas. In 2018, the Chocolate Bayou and Battleground facilities had total production volumes of approximately 3,683 kilotonnes inclusive of olefins, polyethylene and polypropylene finished goods.

Chocolate Bayou is one of the largest cracker installations in the Gulf Coast region and, according to Nexant, is the seventh largest site by ethylene capacity in the United States. The site has access to cavern storage, rail service, and approximately 500 miles of pipeline, either owned or leased by us. This allows integration to our polymer assets and our Hobbs fractionation unit, and permits the site to place its surplus ethylene and other products either directly in the local merchant market or in storage to bridge time lags between production and consumption. The scale of the Chocolate Bayou crackers should also enable the leveraging of the facility's infrastructure and workforce. Another key strength of the facility is the crackers' flexible design. While their main feedstock is natural gas liquid gas-based feedstock, which is obtained from various sources, including a significant amount from our natural gas liquid fractionator near Hobbs, New Mexico, the commodity markets and Marathon's refinery in Texas City, Texas, the facility also has the ability to process naphtha. This flexibility enables management of feedstock mix in response to changes in economic and market conditions. All of our polymers facilities in North America are either connected with the Chocolate Bayou crackers or are adjacent to facilities operated by third parties with whom we have feedstock arrangements.

Among our North American polymers units, our key facility is the site at Battleground, Texas, which hosts both polypropylene and high-density polyethylene production as well as being the location of our completed Gemini HDPE joint venture to manufacture high-density polyethylene with Sasol Limited. Our high-density polyethylene site is the fourth largest high-density polyethylene complex in North America. Battleground is integrated with Chocolate Bayou by way of a pipeline system owned by INEOS. Complementing our Battleground polymers production is our Carson polypropylene unit and our 50% ownership interest in the Cedar Bayou Horizon high-density polyethylene line. The Horizon line, which is operated by Chevron Phillips, is one of the largest single slurry loop high density polyethylene lines in North America.

Raw Materials and Energy

Our procurement efforts remain focused on expanding access to low cost materials, services and equipment and creating independence from sole or limited sources of supply. We are connected via pipeline to multiple hydrocarbon suppliers at Chocolate Bayou Works and Battleground Manufacturing Complex to ensure a secure supply at reasonable costs.

We, together with our North American affiliates, have centralized the purchasing of energy, natural gas, rail routes and propylene (including refinery-, chemical- and polymer-grades), providing scale, common voice in the market and, in the case of propylene, flexibility to manage our supply and demand. Our olefins and polymers business primarily uses naphtha and NGLs as the basic feedstocks for our olefins crackers.

Although most external feedstock supplies of the business are available from a variety of third parties, our Carson polypropylene plant depends on raw materials from the Tesoro refinery located on the same site. Most of the petrochemical feedstocks purchased from Tesoro are part of a long-term contractual agreement. In addition, a substantial proportion of our feedstock requirements is also obtained on the commodity markets. We manage the procurement and trading of our feedstocks internally.

Our U.S. ethylene production capacity exceeds our U.S. consumption. We, thus, sell ethylene on the merchant market through supply contracts and swaps with other petrochemical and refining companies. Our propylene production is lower than consumption. To address this shortfall, we purchase propylene on the merchant market through supply contracts and swaps with other petrochemical and refining companies.

Our U.S. polyethylene production capacity exceeds our U.S. consumption. It is expected that our recent vertical integration acquisition of WL Plastics will receive some of this polyethylene overhang as we plan to get the benefits of vertical integration.

Although energy is generated at several of our sites, including as part of petrochemical manufacturing processes, we are a significant net purchaser of both electricity and gas. Typically we procure our requirements from local producers or utilities at local market prices.

WL Plastics has a premium value proposition to their approximately 125 domestic customers with industry leading response times, scalable low-cost manufacturing with longer run times and a reputation for reliability.

Customers and Contracts

We work with customers to meet evolving market requirements. We market our products both directly—business to business—and through authorized distributors. We have a small base of olefins customers and approximately 350 polymer customers worldwide. Our industrial customers include a large number of companies in a variety of downstream industries involving rigid packaging, fibers and flexible packaging.

Most of our olefins sales are by multi-year contracts, with prices subject to monthly industry pricing. Our polymer sales are to customers in the merchant market and are made either on contract or spot terms. Some contracts are based on negotiated prices, while others are based on pricing formulas or refer to spot market rates.

Chemical Intermediates

Overview

Set forth below is a discussion of the products, manufacturing, raw materials and energy, customers and contracts, research and intellectual property and competition for our Chemical Intermediates activities. This includes the following key businesses: INEOS Nitriles, INEOS Oligomers, INEOS Oxide, INEOS Phenol and INEOS Enterprises. As part of a corporate reorganisation, the management of the ammonia and nitric acid businesses will transfer from INEOS Enterprises to INEOS Nitriles during the first half of 2019.

The following table provides a breakdown of the revenue and EBITDA before exceptionals of the Chemical Intermediates business for the periods and as of the dates indicated:

	For the year ended December 31,		
	2018	2017	2016
	(€ in millions)		
Revenue[1]	7,855.0	7,589.4	6,204.3
EBITDA before exceptionals[2]	818.1	819.4	665.7

(1) Excludes intersegmental eliminations.

(2) For more information on how we calculate EBITDA before exceptionals, see "Presentation of Financial and Non-IFRS Information."

Products

The following table provides an overview of our key chemical intermediate products and their principal applications:

Business	Key Products	Principal Applications
INEOS Nitriles	Acrylonitrile	Acrylic fibers, acrylamide and acrylonitrile butadiene styrene and styrene acrylonitrile polymers
	Acetonitrile	Performance solvent for pharmaceuticals industry
	Hydrogen Cyanide	Gold extraction, perspex manufacture and animal feeds
	Acetone Cyanohydrin	Chemical intermediates and perspex manufacture
	Ammonium Sulphate	Fertilizers
	Oxazole	Chemical intermediates
	Acrylonitrile catalysts	Used in the manufacture of Acrylonitrile

Business	Key Products	Principal Applications
INEOS Oligomers . .	Linear alpha olefins	Co-monomers for polyethylene, feedstock for synthetic lubricants, surfactants, detergents, lubricant additives, paper sizing chemicals and various other specialty chemicals, base stock for drilling fluids
	Polyalpha olefins	Synthetic lubricants
	Isoolefins, Isoparaffins and Specialties	Tire manufacture, specialty acids, agrochemicals, fragrances, cosmetics and blowing agents
	GAS/SPEC specialty amine solvents & additives	Customizable solvents for natural gas processing, various refining applications, tail gas treating, LNG, hydrogen and ammonia production, ethane cracker feed treatment, and coal degasification.
	GAS/SPEC process technology packages	Process technology packages for design of new specialty amine treatment systems and revamp/ optimization of existing systems
INEOS Oxide	Ethylene oxide and derivatives, including ethylene glycol, ethanolamines, alkoxylates, glycol ethers	Polyester resins, fibers, film, antifreeze/coolants, industrial detergents, agrochemicals, surfactants, cosmetics, construction chemicals, glyphosates, pharmaceuticals, synthetic lubricants
	Propylene oxide and derivatives, including propylene glycols	Polyurethane foam, polyester resins and de-icing
	Ethylidene norbornene monomer	Ethylene propylene diene monomer rubber
	Ethyl and butyl acetates	Surface coating, inks, paints, process solvents
INEOS Phenol	Phenol	Bisphenol A for the production of polycarbonates and epoxy resins, phenolic resins, pharmaceuticals and nylon intermediates
	Acetone	Methylmethacrylate, polymethylmethacrylate, bisphenol A, pharmaceuticals, solvents, coatings, personal care products and agrochemicals
	Cumene	Primary raw material for the production of phenol and acetone

Business	Key Products	Principal Applications
INEOS Enterprises . .	Alphamethylstyrene	Heat resistant thermoplastics, tackifiers, coatings and antioxidants
	Ammonia	Intermediate used to produce a range of products, including nitric acid, polymer resins and textiles
	Nitric Acid	Polyurethanes
Other businesses . . .	Catalyst and Additives	Polymers, vinyls, acrylonitrile and maleic anhydride

INEOS Nitriles. Our main product in the nitriles sector is acrylonitrile. According to Nexant, measured by expected average annual capacity for 2018, we are the largest manufacturer of acrylonitrile in the world. The primary applications for acrylonitrile are acrylic fiber, acrylamide and acrylonitrile butadiene styrene plastics. We employ safeguards to ensure the safe handling of Nitriles' products including the use of specially designed railcars and pipelines for transportation to nearby customers. We believe that our competitive position in the worldwide acrylonitrile market is strengthened by our proprietary fluid bed acrylonitrile process and related catalysts.

In addition, the Nitriles business produces acetonitrile, hydrogen cyanide, acetone cyanohydrin, ammonium sulphate and oxazole, and produces catalysts used in the manufacture of acrylonitrile.

INEOS Oligomers. According to Nexant, we are the third largest linear alpha olefins producer measured by average annual capacity for 2018. Nexant also believes we are one of the largest producers of polyalpha olefins worldwide. As a "full range" linear alpha olefins producer, we manufacture a broad range of co-produced linear alpha olefins and must manage production levels consistent with our ability to utilize or sell the entire product slate. As different segments of the linear alpha olefins market tend to grow at different rates, the business has developed a variety of internal and external outlets for the key products, which allow the plants to operate with minimal constraints. Our unique technology does allow some flexibility to adjust our product slate, in order to emphasize certain linear alpha olefins products and de-emphasize others as demand fluctuates. Linear alpha olefins are used primarily as comonomers in the production of polyethylene, as feedstock in the production of poly alpha olefins, surfactants, detergents, lubricant additives, paper sizing chemicals and various other specialty chemicals, and as base stock for drilling fluids. Poly alpha olefins are primarily used in synthetic motor oils, transmission fluids, gear oils, greases and other demanding lubricant applications such as compressors and wind turbines.

Specialty Oligomers products are manufactured from C4/C5 olefins and are used as intermediates in a variety of high margin applications such as tire manufacture, specialty acids, agricultural chemicals, plastic additives, specialty chemicals, fragrances and cosmetics.

Our GasSpec™ specialty amines, which are high performance specialty chemical formulations, often patent protected, are used to remove hydrogen sulphide and carbon dioxide from natural gas, various refinery streams, hydrogen & ammonia production streams, ethane cracker feed gas, and coal degasification product gas. GasSpec™ operates a fully equipped laboratory in Freeport, Texas, that provides comprehensive analytical support to our customers.

INEOS Oxide. We manufacture ethylene and propylene oxide, from which we produce a range of derivatives including ethylene glycol, propylene glycol, EO and PO alkoxylates and glycol ethers. We believe, as measured by expected aggregate annual capacity for 2017, we are the largest producer of ethylene oxide and ethylene glycol in Western Europe and one of only two commercially viable producers of ethylidene norbornene monomer in the world.

Ethylene oxide is a highly reactive, flammable and toxic molecule. As a consequence, ethylene oxide producers typically use a significant proportion of their ethylene oxide for captive production or sell it to third parties located reasonably close to, or on, their ethylene oxide production sites. The majority of ethylene oxide produced in Western Europe is used for captive production and there are virtually no ethylene oxide imports into, or exports from, Western Europe. INEOS Oxide uses its ethylene oxide production for the captive production of ethylene glycol, ethylene oxide derivatives and sales to third parties on its sites in Antwerp and Köln.

Our ethylene oxide derivatives include ethanolamine, a broad range of alkoxylates, and glycol ethers. We own and operate one of the world's largest ethanolamine units and produce a family of molecules that are used in applications such as agrochemicals, surfactants (used in personal care products and detergent formulations), cement additives, textile chemicals, metal working fluids, electronics and pigments. We have four alkoxylate reactors based in Antwerp, which we use to make a broad range of alkoxylates used in household detergents, herbicides, industrial cleaners, petroleum production, cosmetics, pharmaceuticals, synthetic lubricants and surface coating. We also operate one of Europe's largest glycol ether assets to produce a range of methyl, ethyl and buthyl glycol ethers used as solvents in surface coatings and inks, and as jet fuel de-icers.

We are one of only two commercially viable suppliers of ethylidene norbornene (ENB) monomer globally and the only producer in Europe. Ethylidene norbornene monomer is used in the production of ethylene propylene diene monomer (EPDM) rubber, a high performance rubber that is both wear and weather resistant and is increasingly used in place of conventional rubbers in automobiles, roofing materials and household appliances.

Ethylene glycol is used primarily as a feedstock to produce polyethylene terephthalate for film, fiber and resin and in a variety of other industrial applications including antifreeze/coolants for automotive vehicles.

We have the largest Ethyl acetate plant in Europe with the product being primarily used as a solvent and diluent, favored because of its low cost, low toxicity and agreeable odor. For example, it is commonly used to clean circuit boards and some nail varnish remover. Coffee beans and tea leaves are decaffeinated with this solvent. It is also used in paints as an activator or hardener and is present in confectionery, perfumes and fruits.

INEOS Phenol. According to Nexant, measured by average annual capacity in 2018, we are the largest producer of phenol in the world. Our global manufacturing capacity is two times that of our closest competitor. Phenol is a primary material for a large number of chemical products. In recent years, the use of phenol for the production of bisphenol A, an intermediate product used to produce polycarbonate and epoxy resins, has increased substantially and is now the largest phenol application. Polycarbonate is an engineering thermoplastic material which, due to its superior optical qualities, structural strength and weight, has a wide range of uses including; CDs and DVDs, optic-fibers, optical lenses, bulletproof glass and other ballistic resistant materials, structural parts in cars and trucks and housings for electrical household appliances and office equipment. Epoxy resins are used in a wide variety of applications including coatings, adhesives and composite materials, such as carbon fiber.

Phenol is also combined with formaldehyde to produce phenolic resins, which represent the second largest commercial use of phenol. Phenolic resins are used in a wide range of applications, including plywood and oriented strand board, furniture, insulation materials, laminates, foundry molds and adhesives.

The next largest application for phenol is as the raw material for caprolactam and adipic acid for the production of nylon intermediates. Major uses include engineering thermoplastics and synthetic fibers for clothing and carpeting.

Since phenol and acetone are produced together in a fixed ratio, we are also the largest producer of acetone in the world with more than twice as much capacity as the next largest competitor. The largest commercial use of acetone is for solvents, either through the use of acetone itself as a solvent or through the acetone-based production of solvents. The second largest commercial use of acetone is the manufacture of methylmethacrylate. Methylmethacrylate is used to manufacture polymethylmethacrylate resins, including acrylic sheets and compounds for molding and extrusion. Acrylic sheets and compounds are used in a wide range of architectural and industrial applications, ranging from point of sale retail displays to glazing and decorative light panels. The third major use of acetone is in the production of bisphenol A.

Alphamethylstyrene is formed as an intermediate product during the phenol and acetone production process. It is used in heat resistant thermoplastics, tackifiers, coatings and antioxidants.

INEOS Enterprises. Ammonia production finds major application in the fertilizer industry, but in the case of INEOS Enterprises is used in the production of acrylonitrile, nylon and other non-fertilizer applications. Nitric acid is similarly used in the fertilizer industry, and for INEOS Enterprises is primarily used in the manufacture of polyurethanes. In this highly competitive market, we benefit from a cost base lower than that of many of our competitors, having an advantaged location within our Köln integrated petrochemical site and supplying 80% of our customer volume directly by pipeline.

Manufacturing

INEOS Nitriles operates from four sites, two in the United States and two in Europe. Our Green Lake, Texas, facility is one of the largest facilities for acrylonitrile and related products in the world. The second U.S. site is in Lima, Ohio, and is an integrated nitriles complex, producing acrylonitrile and related products, with access to feedstock from an adjacent refinery. Lima also manufactures acrylonitrile catalysts for other facilities on a global basis. In Europe, we manufacture at the former BASF site in Seal Sands in the north east of England and in Köln, Germany.

INEOS Oligomers operates from four sites split across Europe and North America. Joffre, in Alberta, Canada, has access to low-cost ethylene feedstock derived from Canadian gas. The other North American asset is located in La Porte, Texas and it manufactures polyalpha olefins. In Europe, production of linear alpha olefins and polyalpha olefins occurs in Feluy, Belgium, and specialty oligomers are manufactured in Köln, Germany. In addition, construction is underway for a new 420,000 tonnes linear alpha olefins plant, as well as a new 120,000 tonnes poly alpha olefins plant, both at Chocolate Bayou, Texas, which we estimate will be operational in the second quarter 2019 and first quarter of 2020, respectively.

INEOS Oxide operates from four main sites, in Antwerp, Belgium, Plaquemine, Louisiana, United States, Köln, Germany and Hull, United Kingdom. Our largest production facility is at the Antwerp complex in the second largest European harbor and second largest chemical region in the world. This site has direct or indirect connections to three major ethylene pipelines linking it to most ethylene crackers in Northwest Europe as well as the only deep sea terminal for Ethylene not integrated in a cracker complex. It also has pipeline connections to pipelines for nitrogen, oxygen, natural gas and ship/rail logistic capabilities for sourcing bulk feedstock of propylene oxide, butadiene, acetic acid and alcohols. In addition, the site has its own jetty facility on the Schelde River which links it to the port of Antwerp and the Amsterdam Rotterdam Antwerp ("ARA") pipeline and with rail and road tanker loading facilities. We produce ethanolamine at our Plaquemine plant located on the Mississippi/Gulf Coast of the United States. This is a prime location for chemicals production due to advantaged access to feedstock and direct access to sea jetties and close proximity to our customer base.

INEOS Phenol operates phenol and acetone plants at sites in Gladbeck, Germany; Antwerp, Belgium; and Mobile, Alabama in the United States. All three sites use our own proprietary technology, which has significant advantages in energy consumption and other factors over competing technologies. Our Gladbeck plant is located in the industrial heartland of Germany known as the Ruhrgebiet. It receives its raw materials by pipeline from an INEOS-owned cumene plant (Marl), as well as other suppliers, and the finished products go out by rail and truck with most customers situated within a 100 kilometer radius. It is the largest single train unit in the world. Our Antwerp site, the largest capacity Phenol site in the world, is located in the Antwerp industrial area with direct deepwater access. All of the cumene reaches the site via ship. The majority of the site's end-products are transported to customers by ship, with the balance being transported by road. Our Mobile, Alabama, United States, plant is located on Mobile Bay on the Gulf of Mexico, close to several major consumers. All cumene is supplied via ship mainly from an INEOS-owned cumene plant (Pasadena, Texas) or producers on the Gulf Coast or Asia. About half of the phenol and acetone produced is transported via ship and barge while the balance goes out by rail and road. INEOS Phenol operates two cumene plants at sites in Marl, Germany and Pasadena, Texas.

INEOS Enterprises manufactures ammonia and nitric acid at the Köln complex in Germany.

We manufacture catalysts for polyethylene, polypropylene, acrylonitrile and maleic anhydride, and have established toll-manufacturing arrangements for polypropylene catalysts, ethylene dichloride oxychlorination catalysts and some polyethylene catalysts, and for process additives for the polyvinylchloride process. Manufacturing facilities exist in Lima, Ohio, United States (acrylonitrile catalysts), Green Lake, Texas, United States (maleic anhydride catalysts), Lavéra and Sarralbe, France (both polyethylene catalysts) and Dahej, India (polyolefin catalysts).

Raw Materials and Energy

Acrylonitrile is manufactured from propylene, ammonia and air with the use of a special catalyst. Acrylonitrile is toxic and flammable and, unless chemical stabilizers are added for storage and shipment, can undergo an explosive chemical reaction. We employ safeguards to ensure the safe handling of nitriles, including the use of specially designed railcars and pipelines for transportation to nearby customers.

Ethylene is the primary feedstock for the production of the linear alpha olefins of INEOS Oligomers. In Joffre, ethylene is supplied from the neighboring, globally cost advantaged Nova facility. In Europe, the Feluy facility is supplied both by pipeline and now via the new INEOS deep-sea terminal. Poly alpha olefins are produced by reacting selected linear alpha olefins together.

INEOS Oxide's principal raw material is ethylene. Our Antwerp complex is the largest chemical site in Europe and the largest ethylene consumer in Europe, and we benefit from this. This supply flexibility is further bolstered by access to or ownership of major ethylene deep sea terminals connected to the ARA pipeline network. We have short and medium-term contracts of one to five years that generally specify minimum and maximum volumes with several different suppliers. The cost of our key feedstock ethylene supply is based on a discount to the current Northwestern European contract price.

Cumene, which is made from the combination of benzene and propylene, is INEOS Phenol's main raw material. INEOS owns cumene plants located in Marl, Germany, which is pipeline-connected to the Gladbeck site and in Pasadena, Texas. We acquire the remaining cumene from our suppliers pursuant to four different types of contractual arrangements. Under a toll contract, we supply the benzene and propylene required for the production of cumene to our suppliers, who then convert these inputs into cumene. For this service, we are charged a conversion and capacity reservation fee reflecting the supplier's costs and a margin. Under the second type of contractual arrangement, the suppliers charge us for cumene according to contractually agreed formulas based on benzene and propylene market prices and agreed yield factors. A conversion fee is added to the charge. The third type of arrangement is the toll contract, discussed above, pursuant to which customers pay for or provide raw materials to us and receive, in exchange for a toll fee, corresponding phenol and acetone outputs in fixed proportions. Finally, we also make some incidental purchases of cumene in the open market. As a result of these arrangements, we are exposed to changes in the market contract and spot rates for benzene and propylene. We believe that our use of toll contracts with customers and formula-based contracts can reduce our exposure to raw material price fluctuations.

INEOS Enterprises' key raw material is natural gas. Natural gas is supplied from utility companies via pipeline from the German natural gas grid to the Köln plant to manufacture ammonia.

Customers and Contracts

During the year ended December 31, 2018, INEOS Nitriles had approximately 180 customers worldwide, with the top 10 customers accounting for approximately 75% of revenue. Major customers include, in Asia, Chi Mei, LG, Lotte and Toray, and, in Europe, Styrolution, Aksa, Dralon and Trinseo. We are the only supplier to provide customers with the security of supply from capacity in the United States and in Europe and the only supplier to service all key regions of the world: United States, Europe and Asia (including the Indian subcontinent).

During the year ended December 31, 2018, INEOS Oligomers had approximately 290 worldwide customers with its top 10 customers accounting for approximately 52% of revenue. Major customers typically include large polyethylene manufacturers, such as Dow and Nova, and leading lubricant, surfactant and drilling fluid companies.

INEOS Oxide sells most of its products to leading chemical manufacturers, including Dow, BASF, Monsanto, Lanxess, Covestro, Indorama and DuPont. The majority of our sales are made pursuant to short- and medium-term market contracts of one to five years in duration. Under a long-term swap agreement entered into with Dow Chemical as part of the ethanolamine and GasSpec™ gas treating amines acquisition in February 2001, we swap a significant proportion of our ethylene glycol production from our Antwerp facilities for an equivalent volume of ethylene oxide production from Dow Chemical's ethylene oxide plant in Plaquemine. We generally determine the prices for our chemicals on a monthly basis based on current market conditions, including raw material costs. Other than ethylene oxide prices, which are based on the European market price, our prices are generally based on the international market price.

INEOS Phenol sells to most of the major phenol and acetone consumers globally, including Covestra (previously Bayer), Olin (previously Dow), Sabic, Fibrant (previously DSM), Evonik and Lucite. During the year ended December 31, 2018, we generated approximately 68% of our total sales from our 10 largest customers with whom we have developed strong relationships over more than 50 years of doing business. Many of our sales contracts include provisions whereby raw material price changes are passed through automatically insulating our margins from volatile changes in raw material markets.

INEOS Enterprises sells its ammonia products predominantly to on-site internal customers for the production of acrylonitrile and nitric acid, but also supplies to external customers for a wide range of applications.

Research and Intellectual Property

The market position of our Chemical Intermediates business is supported by a range of technologies. Our main technology in this area is the proprietary fluid bed acrylonitrile process and related catalysts. We believe that this technology is the leading nitriles manufacturing technology and, we believe that it is used in a significant majority of the world acrylonitrile production.

INEOS also carries out research to improve the capital and operating costs of the different technology platforms, and catalyst and additive performance, including development of novel catalysts and additives. This work complements other research focused on applications and improvements to existing asset performance.

For example, since 1995, INEOS Phenol has filed in excess of 20 patent applications for new process technology, including acetone recycling, improvements in product quality and process optimization.

Active management of our intellectual property rights allows us to preserve the advantages of the products we sell and the technologies we use, and helps us to maximize the return on our investment in research and development. We police our proprietary rights and enforce them against third party infringements or misappropriations. We own, or have rights to, approximately 2,100 patents or patent applications, divided into approximately 280 patent families, in the United States, Europe, China and various other commercially relevant regions. In addition, we own a number of registered trademarks. Strict control of our proprietary confidential technical information provides valuable complementary protection to our other intellectual property rights. INEOS businesses regularly review, typically annually, their individual patent portfolios to ensure that they remain strategically aligned. Where patents no longer deliver clear business value they are no longer funded, potentially resulting in periodic changes in the overall size of the patent portfolio. In addition to our own intellectual property, we are party to licensing and other agreements authorizing us to use and sub-license patents, trade secrets, confidential technical information and related technology owned by third parties.

While we believe that our portfolio of intellectual property rights provides significant competitive advantages, we do not regard our business as being materially dependent on any single patent, trademark, trade secret or agreement.

Competition

Although INEOS Nitriles competes with numerous manufacturers of acrylonitrile, we are the largest producer in the world. In addition, we believe that a significant majority of the world's acrylonitrile capacity is based on our process technology. Our most significant competitor is Sinopec, closely followed by Asahi Kasei Corporation. Other competitors include Ascend in North America and AnQore in Europe.

The main competitors for INEOS Oligomers in linear alpha olefins are Royal Dutch Shell, Chevron Phillips and Sasol Limited. For polyalphaolefins, major competitors include Chevron Phillips and Exxon Mobil.

The main competitors of INEOS Oxide in the ethylene glycol, antifreeze, ethylene oxide and ethylene oxide derivatives markets are BASF, Shell and Dow Chemical, while those in acetate esters include BASF and Solventis. Our only competitor in the ethylidene norbornene monomer merchant market is JX Nippon Oil & Energy.

In Europe, the major competitors for INEOS Phenol are Cepsa, Novapex, Borealis and Versalis. In North America, our major competitors are Shell and Honeywell.

Integration is the key factor supporting the competitive status for INEOS Enterprises. In the global market for ammonia, we face over 150 competitive production units located in 50 countries. Thirty of these units are within Western Europe.

Refining Divestiture, Grangemouth Divestiture and Lavéra Divestiture

The Refining Divestiture

On July 1, 2011, subsidiaries of Lux I disposed of (i) the Refining Business and the Entrepreneurial (Refining) Business to joint ventures formed between PetroChina and INEOS Investments and (ii) the Infrastructure Entity to a joint venture owned by INEOS Investments (50.0%) and the Refining Business JV (50.0%), herein referred to as the "Refining Divestiture." The disposal of the Refining Business, the Entrepreneurial (Refining) Business and the Infrastructure Entity was principally a disposal of the Refining segment of the INEOS Group as reported on the financial statements of IGH.

The Refining Business and the Entrepreneurial (Refining) Business disposed of in connection with the Refining Divestiture consist principally of the crude oil refining operations carried out at the refineries located at Grangemouth, Scotland, and Lavéra, France, and related entrepreneurial activities. The Refining Divestiture also involved the transfer to the Infrastructure Entity of certain related infrastructure assets (principally a power station in Grangemouth, Scotland, and a terminal and other facilities). Following the Refining Divestiture, the INEOS Group and the Refining Business share certain assets and will continue to rely on each other for certain goods and services, which include the purchase of feedstock by the INEOS Group from the Refining Business JV, the sale by the INEOS Group of certain hydrocarbons to the Refining Business JV and the provision of certain administrative services to each other (such as security, emergency response, accounting, employee relations, procurement and site management). The Infrastructure Entity acquired the related infrastructure assets and provides certain infrastructure goods and services (such as power and access to terminals) to the INEOS Group and the Refining Business JV. The Infrastructure Entity was transferred by the INEOS Group as part of the Refining Divestiture and is jointly owned by INEOS Investments and the Refining Business JV. Upon the consummation of the Refining Divestiture, service and asset-sharing arrangements were executed to govern the ongoing use of the shared infrastructure and services. The indemnification provisions include the INEOS Group giving an uncapped non-time limited indemnity to the joint venture in respect of environmental liabilities not related to the Refining Business.

As a result of the Refining Divestiture and related transactions, on July 1, 2011, we received net cash proceeds (after expenses and agreed completion adjustments) equal to €658.0 million and 400 Ordinary Shares in INEOS Investments, subscribed for at an aggregate subscription price of $1.015 billion. The ordinary shares have the right to receive an amount equal to all amounts received by INEOS Investments (net of a good faith estimate of its audit, company secretarial and other administrative expenses, as determined by the directors of INEOS Investments) in respect of its investments, including its equity interest in the Refining and Entrepreneurial JVs and the Infrastructure Entity, and INEOS Investments shall be obliged to distribute to the INEOS Group, subject to applicable legal requirements, in the form of dividends or as a return of capital, all amounts received by it in respect of such investments, less such audit, company secretarial and other administrative expenses. The holders of the ordinary shares are entitled to, in priority to any payment to holders of any other class of shares, $1.015 billion of the total capital returned to the voting shareholders. While we do not have voting control of INEOS Investments, the INEOS Group does retain the majority of the current economic benefits of the entity as we are entitled to receive the foregoing amounts through the ordinary shares we hold. By virtue of the Group's retained economic interest in INEOS Investments, the INEOS Group consolidates INEOS Investments as a subsidiary in its consolidated financial statements. The investments in the Refining Business held by INEOS Investments are therefore accounted for as investments in joint ventures in the consolidated financial statements of the INEOS Group. The ordinary shares are unsecured equity interests. Subject to applicable law, the ordinary shares do not carry voting rights other than class voting rights in relation to changes in the Articles of Association of INEOS Investments that would affect the rights of the ordinary shares, including the issuance of shares ranking *pari passu* or prior to the ordinary shares, or in relation to any proposal to wind-up INEOS Investments. Except with respect to the limited class voting rights of the ordinary shares, the voting shares of the principal shareholders of IGH have 100% of the voting rights of INEOS Investments.

The Grangemouth Divestiture

On October 1, 2013, the Group completed the Grangemouth Divestiture which comprised the disposal of its Grangemouth petrochemicals operations, including the assets and pension and other liabilities, to a newly created subsidiary of INEOS Holdings AG, our indirect parent company. The Grangemouth Divestiture was implemented pursuant to a restructuring designed to address concerns that the operations carried out by INEOS Commercial Services UK Limited and INEOS Chemicals Grangemouth Limited at the Grangemouth site had been loss-making for the previous four years, primarily due to a high fixed-costs base at the Grangemouth site and a decline in suitable feedstock supplies. Accordingly, a survival plan was implemented to improve its cost base and to enable it to invest in new infrastructure to import U.S. ethane to the Grangemouth site which will provide a low cost sustainable raw material supply for the business.

The plan formulated for the survival of the Grangemouth operations required a significant investment. This investment included investment in infrastructure necessary to allow the site to import ethane gas from the U.S., including the construction of an import facility and ethane tank. These facilities were completed during 2016 and the first shipment of ethane gas arrived from the U.S. into Grangemouth in September 2016. The investment was funded from the proceeds of the issue by INEOS Grangemouth plc in August 2014 of €285 million 0.75% Guaranteed Notes due 2019, which are guaranteed by the U.K. government's Infrastructure Guarantee Scheme. As at December 31, 2018, there was approximately €99 million of funds held in an INEOS Grangemouth Plc bank account which is secured in favor of the U.K. government as security against the repayment of such borrowings under the Infrastructure Guarantee Scheme. IHL has also made available to INEOS Grangemouth plc, as borrower, a €200 million affiliate loan facility for, *inter alia*, its general corporate requirements. Although all outstanding amounts have been repaid in full in July 2017, the terms of the loan facility have been amended to allow for future drawdowns. The loan facility is guaranteed by INEOS Chemicals Grangemouth Limited and INEOS Commercial Services UK Limited.

The Grangemouth Chemicals business has delivered stronger financial performance from 2014 to June 2018 than was envisaged in the original business case for the survival plan. Acceleration of the site transformation plan, strong chemicals markets and improvements in the operations of the site have all contributed to higher cash generation and an improvement in the net debt position of the divested business compared to the original business case.

The Lavéra Divestiture

On July 1, 2014, our subsidiaries INEOS Group AG and INEOS Europe AG disposed of certain petrochemical assets and business in France and Italy to a subsidiary of INEOS AG, a company wholly owned by our ultimate parent INEOS Limited. The disposed businesses comprise a petrochemical business at the Lavéra site in France as well as certain other business and assets in France and Italy that were formerly part of our European Olefins & Polymers business unit (the disposed assets and business are together referred to as the "Lavéra businesses"). The total consideration for the sale of the Lavéra businesses amounted to €200 million and was initially provided in the form of vendor loans. As of December 31, 2015 all of the consideration has been received by us in cash.

The disposal was part of a restructuring plan for the Lavéra businesses with the objective of improving the reliability and cost base of the Lavéra site.

The acquiror of the Lavéra businesses is not part of the "Restricted Group" under our Senior Secured Term Loans Agreement and the Existing Indentures and as a result the Lavéra businesses are no longer subject to the covenants and other obligations under our Senior Secured Term Loans Agreement and the Existing Indentures. Further, the Lavéra businesses will not be part of the "Restricted Group" under the Indenture governing the Notes and will consequently not be subject to the covenants and the obligations contained therein.

We continue to provide certain supporting services such as supply chain management, accounting or logistical services to the Lavéra businesses following their disposal. Further, our subsidiary INEOS Europe AG entered into an offtake agreement for ethylene oxide with an entity that is part of the Lavéra business. These services and agreements with the Lavéra businesses are engaged in on an arm's-length basis.

Contractual Arrangements with the Refining and Entrepreneurial JVs

To ensure that the companies in the INEOS Group retain access to the feedstocks provided by the Refining and Entrepreneurial JVs, we have entered into several contractual arrangements with the Refining Business JV and the Infrastructure Entity. Pursuant to these arrangements, the INEOS Group will retain access to the feedstocks that are essential to the retained business segments, thereby contributing to the long-term viability, security and profitability of our businesses.

Our Köln site within our Olefins & Polymers Europe business has entered into standard supply contracts buying naphtha with the Refining and Entrepreneurial JVs on an arm's-length basis.

Contracts have been put in place to ensure that the companies in the INEOS Group retain access to the naphtha feedstock produced by the Refining Business JV at Grangemouth, following the separation of the Grangemouth petrochemicals business from the INEOS Group in the Grangemouth Divestiture. Historically, the majority of naphtha feedstock produced by the Grangemouth refinery was exported and delivered to other INEOS Group companies as chemical intermediate feedstock. To maintain the security of supply of naphtha feedstock from the Refining Business JV to the INEOS Group, INEOS Europe AG ("IEAG"), a member of the INEOS Group, entered into a long-term agreement with the Refining Business JV for the purchase of all of the refinery naphtha produced at Grangemouth. Pursuant to this arrangement, the INEOS Group retains access to the naphtha feedstock, which is a key part of the supply chain for the retained business segments, thereby contributing to the long-term viability, security and profitability of our businesses.

Contractual Arrangements with the Grangemouth petrochemicals business

To retain flexibility on polymer sales, and thus optimisation of value for the INEOS Group businesses, the polymer production at Grangemouth is sold to market through the INEOS Group Limited Risk Distributor companies ("LRDs"). The proceeds (less an agreed sales margin) of the sale of polymer production at Grangemouth through the LRD network are transferred back to INEOS Commercial Services UK Limited, one of the entities divested in the Grangemouth Divestiture.

Contractual Arrangements with the Lavéra, Sarralbe & Rosignano petrochemicals business

Historically, the majority of naphtha feedstock produced by the Lavéra refinery has been consumed by the petrochemicals business at Lavéra. Pursuant to the Lavéra Divestiture, contracts were executed in order to continue this arrangement.

To retain flexibility on polymer sales, and thus optimisation of value for the INEOS Group businesses, the polymer production at Lavéra, Sarralbe and Rosignano is sold to market through the INEOS Group LRDs. The proceeds of the sales through the LRD network sales are transferred back to INEOS Derivatives France Limited ("IDFL") less an agreed sales margin.

Prior to the divestiture, all contracts for the purchase of ethylene and propylene for IDFL's polymer plants in Sarralbe, Lavéra & Rosignano were with counterparties external to the INEOS Group and these supply arrangements remain in place following divestiture.

Research and Technologies ("R&T")

We consider R&T to be a key contributor to both the short-term performance and the long-term growth of our business.

Our R&T work has three principal objectives:

- minimize production costs with a view to increasing the margins that can be achieved in the manufacture and sale of our products;
- make better products in order to sustain or capture more margin or market share; and
- reduce capital costs to minimize the investments necessary to meet demand.

A substantial portion of our R&T expenditure is dedicated to the continuous improvement of our existing processes, products, assets and operations and is intended to yield returns in less than two years. This R&T work is carried out by a combination of integrated teams based at our facilities and centrally located specialists and research teams in one of our R&T centers. In addition, we carry out longer-term projects targeted at more fundamental improvements, which we typically intend to yield returns within two to five years. We protect our process technologies and products by seeking patents or retaining them as trade secrets.

We believe that the quality of our scientific staff is important to our success. The employees working in our R&T centers have comprehensive expertise in a variety of areas, including catalysis, process development, product and material science, modeling and project management. Our R&T project teams also have commercial expertise. We consistently aim to improve the effectiveness of our R&T efforts by targeting our projects at the most valuable applications and using project management tools to monitor progress. To attract and retain the best-qualified scientists and develop a high level of capability and competence in the key areas of processes, products and operations, we offer our employees challenging development opportunities and a competitive compensation package that is aligned with performance of the relevant business in both the short and long term.

We also draw on external resources to enhance the scope, depth and effectiveness of our internal R&T efforts. We proactively seek mutually beneficial partnerships with third parties, including other petrochemical companies and leading universities.

Facilities

We currently lease the office space for our principal executive offices, which are located in Rolle, Switzerland. We also lease administrative, technical and sales office space in various locations in the countries in which we operate.

Our production network comprises 33 manufacturing facilities in six countries throughout the world. The following table provides information regarding these facilities:

Country	Location[1]	Business	Principal products manufactured	Capacity[2]
Belgium	Doel[3]	Phenol	Phenol, acetone	1,105 kta
	Feluy	Oligomers	Linear alpha olefins, poly alpha olefins	445 kta
	Geel	O&P Europe	Polypropylene	339 kta
	Lillo	O&P Europe	Polypropylene, high-density polyethylene	723 kta
	Zwijndrecht	Oxide	Ethylene oxide, ethylene glycol, ethylene oxide derivatives, ethylidene norbornene monomer, Buthyl acetate, alkoxylates	1,481 kta
Canada	Joffre	Oligomers	Linear alpha olefins	290 kta
Germany	Gladbeck	Phenol	Phenol, acetone, alpha methyl styrene	1,105 kta
	Köln	Enterprises	Ammonia, nitric acid[4]	1,235 kta
		Nitriles	Acrylonitrile and related products	411 kta
		O&P Europe	Ethylene, propylene, butadiene, benzene, low-density polyethylene, linear low-density polyethylene	3,131 kta
		Oligomers	Isoolefins, isoparaffins, specialties	150 kta
		Oxide	Ethylene oxide and derivatives, ethylene glycol, propylene oxide, propylene glycol	863 kta
	Marl[5]	Phenol	Cumene	260kta
Norway	Bamble	O&P Europe	Low-density polyethylene	158 kta
	Rafnes	O&P Europe	Ethylene, propylene	699 kta
United Kingdom	Hull	Oxide	Ethyl acetate	330 kta
	Seal Sands	Nitriles	Acrylonitrile and related products	424 kta
United States	Battleground	O&P North America	High-density polyethylene, polypropylene	930 kta
	Carson	O&P North America	Polypropylene	230 kta
	Cedar Bayou[6]	O&P North America	High-density polyethylene	150 kta
	Chocolate Bayou	O&P North America	Ethylene, propylene, butadiene, polypropylene	2,753 kta
	Freeport	Oligomers	Gas treating amines	12 kta
	Gemini Facility[7]	O&P North America	High-density polyethylene	277 kta
	Green Lake	Nitriles	Acrylonitrile and related products	697 kta

Country	Location(1)	Business	Principal products manufactured	Capacity(2)
	Hobbs	O&P North America	Ethane/propane mix, propane	1,455 kta
	La Porte	Oligomers	Poly alpha olefins (low and high viscosity)	105 kta
	Lima	Nitriles	Acrylonitrile and related products	230 kta
			Acrylonitrile catalyst	2 kta
	Mobile	Phenol	Phenol, acetone	875 kta
	Pasadena	Phenol	Cumene	900 kta
	Plaquemine	Oxide	Ethanolamines	175 kta
	Mills	O&P North America	Polyethylene pipe	35 kta
	Bowie	O&P North America	Polyethylene pipe	48 kta
	Cedar City	O&P North America	Polyethylene pipe	40 kta
	Elizabethtown	O&P North America	Polyethylene pipe	33 kta
	Snyder	O&P North America	Polyethylene pipe	38 kta
	Rapid City	O&P North America	Polyethylene pipe	28 kta
	Statesbro	O&P North America	Polyethylene pipe	48 kta

(1) We own all of the production facilities except where otherwise indicated.

(2) The unit kta is kilo-tonnes per annum.

(3) We own the production assets, but lease the land under a long-term lease that expires in 2040.

(4) Nitric acid plant owned by third party, operated by INEOS.

(5) Plant owned by INEOS Styrenics Gmbh, a related party.

(6) A 50/50 joint venture with Chevron Phillips, operated by Chevron Phillips. The capacities shown are the INEOS share of the activities.

(7) A joint venture with Sasol Limited, operated by Ineos USA LLC, located at the Battleground site. The capacities shown are the INEOS share of the activities and incremental to the Battleground capacities.

Health, Safety, Security and Environment

Overview

Our facilities and operations are subject to a wide range of HSSE laws and regulations in all of the jurisdictions in which we operate. These requirements govern, among other things, the manufacture, storage, handling, treatment, transportation and disposal of hazardous substances and wastes, wastewater discharges, air emissions (including GHG emissions), noise emissions, operation and closure of landfills, human health and safety, process safety and risk management and the clean-up of contaminated sites. Many of our operations require permits and controls to monitor or prevent pollution. We have incurred, and will continue to incur, substantial ongoing capital and operating expenditures to ensure compliance with current and future HSSE laws, regulations and permits or the enforcement of such requirements. Our aggregate HSSE capital expenditures in 2018 totaled approximately €350 million. Our projected HSSE capital expenditures in 2019 are around €355 million. Annual HSSE capital expenditures for 2020-2021 are expected to be similar to prior years.

Violations of HSSE requirements may result in substantial fines or penalties, the imposition of other civil or criminal sanctions, cleanup costs, claims for personal injury, health or property damages, requirements to install additional pollution control equipment, or restrictions on, or the suspension of, our operating permits or activities. At certain sites where we operate, regulators have alleged or we have otherwise identified potential or actual non-compliance with HSSE laws and/or the permits which authorize operations at these sites. Some of these allegations or instances of non-compliance are ongoing, and substantial amounts may need to be spent to attain and/or maintain compliance. In addition, we have in the past paid, and in the future may pay, penalties to resolve such matters. Our businesses and facilities have experienced, and in certain cases, are in the process of investigating or remediating, hazardous materials in the soil and groundwater at locations where we operate and/or adjacent properties and/or natural resources at public and private lands not owned by us. We are also in the process of investigating and remediating contamination at certain of our facilities and/or other sites where our facilities disposed of hazardous wastes. In addition, HSSE laws and regulations can impose various financial responsibility requirements on us, and pursuant to these requirements we may be required to post bonds, create trust funds or provide other assurances that we will be able to address contamination at our sites and comply with our decommissioning obligations once our facilities reach the end of their useful lives.

Other HSSE laws and regulations may impose restrictions upon product or raw material use, import or sale by us or our customers. For example, it is possible that certain of our products or by-products or the raw materials we use may, in the future, be classified as hazardous or harmful, which could impact our production or demand for our products and, in turn, could materially and adversely affect our business and/or results of operations.

We believe that our operations are nonetheless currently in material compliance with all HSSE laws, regulations and permits. We actively address compliance issues in connection with our operations and properties and we believe that we have systems in place to ensure that environmental costs and liabilities will not have a material adverse impact on us. Nevertheless, estimates of future environmental costs and liabilities are inherently imprecise, and the imposition of unanticipated costs or obligations could have a material adverse effect on our business, financial condition or results of operations in any period in which those costs are incurred.

Major Regulatory Matters and Developments

Air and Climate Change Regulations and Initiatives

EU Emissions Trading System

Our operations in Europe are covered by the European Union Emissions Trading System ("EU ETS"), a EU-wide trading system for industrial GHG emissions. Industrial sites receive or purchase allowances to emit GHGs and must surrender one allowance for each ton of carbon dioxide emitted. Companies which emit less GHGs than their allowances cover are able to sell the excess allowances, whereas those which emit more must buy additional allowances through the EU ETS. The number of allowances to emit GHGs that are received by industrial facilities free of charge has been, and we expect will continue to be, reduced over time. Accordingly, in the future, we may be required to purchase more of the allowances we use, or to make emissions reductions at our facilities, which could cause us to incur additional compliance and/or capital costs and/or adversely impact our production and our results of operations.

U.S. Clean Air Act and Climate Change Regulations

In the United States, the federal Clean Air Act ("CAA") regulates air emissions from various sources and requires, among other things, monitoring of specified pollutants, including hazardous air pollutants, stringent air emission limits and technological controls to reduce emissions to air. Strict federal and state controls on ozone, carbon monoxide, benzene, sulphur dioxide, nitrogen oxide and other emitted substances impact our activities and increase our operational costs in the United States.

Growing concern about the sources and impacts of global climate change has led to a number of legislative and administrative measures, both proposed and enacted, to monitor, regulate and limit carbon dioxide and other GHG emissions. For example, we are required to monitor and report to EPA annual GHG emissions from certain of our U.S. facilities. In addition, EPA has taken steps to regulate GHG emissions under the CAA and other existing legislation as comprehensive climate change legislation has not yet been enacted by the U.S. Congress. Under the Trump administration, uncertainty exists as to how GHG regulations will in the future impact large stationary sources, such as our facilities in the United States, and what costs or operational changes these regulations may require. For example, in August 2018, EPA proposed the Affordable Clean Energy ("ACE") rule to replace the 2015 CPP. The CPP was stayed by the U.S. Supreme Court in 2016 and has never gone into effect. The ACE rule, which would establish emission guidelines for states to use in developing plans to address greenhouse gas emissions from existing coal-fired power plants, was open for public comment until the end of October 2018. The ACE rule has four major components: (i) a definition of the best system of emission reduction for greenhouse gas emissions from coal-fired power plants, (ii) a list of "candidate technologies" states can use to establish standards of performance, (iii) a new preliminary applicability test for determining a "major modification" triggering enhanced review standards, and (iv) new implementing regulations for emission guidelines under other provisions of the CAA. Although we believe it is likely that GHG emissions will continue to be regulated in the U.S. and other countries (in addition to the E.U.) in the future, we cannot yet predict the form any such additional regulation will take in the chemical industry itself in various jurisdictions (such as a cap-and-trade program, technology mandate, emissions tax or other regulatory mechanism) or, consequently, to estimate any costs that we may be required to incur, for example, to install emissions control equipment, purchase emission allowances or address other regulatory obligations. We continue to monitor the situation closely.

In addition, the EPA has finalized or proposed several rules relating to emissions reporting and emissions reductions. We monitor rules within our industrial sector and rules in other sectors that may set a precedent for ours. Significant capital expenditures could be required for emissions control equipment in order to comply with these new rules.

In the United States, stringent controls on nitrogen oxides (NOx) and hydrocarbon "Volatile Organic Compound" (VOC) emissions, and/or the need to purchase emissions credits for certain facilities, impact our operations and, indirectly, the cost of our products. Credit pricing is subject to general economic conditions. NOx and VOC credits are available and affordable in the markets where we have previously needed such credits, and have not been a deciding factor in growth. EPA has finalized rules that will require states to restrict or prohibit emissions that "significantly contribute" to non-attainment of, or interference with a state's ability to maintain, the revised ozone standard in other "downwind" states. Both of these developments may require additional NOx and VOC reductions at our facilities over the next decade, and could cause us to incur additional compliance and/or capital costs and/or adversely impact our production and our results of operations.

The Registration, Evaluation, and Authorization of Chemicals ("REACH") Regulation, the Classification, Labelling and Packaging ("CLP") Regulation, the Toxic Substances Control Act and the Canadian Environmental Protection Act, 1999 ("CEPA")

The EU regulates chemical products within the EU by imposing on all affected industries the responsibility for ensuring and demonstrating the safe manufacture, use and disposal of chemicals. REACH requires the registration of all chemicals manufactured and imported into the EU (either alone, in mixtures or in articles) with the European Chemicals Agency ("ECHA"). The regulation requires formal documentation of the relevant data required for hazard assessments for each substance registered as well as development of risk assessments for their registered uses. Most uses of high hazard substances, such as carcinogens, will require authorization by the ECHA. We manufacture, process, or use a number of substances classified as substances of very high concern under REACH.

Some of the intermediates and monomers manufactured within some of our businesses are classified as carcinogenic, mutagenic, or reprotoxic. REACH requires extensive toxicological data, documentation and risk assessments for many of our chemical products and raw materials. As a corollary to REACH, the EU has also adopted the CLP Regulation to harmonize the EU's system of classifying, labelling and packaging chemical substances with the United Nation's Globally Harmonized System. The regulation is expected to standardize communication of hazard information of chemicals and to promote regulatory efficiency. It introduces new classification criteria, hazard symbols and labeling phrases, while taking account of elements that are part of the current EU legislation.

In the United States and Canada, our products and raw materials are subject to environmental, health and industrial hygiene regulations, including TSCA and CEPA, which require the registration and safety analysis of certain chemicals. The U.S. Congress passed the Frank R Lautenberg Chemical Safety for the 21st Century Act, a set of amendments to TSCA, in 2016. EPA is currently working to implement these amendments and to comply with the new legal requirements. The full impact of these amendments to TSCA remains uncertain, and it is possible that risk evaluations of certain of our products by EPA could lead to new or more stringent regulatory obligations and/or restrictions, up to and including prohibitions on manufacture and sale of certain products. On December 19, 2016, EPA published a list of ten chemical substances that are the subject of EPA's initial chemical risk evaluations, as required by TSCA. This list includes multiple chemicals we manufacture, including carbon tetrachloride and methylene chloride. Work on the required risk evaluations is underway. In order to prioritize additional chemicals for risk evaluations, by December 22, 2019, EPA must have designated at least 20 chemical substances as High-Priority and 20 chemical substances as Low-Priority. It is possible that chemicals prioritized in this process could include additional chemicals we manufacture.

Such regulations could result in a key raw material, chemical, or other substance being classified or reclassified as having a toxicological or health-related impact on the environment, users of our products, or our employees. Such reclassification of one or more of our raw materials or products could affect its availability and marketability, result in a ban on its purchase or sale, or require us to incur increased costs to comply with additional notification, labelling, or handling requirements.

Risk Management—Prevention of Major Accidents and Process Safety

Risks are inherent in the chemical and petrochemical businesses, particularly risks associated with safety, health and the environment, and each of our facilities actively assesses and manages such risks as required by law. Within the European Union, an EU directive on the control of major accident hazards (the "Seveso III Directive"), regulates facilities that present a risk of accidents involving dangerous substances and imposes specific plans and procedures on them, particularly for the storage of such substances. The Directive, which replaced the previous Seveso II Directive on June 1, 2015, provides for control measures aimed at preventing and limiting the consequences of major accidents. All of our major production sites are in the top tier of regulation under the Directive due to the quantity of dangerous substances stored at them. As such, we must establish a major accident prevention policy, safety reporting system, safety management system and emergency plan compliant with the requirements of the Directive.

In the United States, our manufacturing facilities are subject to EPA's Risk Management Program ("RMP"), which requires facilities that produce, handle, process, distribute or store certain highly hazardous chemicals to develop a risk management plan and program in the event of an accidental release of such chemicals. RMP also requires facilities to assess potential impacts to off-site populations in the event of a credible worst-case release and to document the policies, procedures, equipment and work practices in place to mitigate identified risks. Similar risk management requirements are imposed upon our facilities under the Emergency Planning and Community Right-to-Know Act, which contains chemical emergency response planning, accident release and other reporting and notification requirements applicable to our U.S. manufacturing facilities. The EPA finalized changes to the RMP regulations in late 2016 that became effective in September 2018. While the changes impact some RMP-covered sites, the changes are not expected to result in a burden or increased costs to our facilities.

In addition, our U.S. facilities are subject to standards including the OSHA Process Safety Management ("PSM") standard, which requires development of a program to manage workplace risks associated with highly hazardous chemicals. To better manage risks and process safety we pursue certifications within OSHA's Voluntary Protection Program ("VPP"), and our Battleground (Houston), Chocolate Bayou and Addyston sites are certified to Star status, the highest level achievable. Star level means that the site has successfully implemented a safety and health management system and achieved a combined injury and illness rate that is below the industry rate nationwide. In addition, our U.S. sites also report PSM incidents as required by API 754 as part of the database maintained by the American Fuel and Petrochemical Manufacturers association.

Programs employed to manage PSM risks include instrumentation and overpressure relief devices. ISA 84 is an international standard that addresses the application of safety-instrumented systems for process industries. Our pressure relief systems are reviewed and designed in accordance with relevant legal (OSHA, ASME, NFPA, PED, ISO), industry (API, DIERS), and internal standards.

In addition, all of our businesses are aware that effective safety management is consciously required to address and deal with major accident and process safety risks. We promote personal leadership for the management of these risks and the Board of Directors for each business operates a "Letter of Assurance" process whereby each of the Operations Directors/Site Managers reviews compliance with local regulations and the effectiveness of the safety management system. They then formally inform their Executive Team and Chief Executive in writing about any issues about which they need to be concerned. This process is intended to provide assurance that all businesses are in compliance in all material respects with applicable health, safety and environmental laws in the countries in which they operate.

Environmental Remediation and Closure Liabilities

Many of our sites have an extended history of industrial chemical processing, storage and related activities, and sites with known or suspected contamination exist. We are currently, and from time to time have been or may be, required to investigate and remediate releases of hazardous materials or contamination at or migrating from certain of these sites, as well as properties we formerly owned, leased or operated. We could also be responsible for investigating and cleaning up contamination at off-site locations where our predecessors or we disposed of or arranged for the disposal or treatment of hazardous wastes. Under some environmental laws, liability can be imposed regardless of whether the owner or operator knew of or caused the contamination and regardless of whether the practices that resulted in the contamination were legal at the time they occurred. In connection with contaminated properties, as well as our operations generally, we also could be subject to claims by government authorities, individuals and other third parties seeking damages for alleged personal injury or property damage resulting from hazardous substance contamination or exposure caused by our operations, facilities or products.

Baseline surveys of soil and groundwater conditions were conducted at many of our sites in the EU in connection with obtaining our Integrated Pollution Prevention and Control ("IPPC") permits, and such data was reported to the relevant authorities. In addition, many of our other sites were the subject of intrusive investigations when they were acquired by us or in connection with historical activities or operational changes over the years. The process of investigation and remediation can be lengthy, varies from site to site and is subject to changing legal requirements and developing technologies. We are not currently aware of any additional sites as to which material claims or clean-up obligations exist. The discovery of previously unknown contamination, however, or the imposition of new obligations to investigate or remediate contamination at our facilities, could result in substantial unanticipated costs. We could be required to establish or substantially increase financial reserves for such obligations or liabilities and, if we fail to accurately predict the amount or timing of such costs, the related impact on our business, financial condition or results of operations in any period in which those costs need to be incurred could be material.

Product Stewardship and Innovation

Many of our products have some hazardous properties, and some of them require specialized handling procedures due to their acute and chronic toxicity. Our polymer products have widespread end uses in a variety of tightly regulated consumer industries, including in food packaging and medical applications. To manage these risks, our product stewardship team works closely with industry associations, government regulators and others to develop regulations, which are based in science and are commensurate with the magnitude of the risk.

Security and Crisis Management

The U.S. Department of Homeland Security ("DHS") requires compliance by our facilities as defined in the Marine Transportation Security Act ("MTSA"), the Chemical Facilities Anti-Terrorism Standards (CFATS) and U.S. Department of Transportation Hazardous Materials regulations.

The DHS, the U.S. Federal Emergency Management Administration and individual state emergency management regulators require that all sites hosting emergency response teams train responders. It is required that the emergency response teams and incident management teams have the knowledge, skills and equipment to allow them to work in concert with local, state, and Federal agencies in a framework defined by the National Incident Management System ("NIMS"). NIMS or equivalent training is conducted at sites to meet the intent of NIMS requirements. This allows the site responders to join with the governmental group in cases of widespread emergencies, including pandemics, where multiple agencies and organizations are involved.

HSSE Principles

We remain very strongly committed to excellent HSSE performance and believe we are a top decile performer within the chemicals industry. In 2013, INEOS converted its safety performance monitoring to mirror the U.S. OSHA standard. This enabled a common platform for comparisons and increased the number and types of injury data collected and analyzed. INEOS's OSHA rate for the total workforce in 2018 was 0.20 injuries per 200,000 hours. We strive to operate throughout the world with a commitment to doing what is needed to protect the environment and to comply with all applicable regulations in the countries in which we operate. Our focus is on prevention of process safety incidents and we have developed internal audit programs (20 HSSE principles) designed to monitor and correct any deviations from acceptable performance.

Our aim is to avoid injuries to the community, employees and contractors. We focus on reducing major plant losses of containment of chemicals with health and safety impact. Core to our HSSE standards is our HSSE policy, which promotes executive management and individual responsibility, adherence to operating procedures and training and requires our sites to be designed, operated and managed with the goal of preventing major incidents.

Employees

As of December 31, 2018, we had approximately 7,500 employees (measured as full-time equivalents ("FTEs")) in our operations around the world, excluding employees of our joint ventures.

Approximately 65% of these employees were located in Europe, approximately 34% were located in North America and 1% was located in the rest of the world.

Historically, we have enjoyed good labour relations and we are committed to maintaining these relationships. Other than management and professional personnel, the majority of our employees are represented by local trade unions and are covered by collective bargaining agreements, including a European Employee Forum agreement under the European Council 94/45/EC, Article 6, which covers all businesses and employees across Europe within INEOS Group and is designed to provide a formal mechanism for management and employee representatives to communicate on significant or potentially significant issues across the INEOS Group's European operations.

Insurance

INEOS purchases insurance on an all risk basis, including business interruption (including consequential loss) and property damage on a replacement cost basis. In addition, we purchase third party liability insurance, directors & officers, marine cargo, protection & indemnity insurance and life insurance for all of our employees. We believe our policies are in accordance with customary industry practices, including deductibles and coverage amounts. Our broker, lead insurers and underwriters perform risk engineering surveys and routinely inspect all assets. We have an ongoing program to regularly revalue our assets. The insurance replacement value of our assets for business interruption (including consequential loss) and property damage is approximately €30 billion as of December 31, 2018.

Legal proceedings

As is the case with many companies in the chemical industry, we are and may from time to time become a party to claims and lawsuits incidental to the ordinary course of our business. We are not currently involved in any legal or arbitration proceedings that are expected to have a material adverse effect on our financial position and, to our knowledge, no such legal or arbitration proceedings are currently threatened.

Agreements with BP

We have ongoing relationships with BP under several trading agreements as summarized below.

Reorganization Agreements

In connection with the separation of certain businesses that INEOS acquired from BP in December 2005, there are certain reorganization arrangements in place with BP. The principal arrangement relates to access to the RMR Pipeline. A significant portion of the annual naphtha supply required by the petrochemical cracker at our Köln, Germany site is transported through the RMR pipeline. BP is entitled to a certain amount of RMR pipeline capacity every year, consistent with its overall 35% interest in the pipeline. We have an arrangement with BP pursuant to which we have a right to use a portion of this capacity, along with associated infrastructure at BPRR ("BP Rotterdam Refinery"), The Netherlands, to enable us to meet an agreed amount of the naphtha requirements of our Köln site. This agreement has an indefinite term.

Commercial Interface Agreements

We have a series of agreements with BP which cover, among other things:

- the sale and purchase of hydrocarbons at or between sites where INEOS and BP have a continuing relationship; and

- the provision by INEOS to BP and vice versa of services, utilities and infrastructure rights at certain INEOS sites (both standalone and shared) and in some cases between INEOS' respective sites;

although, with the purchase of the Forties Pipeline System during 2017 by a related party of INEOS Group, the majority of these arrangements between BP and INEOS have come to an end.

Related Agreements

In connection with our relationship with BP, we and BP (among others) entered into agreements providing for (i) reciprocal credit support, (ii) the netting of each parties reciprocal obligations and (iii) security assignments as guarantees for our payment obligations owed to BP.

These agreements were terminated on January 5, 2017 and were replaced by a new credit support agreement pursuant to which (i) any party to any existing underlying trading agreement between IHL and BP (and/or certain of their respective affiliates) and (ii) any party to certain agreements for the sale and purchase of Ethylene and Propylene proposed to be entered into between BP Europa SE and INEOS Europe AG, may require the provision of additional credit support if the existing credit support provided under that trading agreement is no longer satisfactory (the "Credit Support Deed"). See "Risk Factors—Credit Support Deed—The credit support we may be required to provide under our Credit Support Deed with BP may be substantial."

In connection with the new credit support agreement IGH has provided a parent company guarantee in favor of BP and certain of its affiliates, pursuant to which IGH guarantees the payment obligations of various members of the Group under trading agreements between such parties.

THE ISSUER

The Issuer

The Issuer, INEOS Finance plc, is a public limited company that was incorporated in England and Wales on November 23, 2009. It is registered at Companies House with Company Number 07084307. The address of the Issuer's registered office is Hawkslease, Chapel Lane, Lyndhurst, Hampshire SO43 7FG, United Kingdom. The Issuer was established as a financing vehicle for the purpose of assisting in the financing of the operations of the Group. The issued capital of INEOS Finance plc consists of 50,000 ordinary shares of £1.00 each, all of which are held by INEOS Holdings Limited and are fully paid. The Issuer is an indirect wholly owned subsidiary of INEOS Group Holdings S.A. The issued capital of INEOS Group Holdings S.A. consists of 924,803 ordinary shares of €1 each, all of which are held by INEOS Holdings Luxembourg S.A. and are fully paid. The Issuer has not issued any convertible debt securities, exchangeable debt securities or debt securities with warrants attached.

The Issuer is a wholly-owned finance company that conducts no business operations and has no plans to conduct any business operations. As of the date of this offering memorandum, as adjusted for the Transactions, the Issuer's borrowings are limited to the Notes, the 2025 Senior Secured Notes and certain borrowings under the Senior Secured Term Loans Agreement and the Schuldschein Loan, each of which is guaranteed by INEOS Group Holdings S.A., INEOS Luxembourg I S.A., INEOS Holdings Limited and certain of their subsidiaries. See "Description of the Notes" and "Description of Other Indebtedness." As of December 31, 2018, as adjusted for the Transactions and the Schuldschein Loan, the total amount outstanding on the Notes would have been €770.0 million, the total amount outstanding on the 2025 Senior Secured Notes would have been €550.0 million, the total amount outstanding on the Schuldschein Loan would have been €141.0 million and the total amounts outstanding under the Senior Secured Term Loans would have been €3,476.7 million (based on an exchange rate of $1.1434 per €1.00 in respect of the Senior Secured Term Loans outstanding on December 31, 2018). The Issuer guarantees certain obligations under the Senior Secured Term Loans Agreement and certain hedging and cash management obligations. The Issuer is also a guarantor of the 2024 IGH Notes. The Issuer does not have any other indebtedness or contingent liabilities outstanding.

After giving effect to the Transacations, the only significant assets of the Issuer will be the Notes Proceeds Loan, the Senior Secured Term Loans Euro Proceeds Loans, the 2025 Senior Secured Notes Proceeds Loan and the Schuldschein Proceeds Loan, each of which is an amount equal to the total amount outstanding on the Notes, the euro portion of the loans under the Senior Secured Term Loans Agreement, the Schuldschein Loan Agreement and the 2025 Senior Secured Notes, respectively.

The Issuer has not incurred any additional indebtedness or made any additional investments, in each case other than the issuance of the Notes, the borrowings and guarantees under the Senior Secured Term Loans Agreement, the Schuldschein Loan Agreement, the 2025 Senior Secured Notes and its guarantee of the 2024 IGH Notes through the date of this offering memorandum. The Issuer may from time to time incur additional indebtedness or make additional investments in compliance with the terms of its then outstanding indebtedness.

Accordingly, the Issuer will be dependent upon payments from IHL to make any payments due on the Notes. If IHL fails to make scheduled payments on the Notes Proceeds Loan, the 2025 Senior Secured Notes Proceeds Loan, the Schuldschein Proceeds Loan or the Senior Secured Term Loans Euro Proceeds Loans, it is not expected that the Issuer will have any other sources of funds that would allow it to make payments on its indebtedness. In addition, IHL is a holding company that conducts no independent business operations. See "Risk Factors—Risks Relating to the Notes and Our Capital Structure—Finance Subsidiary Issuer—The Issuer is a finance company with no independent operations and is dependent on payments under the Notes Proceeds Loan to provide it with funds to meet its obligations under the Notes."

MANAGEMENT

Executive Officers and Directors of INEOS Limited

INEOS Limited, a company incorporated in the Isle of Man, is our ultimate parent undertaking. INEOS Limited was incorporated on March 24, 2016 and became the ultimate parent undertaking on December 1, 2016.

The following table sets forth the name, age (as of December 31, 2018) and principal position of each of INEOS Limited directors and officers:

Name	Age	Position
James A. Ratcliffe	66	Chairman
Andrew Currie	63	Member of the Board
John Reece	61	Member of the Board
Jim Dawson	74	Non Executive Director of INEOS Group

James A. Ratcliffe has been the Chairman of INEOS Capital since 1998. Mr. Ratcliffe, who has over 30 years of experience in the chemical industry, is experienced in managing buyouts of chemical companies. In 1992, he led the successful buyout of Inspec Group plc. In 1998, he left Inspec to lead the acquisition of INEOS plc (now INEOS Oxide) from Inspec. Mr. Ratcliffe started his career with Exxon Chemicals before moving to Courtaulds. He then completed his MBA at London Business School before joining Advent International and then Inspec.

Andrew Currie has been a director of INEOS Capital since 1999. He was previously Managing Director, Laporte Performance Chemicals, having served as a director of the Inspec Group from 1994 until the Laporte acquisition of Inspec in 1998. Mr. Currie has a degree in natural sciences from Cambridge University and spent the first 15 years of his career with BP Chemicals in various technical and business management functions.

John Reece joined INEOS Capital as Finance Director in January 2000. He was previously a partner with PricewaterhouseCoopers LLP, where he advised companies in the chemical industry. Mr. Reece has a degree in economics from Cambridge University and is a Chartered Accountant.

Jim Dawson became a non-executive director of INEOS Capital Limited in 2005. Dr. Dawson has been serving as a consultant to INEOS since 2001. Dr. Dawson served as a director of Shell International Chemicals until 2000. Dr. Dawson has a first degree in chemistry and a doctorate of philosophy from Oxford University.

INEOS AG, a subsidiary of INEOS Limited, provides operational management services to us.

All of the members of the board of directors and officers of INEOS Limited have their business address at Fort Anne, Douglas, IM1 5PD, Isle of Man.

Executive Officers and Directors of the Issuer

The Issuer is an indirect wholly-owned subsidiary of INEOS Group Holdings S.A. The directors of the Issuer are Graeme Leask and Jonathan Ginns.

The members of the board of directors of INEOS Limited control the Issuer. The principal executive offices of the Issuer are located at: Hawkslease, Chapel Lane, Lyndhurst, Hampshire SO43 7FG, United Kingdom.

Compensation of Directors and Executive Officers

An aggregate of €1.5 million was paid to our executive officers and directors in their capacity as directors and officers of INEOS Group Holdings S.A. in 2018.

Board Practices

Our board meets on a regular basis to review performance and our business plans. In addition, the board has established policies for the conduct of our business, including delegations of board authority to directors and members of senior management. The board has appointed committees to ensure appropriate oversight of our companies' operations. None of the members of the board of directors has a service contract that provides for benefits upon his termination as a director.

Board Committees

INEOS Limited has an audit committee and a remuneration committee, which also govern the audit and remuneration matters of INEOS Group Holdings S.A.

The audit committee meets at least twice a year. The committee is responsible for appointing auditors and reviewing the suitability and effectiveness of internal control systems and the application of corporate policies.

The remuneration committee meets at least once a year. The primary function of the remuneration committee is to determine remuneration and other terms of employment for the directors and senior employees of the company, having due regard for performance. We anticipate that, in setting the remuneration policy, the committee will consider a number of factors, including the salaries and benefits available to senior management in comparable companies and the need to ensure senior management commitment to the continued success of the business by means of incentive schemes.

PRINCIPAL SHAREHOLDERS

As at December 31, 2018, all of the issued share capital of INEOS Group Holdings S.A. was held directly by INEOS Holdings Luxembourg S.A. The issued voting share capital of INEOS Holdings Luxembourg S.A. is held by INEOS Holdings AG. The remaining non-voting issued share capital is held by Estera Trust (Jersey) Limited, as trustee of the INEOS Group Share Benefit Trust, by Estera Nominees (Jersey) Limited and by certain employees, former employees or their family members. INEOS Holdings AG exercises a controlling interest over INEOS Holdings Luxembourg S.A. through its majority interest in the voting share capital. The issued share capital of INEOS Holdings AG is held by INEOS AG. Of the issued share capital of INEOS AG, 94.9% is held by INEOS Limited and 5.1% directly by James A. Ratcliffe, Andrew Currie and John Reece. INEOS Limited became the ultimate parent undertaking of the Group on December 1, 2016. See also "Management" and "Certain Relationships and Related Party Transactions."

The following table sets forth information regarding the ownership of INEOS Limited's share capital, as of December 31, 2018, by the following:

- each person or group known by us to be the owner of 5% or more of the share capital of INEOS Limited; and
- all directors of INEOS Limited.

	Number of Ordinary Shares	Percentage of Total INEOS Limited Share Capital
James A. Ratcliffe	2,295,391,680	61.804%
Andrew Currie	711,501,880	19.157%
John Reece	707,106,440	19.039%
TOTAL	3,714,000,000	100.00%

CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS

We enter into transactions with certain related parties or our affiliates from time to time and in the ordinary course of our business. We believe these agreements are on terms no more favorable to the related parties or our affiliates than what they would expect to negotiate with disinterested third parties.

Relationship with INEOS Limited and INEOS AG

Mr. J.A. Ratcliffe, Mr. A.C. Currie and Mr. J. Reece are shareholders in INEOS Limited. INEOS AG, a subsidiary of INEOS Limited, provides operational management services to the Group through a management services agreement. For the year ended December 31, 2018, INEOS AG management fees of €85.7 million (2017: €81.6 million, 2016: €81.3 million) were charged to the income statement. As at December 31, 2018 amounts owed to INEOS AG were €22.0 million (2017: €21.1 million, 2016: €22.0 million). Amounts owed to INEOS Holdings AG, a wholly owned subsidiary of INEOS AG, were €0.4 million (amounts due from INEOS Holdings AG in 2017: €148.8 million, 2016: €117.8 million).

Relationship with Other INEOS Subsidiaries

INEOS Limited owns and controls a number of operating subsidiaries that are not included in the INEOS Group, including INOVYN Limited, INEOS Industries Limited (which from September 1, 2017 includes the Grangemouth petrochemical subsidiaries), INEOS Enterprises Holdings Limited and the Lavéra petrochemical assets and businesses together with other French and Italian assets of INEOS O&P South. On July 1, 2015, the Group completed the purchase of the remaining 50% interest in the Noretyl ethylene cracker at Rafnes, Norway from the INOVYN group (formerly the Kerling Group), a related party, for a gross consideration of €200 million.

During the year ended December 31, 2018, the Group has made sales to these subsidiaries of €1,182.6 million (2017: €987.1 million, 2016: €631.5 million), recovered costs of €107.5 million (2017: €135.1 million, 2016: €84.8 million) and made purchases of €1,469.7 million (2017: €1,624.9 million, 2016: €940.8 million). As at December 31, 2018, €430.9 million (2017: €393.8 million, 2016: €365.1 million) was owed by and €111.0 million (2017: €164.5 million, 2016: €150.2 million) was owed to these subsidiaries (excluding the Grangemouth shareholder loan, the INEOS Upstream Limited loan and transactions and balances with Styrolution).

During 2015, the Group provided a loan of $623.7 million to INEOS Upstream Limited, a related party, in connection with its acquisition of natural gas assets in the North Sea. The loan facility is unsecured and matures on October 26, 2020 and bears interest at 7% per annum. On September 29, 2017, INEOS Upstream Limited, a related party, acquired further natural gas assets in the North Sea through its acquisition of the entire oil and gas business of DONG Energy A/S. In connection with the DONG Acquisition, the Group advanced a loan of $376.2 million (€315.7 million) to INEOS Upstream Limited, the proceeds of which were on lent to certain of its subsidiaries. The loan is unsecured and matures in June 2022 and bears interest at 7% per annum. During 2018, net loan repayments of $122.5 million (€105.4 million) were received (2017: net loan repayments of $142.7 million (€121.4 million), 2016: net loan repayments of $117.6 million (€103.4 million)), leaving $617.1 million (€539.7 million) outstanding under the facility as at December 31, 2018 (2017: $739.6 million (€619.5 million), 2016: $506.1 million (€482.5 million)).

Following the divestment of the Grangemouth petrochemical business in 2013, the Group put in place a €200 million shareholder loan facility to fund the ongoing operations and investments required at the site. This facility matures on July 28, 2021 and is secured on a second lien basis on the assets of the Grangemouth petrochemical business. During the year ended December 31, 2017, INEOS Grangemouth plc repaid the Group €127.0 million in full repayment (including accrued interest) of the shareholder loan facility. As at December 31, 2016, €125.4 million was outstanding under the facility, which included €14.3 million of capitalised interest.

In addition to the various loans and trading described above, from time to time, the Group provides support in the form of unfunded performance guarantees (including via take-or-pay arrangements) to various affiliated entities. The Group does not consider these to be material to its results or operations.

Relationship with Styrolution

Styrolution was a joint venture among INEOS Industries Holdings Limited (which owned 50% of Styrolution through its shareholding in Styrolution Holding GmbH), BASF SE (which owned 34.05% of Styrolution through its shareholding in Styrolution Holding GmbH) and BASF Antwerpen N.V. (which owned 15.95% of Styrolution through its shareholding in Styrolution Holding GmbH). INEOS Industries Holdings Limited is a wholly owned subsidiary of INEOS Industries Limited, and INEOS Industries Limited is a wholly owned subsidiary of INEOS AG, thereby making it an affiliate of ours.

On November 17, 2014, INEOS Industries Limited completed the acquisition of BASF's 50% share in Styrolution for a purchase price of €1.1 billion. As part of the funding for the acquisition the Group provided INEOS Styrolution Holding GmbH, a related party, with a Second Lien PIK Toggle Loan of €200.0 million. The loan bore interest at a rate per annum of 9.5% for cash interest payments or 10.25% for PIK interest and its maturity date was November 2020.

During the year ended December 31, 2016, Styrolution paid €22.5 million (2015: €17.1 million) of interest relating to the Second Lien PIK Toggle Loan. During September 2016, Styrolution refinanced its capital structure and repaid the €200 million Second Lien PIK Toggle Loan. The Group used the proceeds from the loan together with €50 million of cash in hand to invest €250 million in Styrolution term loan debt which was issued in September 2016. The term loan was secured on the assets of INEOS Styrolution, bore interest at a rate per annum equal to EURIBOR (subject to a floor of 1.00% per annum) plus a margin of 3.75% and had a maturity date of September 30, 2021. In October 2017, the term loan was fully repaid to the Group resulting in an inflow of €249.3 million. During the year ended December 31, 2017, INEOS Styrolution paid €7.7 million of interest to the Group in relation to the term loan facility.

During the year ended December 31, 2018 the Group has made sales to Styrolution of €346.3 million (2017: €420.1 million, 2016: €354.9 million), recovered costs of €7.5 million (2017: €8.0 million, 2016: €6.8 million) and made purchases of €19.4 million (2017: €7.9 million, 2016: €4.2 million). As at December 31, 2018, €34.1 million (2017: €45.9 million, 2016: €282.1 million) was owed by Styrolution (2016: included €250 million Term Loan holding) and €4.1 million (2017: €3.5 million, 2016: €0.1 million) was owed to Styrolution.

Relationship with the Entrepreneurial (Refining) Business JV and the Refining Business JV

INEOS Investments, whose shareholders are the principal shareholders of the Issuer, holds a 49.9%, a 50.1% and a 50.0% direct interest in the Entrepreneurial (Refining) Business JV, the Refining Business JV and the Infrastructure Entity, respectively. INEOS Investments holds a 25.05% indirect interest in the Infrastructure Entity by virtue of its 50.1% stake in the Refining Business JV. The Refining Business and Entrepreneurial JVs, the Infrastructure Entity and their subsidiaries may be "Affiliates" of the Issuer for the purposes of the Indenture because each is owned in part by, and in some cases operated or controlled by, entities controlled by or under common control with the principal shareholders of the Issuer. We transferred certain businesses to the Refining and Entrepreneurial JVs that related to our Refining Business segment and related entrepreneurial activities. See "Business—Refining Divestiture, Grangemouth Divestiture and Lavéra Divestiture—The Refining Divestiture."

Upon the consummation of the Refining Divestiture, we entered into various contractual agreements with the Refining and Entrepreneurial JVs and the Infrastructure Entity in order to continue the provision by the Refining and Entrepreneurial JVs of various feedstocks and entrepreneurial activities to our business on an ongoing basis. In addition, we entered into agreements with the Infrastructure Entity pursuant to which the Infrastructure Entity provides access to our business of certain shared utilities and infrastructure assets located on the sites. See "Business—Refining Divestiture, Grangemouth Divestiture and Lavéra Divestiture—The Refining Divestiture."

There may be certain ongoing liabilities on the part of the Group under existing guarantees and indemnities, which may extend to liabilities of the Refining Business. Except as described below, PetroChina is required to procure the release of these guarantees and indemnities and, in the interim, has provided a counter-indemnity in respect of such liabilities.

Certain indemnities relating to losses that may be incurred by BP in connection with the Refining business and third-party claims regarding the refining intellectual property that was provided by INEOS LLC and INEOS European Holdings Limited (which is not part of the joint venture business) to BP under a Master Reorganization Agreement ("MRA") and an Intellectual Property and Information Technology Separation Agreement at the time of the separation of Innovene from BP (prior to the Innovene Acquisition) remain in place. PetroChina has no obligation to procure the release of the indemnity related to the MRA or provide an indemnity in relation to it.

During the year ended December 31, 2018 the Group made sales to the Refining joint ventures of €0.6 million (2017: €nil, 2016: €nil), recovered costs of €5.4 million (2017: €24.5 million, 2016: €43.3 million) and made purchases of €379.3 million (2017: €164.1 million, 2016: €262.0 million). As at December 31, 2018, €1.4 million (2017: €0.6 million, 2016: €1.2 million) was owed by the Refining joint ventures and €21.2 million (2017: €14.9 million, 2016: €30.4 million) was owed to the Refining joint ventures.

Relationship with Other Joint Ventures

INEOS AG owns interests in a number of joint ventures that are not included in the INEOS Group Holdings S.A. group, including the French joint ventures associated with the Lavéra petrochemical assets and businesses which were divested by the Group on July 1, 2014 and a joint venture with Sasol Limited to build and operate a HDPE plant at Battleground site in Texas, USA which became operational at the end of 2017.

During the year ended December 31, 2018, the Group made sales of €0.1 million (2017: €0.1 million, 2016: €nil) to the French joint ventures and recovered costs of €nil (2017: €0.2 million, 2016: €nil) from the French joint ventures. As at December 31, 2018 €0.1 million (2017: €0.1 million, 2016: €nil) was owed by the French joint ventures.

During the year ended December 31, 2018, the Group made sales to the Gemini HDPE joint venture of €5.6 million (2017: €nil), recovered costs of €58.4 million (2017: €0.1 million, 2016: €0.3 million) and made purchases of €44.7 million from the Gemini HDPE joint venture. As at December 31, 2018, €0.5 million was owed to (2017: €2.5 million was owed by, 2016: €2.3 million was owed by) the Gemini HDPE joint venture.

DESCRIPTION OF OTHER INDEBTEDNESS

The following summary of certain provisions of the documents listed below governing certain of our indebtedness does not purport to be complete and is subject to, and qualified in its entirety by reference to, the underlying documents.

Senior Secured Term Loans

Overview

The Group has outstanding term loans (the "Senior Secured Term Loans" or "Term Loans") under a credit agreement dated as of April 27, 2012 (as amended and restated) among INEOS US Finance LLC and INEOS Finance plc as borrowers, each of the guarantors named therein, the lender parties thereto and Barclays Bank PLC as administrative agent and security agent. The Senior Secured Term Loans are denominated in both Euros and U.S. dollars with tranches maturing in 2024. The credit agreement was last amended and restated as of November 3, 2017. The form of the credit agreement in effect at any time is herein called the "Senior Secured Term Loans Agreement."

The aggregate principal amount of Senior Secured Term Loans outstanding at December 31, 2018 before issue costs were €3,476.7 million (2017: €3,450.5 million, 2016: €4,604.6 million) of which €35.1 million (2017: €34.5 million, 2016: €47.1 million) is due within one year. As of December 31, 2018, the total amounts outstanding on the Senior Secured Term Loans consisted of New euro-denominated Term Loans due 2024 in an aggregate principal amount outstanding of €2,039.4 million and new dollar-denominated Term Loans due 2024 in an aggregate principal amount outstanding of €1,437.3 million.

On February 28, 2017, the Company amended and restated the Senior Secured Term Loans Agreement and in connection therewith (a) prepaid all the outstanding Term Loans due 2018, (b) borrowed $1,450 million of new term loans due March 31, 2022 (the "dollar-denominated Term Loans due 2022") and €1,725 million of new term loans due March 31, 2022 (the "euro-denominated Term Loans due 2022" and, together with the dollar-denominated Term Loans due 2022, the "Term Loans due 2022") and in connection therewith prepaid or converted to Term Loans due 2022 all the Term Loans due 2020 and Original Term Loans due 2022, and (c) borrowed $555 million of term loans due March 31, 2024 (the "dollar-denominated Term Loans due 2024") and €875 million of term loans due March 31, 2024 (the "euro-denominated Term Loans due 2024" and, together with the dollar-denominated Term Loans due 2024, the "Term Loans due 2024").

On November 3, 2017, the Company amended and restated the Senior Secured Term Loans Agreement and in connection therewith (a) prepaid, with the proceeds of the 2025 Senior Secured Notes and approximately €250 million of cash on hand, the Term Loans due 2022 and Term Loans due 2024 in an aggregate amount of approximately €750 million and (b) refinanced all the remaining Term Loans due 2022 and Term Loans due 2024 with the proceeds of new tranches of dollar-denominated Term Loans (the "New dollar-denominated Term Loans due 2024") and euro-denominated New Term Loans due March 31, 2024 (the "New euro-denominated Term Loans due 2024" and, together with the New dollar-denominated Term Loans due 2024, the "New Term Loans due 2024") in approximately the same aggregate principal amount (in a combination of U.S. dollars and euro).

For additional information about the Senior Secured Term Loans, please see note 19 "Interest Bearing Loans and Borrowings" to the financial statements of the Group as of and for the year ended December 31, 2018 included elsewhere in this offering memorandum.

Interest and Fees

As of December 31, 2018, the New dollar-denominated Term Loans due 2024 bore interest at a rate determined by reference to LIBOR divided by a percentage equal to 100% minus the LIBOR

Reserve Percentage (as defined in the Senior Secured Term Loans Agreement) (subject to a floor of 0.00% per annum) plus the Applicable Margin specified below for such loans or the Alternate Base Rate (subject to a floor of 1.00% per annum) plus the Applicable Margin specified below for such loans. As of December 31, 2018, the New euro-denominated Term Loans due 2024 bore interest at a rate determined by reference to LIBOR divided by a percentage equal to 100% minus the LIBOR Reserve Percentage (subject to a floor of 0.50% per annum) plus the Applicable Margin specified below for such loans. Term Loans bearing interest at a rate determined by reference to LIBOR are herein called "LIBOR Loans" and Term Loans bearing interest at the rate determined by reference to the Alternate Base Rate are herein called "ABR Loans".

The Alternate Base Rate is a rate per annum determined as the highest of (a) the rate of interest quoted on such day in the print edition of *The Wall Street Journal*, Money Rates Section as the "prime rate", (b) the Federal Funds rate plus 0.50% and (c) LIBOR for an interest period of one month (giving effect to the applicable LIBOR floor) plus 1.00%.

As of December 31, 2018, the Applicable Margins for the New Term Loans due 2024 were:

- in the case of the New dollar-denominated Term Loans due 2024 that are ABR Loans, 1.00% per annum, and in the case of the New dollar-denominated Term Loans due 2024 that are LIBOR Loans, 2.00% per annum; and
- in the case of the New euro-denominated Term Loans due 2024, 2.00% per annum.

All of the New dollar-denominated Term Loans due 2024 were LIBOR Loans as of December 31, 2018.

Overdue amounts owing under the Senior Secured Term Loans Agreement bear interest (a) in the case of overdue principal, at the interest rate that would otherwise be applicable plus 2% per annum and (b) in the case of other overdue amounts, at the interest rate that would apply to the New dollar-denominated Term Loans that bear interest at a rate determined by reference to Alternate Base Rate plus 2% per annum.

Under the Senior Secured Term Loans Agreement, the administrative agent and the Borrower are required to endeavor to establish an alternate rate of interest to LIBOR in certain circumstances such as when the administrative agent determines that LIBOR is not available or if the supervisor for the administrator of LIBOR or a governmental authority having jurisdiction over the administrative agent publicly announces a specific date after which LIBOR shall no longer be used for determining interest rates for loans denominated in the applicable currency.

Security and Guarantees

The Senior Secured Term Loans share the same security package as the Senior Secured Notes, the Schuldschein Loan, certain hedging liabilities and certain cash management liabilities.

The obligations under the Senior Secured Term Loans are jointly and severally guaranteed on a senior basis by IGH and the Guarantors under the Senior Secured Term Loans Agreement (the "Senior Secured Term Loans Guarantors"). The obligations under the Senior Secured Term Loans are secured by the same collateral securing the Schuldschein Loan and Senior Secured Notes, including, subject to certain exceptions, substantially all of the assets of IGH and the Senior Secured Term Loans Guarantors. Such security includes first priority security interests over the collateral that secures the 2024 IGH Notes on a second priority basis (*i.e.*, the IHL Pledged Shares and the 2024 IGH Notes Proceeds Loans).

No later than 150 days after the end of each financial year, commencing with the financial year ended on December 31, 2017 (or such longer period as the administrative agent may agree to), (i) the Consolidated EBITDA (as defined in the Senior Secured Term Loans Agreement) of the Senior

Secured Term Loans Guarantors must exceed 85% of the Consolidated EBITDA of the Financial Group (defined in the Senior Secured Term Loans Agreement as IGH, Lux I and the Restricted Subsidiaries (as defined in the Senior Secured Term Loans Agreement) of Lux I) and (ii) the total assets of the Senior Secured Term Loans Guarantors must exceed 85% of the consolidated total assets of the Financial Group, in each case subject to certain exceptions.

Covenants

Subject to certain agreed exceptions, the Senior Secured Term Loans Agreement contains negative covenants similar to the negative covenants applicable to the Notes, the Schuldschein Loan Agreement and the 2025 Senior Secured Notes, including covenants restricting the ability of Lux I, the Borrowers and the other restricted subsidiaries of Lux I to:

- incur or guarantee additional indebtedness and issue certain preferred stock;
- layer debt;
- make restricted payments, including dividends or other distributions;
- prepay or redeem subordinated debt or equity;
- make certain investments;
- create or incur certain liens;
- transfer, lease or sell certain assets;
- enter into arrangements that impose restrictions on the ability of Restricted Subsidiaries (as defined in the Senior Secured Term Loans Agreement) to pay dividends or make other payments to Lux I;
- engage in certain transactions with affiliates;
- designate Unrestricted Subsidiaries (as defined in the Senior Secured Term Loans Agreement);
- consolidate, merge or transfer all or substantially all assets; and
- impair the security interests for the benefit of the Term Loan lenders.

IGH, Lux I and the Borrowers are also subject to more stringent restrictions upon their activities (for example, in relation to the ownership of assets and the liabilities that they may incur).

The Senior Secured Term Loans Agreement also contains customary affirmative covenants, including covenants relating to:

- the provision of financial statements and certain other information and notices;
- inspections;
- maintenance of certain insurance;
- payment of taxes;
- preservation of existence and consolidated corporate franchises;
- compliance with laws (including environmental laws);
- certain ERISA and pension matters;
- maintenance of certain properties;
- changes in fiscal years and fiscal quarters;

- additional guarantors and security;
- use of proceeds;
- further assurances;
- use of commercially reasonable efforts to maintain certain ratings;
- auditors, books and records; and
- certain other covenants, including agreements relating to the Intercreditor Deed (as defined below).

The Senior Secured Term Loans Agreement does not contain any financial maintenance covenants.

Repayment

The Senior Secured Term Loans made under the Senior Secured Term Loans Agreement are to be repaid in equal quarterly installments, in aggregate annual amounts equal to 1% of the original principal amount of the Senior Secured Term Loans (subject to adjustment as set forth below). The balance of any additional Senior Secured Term Loans outstanding will be payable on March 31, 2024. No amounts repaid by the Borrowers in respect of the Senior Secured Term Loans may be reborrowed.

Prepayments

Mandatory prepayments of the Senior Secured Term Loans are required in an amount equal to:

- starting with the financial year ended on December 31, 2017, 50% (reduced to 25% when the ratio of consolidated total net debt to consolidated EBITDA is less than or equal to 3.75 to 1.00 but greater than 3.25 to 1.00 and 0% when the ratio of consolidated total net debt to consolidated EBITDA is less than or equal to 3.25 to 1.00) of annual excess cash flow (subject to certain adjustments); and
- 100% of the net cash proceeds from any issuance or incurrence of debt, other than debt permitted under the Senior Secured Term Loans Agreement.

All mandatory prepayments of the Senior Secured Term Loans will be made without premium or penalty (except for reimbursement of breakage and redeployment costs in the case of LIBOR Loans) and will be applied to scheduled amortization installments of principal of the Senior Secured Term Loans in such order as the applicable Borrower may specify (or, absent such specification, in direct order of maturity).

Voluntary prepayments of the Senior Secured Term Loans are permitted without premium or penalty (except as set forth below and except for reimbursement of breakage and redeployment costs in the case of LIBOR Loans) and will be applied to the remaining scheduled amortization installments of principal of the Term Loans as directed by the Borrowers. Voluntary prepayments of the Senior Secured Term Loans made on or prior to the date that is 180 days after giving effect to the amendment and restatement of the Senior Secured Term Loans Agreements in connection with certain refinancing transactions are subject to an early prepayment premium equal to 1.0% of the amount of the Senior Secured Term Loans prepaid or mandatorily assigned pursuant to the applicable refinancing transaction.

Events of Default

The Senior Secured Term Loans Agreement sets out certain events of default, the occurrence of which would allow the lenders to accelerate all outstanding loans, including, among other events and subject in certain cases to agree to grace periods, thresholds and other qualifications:

- non-payment of amounts due under the Senior Secured Term Loans or under the other Senior Finance Documents (as defined in the Senior Secured Term Loans Agreement);
- breach of covenants;
- inaccuracy of representations and warranties in any material respect;
- cross defaults and certain judgment defaults;
- invalidity of the Senior Secured Term Loans Agreement and other Senior Finance Documents;
- certain bankruptcy and insolvency events;
- the occurrence of certain ERISA-related events;
- the occurrence of a change of control; and
- certain breaches of the Intercreditor Deed.

Miscellaneous

The Senior Secured Term Loans Agreement permits the Borrowers to request the establishment of one or more additional tranches of term loans in principal amounts of not less than $50,000,000 individually, subject to certain conditions specified in the Senior Secured Term Loans Agreement.

The Senior Secured Term Loans-Agreement permits the Borrowers to request extensions of the final maturity of all or a portion of the Senior Secured Term Loans and, in that connection, there may be an increase in the interest rates and/or fees payable with respect to the extended Senior Secured Term Loans. Such extensions shall be subject to certain conditions described in the Senior Secured Term Loans Agreement.

The Senior Secured Term Loans Agreement contains customary "yank a bank" provisions allowing the Borrowers to replace a non-consenting lender in connection with (1) amendments and waivers requiring the consent of all lenders or all affected lenders (or all affected lenders of a particular class of lenders) so long as the required lenders (or, where the consent of the required lenders is not required, a majority in interest of the lenders of the relevant class) have consented to such amendments or waivers, (2) any Lender becoming a Defaulting Lender (as defined in the Senior Secured Term Loans Agreement), (3) any Lender failing to consent to any Extension/Modification Request (as defined in the Senior Secured Term Loans Agreement) made to such Lender and (4) requests by leaders for compensation for increased costs, taxes and similar items.

The Senior Secured Term Loans Agreement contains customary loan buyback provisions, which permits the Borrowers to purchase Senior Secured Term Loans from lenders pursuant to open-market transactions or a Dutch auction, subject to certain conditions, including a requirement that the loans purchased are automatically and permanently cancelled.

The Senior Secured Term Loans Agreement is governed by New York law.

Senior Secured Notes due 2025

Overview

On November 3, 2017, INEOS Finance plc issued €550,000,000 aggregate principal amount 2⅛% Senior Secured Notes due 2025 (the "2025 Senior Secured Notes") under an indenture dated November 3, 2017, as amended, among INEOS Finance plc, each of the guarantors named therein, The Bank of New York Mellon, London Branch, as trustee and principal paying agent (the "2025 Senior Secured Notes Trustee"), The Bank of New York Mellon SA/NV, Luxembourg Branch, as registrar, paying agent and Luxembourg transfer agent and Barclays Bank PLC, as security trustee. As of December 31, 2018 there were €550,000,000 aggregate principal amount of the 2025 Senior Secured Notes issued and outstanding.

Ranking

The 2025 Senior Secured Notes are the general senior secured obligations of INEOS Finance plc and rank equally in right of payment with its existing and future indebtedness that is not expressly subordinated to the 2025 Senior Secured Notes (including, without limitation, the Senior Secured Term Loans, the Schuldschein Loan and the Notes), are guaranteed on a senior secured basis by the 2025 Senior Secured Notes Guarantors (as defined below), rank effectively senior to all existing and future indebtedness of INEOS Finance plc that is unsecured or secured by liens ranking behind the liens securing the 2025 Senior Secured Notes to the extent of the value of the collateral and rank senior in right of payment to all existing and future obligations of INEOS Finance plc subordinated in right of payment to the 2025 Senior Secured Notes, including its guarantee of obligations under the 2024 IGH Notes. In addition, the 2025 Senior Secured Notes are effectively subordinated in right of payment to all existing and future indebtedness and other liabilities, including trade payables and letters of credit issued by, Lux I's non-guarantor subsidiaries.

Interest Rates, Payment Dates and Maturity

The 2025 Senior Secured Notes bear interest at a rate of 2⅛% per annum. Interest on the 2025 Senior Secured Notes is payable semi-annually in arrears on May 15 and November 15 of each year, beginning May 15, 2018. The 2025 Senior Secured Notes will mature on November 15, 2025.

Guarantees

The 2025 Senior Secured Notes are jointly and severally guaranteed on a senior secured basis by IGH and the Guarantors (the "2025 Senior Secured Notes Guarantors").

The guarantee of each 2025 Senior Secured Notes Guarantor is its general senior secured obligation and (i) ranks equally in right of payment with all existing and future obligations of such 2025 Senior Secured Notes Guarantor that are not expressly subordinated in right of payment to such guarantee, including with respect to the guarantee of the 2025 Senior Secured Notes by each 2025 Senior Secured Notes Guarantor, obligations under the Senior Secured Term Loans, the Schuldschein Loan, the Notes and, with respect to the guarantee of the 2025 Senior Secured Notes by IGH, the 2024 IGH Notes, (ii) ranks effectively senior to all existing and future obligations of such 2025 Senior Secured Notes Guarantor that are unsecured or secured by liens ranking behind the liens securing the 2025 Senior Secured Notes to the extent of the value of the collateral, (iii) ranks senior in right of payment to all existing and future obligations of such 2025 Senior Secured Notes Guarantor that are expressly subordinated in right of payment to such guarantee, including the guarantees of the 2024 IGH Notes (but not, in the case of IGH, its obligations under the 2024 IGH Notes) and (iv) is effectively subordinated to any existing and future obligations of such 2025 Senior Secured Notes Guarantor that are secured by liens senior to the liens securing such guarantee, or secured by property and assets that do not secure such guarantee, to the extent of the value of the property and assets securing such indebtedness and other liabilities. In the event of a bankruptcy or insolvency, each such secured lender of each 2025 Senior Secured Notes Guarantor will have a prior secured claim to any collateral of such 2025 Senior Secured Notes Guarantor securing the debt owed to them.

Security

The 2025 Senior Secured Notes and the related guarantees are secured by first priority liens (subject to certain exceptions) on the same assets that secure the obligations under the Senior Secured Term Loans, the Notes, the Schuldschein Loan, certain hedging liabilities and certain cash management liabilities.

Optional Redemption and Change of Control

At any time prior to November 15, 2020, INEOS Finance plc may redeem all or part of the 2025 Senior Secured Notes at a redemption price equal to 100% of the principal amount of the 2025 Senior Secured Notes redeemed plus the greater of (1) 1.0% of the principal amount of such 2025 Senior Secured Notes; and (2) the excess of (a) the present value at such redemption date of the redemption price of such 2025 Senior Secured Notes at November 15, 2020, plus all required interest payments that would otherwise be due to be paid on such 2025 Senior Secured Notes during the period between the redemption date and November 15, 2020, excluding accrued but unpaid interest, computed using a discount rate equal to the Bund rate at such redemption date plus 50 basis points, over (b) the principal amount of such 2025 Senior Secured Notes.

The 2025 Senior Secured Notes are subject to redemption at any time on or after November 15, 2020, at the option of INEOS Finance plc, in whole or in part, at the following redemption prices (expressed as percentages of the aggregate principal amount), if redeemed during the twelve-month period beginning on November 15 of the year indicated below:

Year	2025 Senior Secured Notes Redemption Price
2020	101.0625%
2021	100.53125%
2022 and thereafter	100.000%

together with certain additional amounts, if applicable, and accrued and unpaid interest, if any, to the redemption date (subject to the rights of holders of record on relevant record dates to receive interest due on an interest payment date).

At any time prior to November 15, 2020, INEOS Finance plc or any Parent Holdco (as defined in the 2025 Senior Secured Notes Indenture), at its option, may redeem up to 40% of the initial aggregate principal amount of each of the 2025 Senior Secured Notes and any additional 2025 Senior Secured Notes issued under the 2025 Senior Secured Notes Indenture (the "Additional 2025 Senior Secured Notes") with the net cash proceeds of certain public equity offerings at 102.125% of the aggregate principal amount of the 2025 Senior Secured Notes originally issued and the initial aggregate principal amounts of any Additional 2025 Senior Secured Notes, in each case, plus certain additional amounts, if applicable, and accrued and unpaid interest, if any, to the redemption date, if at least 60% of the sum of the originally issued aggregate principal amount of the 2025 Senior Secured Notes and any Additional 2025 Senior Secured Notes remains outstanding.

In connection with any tender offer for, or other offer to purchase, all of the 2025 Senior Secured Notes, if holders of not less than 90% of the aggregate principal amount of the then outstanding 2025 Senior Secured Notes validly tender and do not validly withdraw such 2025 Senior Secured Notes in such tender offer and INEOS Finance plc, or any other Person making such tender offer in lieu of the INEOS Finance plc, purchases all of the Notes validly tendered and not validly withdrawn by such holders, INEOS Finance plc will have the right, subject to certain notice requirements, to redeem all (but not less than all) 2025 Senior Secured Notes that remain outstanding following such purchase at a price equal to the highest price (excluding any tender premium or similar payment) paid to each other holder in such tender offer, plus, to the extent not included in the tender offer payment, accrued and unpaid interest thereon and certain additional amounts, to, but not including, the date of such redemption (subject to the rights of holders of record on the relevant record dates to receive interest due on an interest payment date).

Upon the occurrence of certain change of control events, each holder of 2025 Senior Secured Notes may require INEOS Finance plc to repurchase all or a portion of its 2025 Senior Secured Notes at a purchase price equal to 101% of the principal amount of such 2025 Senior Secured Notes, plus accrued and unpaid interest to, but not including, the date of purchase.

If INEOS Finance plc sells assets under certain circumstances, it is required to make an offer to purchase the 2025 Senior Secured Notes at 100% of the principal amount of the 2025 Senior Secured Notes, plus accrued and unpaid interest to, but not including, the date of purchase, with the excess proceeds from the sale of the assets.

In addition, in the event that INEOS Finance plc becomes obligated to pay Additional Amounts (as defined in the 2025 Senior Secured Notes Indenture) to holders of the 2025 Senior Secured Notes as a result of changes affecting withholding taxes applicable to payments on the 2025 Senior Secured Notes, it may redeem the 2025 Senior Secured Notes in whole but not in part at any time at 100% of the principal amount of the 2025 Senior Secured Notes plus accrued and unpaid interest to the redemption date.

Covenants

The 2025 Senior Secured Notes Indenture contains covenants that, among other things, limit the ability of our subsidiaries to:

- incur or guarantee additional indebtedness and issue certain preferred stock;
- layer debt;
- make restricted payments, including dividends or other distributions;
- prepay or redeem subordinated debt or equity;
- make certain investments;
- create or permit to exist certain liens;
- transfer, lease or sell certain assets;
- enter into arrangements that impose restrictions on the ability of our subsidiaries to pay dividends or make other payments to Lux I;
- engage in certain transactions with affiliates;
- consolidate, merge or transfer all or substantially all of our assets and the assets of our subsidiaries on a consolidated basis;
- impair the security interests for the benefit of the holders of the 2023 Senior Secured Notes; and
- amend certain documents.

These covenants are subject to a number of important limitations and exceptions. Currently, all of IGH's subsidiaries are Restricted Subsidiaries (as defined in the 2025 Senior Secured Notes Indenture).

Events of Default

The 2025 Senior Secured Notes Indenture contains customary events of default, including, among others, the non-payment of principal or interest on the 2025 Senior Secured Notes, certain failures to perform or observe any other obligation under the 2025 Senior Secured Notes Indenture or security documents, the failure to pay certain indebtedness or judgments and the bankruptcy or insolvency of IHL or any Significant Restricted Subsidiary (as defined in the 2025 Senior Secured Notes Indenture). The occurrence of any of the events of default would permit or require the acceleration of all obligations outstanding under the 2025 Senior Secured Notes.

IGH Notes due 2024

Overview

On August 9, 2016, INEOS Group Holdings S.A. issued $500,000,000 aggregate principal amount of 5⅝% Senior Notes due 2024 (the "2024 IGH Dollar Notes") and €650,000,000 5⅜% Senior Notes due 2024 (the "2024 IGH Euro Notes" and together with the 2024 IGH Dollar Notes, the "2024 IGH Notes") under an indenture dated August 9, 2016 among INEOS Group Holdings S.A., each of the guarantors named therein, The Bank of New York Mellon, London Branch, as trustee (the "2024 IGH Notes Trustee"), collateral agent, registrar and principal paying agent and The Bank of New York Mellon (Luxembourg) S.A., as Luxembourg paying agent and Luxembourg transfer agent. As of December 31, 2018, there were $500,000,000 aggregate principal amount of 2024 IGH Dollar Notes and €650,000,000 aggregate principal amount of 2024 IGH Euro Notes issued and outstanding.

Ranking

The 2024 IGH Notes are the general unsubordinated obligations of IGH and rank equally with IGH's existing and future senior indebtedness, rank senior to all of IGH's existing and future subordinated indebtedness and are effectively subordinated to all of its existing and future secured indebtedness to the extent of the value of the assets securing such indebtedness, unless such assets also secure the 2024 IGH Notes on an equal and ratable basis. In addition, the 2024 IGH Notes are effectively subordinated to all existing and future indebtedness and other liabilities of IGH's non-guarantor subsidiaries.

Interest Rates, Payment Dates and Maturity

The 2024 IGH Dollar Notes bear interest at a rate of 5⅝% per annum. The 2024 IGH Euro Notes bear interest at a rate of 5⅜% per annum. Interest on the 2024 IGH Notes is payable semi-annually in arrears on February 1 and August 1, beginning February 1, 2017. The 2024 IGH Notes will mature on August 1, 2024.

Guarantees

The 2024 IGH Notes are jointly and severally guaranteed on a senior subordinated basis by the Guarantors (other than IGH which is the issuer of the 2024 IGH Notes) (collectively, the "2024 IGH Notes Guarantors").

The guarantees by the 2024 IGH Notes Guarantors are their senior subordinated obligations and rank behind all of the existing and future senior indebtedness (including any second secured liabilities) of the 2024 IGH Notes Guarantors, which includes the subsidiary guarantees under the

Notes, the 2025 Senior Secured Notes, the Schuldschein Loan and the Senior Secured Term Loans, rank equally with the existing and future senior subordinated indebtedness of the 2024 IGH Notes Guarantors, rank senior to all of the existing and future subordinated indebtedness of the 2024 IGH Notes Guarantors other than indebtedness of the 2024 IGH Notes Guarantors that is secured by liens on the assets of the 2024 IGH Notes Guarantors, and are effectively subordinated to all of the existing and future secured indebtedness of the 2024 IGH Notes Guarantors to the extent of the value of the assets securing such indebtedness.

Security

The 2024 IGH Notes are secured by a second ranking assignment over the 2024 IGH Notes Proceeds Loans and a second ranking share charge over 100% of the shares of IHL. This security ranks behind the security granted over these assets which secures certain senior indebtedness, including indebtedness under the Notes, the 2025 Senior Secured Notes, the Schuldschein Loan and the Senior Secured Term Loans.

Optional Redemption and Change of Control

The 2024 IGH Notes are subject to redemption at any time, at the option of IGH, in whole or in part, at the following redemption prices (expressed as percentages of the aggregate principal amount), if redeemed during the twelve-month period beginning on August 1 of the year indicated below:

Year	2024 IGH Dollar Notes Redemption Price	2024 IGH Euro Notes Redemption Price
2019	102.813%	102.688%
2020	101.406%	101.344%
2021 and thereafter	100.000%	100.000%

Upon the occurrence of certain change of control events, each holder of 2024 IGH Notes may require IGH to repurchase all or a portion of its 2024 IGH Notes at a purchase price equal to 101% of the principal amount of the 2024 IGH Notes, plus accrued interest to, but not including, the date of purchase.

If IGH sells assets under certain circumstances, IGH is required to make an offer to purchase the 2024 IGH Notes at 100% of the principal amount of the 2024 IGH Notes, plus accrued interest to, but not including, the date of purchase, with the excess proceeds from the sale of the assets.

In addition, in the event that IGH becomes obligated to pay Additional Amounts (as defined in the 2024 IGH Notes Indenture) to holders of the 2024 IGH Notes as a result of changes affecting withholding taxes applicable to payments on the 2024 IGH Notes, IGH may redeem the 2024 IGH Notes in whole but not in part at any time at 100% of the principal amount of the 2024 IGH Notes plus accrued interest to the redemption date.

Covenants

The 2024 IGH Notes Indenture contains covenants that, among other things, limit our ability and the ability of our subsidiaries to:

- incur or guarantee additional indebtedness and issue certain preferred stock;
- layer debt;
- make restricted payments, including dividends or other distributions;

- prepay or redeem subordinated debt or equity;
- make certain investments;
- create certain liens;
- transfer, lease or sell certain assets;
- in the case of our Restricted Subsidiaries (as defined in the 2024 IGH Notes Indenture), enter into arrangements that restrict dividends or other payments to us;
- in the case of our Restricted Subsidiaries (as defined in the 2024 IGH Notes Indenture), guarantee or secure debt;
- engage in certain transactions with affiliates;
- create Unrestricted Subsidiaries (as defined in the 2024 IGH Notes Indenture);
- consolidate, merge or transfer all or substantially all of our assets and the assets of our subsidiaries on a consolidated basis;
- impair the security interests for the benefit of the holders of the 2024 IGH Notes; and
- amend certain documents.

These covenants are subject to important exceptions and qualifications. Currently, all of IGH's subsidiaries are Restricted Subsidiaries (as defined in the 2024 IGH Notes Indenture).

Events of Default

The 2024 IGH Notes Indenture contains customary events of default, including, among others, the non-payment of principal or interest on the 2024 IGH Notes, certain failures to perform or observe any other obligation under the 2024 IGH Notes Indenture or security documents, the failure to pay certain indebtedness or judgments and the bankruptcy or insolvency of IGH or any Significant Restricted Subsidiary (as defined in the 2024 IGH Notes Indenture). The occurrence of any of the events of default would permit or require the acceleration of all obligations outstanding under the 2024 IGH Notes.

Letter of Credit Facility

On May 4, 2012, INEOS Treasury (UK) Limited (the "LC Borrower"), a wholly owned subsidiary of INEOS Investment Holdings (Germany) Limited, entered into an on-demand letter of credit facility (the "LC Facility") with Barclays Bank PLC (the "Issuing Bank"), under which the LC Borrower may request (on its own behalf or on behalf of other Group companies) the Issuing Bank to issue letters of credit, guarantees, performance bonds and indemnities (or any other instrument in a form agreed by the Issuing Bank) ("LC Utilizations"), the outstanding aggregate base currency amount of which is not more than €300 million. Under the terms of the LC Facility, the LC Borrower undertakes to provide cash collateral in an amount at least equal to the aggregate of 100% of the maximum actual and/or contingent liability of the Issuing Bank under each outstanding LC Utilization (or 105%, to the extent cash cover is provided in a currency other than the currency of an LC Utilization) standing to the credit of an account or certain accounts of the LC Borrower which are subject to a lien in favor of the Issuing Bank.

Noretyl Facility

As part of the Group's purchase of the remaining 50% interest in the Noretyl ethylene cracker at Rafnes, Norway from the Kerling group on July 1, 2015, the Group also assumed the obligations of a €140 million loan facility ("Noretyl Facility") that Noretyl had in place. The total amount outstanding at December 31, 2018 was €27.5 million (December 31, 2017: €55.0 million, December 31, 2016: €82.5 million), all of which is due within one year (December 31, 2017: €27.5 million, December 31, 2016: €27.5 million).

The Noretyl Facility is to be repaid in equal quarterly installments, in aggregate annual amounts equal to 6.25% of the original principal amount of the facility, with the first quarterly installment made on March 31, 2016. The facility matures in November 2019. The facility is secured by pledges over the property, plant and equipment of Noretyl AS. The outstanding Noretyl Facility bears interest a rate per annum equal to EURIBOR (subject to a floor of 0% per annum) plus a margin of 2.75%.

Securitization Program

In July 2006, IHL and certain of the other Group companies (such other companies being the "Sellers") entered into a five year €1,500.0 million receivables securitization (as amended, supplemented, varied, novated, extended or replaced from time to time, the "Securitization Program"). The margins on amounts drawn and the commitment fee on amounts undrawn under the Securitization Program have been amended from time to time, most recently on December 13, 2017 in respect of the margins and on December 14, 2015 in respect of the commitment fee. On December 14, 2015, amongst other things, the Securitization Program was updated to include certain newly incorporated Group entities as Sellers. The overall facility amount has also been amended from time to time, most recently to €800.0 million pursuant to an amendment deed dated December 14, 2015. On December 13, 2017, the scheduled termination date for the facility was extended to December 31, 2020. The Securitization Program complies with the terms for a Permitted Receivables Securitization as defined in the Senior Secured Term Loans Agreement.

Under the Securitization Program, the trade receivables originated by the Sellers (other than those receivables that are specifically identified as "excluded receivables") are sold to a bankruptcy remote special purpose vehicle incorporated under the laws of the Republic of Ireland, INEOS Finance (Ireland) Limited (the "SPV"). The SPV finances these purchases from borrowings, primarily funded through asset backed commercial paper ("ABCP") conduits. The cost of funding for the ABCP conduits reflects the rating of the pooled financial assets in which they invest, thus allowing the Securitization Program to benefit from financing costs that are not linked to the Group's corporate rating.

The Securitization Program is restricted to receivables denominated in U.S. dollars, Canadian dollars, euro or sterling that are sold to the SPV at face value less a small discount to reflect the carry cost until settlement. In some jurisdictions, the sale of the receivables requires the involvement of an intermediate purchaser in order to comply with local securities and banking regulations. The SPV acquires title, on a non-recourse basis, to new receivables as the liability arises and settles its purchases with the Sellers on a twice monthly basis. Between settlement dates, the Sellers have the use of the cash received from customers which has been paid into segregated bank accounts, either in the name of the SPV or held on trust for the SPV. Responsibility for the administration of the receivables, including adherence to established credit and collection policies, remains with the Sellers, with IHL acting on their behalf in its capacity as master servicer.

The twice-monthly settlement period is tied to the term of the loans advanced to the SPV by the lenders against the security of the outstanding receivables. The lenders' advance rate is adjusted each month to reflect the actual performance of the receivables portfolio and standard Rating Agency methodology for calculating loss and dilution reserves and other potential shortfalls is applied. The balance of the SPV's funding requirements is provided by IHL through a subordinated loan facility.

Köln CoGen Facility

As part of a project at the Group's Köln site to replace part of its incineration or cogeneration unit, the Group has entered into a €120 million loan facility (the "Köln CoGen Facility"). The facility matures in December 2024. There are no scheduled interest or amortization payments during the first two years of the facility. The total amount outstanding at December 31, 2018 was €120.0 million.

The Köln CoGen Facility is to be repaid in equal quarterly installments of €6 million, starting from March 2020. The facility is secured by pledges over the plant and equipment of INEOS Manufacturing Deutschland GmbH's new cogeneration assets. The outstanding Köln CoGen Facility bears a fixed interest rate of 2.85% per annum.

Schuldschein Loan

Overview

INEOS Finance plc has a floating rate loan in an aggregate principal amount of €141.0 million (the "Schuldschein Loan") outstanding under an assignable loan agreement dated March 22, 2019 among, *inter alios*, the Issuer, the Guarantors, Deutsche Bank Aktiengesellschaft, as bank, creditor and paying agent and Wilmington Trust SP Services (Frankfurt) GmbH, as trustee.

Interest Rates, Payment Dates and Maturity

The Schuldschein Loan bears interest at a rate per annum equal to EURIBOR for an interest period of six months (subject to a floor of 0.50% per annum) plus a margin of 2.00%. Interest on the Schuldschein Loan is payable semi-annually in arrears on September 26 and March 26 of each year, beginning on September 26, 2019. The Schuldschein Loan will mature on March 26, 2024.

Security and Guarantees

The Schuldschein Loan shares the same security package as the Senior Secured Term Loans and the Senior Secured Notes. The obligations under the Schuldschein Loan are jointly and severally guaranteed on a senior basis by IGH and the Senior Secured Term Loans Guarantors. The obligations under the Schuldschein Loan are secured by the same collateral securing the Senior Secured Term Loans and the Senior Secured Notes, including, subject to certain exceptions, substantially all of the assets of IGH and the Senior Secured Term Loans Guarantors. Such security includes first priority security interests over the collateral that secures the 2024 IGH Notes on a second priority basis (i.e., the IHL Pledged Shares and the 2024 IGH Notes Proceeds Loans).

Covenants and Events of Default

The Schuldschein Loan contains negative covenants, affirmative covenants and events of default that generally conform to the negative covenants, certain affirmative covenants and events of default applicable to the Senior Secured Term Loans.

For so long as the aggregate principal amount of the loans outstanding under the Senior Secured Term Loans Agreement represents at least 200% of the aggregate principal amount outstanding under the Schuldschein Loan Agreement, if at any time INEOS Finance plc enters into any amendment, modification or restatement of the Senior Secured Term Loans Agreement which concerns a provision that is substantially the same as the respective provision under the Schuldschein Loan Agreement (including, *inter alia*, in respect of the guarantor and security release provisions, negative covenants, affirmative covenants and events of default, and related definitions), then such amendment, modification or restatement shall be deemed to be incorporated by reference into, and apply to, the Schuldschein Loan Agreement *mutatis mutandis* as if set forth fully in the Schuldschein Loan Agreement.

Change of Control

Upon the occurrence of certain change of control events, each lender under the Schuldschein Loan Agreement may require INEOS Finance plc to repay such lender's outstanding nominal amount of the Schuldschein Loan in an amount equal to 101% of such outstanding nominal amount of the Schuldschein Loan, plus accrued and unpaid interest to, but not including, the date of repayment.

Miscellaneous

The Schuldschein Loan Agreement is governed by German law.

Intercreditor Deed

Unless the context otherwise requires, terms defined below in this description of the Intercreditor Deed apply only to this section.

Overview

Lux I and certain of its subsidiaries (including IHL and INEOS Finance plc) (together, the "Obligors"), the Parent (as the issuer of the 2024 IGH Notes) and INEOS Holdings Luxembourg S.A. (together, and collectively with certain other entities referred to in the Intercreditor Deed, the "Subordinated Creditors") and certain INEOS intra-group creditors (the "Intra-Group Creditors") are subject to an intercreditor deed dated May 12, 2010 (as amended and restated by a first amendment deed dated December 23, 2010, as further amended by a second amendment deed dated February 18, 2011, as further amended by a third amendment deed dated February 6, 2012, as further amended and restated by a fourth amendment deed dated May 4, 2012, as further amended and restated by a fifth amendment deed dated May 8, 2013, as further amended and restated by a sixth amendment deed dated July 8, 2014, as further amended by a seventh amendment deed dated May 5, 2015, as further amended and restated by an eighth amendment deed dated January 5, 2017, as further amended and restated by a ninth amendment deed dated November 3, 2017, as further amended by a tenth amendment deed dated March 22, 2019 and as further supplemented in connection with the Offering) (the "Intercreditor Deed") entered into with the lenders under the Senior Secured Term Loans Agreement (the "Senior Lenders"), Barclays Bank PLC as administrative agent (the "Senior Facility Agent") for the Senior Lenders and as security agent (the "Senior Security Agent") for itself, the Senior Lenders, the institutions named therein as hedge counterparties or cash management banks, the lenders under the Schuldschein Loan Agreement, the holders of the Notes, the 2025 Senior Secured Notes, and any other permitted senior secured notes issued from time to time (the "Additional Senior Secured Notes"), and the trustee under the 2024 IGH Notes Indenture (the "2024 IGH Notes Trustee"). On March 22, 2019, the trustee under the Schuldschein Loan Agreement (the "Schuldschein Loan Trustee") acceded to the Interceditor Deed. On November 3, 2017, the trustee under the 2025 Senior Secured Notes Indenture (the "2025 Senior Secured Notes Trustee") acceded to the Intercreditor Deed. On the Issue Date, the Trustee will accede to the Intercreditor Deed. By accepting a Note, holders of the Notes are deemed to have agreed to, and accepted the terms and conditions of, the Intercreditor Deed.

The Intercreditor Deed sets out, by way of agreement between the parties to it, among other things, provisions relating to:

- the relative ranking of certain liabilities of the Obligors;
- the relative ranking of certain security granted by the Obligors and the Parent;
- when payments can be made in respect of certain liabilities of the Obligors and the Parent;
- when enforcement action can be taken in respect of those liabilities;

- the terms pursuant to which certain of those liabilities will be subordinated upon the occurrence of certain insolvency events;
- turnover provisions; and
- when security and guarantees may be released to permit an enforcement sale.

The following description is a summary of certain provisions contained in the Intercreditor Deed. It does not restate the Intercreditor Deed in its entirety and we urge you to read that document because it, and not the discussion that follows, will regulate and govern, among other things, certain of the rights of the lenders under the Senior Secured Term Loans Agreement, the lenders under the Schuldschein Loan Agreement, the holders of the Notes, the holders of the 2024 IGH Notes, the holders of the 2025 Senior Secured Notes, the Senior Facility Agent, the Trustee, the 2024 IGH Notes Trustee and the 2025 Senior Secured Notes Trustee.

Ranking and Priority

The Intercreditor Deed provides that, subject to the provisions in respect of permitted payments (summarized below), the liabilities of the Obligors in respect of the Notes, the Senior Secured Term Loans, the Schuldschein Loan, the 2024 IGH Notes, the 2025 Senior Secured Notes and certain other liabilities rank, in summary, in the following order and are postponed and subordinated to any prior ranking liabilities of the Obligors as follows:

- first, each of the following, *pari passu* among themselves: (i) the liabilities of the Obligors under the Senior Secured Term Loans Agreement, under the Schuldschein Loan Agreement and under any other Additional Senior Finance Documents (as defined in the Intercreditor Deed), the liabilities of any Obligor party to certain hedging agreements and cash management arrangements, the liabilities of INEOS Finance plc and the guarantors under the Notes, the Indenture, the 2025 Senior Secured Notes, the 2025 Senior Secured Notes Indenture and any Additional Senior Secured Notes (together, the "Senior Liabilities"), (ii) fees, costs and expenses of, and amounts incurred by or payable to, the 2024 IGH Notes Trustee (the "High Yield Note Trustee Amounts"), (iii) fees, costs and expenses incurred by or payable to the Senior Facility Agent or any agent appointed to act as security trustee, facility agent or other similar representative for or with respect to any Additional Senior Finance Parties (as defined in the Intercreditor Deed) or any agents appointed to act as security agent and security trustee on behalf of more than one class of holders of the 2024 IGH Notes or any other High Yield Notes or fees, costs and expenses incurred by any Second Secured Representative (as defined in the Intercreditor Deed) (other than in respect of any Second Secured Liabilities (as defined in the Intercreditor Deed)) in the form of notes issued pursuant to one or more indentures) ("Agency Amounts"), (iv) fees, costs and expenses of, and amounts incurred by or payable to, the Trustee, the 2025 Senior Secured Notes Trustee and the trustee of any Additional Senior Secured Notes (the "Additional Senior Secured Notes Trustee")(collectively, the "Senior Secured Notes Trustees")(the "Senior Secured Note Trustee Amounts"), and (v) fees, costs and expenses of, and amounts incurred by or payable to any Second Secured Note Trustee (the "Second Secured Note Trustee Amounts");
- second, any Second Secured Liabilities (as defined in the Intercreditor Deed);
- third, the liabilities of the Obligors in relation to the 2024 IGH Notes (other than in respect of High Yield Note Trustee Amounts) and the liabilities owed by IHL or Lux I (to the extent it is a borrower of a High Yield Proceeds Loan (as defined in the Intercreditor Deed)) to the Parent or any other permitted lenders (such other lenders, together with Parent, the "High Yield Proceeds Lenders") under any loan of the proceeds of the 2024

IGH Notes or any other High Yield Notes (together, the "Subordinated High Yield Liabilities");

- fourth, (i) the liabilities of the Obligors to the Subordinated Creditors (other than in respect of any High Yield Proceeds Loan or any loan of the proceeds of any funds made available under any documents pursuant to or in connection with which any Second Secured Liabilities arise (the "Second Secured Documents") to IHL or Lux I (each, a "Second Secured Proceeds Loan")), (ii) any liabilities owed by IHL, the Parent, or any other High Yield Note Issuer (as defined in the Intercreditor Deed) or any Additional Second Secured Borrower (as defined in the Intercreditor Deed) to any Subordinated Creditor under certain investor documents, (iii) any other money or liabilities due, owing or payable by any Obligor to the Parent, or any other High Yield Note Issuer or any Additional Second Secured Borrower or any parent holding company of the Parent which has acceded to the Intercreditor Deed (other than in respect of any High Yield Proceeds Loan or any Second Secured Proceeds Loan) (the liabilities referred to in paragraphs (i) to (iii) being, together, the "Subordinated Liabilities"), and (iv) any liabilities of the Obligors to the Intra-Group Creditors in such capacity (other than liabilities under the Notes Proceeds Loans, the 2025 Senior Secured Notes Proceeds Loan, the Schuldschein Proceeds Loan, the Senior Secured Term Loans Proceeds Loan or certain other loans of the proceeds of any Senior Liabilities to IHL or any Restricted Subsidiary of the Bottom Swiss Subsidiary (as defined in the Intercreditor Deed) (collectively, the "Senior Proceeds Loans")) (the "Intra-Group Liabilities").

The Intercreditor Deed does not purport to rank any of the Subordinated Liabilities or Intra-Group Liabilities as between themselves. The Intercreditor Deed also provides that, subject to the provisions in respect of permitted payments, the Subordinated Liabilities are postponed and subordinated until the Senior Liabilities, liabilities of the Obligors and the Parent to the holders of the 2024 IGH Notes and the 2024 IGH Notes Trustee (the "High Yield Liabilities") and the Second Secured Liabilities have been discharged in full.

The parties to the Intercreditor Deed agree in the Intercreditor Deed that the liens and other security provided by the Parent and the Obligors rank in the following order:

- first, the security provided in respect of the Senior Liabilities;
- second, any security provided separately in respect of the Second Secured Liabilities, if any; and
- third, the security provided in respect of the 2024 IGH Notes Indenture and the 2024 IGH Notes and any other High Yield Notes.

Under the Intercreditor Deed, all proceeds from enforcement of security to which the Intercreditor Deed applies are required to be applied in accordance with the terms of the Intercreditor Deed, summarized below under "—Application of Proceeds." Certain security granted by members of the Group (being, for the purposes of the Intercreditor Deed, Lux I and its subsidiaries), for example certain liens granted by the Obligors, are not governed by the Intercreditor Deed.

Permitted Payments

The Intercreditor Deed permits, *inter alia*, payments to be made by the Obligors, each Additional Senior Secured Borrower (as defined in the Intercreditor Deed), and the Parent and each other High Yield Note Issuer to the Senior Lenders under the Senior Secured Term Loans Agreement, the lenders under the Schuldschein Loan Agreement, the holders of the Notes, the holders of the 2025 Senior Secured Notes, the Trustee, the Schuldschein Loan Trustee, the 2025 Senior Secured Notes Trustee, (subject to certain restrictions) certain hedge counterparties, certain cash management banks and to lenders under any Additional Senior Finance Documents and holders of any Additional Senior Secured Notes and the Additional Senior Secured Notes Trustees with respect thereto. The Intercreditor Deed also permits payments to be made without further consents being obtained:

- by the Obligors in respect of any Second Secured Liabilities (x) to the extent that the payment is (i) a payment of scheduled interest (or default interest), (ii) a payment under any customary tax gross-up, tax indemnity, illegality or increased costs provision, currency indemnity or indemnity in respect of costs and expenses contained in the Second Secured Documents, or (iii) any consent fee payment customary for the amendment of the Second Secured Documents, in each case so long as such payment is then due and not prohibited by any payment blockage described below, and (y) for so long as such payment is not prohibited by any payment blockage described below, any Obligor may (i) on or after the original maturity date of the Second Secured Liabilities; and (ii) at any time in connection with any provision of the Second Secured Documents specifying a mandatory repayment, offer to purchase or redemption which is either permitted or, if not permitted, *provided* that consent is obtained from the Majority Senior Lenders, each relevant Additional Senior Facilities Representative and each relevant Senior Secured Notes Trustee (as applicable), pay the principal amount due or any other amount payable by it with respect to the Second Secured Liabilities or redeem, acquire or defease the Second Secured Liabilities;

- by the Obligors to the 2024 IGH Notes Trustee or holders of the 2024 IGH Notes and any other High Yield Notes or High Yield Note Trustee pursuant to the guarantees to the extent that the payment is (i) a payment of scheduled interest (or default interest), (ii) a payment under any tax gross-up, tax indemnity or increased costs provisions, provided such provisions are in customary form, or (iii) a consent fee payment customary for the amendment of the 2024 IGH Notes Indenture and certain other documents entered into in connection with the 2024 IGH Notes Indenture or any other High Yield Documents, in each case so long as such payment is then due and not prohibited by any payment blockage as described below (except that payments in respect of High Yield Note Trustee Amounts may always be made);

- by IHL or Lux I as borrowers under any High Yield Proceeds Loan to the Parent or any other High Yield Proceeds Lenders in respect of cash interest on any High Yield Proceeds Loan to enable the Parent or any other High Yield Note Issuer to make a payment of scheduled interest and default interest in respect of the 2024 IGH Notes or any additional High Yield Notes (as defined in the Intercreditor Deed) (the "Additional High Yield Notes," together with the 2024 IGH Notes, the "High Yield Notes"), which payment must fall due within five (5) days of the date of payment of the corresponding interest by IHL or Lux I to the applicable High Yield Note Issuer, and certain other payments by IHL or Lux I to the Parent or any other High Yield Proceeds Lender in respect of sums due under any High Yield Notes (as applicable) and related documents permitted by the Intercreditor Deed, so long as any such payment is not prohibited by any payment blockage as described below (except that payments in respect of High Yield Note Trustee Amounts may always be made); and

- by the Obligors in respect of Intra-Group Liabilities if (i) at the time of the payment no Enforcement Action (as defined below) has occurred and is continuing in respect of the Senior Liabilities or any Second Secured Liabilities, (ii) prior to the date on which all Senior Liabilities have been unconditionally discharged in full (the "Senior Discharge Date"), the consent of the Instructing Group (as defined in the Intercreditor Deed) to the relevant payment is obtained or (iii) on or after the Senior Discharge Date but prior to the date on which all Second Secured Liabilities have been unconditionally discharged in full (the

“Second Secured Discharge Date”), the consent of the Majority Second Secured Creditors (as defined in the Intercreditor Deed) is obtained.

Prior to the later of the Senior Discharge Date and the Second Secured Discharge Date, no Obligor, Additional Second Secured Borrower or High Yield Note Issuer or any of their subsidiaries may make any payments in respect of the Subordinated Liabilities unless, prior to the Senior Discharge Date, where the relevant action is prohibited under the Senior Secured Term Loans Agreement, the Schuldschein Loan Agreement, the Additional Senior Finance Documents or the Senior Secured Note Documents, the prior consent of the Majority Senior Lenders (as defined in the Intercreditor Deed), each security trustee, facility agent or other similar representative with respect to the creditors under each Additional Senior Finance Document (the “Additional Senior Facilities Representative”), each Senior Secured Notes Trustee (as applicable and relevant) is obtained and, following the Senior Discharge Date but prior to the Second Secured Discharge Date, where the relevant action is prohibited under any Second Secured Document, of the Majority Second Secured Creditors is obtained.

As defined in the Intercreditor Deed, the term “Instructing Group” means the senior creditors under the Intercreditor Deed whose senior credit participations at the relevant time constitute the simple majority in aggregate principal amount of the total senior credit participations at the relevant time.

Payment Blockage

Prior to the Senior Discharge Date, if any Obligor fails to pay on the due date or within any applicable grace period any amount payable under the Senior Finance Documents (including relevant hedging agreements and cash management arrangements), the Schuldschein Loan Agreement, any Additional Senior Finance Document, the Indenture, the 2025 Senior Secured Notes Indenture, the Notes or the 2025 Senior Secured Notes or any indenture of any Additional Senior Secured Notes (the “Additional Senior Secured Notes Indenture”) or any Additional Senior Secured Notes (all such senior secured notes and indentures, collectively, the “Senior Secured Notes And Notes Indentures”) (other than an amount not constituting principal, interest or fees not in excess of €1,000,000 (or its equivalent in any other currency)), the Obligors may not make payments in respect of the Second Secured Liabilities while that failure is continuing. Permitted payments in respect of the Second Secured Liabilities may be resumed when such payment default is cured or waived.

Prior to the Senior Discharge Date, if there is any other default that occurs and is continuing under the Senior Secured Term Loans Agreement, the Schuldschein Loan Agreement, any Additional Senior Finance Documents or any Senior Secured Notes And Notes Indentures, the Senior Facility Agent (on the instructions of the Majority Senior Lenders (as defined in the Intercreditor Deed)), the Schuldschein Loan Trustee, or the relevant Additional Senior Facilities Representative or any Senior Secured Notes Trustee (as applicable) may issue a written stop notice (a “Second Secured Stop Notice”) to each note trustee, security trustee, facility agent or other similar representative with respect to any holders of interests representing Second Secured Liabilities (the “Second Secured Creditors”) (each, a “Second Secured Representative”) and notify IHL. From the date of the issue of such notice, the Obligors may not make payments in respect of the Second Secured Liabilities for a period of 179 days (the “Second Secured Stop Period”), subject to certain exceptions described below.

Prior to the Senior Discharge Date, from the date of issue of a Second Secured Stop Notice for the duration of the Second Secured Stop Period, no payments may be made that would otherwise be permitted by the Intercreditor Deed in respect of the Second Secured Liabilities unless:

- the event in respect of which the Second Secured Stop Notice was issued has been cured or waived in writing by (if the default has occurred and is (or immediately prior to the waiver was) continuing at such time with respect to the Senior Secured Term Loans Agreement) the Senior Facility Agent, (if the default has occurred and is (or immediately prior to the waiver was) continuing at such time with respect to the Schuldschein Loan Agreement) the Schuldschein Loan Trustee, (if the default is (or immediately prior to the waiver was) continuing with respect to any Additional Senior Finance Documents) the relevant Additional Senior Facilities Representative, (if the default is (or immediately prior to the waiver was) continuing with respect to the Notes) the Trustee, (if the default is (or immediately prior to the waiver was) continuing with respect to the 2025 Senior Secured Notes) the 2025 Senior Secured Notes Trustee and (if the default is (or immediately prior to the waiver was) continuing with respect to any Additional Senior Secured Notes) the Additional Senior Secured Notes Trustee relating thereto or has ceased to exist;

- (if at any time of cancellation or consent, a default is continuing under the Senior Secured Term Loans Agreement) the Senior Facility Agent, (if at any time of cancellation or consent, a default is continuing under the Schuldschein Loan Agreement) the Schuldschein Loan Trustee, (if at the time of cancellation or consent, a default is continuing under any Additional Senior Finance Documents) the relevant Additional Senior Facilities Representative, (if at the time of cancellation or consent, a default is continuing under the Notes) the Trustee, (if at the time of the cancellation or consent, a default is continuing under the 2025 Senior Secured Notes) the 2025 Senior Secured Notes Trustee and (if at the time of cancellation or consent, a default is continuing under any Additional Senior Secured Notes) the Additional Senior Secured Notes Trustee cancels the Second Secured Stop Notice or consents to such payment; or
- if applicable, any Second Secured Standstill Period (as defined below) in effect at the time the Second Secured Stop Notice was issued has expired and the relevant event of default to which the Second Secured Standstill Period relates has not been cured or waived.

No Second Secured Stop Notice may be served by the Senior Facility Agent, the Schuldschein Loan Trustee, any Additional Senior Facilities Representative or any Senior Secured Notes Trustee in reliance on a particular payment blockage event more than 75 days after the Senior Facility Agent, the Schuldschein Loan Trustee, any Additional Senior Facilities Representative, or any Senior Secured Notes Trustee (as applicable) receives notice in writing specifying the occurrence constituting that payment blockage event. Not more than one Second Secured Stop Notice may be served with respect to the same event or set of circumstances. No Second Secured Stop Notice in relation to a payment blockage event may be served unless (i) 365 days have elapsed since the delivery of any previous Second Secured Stop Notice in relation to a payment blockage event and (ii) all scheduled payments of interest on the Second Secured Liabilities that have become due as a result of any previous Second Secured Stop Notice have been paid in full in cash.

Any failure to make a payment due in respect of the Second Secured Liabilities as a result of the issue of a Second Secured Stop Notice will not prevent the occurrence of an event of default under the Second Secured Documents as a consequence of such non-payment or the commencement of an Enforcement Action (defined below) otherwise permitted by the Intercreditor Deed.

If any Obligor fails to pay on the due date or within any applicable grace period any amount payable under the Senior Finance Documents (including relevant hedging agreements and cash management arrangements), the Schuldschein Loan Agreement, any Additional Senior Finance Document, any Senior Secured Notes And Notes Indentures or any Second Secured Document (other than an amount not constituting principal, interest or fees not in excess of €1,000,000 (or its equivalent in any other currency)), the Obligors may not make payments (except if such payment is in the form of Permitted High Yield Note Junior Securities (as defined in the Intercreditor Deed) or comprises High Yield Note Trustee Amounts) in respect of the Subordinated High Yield Liabilities while that failure is continuing. Such payments in respect of any High Yield Notes may be resumed to the extent permitted under the Intercreditor Deed when such payment default is cured or waived.

Prior to the later of the Senior Discharge Date and the Second Secured Discharge Date, if there is any other default that occurs and is continuing under the Senior Secured Term Loans Agreement, the Schuldschein Loan Agreement, any Additional Senior Finance Document, any Senior Secured Notes And Notes Indentures or, following the Senior Discharge Date, under any Second Secured Document, the Senior Facility Agent (on the instructions of the Majority Senior Lenders) or the relevant Additional Senior Facilities Representative, the Schuldschein Loan Trustee, any Senior Secured Trustee or the relevant Second Secured Representative (as applicable) may issue a payment blockage notice (a "Stop Notice") to the 2024 IGH Notes Trustee and other High Yield Note Trustees and notify each High Yield Representative (as defined in the Intercreditor Deed). From the date of the issue of such notice, the Obligors may not make any payments (except if such payment comprises High Yield Note Trustee Amounts) in respect of the Subordinated High Yield Liabilities or any High Yield Proceeds Loan for a period of 179 days (the "High Yield Stop Period"), subject to certain exceptions described below.

Prior to the later of the Senior Discharge Date and the Second Secured Discharge Date, from the date of issue of a Stop Notice for the duration of the High Yield Stop Period, blocked payments may not be made unless:

- the event in respect of which the Stop Notice was issued has been cured or, prior to the Senior Discharge Date, waived in writing (if the default is (or immediately prior to the waiver was) continuing with respect to the Senior Secured Term Loans Agreement) by the Senior Facility Agent, (if the default is (or immediately prior to the waiver was) continuing with respect to the Schuldschein Loan Agreement) by the Schuldschein Loan Trustee, (if the default is (or immediately prior to the relevant waiver was) continuing with respect to any Additional Senior Finance Documents) the relevant Additional Senior Facilities Representative, (if the default is (or immediately prior to the waiver was) continuing with respect to the Notes) the Trustee, (if the default is (or immediately prior to the waiver was) continuing with respect to the 2025 Senior Secured Notes) the 2025 Senior Secured Notes Trustee and (if the default is (or immediately prior to the waiver was) continuing with respect to any Additional Senior Secured Notes) the relevant Additional Senior Secured Notes Trustee or, following the Senior Discharge Date and prior to the Second Secured Discharge Date, waived in writing by the relevant Second Secured Representative or has ceased to exist;
- prior to the Senior Discharge Date, (if at the time of cancellation or consent, a default is continuing under the Senior Facilities) the Senior Facility Agent, (if at any time of cancellation or consent, a default is continuing under the Schuldschein Loan Agreement) the Schuldschein Loan Trustee, (if at the time of cancellation or consent, a default is continuing under any Additional Senior Finance Documents) the relevant Additional Senior Facilities Representative, (if at the time of cancellation or consent, a default is continuing under the Notes) the Trustee, (if at the time of the cancellation or consent, a default is continuing under the 2025 Senior Secured Notes) the 2025 Senior Secured Notes Trustee and (if at the time of cancellation or consent, a default is continuing under any Additional Senior Secured Notes) the relevant Additional Senior Secured Notes Trustee cancels the Stop Notice or consents to such payment;
- prior to the Senior Discharge Date, the Senior Liabilities have been repaid in full and all the commitments of the Senior Creditors (as defined in the Intercreditor Deed) cancelled or following the Senior Discharge Date the Second Secured Liabilities have been repaid in full; or

- if applicable, any High Yield Standstill Period (as defined below) in effect at the time the payment Stop Notice was issued has expired and the relevant event of default to which the High Yield Standstill Period relates has not been cured or waived.

No Stop Notice may be served by the Senior Facility Agent, the Schuldschein Loan Trustee, an Additional Senior Facilities Representative or any Senior Secured Notes Trustee or a Second Secured Representative (as applicable) in reliance on a particular payment blockage event more than 75 days after the Senior Facility Agent, the Schuldschein Loan Trustee, each Additional Senior Facilities Representative, a Senior Secured Notes Trustee or a Second Secured Representative receives notice in writing specifying the occurrence constituting that payment blockage event. Not more than one Stop Notice may be served by the Senior Facility Agent, the Schuldschein Loan Trustee, each Senior Secured Notes Trustee or each Second Secured Representative (as applicable) with respect to the same event or set of circumstances. No Stop Notice in relation to a payment blockage event may be served unless (i) 365 days have elapsed since the delivery of any previous Stop Notice in relation to a payment blockage event, and (ii) all scheduled payments of interest on any High Yield Notes that have become due as a result of any previous Stop Notice have been paid in full in cash.

Any failure to make a payment due under the 2024 IGH Notes Indenture or the indenture for any Additional High Yield Notes (the "Additional High Yield Notes Indenture," together with the 2024 IGH Notes Indenture, the "High Yield Notes Indentures") or the guarantees of any High Yield Notes as a result of the foregoing will not prevent the occurrence of an event of default under the 2024 IGH Notes or any other High Yield Notes as a consequence of such non-payment or the commencement of an Enforcement Action otherwise permitted by the Intercreditor Deed.

Entitlement to Enforce

The Intercreditor Deed provides that the Senior Security Agent will (subject to certain exceptions) enforce the senior security only at the direction of the Instructing Group. Subject to certain exceptions in relation to the Second Secured Security (as defined in the Intercreditor Deed), prior to the Senior Discharge Date, the Second Secured Creditors may only take Enforcement Action with respect to the guarantees or security granted pursuant to the Intercreditor Deed in respect of the Second Secured Liabilities or any Second Secured Proceeds Loan if:

- the prior written consent of the Instructing Group is obtained;
- the Senior Creditors have taken certain Enforcement Action in which case the Second Secured Creditors may take the same Enforcement Action against the same Obligor;
- the Second Secured Creditors have become entitled to do so as a result of the expiry of any Second Secured Standstill Period unless on the expiry of the Second Secured Standstill Period the relevant default to which the Second Secured Standstill Period relates has been waived or cured; or
- certain insolvency events have occurred and are continuing, *provided* that any such insolvency event is not the result of actions of a Second Secured Creditor prohibited under the Intercreditor Deed and provided Enforcement Action may only be taken against the entity in respect of which the insolvency event has occurred.

Prior to the Senior Discharge Date and the Second Secured Discharge Date, the holders of any High Yield Notes and the 2024 IGH Notes Trustee or the trustee under any Additional High Yield Notes (the "Additional High Yield Notes Trustee," together with the 2024 IGH Notes Trustee, the "High Yield Notes Trustees") and any lender under any High Yield Proceeds Loan (together, the

"High Yield Creditors") may only take Enforcement Action with respect to the guarantees and security granted in respect of any High Yield Notes or the High Yield Proceeds Loan if:

- the prior written consent of (prior to the Senior Discharge Date) the Instructing Group and (prior to the Second Secured Discharge Date) the Majority Second Secured Creditors (as defined in the Intercreditor Deed) is obtained;
- the Senior Creditors and/or any Second Secured Creditors have taken Enforcement Action against an Obligor, in which case the High Yield Creditors may take Enforcement Action against the same Obligor but may not take any other Enforcement Action until the Senior Discharge Date and any Second Secured Discharge Date shall have occurred except after expiry of a High Yield Standstill Period;
- the High Yield Creditors, as applicable, have become entitled to do so as a result of the expiry of any High Yield Standstill Period unless on the expiry of the High Yield Standstill Period the relevant default to which the High Yield Standstill Period relates has been waived or cured; or
- if certain insolvency events have occurred and are continuing, *provided* that any such insolvency event is not the result of actions of a High Yield Creditor prohibited under the Intercreditor Deed and provided Enforcement Action may only be taken against the entity in respect of which the insolvency event has occurred.

A "Second Secured Standstill Period" is defined in the Intercreditor Deed to mean a period of 179 days after written notice has been given by the Majority Second Secured Creditors (as defined in the Intercreditor Deed) to the Senior Facility Agent, the Schuldschein Loan Trustee, each Additional Senior Facilities Representative and each Senior Secured Notes Trustee that an event of default has occurred as a result of any failure to pay any amount of the Second Secured Liabilities when due and payable and is continuing, and specifying that a Second Secured Standstill Period is to commence.

A "High Yield Standstill Period" is defined in the Intercreditor Deed to mean a period of 179 days after written notice has been given by any High Yield Notes Trustee to the Senior Facility Agent, the Schuldschein Loan Trustee, each Additional Senior Facilities Representative, any Senior Secured Notes Trustee and each Second Secured Representative that an event of default under any High Yield Notes has occurred and is continuing, and specifying that a High Yield Standstill Period is to commence.

An "Enforcement Action" is defined in the Intercreditor Deed to mean:

(a) the acceleration of any liabilities or any declaration that any liabilities are prematurely due and payable or the making of demand for payment of any liabilities after such liabilities have been made payable on demand;

(b) without prejudice to the right of a hedging counterparty to terminate or close out a hedging transaction as otherwise expressly permitted by the Intercreditor Deed, the designation by a hedge counterparty of an early termination date under any hedging agreement or the making of a demand by a hedge counterparty for payment of all or any amount which would become payable in connection with the occurrence of an early termination date;

(c) the making of any demand against any Obligor in relation to any guarantee in respect of any liabilities which are due and payable but unpaid or exercising any right to require the Group to acquire any liability (including exercising any put or call option against any member of the Group for the redemption or purchase of any liability);

(d) the enforcement of any Security Document (as defined in the Intercreditor Deed) or any other security interest granted by any Obligor, any Additional Second Secured Borrower, the Parent or any other High Yield Note Issuer (including taking any action to crystallize any floating charge forming part of any Security Document);

(e) the exercise of any right of set-off against any Obligor in respect of any liabilities due and payable but unpaid (excluding, for the avoidance of doubt, any payment or close-out netting under any hedging agreements or any set-off under any cash management arrangements);

(f) the suing for, commencing or joining of any legal or arbitration proceedings against any Obligor to recover any liabilities; or

(g) the petitioning, applying or voting for, or the taking of any steps (including the appointment of any liquidator, receiver, administrator or similar officer) which could reasonably be expected to lead to an insolvency event in relation to any Obligor,

provided that the following shall not constitute Enforcement Action:

(i) the taking of any action falling within paragraph (f) above necessary to preserve the validity and existence of claims, including the registration of such claims before any court or governmental authority;

(ii) to the extent entitled by law, the taking of any actions against any creditor (or any agent, trustee or receiver acting on behalf of such creditor) to challenge the basis on which any sale or disposal is to take place pursuant to powers granted to such persons under any security documentation;

(iii) bringing legal proceedings against any person in connection with any securities violation or common law fraud or to restrain any actual or putative breach of the Finance Documents (as defined in the Intercreditor Deed) or for specific performance with no claim for damages; or

(iv) demand being made for payment of any of the liabilities as a result of it being unlawful for any Senior Creditor, Second Secured Creditor (other than any Second Secured Proceeds Lender) or High Yield Creditor (other than any High Yield Proceeds Lender) to perform any obligation under the Finance Documents,

unless in the case of any of the actions listed above in paragraphs (i)-(iv) above, such action will result in an insolvency event.

The Intercreditor Deed also contains enforcement provisions in relation to hedge counterparties, Intra-Group Liabilities, Senior Proceeds Loans and Subordinated Liabilities.

Subordination

Upon the occurrence of an insolvency event in relation to an Obligor, claims against that Obligor:

- in respect of any Second Secured Liabilities will be subordinate in right of payment to the claims against that Obligor in respect of Senior Liabilities;
- in respect of the Subordinated High Yield Liabilities will be subordinate in right of payment to the claims against that Obligor in respect of Senior Liabilities and Second Secured Liabilities; and

- in respect of Intra-Group Liabilities and Subordinated Liabilities will be subordinate in right of payment to the claims against that Obligor in respect of Senior Liabilities, Second Secured Liabilities and Subordinated High Yield Liabilities.

Upon the occurrence of an insolvency event in relation to a High Yield Note Issuer or an Additional Second Secured Borrower claims against that High Yield Note Issuer or Additional Second Secured Borrower in respect of the Subordinated Liabilities will be subordinate in right of payment to the claims against that High Yield Note Issuer or Additional Second Secured Borrower in respect of Senior Liabilities, Second Secured Liabilities and High Yield Liabilities (as applicable).

Turnover

Except to the extent prohibited by law and subject to certain exceptions, if at any time on or before the Senior Discharge Date and the Second Secured Discharge Date, any High Yield Creditor or any High Yield Note Issuer:

- receives or recovers any payment or distribution of, or on account of or in relation to, any of the Subordinated High Yield Liabilities which is not a permitted payment under the Intercreditor Deed;
- receives or recovers any amount by way of set-off in respect of any of the Subordinated High Yield Liabilities owed to them which does not give effect to a permitted payment under the Intercreditor Deed;
- receives or recovers proceeds pursuant to any Enforcement Action in respect of the Subordinated High Yield Liabilities except in accordance with the Intercreditor Deed or receives or recovers proceeds pursuant to any Enforcement Action in respect of the collateral for any High Yield Notes (as applicable);
- receives any payment or distribution of any kind whatsoever in relation to the purchase or acquisition of any High Yield Liabilities by any member of the Group;
- receives any distribution in cash or in kind in respect of any liability owed by IHL or the other Obligors in respect of the Subordinated High Yield Liabilities which is made as a result of the occurrence of an insolvency event of any Obligor; or
- receives or recovers any payment or distribution in respect of the High Yield Liabilities as a result of any High Yield Note Issuer receiving or recovering an amount in contravention of the Intercreditor Deed,

that High Yield Creditor or High Yield Note Issuer, as the case may be, will notify the Senior Security Agent and (following the Senior Discharge Date and prior to the Second Secured Discharge Date) each Second Secured Representative and hold that amount in a separate account on trust for (prior to the later of the Senior Discharge Date) the Senior Security Agent or (following the Senior Discharge Date prior to the Second Secured Discharge Date) each Second Secured Representative and promptly pay that amount (prior to the Senior Discharge Date) to the Senior Security Agent or (following the Senior Discharge Date prior to the Second Secured Discharge Date) a Second Secured Representative or (after deducting from the amount received or recovered the costs and expenses (if any) actually incurred by it in recovering such amount) to be held in trust by such person for application in accordance with the order of priority under the Intercreditor Deed as described below in "Application of Proceeds." The foregoing provision does not, however, apply to any amounts received or recovered by any High Yield Notes Trustee that have been distributed by it to the holders of any High Yield Notes as applicable, if at the time it distributed such payment it had no actual knowledge that such payment was so prohibited.

The Intercreditor Deed also contains a turnover provision in relation to the Second Secured Liabilities, Intra-Group Liabilities and Subordinated Liabilities as well as certain amounts received by the Obligors generally.

Application of Proceeds

Subject to rights of creditors mandatorily preferred by law applying to companies generally, amounts received by the Senior Security Agent, a Second Secured Representative or trustee or representative under any High Yield Notes Indenture, any hedge counterparty or any cash management bank representing (i) the proceeds of enforcement of any security, (ii) recoveries under any guarantee contained in the Finance Documents and (iii) all amounts paid pursuant to the Intercreditor Deed will be applied in the following order of priority:

- in discharging any sums owing to the Senior Security Agent or any additional agent appointed by the Senior Security Agent, any High Yield Note Trustee Amounts, any Agency Amounts, any Senior Secured Note Trustee Amounts and any Second Secured Note Trustee Amounts, on a *pari passu* basis;
- in payment of all costs and expenses incurred by or on behalf of the Senior Creditors in connection with the enforcement of their security;
- in payment to the Senior Facility Agent (for itself and the Senior Lenders) to discharge the liabilities in respect of the Senior Secured Term Loans Agreement, to the Schuldschein Loan Trustee to discharge the liabilities in respect of the Schuldschein Loan, to hedging counterparties to discharge the liabilities owed to them, to cash management banks to discharge the liabilities owed to them, to the 2025 Senior Secured Notes Trustee for application towards the discharge of the liabilities under the 2025 Senior Secured Indenture, the 2025 Senior Secured Notes and related documents, to the Trustee for application towards the discharge of the liabilities under the Indenture, the Notes and related documents, to any Additional Senior Secured Notes Trustee for application towards the discharge of the liabilities under the Additional Senior Secured Notes Indenture relating thereto, the applicable Additional Senior Secured Notes and related documents and each Additional Senior Facilities Representative (for itself and the creditors under such Additional Senior Finance Documents) for application towards the discharge of the Additional Senior Lender Liabilities (as defined in the Intercreditor Deed) owing under the Additional Senior Finance Documents, on a *pro rata* basis;
- in payment to each Second Secured Representative on behalf of the Second Secured Creditors which it represents for application towards the discharge of any Second Secured Liabilities, on a *pro rata* basis;
- in payment to the 2024 IGH Notes Trustee for application towards the discharge of the liabilities in respect of the 2024 IGH Notes Indenture and the 2024 IGH Notes and to any Additional High Yield Notes Trustee for application towards the discharge of the liabilities in respect of the applicable Additional High Yield Notes Indenture and the applicable Additional High Yield Notes, on a *pro rata* basis;
- if none of the Obligors is under any further actual or contingent liability under any Senior Finance Document, Senior Secured Note Document (as defined in the Intercreditor Deed), Second Secured Document, under any High Yield Notes Indenture and related documents, in payment to any person to whom the Senior Security Agent, Second Secured Representative or the trustee or representative under any High Yield Notes Indenture is obliged to pay in priority to any Obligor; and
- the balance, if any, in payment to the relevant Obligor.

Release of the Guarantees and the Security

The Intercreditor Deed provides that, subject to any consents required from the Majority Senior Lenders and each Senior Secured Notes Trustee in certain circumstances being obtained, the Senior Security Agent is authorized to (i) release any security created by the security documents over the relevant asset, and (ii) (if the relevant asset comprises all of the shares in the capital of a member of the Group (as defined in the Intercreditor Deed)) to release that member of the Group and any of its direct or indirect subsidiaries from all past, present and future liabilities (both actual and contingent) and/or its obligations in its capacity as a guarantor, issuer or borrower of the whole or any part of its liabilities in respect of the Senior Secured Term Loans Agreement, the Schuldschein Loan Agreement, any Senior Secured Notes, any Additional Senior Secured Notes, Second Secured Documents, any High Yield Notes and certain other liabilities and to release any security granted by that member of the Group or any of its direct or indirect subsidiaries over any asset under any security document if:

- in connection with any permitted Enforcement Action, the Senior Security Agent or any receiver or administrator sells or otherwise disposes of (or proposes to sell or otherwise dispose of) any asset under any security document; or
- following a default under the Senior Secured Term Loans Agreement, the Schuldschein Loan Agreement, any Additional Senior Finance Document, the 2025 Senior Secured Notes Indenture, the Indenture or any Additional Senior Secured Notes Indenture (collectively, such indentures, the "Senior Secured Notes Indentures"), a member of the Group sells or otherwise disposes of (or proposes to sell or otherwise dispose of) any asset at the request or direction of the Senior Security Agent.

Notwithstanding the preceding paragraph, in the case of any release of the guarantees or security for the Second Secured Liabilities or for any High Yield Notes, the Second Secured Creditors and the High Yield Creditors will only be obliged to release and authorize the release set out above in respect of any Obligor or other person which has granted security or provided a guarantee to the Second Secured Creditors or the High Yield Creditors:

- in the case of the Second Secured Liabilities and any security in respect thereof, if the Majority Second Secured Creditors (as defined in the Intercreditor Deed) have approved the release; or
- in the case of guarantees and security for the 2024 IGH Notes and the 2024 IGH Notes Indenture or any Additional High Yield Notes and Additional High Yield Notes Indenture, if the trustee or other representative under each High Yield Notes Indenture confirms to the Senior Security Agent that the holders of the 2024 IGH Notes or any Additional High Yield Notes which it represents have approved the release; or
- if the shares or assets of an Obligor (or the shares of any direct or indirect holding company of such Obligor) are sold or otherwise disposed of pursuant to Enforcement Action taken by the Senior Security Agent (or any receiver or administrator) or at the request or direction of the Senior Security Agent, and the sale or disposal is completed in accordance with applicable law and for a consideration all or substantially all of which is in the form of cash or certain cash equivalents and:

    (1) in the case of a sale or disposal of shares of an Obligor (or the shares of any direct or indirect holding company of such Obligor) (but only to the extent that any guarantees and security for the 2024 IGH Notes and the 2024 IGH Notes Indenture or any Additional High Yield Notes or Additional High Yield Notes Indenture are to be released), concurrently with the completion of such sale or disposal, the indebtedness of the relevant members of the Group being

disposed of to (x) the Senior Creditors, (y) the Second Secured Creditors and (z) the lenders of all Subordinated Debt (as defined in the Intercreditor Deed) and Public Debt (as defined in the 2024 IGH Notes Indenture) that is Pari Passu Debt (as defined in the Intercreditor Deed) are discharged or released (and not assumed by the relevant purchaser or any affiliate thereof); *provided*, *however*, that performance bonds and similar instruments will not be required to be so discharged or released; and

(2) if applicable, in the case of a sale or disposal of assets other than shares in an Obligor as provided above, concurrently with the completion of such sale or disposal the prior ranking security in favor of the Senior Creditors over such assets is released,

and, in the case of paragraphs (1) and (2) above, either (x) the sale or disposal is made pursuant to a Public Auction (as defined below) or (y) an internationally recognized investment bank or an internationally recognized accounting firm selected by the Senior Security Agent has delivered in respect of the sale or disposal an opinion to (in the case of a sale by or at the request of the Senior Security Agent (or any receiver or administrator)) the trustee or representative under any High Yield Notes Indenture and each Second Secured Representative that the amount received in connection with such sale is fair from a financial point of view taking into account all relevant circumstances including the method of enforcement; *provided* that the liability of such investment bank or accounting firm in giving such opinion may be limited to the amount of its fees in respect of such engagement.

A "Public Auction" is defined in the Intercreditor Deed to mean an auction in which more than one bidder participates or is invited to participate conducted with the advice of an internationally recognized investment bank and in which if the sale is undertaken by or at the request of the Senior Security Agent (or any receiver or administrator), pursuant to an enforcement requested by (a) the Instructing Group, in which case the Second Secured Creditors and the High Yield Creditors will have a right to participate in such auction and (b) the Second Secured Creditors, in which case the High Yield Creditors will have a right to participate in such auction.

The Intercreditor Deed also provides that, subject to any consents required from the Majority High Yield Creditors being obtained, the Senior Security Agent, any High Yield Notes Trustee and the applicable Second Secured Representative are authorized to release any security created by the security documents over (i) any assets disposed of in a manner permitted pursuant to the terms of the Senior Secured Term Loans, the Schuldschein Loan, any Additional Senior Lender Liabilities, the 2025 Senior Secured Notes Indenture, the Indenture, any Additional Senior Secured Notes Indenture and the Second Secured Documents; or (ii) any receivables disposed of pursuant to the Securitization Program in a manner permitted pursuant to the terms of the Senior Secured Term Loans, the Schuldschein Loan, any Additional Senior Lender Liabilities, the 2025 Senior Secured Notes Indenture, the Indenture, any Additional Senior Secured Notes Indenture and the Second Secured Documents with effect from whichever is the earlier of (1) the date such receivable is disposed of or (2) the date such receivable is offered for disposal or, if not in existence when offered for disposal, the date it subsequently comes into existence.

The Intercreditor Deed further provides that, if it is necessary to do so in order to give effect to certain provisions of the Intercreditor Deed providing that in connection with any refinancing, restructuring, replacement, extension, supplement, increase or incurrence of additional Senior Liabilities and any Second Secured Liabilities such indebtedness shall be secured in priority to the Subordinated High Yield Liabilities, each High Yield Notes Trustee or other representative shall release any security interest which has been granted to it provided that such release occurs on the date of such refinancing, restructuring, replacement, extension, supplement, increase or incurrence and a new security interest is granted to the High Yield Notes Trustee or other representative immediately upon the grant of security interests in respect of such refinancing, restructuring, replacement, extension, supplement, increase or incurrence.

Option to Purchase Debt under the Senior Secured Term Loans Agreement, the Schuldschein Loan Agreement and the Senior Secured Notes Indentures

If the Senior Creditors under the Senior Secured Term Loans Agreement, the Schuldschein Loan Agreement, any Senior Secured Notes Indenture, any Additional Senior Secured Notes Indenture or any Additional Senior Finance Document have taken any Enforcement Action, any High Yield Notes Trustee may, at the direction of the requisite percentage of the holders of the 2024 IGH Notes under the 2024 IGH Notes Indenture or the requisite percentage of the holders of any Additional High Yield Notes under any Additional High Yield Notes Indenture, as applicable, within 60 days after commencement of that Enforcement Action, on giving not less than 14 days' written notice to the Senior Facility Agent, each Additional Senior Facilities Representative, the Schuldschein Loan Trustee, the 2025 Senior Secured Notes Trustee, the Trustee, any Additional Senior Secured Notes Trustee and each Second Secured Representative, and subject to satisfying certain conditions, purchase all but not part of the debt under the Senior Secured Term Loans, the Schuldschein Loan, any Additional Senior Lender Liabilities, the 2025 Senior Secured Notes Indenture, the Indenture, any Additional Senior Secured Notes Indenture, hedging agreements, cash management arrangements and Second Secured Documents (i) in the case of the Senior Secured Term Loans, the Schuldschein Loan, and any Additional Senior Secured Lender Liabilities, at a price equal to the principal amount of such debt and accrued and unpaid interest and fees and expenses, (ii) in the case of any Senior Secured Notes or Additional Senior Secured Notes, at a price equal to the principal amount of such debt and accrued and unpaid interest, any prepayment fees and other fees and expenses and (iii) in the case of any Second Secured Documents, at a price equal to the principal amount of such debt and accrued and unpaid interest, any prepayment fees and other fees and expenses. The Intercreditor Deed also provides for the price to be paid in relation to hedging agreements and cash management arrangements. Upon such purchase, the purchasers will assume the rights and obligations of the lenders under the Senior Secured Term Loans, the Schuldschein Loan and any Additional Senior Lender Liabilities, including hedging arrangements, and the rights and obligations of the holders of any Senior Secured Notes, any Additional Senior Secured Notes and the rights and obligations of the creditors under any Second Secured Documents.

Amendment

The terms of the Intercreditor Deed may only be amended or waived with the written agreement of each of the Senior Facility Agent, each Additional Senior Facilities Representative, any High Yield Notes Trustee, any Second Secured Representative, the Schuldschein Loan Trustee, the 2025 Senior Secured Notes Trustee, the Trustee, any Additional Senior Secured Notes Trustee and IHL unless (i) any amendments are made to cure defects, resolve ambiguities or reflect changes of a minor, technical or administrative nature, which may be made by the Senior Security Agent and IHL, (ii) any amendments are made to meet the requirements of any person proposing to act as a senior secured note trustee or high yield note trustee which are customary for persons acting in such capacity, which amendments may be made by the Senior Security Agent and IHL, (iii) any amendments which only affect the rights and obligations of one party or class of parties and are not adverse to the rights of the other parties or class of parties, which may be made by only IHL and the party or class of parties affected thereby, or (iv) any amendments are made to give effect to the appointment of an Additional Senior Facilities Representative in respect of the Additional Senior Finance Parties or a Second Secured Representative in respect of the Second Secured Creditors, which amendments may be made by the Senior Security Agent and IHL. Subject to (i) and (ii) in the previous sentence, no amendment or waiver of the Intercreditor Deed may impose new or additional obligations on any party to the Intercreditor Deed or affect the rights or obligations of the Senior Facility Agent, the Schuldschein Loan Trustee, the 2025 Senior Secured Notes Trustee, the Trustee, any Additional Senior Secured Notes Trustee, the Senior Security Agent or the trustee or representative under the 2024 IGH Notes Indenture or any Additional High Yield Notes Trustee, or certain other persons in each case without their prior written consent.

The Senior Security Agent may amend the terms of, waive any of the requirements of, or grant consents under, any of the Senior Security Documents (as defined in the Intercreditor Deed) acting on the instructions of the Senior Facility Agent and (where such consent is required under any Additional Senior Finance Document) of each relevant Additional Senior Facilities Representative and (where such consent is required under any Senior Secured Notes Indenture, Additional Senior Secured Notes Indenture or related documents) of the applicable Senior Secured Notes Trustee. Any such amendment, waiver or consent will be deemed to be an amendment, waiver or consent of any equivalent Security Document (as defined in the Intercreditor Deed) granted in favor of the Second Secured Creditors or the 2024 IGH Notes Trustee and the holders of the 2024 IGH Notes or any Additional High Yield Notes Trustee and the holders of any Additional High Yield Notes but only to the same extent and to no greater extent than the amendment, waiver or consent in relation to the relevant Senior Security Document. Any such amendment, waiver or consent will also be binding on the hedge counterparties save to the extent that in respect of such amendment, waiver or consent the hedge counterparties are treated in a manner which is different to the other Senior Creditors in which event the consent of the hedge counterparties shall also be required. No such amendment, waiver or consent will (without prejudice to any other provision of the Intercreditor Deed) release any security granted to the Second Secured Creditors or the 2024 IGH Notes Trustee or any Additional High Yield Notes Trustee or holders of the 2024 IGH Notes or the holders of any Additional High Yield Notes except as permitted under the Second Secured Documents or the 2024 IGH Notes Indenture or an Additional High Yield Notes Indenture, as applicable.

Notwithstanding the above, any High Yield Notes Trustee, each Second Secured Representative, any Senior Secured Notes Trustee, the Senior Facility Agent, the Schuldschein Loan Trustee, each Additional Senior Facilities Representative and the Senior Security Agent are authorized to enter into such agreement or agreements with, among others, the Obligors and each High Yield Notes Issuer, whether by way of supplement, amendment or restatement of the Intercreditor Deed or by a separate deed, as may be necessary to give effect to the provisions under the Intercreditor Deed relating to, among others, a permitted refinancing of the Senior Liabilities, the Second Secured Liabilities or the liabilities in respect of the 2024 IGH Notes or any other High Yield Notes.

Unless expressly stated otherwise in the Intercreditor Deed, the provisions of the Intercreditor Deed override anything in any of the finance documents to the contrary.

The Intercreditor Deed is governed by English law.

DESCRIPTION OF THE NOTES

The €770.0 million aggregate principal amount of % Senior Secured Notes due 2026 (the "**Notes**") offered hereby will be issued under an indenture (the "**Indenture**") to be dated as of the date the Notes are issued upon completion of the offering (such date, the "**Issue Date**") among, *inter alios*, INEOS Finance plc, as issuer (the "**Issuer**"), the guarantors party thereto (the "**Guarantors**"), The Bank of New York Mellon, London Branch, as trustee (in such capacity, the "**Trustee**") and Barclays Bank PLC as security trustee (in such capacity, the "**Security Trustee**"). Unless the context otherwise requires, in this "Description of the Notes," references to the "**Notes**" include the Notes issued on the Issue Date and any Additional Notes that are issued under the Indenture. A copy of the form of the Indenture will be made available to prospective purchasers of the Notes upon request to the Issuer or, for so long as the Notes are listed on the Official List of the Luxembourg Stock Exchange and are traded on the Luxembourg Stock Exchange's Euro MTF Market, upon request to the paying agent in Luxembourg.

The following is a summary of the material provisions of the Indenture, the Notes, the Guarantees and the Notes Proceeds Loan Agreement and refers to the Security Documents and the Intercreditor Deed. It does not restate these agreements in their entirety. Where reference is made to particular provisions of those agreements, such provisions, including the definitions of certain terms, are qualified in their entirety by reference to all of the provisions of such agreements.

The Indenture, the Notes, the Guarantees and the Security Documents will be subject to the terms of the Intercreditor Deed and any additional intercreditor agreements entered into in the future. The terms of the Intercreditor Deed are important to understanding the terms and ranking of the Notes and the Guarantees. Please see the section entitled "Description of Other Indebtedness—Intercreditor Deed" for a summary of certain material terms of the Intercreditor Deed.

The registered holder of a Note will be treated as its owner for all purposes. Only registered holders will have rights under the Indenture, including, without limitation, with respect to enforcement and the pursuit of other remedies. The Notes have not been registered under the U.S. Securities Act and are subject to certain transfer restrictions. The Indenture is not required to be nor will it be qualified under and will not include or incorporate any provisions by reference to (except with respect to certain communications by Holders) or otherwise be subject to the U.S. Trust Indenture Act.

For definitions of certain capitalized terms used in the following summary, please see "—Certain Definitions." Where this "Description of the Notes" or the Indenture refers to (a) the delivery of an Officer's Certificate, or equivalent, of the Issuer, the Company (as defined below), any Guarantor or a Surviving Entity, the Issuer, the Company, such Guarantor or such Surviving Entity, as the case may be, may, at its election, satisfy such delivery requirement by the delivery of a certificate, or equivalent, of an officer of any of the Issuer, the Parent, the Company or IHL and (b) the determination, resolution, designation, instruction, request or direction of any of the Issuer or the Company or an officer, the senior management or the Board of Directors thereof, such determination, resolution, designation, instruction, request or direction may be made by, in each case, any of the Issuer or an officer, the senior management or the Board of Directors thereof, or the Parent or an officer, the senior management or the Board of Directors thereof, or the Company or an officer, the senior management or the Board of Directors thereof, or IHL or an officer, the senior management or the Board of Directors thereof (in each case, as applicable), at the Issuer's election.

Brief Description of the Notes, the Guarantees and the Security

The Notes

The Notes will:

- be general senior obligations of the Issuer;

- be secured as set forth below under "—Security";
- rank equally in right of payment with all existing and future obligations of the Issuer that are not expressly subordinated to the Notes, including, without limitation, the obligations under the 2025 Senior Secured Notes, the Schuldschein Loan and the Senior Secured Credit Facilities;
- be guaranteed on a senior secured basis by the Guarantors;
- rank effectively senior to all existing and future obligations of the Issuer that are unsecured or secured by Liens junior to the Liens securing the Notes to the extent of the value of the Collateral;
- rank senior in right of payment to all existing and future obligations of the Issuer that are expressly subordinated in right of payment to the Notes, including the Issuer's guarantee of obligations under the 2024 IGH Notes; and
- will be effectively subordinated in right of payment to all of the liabilities of, including trade payables and letters of credit issued by, INEOS Luxembourg I S.A.'s (the initial "**Company**") Subsidiaries that do not guarantee the Notes.

The Issuer is a finance company that has no Subsidiaries. Upon completion of the offering of the Notes, the only significant assets of the Issuer will be the Notes Proceeds Loan, the 2025 Senior Secured Notes Proceeds Loan, the Schuldschein Proceeds Loan and the euro-denominated SFA Proceeds Loans and, as such, the Issuer will be dependent on payments by IHL on such proceeds loans in order to service its Indebtedness, including the Notes.

As of December 31, 2018, after giving *pro forma* effect to the issuance of the Notes and the other Transactions on the Issue Date and, in each case, the application of the proceeds therefrom as described under "Use of Proceeds," and the Schuldschein Loan, the Parent would have had total consolidated loans and borrowings of €6,472.9 million.

The Notes will be effectively subordinated to any existing and future Indebtedness and other obligations of the Issuer that are secured by Liens senior to the Liens securing the Notes or secured by property and assets that do not secure the Notes, to the extent of the value of the property and assets securing such Indebtedness and other obligations.

Certain Liens securing the Notes created under German and French law will, as a matter of local law, be granted as junior ranking Liens in relation to the Liens in respect of the Senior Secured Credit Facilities, the 2025 Senior Secured Notes and the Schuldschein Loan. Nevertheless, the Intercreditor Deed provides that as a contractual matter as among Senior Secured Creditors (as defined in the Intercreditor Deed), the Notes will be secured on a *pari passu* basis with the Senior Secured Credit Facilities, the 2025 Senior Secured Notes, the Schuldschein Loan, certain hedging obligations and certain cash management obligations and will be treated as such for purposes of the application of proceeds from the enforcement of such Collateral.

The existing first-ranking Liens securing the Senior Secured Credit Facilities, the 2025 Senior Secured Notes and the Schuldschein Loan that were created under New York, Luxembourg, Scottish, Norwegian and Jersey law will remain in place and will extend to secure the Notes. In some jurisdictions, the Security Documents creating the existing first-ranking Liens securing the Senior Secured Credit Facilities, the 2025 Senior Secured Notes and the Schuldschein Loan will be amended to extend such Liens (or, with respect to Belgian security, to confirm that these Liens extend) to the Notes (or, with respect to French and certain German security interests, junior ranking security interests will be granted). The existing first-ranking Liens securing the Senior Secured Credit Facilities, the 2025 Senior Secured Notes and the Schuldschein Loan that were created under English law and Singapore law will remain in place, and new Liens over the same Collateral will be created in these jurisdictions to secure the Notes. In these jurisdictions where new Liens are created, the ranking of these new Liens relative to the existing Liens will, as a matter of general law, depend on a number of factors, such as the nature of the Liens, the order of creation of the Liens, compliance with the jurisdiction's perfection requirements with respect to the Liens and the order of giving notices with respect to the Liens, and accordingly without the Intercreditor Deed, the new Liens would be likely to rank after the existing Liens. However, the Intercreditor Deed provides that, as a contractual matter, the Liens securing the Notes, the 2025 Senior Secured Notes, the Schuldschein Loan and the Senior Secured Credit Facilities will rank *pari passu* and will be treated as having equal priority with respect to the application of proceeds from the enforcement of any Collateral.

Under the terms of the Intercreditor Deed, the proceeds of any enforcement of the Collateral will be applied, subject to the rights of creditors mandatorily preferred by law applying to companies generally, *pro rata* to repayment of the Notes, the Senior Secured Credit Facilities, the 2025 Senior Secured Notes, the Schuldschein Loan, the Hedging Obligations to the extent the relevant counterparties accede to the Intercreditor Deed (the "**Hedging Liabilities**") and the Cash Management Arrangements to the extent the relevant counterparties accede to the Intercreditor Deed (the "**Cash Management Liabilities**"). The Intercreditor Deed limits the ability of the Trustee or the holders of the Notes to instruct the Security Trustee to take enforcement action. Please see "—Enforcement of Security," and "Description of Other Indebtedness—Intercreditor Deed."

In addition, the Notes will be effectively subordinated to all existing and future indebtedness and other liabilities of the Company's Subsidiaries that do not guarantee the Notes.

The Indenture and the Intercreditor Deed will permit the Issuer to issue Indebtedness secured by Liens on the Collateral securing the Notes, which Liens may, under certain circumstances, rank ahead of the security interests on the Collateral securing the Notes. Please see "—Certain Covenants—Limitation on Indebtedness" and "—Certain Covenants—Limitation on Liens."

The Guarantees

The Notes will be guaranteed by the Guarantors. Each Guarantee will:

- be joint and several and will be the general senior obligation of the applicable Guarantor;
- be secured as set forth below under "—Security;"
- rank equally in right of payment with all existing and future obligations of the applicable Guarantor that are not expressly subordinated in right of payment to such Guarantee, including with respect to the Guarantee of the Notes by each Guarantor, Indebtedness under the Senior Secured Credit Facilities and the Guarantees of the 2025 Senior Secured Notes, the Schuldschein Loan and with respect to the Guarantee of the Notes by the Parent, the 2024 IGH Notes;
- rank effectively senior to all existing and future obligations of such Guarantor that are unsecured or secured by Liens junior to the Liens securing the Guarantees to the extent of the value of the Collateral; and
- rank senior in right of payment to all existing and future obligations of the applicable Guarantor that are expressly subordinated in right of payment to such Guarantee, including with respect to the Guarantee of the Notes by the Company and the Subsidiary Guarantors, the 2024 IGH Notes.

The Guarantees will be effectively subordinated to any existing and future Indebtedness and other obligations of such Guarantor that are secured by Liens senior to the Liens securing such Guarantee or secured by property and assets that do not secure such Guarantee, to the extent of the value of the property and assets securing such Indebtedness and other obligations. In the event of a bankruptcy or insolvency, each such secured lenders will have a prior secured claim to any collateral of such Guarantor securing the debt owed to them.

Not all of the Company's Restricted Subsidiaries will guarantee the Notes. However, each of the Company's Subsidiaries that as of the Issue Date will guarantee the 2025 Senior Secured Notes, the Schuldschein Loan and the Senior Secured Credit Facilities will also guarantee the Notes. As of the Issue Date, the Notes will be jointly and severally guaranteed on a senior secured basis by the Guarantors. The Guarantors together represent 89.8% of the Parent's consolidated EBITDA for the year ended December 31, 2018 and hold 88.4% of the Parent's consolidated total assets as of December 31, 2018. See "Risk Factors—Risks Relating to the Notes and Our Capital Structure—Structural Subordination—The Notes and each guarantee will be structurally subordinated to the liabilities and any preferred stock of the non-Guarantor subsidiaries."

The obligations of the Guarantors under their Guarantees will be limited as necessary to recognize certain limitations imposed due to local law and defenses generally available to guarantors (including those that relate to fraudulent conveyance or transfer, voidable preference, financial assistance, corporate purpose, capital maintenance or similar laws, regulations or defenses affecting the rights of creditors generally) or other considerations under applicable law. Please see "Description of the Collateral and the Guarantees," "Risk Factors—Risks Relating to the Notes and Our Capital Structure—Insolvency laws—Relevant insolvency laws in England, Luxembourg and other jurisdictions may provide you with less protection than U.S. bankruptcy law," "—Guarantees and Collateral Limitations—The guarantees and pledges of Collateral will be subject to certain limitations on enforcement and may be limited by applicable laws or subject to certain defenses that may limit their validity and enforceability", and "—Enforcement of French share pledges—Under the security interests governed by French law, you may be required to pay a "*soulte*" in the event you decide to enforce the pledge of the shares by judicial or contractual foreclosure of the Collateral consisting of shares of INEOS France SAS or INEOS Technologies France SAS rather than by a sale of such Collateral in a public auction" and "Limitations on Validity and Enforceability of the Guarantees, the Collateral and Certain Insolvency Considerations."

The obligations of any Guarantor under its Guarantee will be automatically and unconditionally released and discharged in certain circumstances. Please see "Description of Other Indebtedness—Intercreditor Deed" and "—Release of the Guarantees."

Release of the Guarantees

A Guarantor's Guarantee will be automatically and unconditionally released and terminated, without any action by, or the necessity of the consent of, the Trustee or the holders of the Notes as follows (and each holder of the Notes will be deemed to have irrevocably authorized the Trustee to execute and deliver (and, at the request and cost of the Company, the Trustee will execute and deliver) any document to the extent necessary or reasonably requested by the Company to evidence such release and termination):

(a) with respect to any Subsidiary Guarantor, in connection with any sale, assignment, transfer (including any transfer to a Permitted Joint Venture) or other disposition (including by way of merger or consolidation) of all or substantially all of the assets of such Subsidiary Guarantor (determined after giving effect to any substantially concurrent sales, assignments, transfers or other dispositions to the Company, a Guarantor or a Restricted Subsidiary) to a Person that is not (after giving effect to such transaction or any related transactions) the Company, a Guarantor or a Restricted Subsidiary, if such sale, assignment, transfer or other disposition does not violate the requirements of the covenant set forth under the heading "—Certain Covenants—Limitation on Sale of Assets";

(b) with respect to any Subsidiary Guarantor, in connection with any sale, assignment, transfer (including any transfer to a Permitted Joint Venture) or other disposition of the Capital Stock of such Subsidiary Guarantor (or of the Capital Stock of any direct or indirect parent company of such Subsidiary Guarantor (other than the Parent, any Parent Intermediate Holdco, the Company or the Issuer)) that results in such Subsidiary Guarantor ceasing to be a Restricted Subsidiary, if such sale, assignment, transfer or other disposition does not violate the requirements of the covenant set forth under the heading "—Certain Covenants—Limitation on Sale of Assets";

(c) with respect to any Subsidiary Guarantor, if such Subsidiary Guarantor is designated as an Unrestricted Subsidiary in accordance with the covenant described under "—Certain Covenants—Limitation on Unrestricted Subsidiaries";

(d) with respect to any Guarantor, upon covenant defeasance as provided below under the caption "—Defeasance or Covenant Defeasance of Indenture";

(e) with respect to any Guarantor, upon legal defeasance or satisfaction and discharge of the Indenture as provided below under the captions "—Defeasance or Covenant Defeasance of Indenture" and "—Satisfaction and Discharge";

(f) with respect to any Guarantor, as described under "—Consolidation, Merger, Sale of Assets," "—Certain Covenants—Limitation on Issuance of Guarantees of Indebtedness by Restricted Subsidiaries" and "—Modifications and Amendments";

(g) with respect to any Subsidiary Guarantor that is an Immaterial Subsidiary, upon written notice from the Company to the Trustee, so long as no Event of Default has occurred and is continuing;

(h) with respect to any Subsidiary Guarantor, upon written notice from the Company to the Trustee, so long as no Event of Default has occurred and is continuing; *provided* that prior to or substantially concurrently with such release, such Subsidiary Guarantor is unconditionally released and discharged from its liabilities, if any, with respect to the Senior Secured Credit Facilities, the 2025 Senior Secured Notes, the Schuldschein Loan and the 2024 IGH Notes; *provided further* that, after giving effect to such release, the Consolidated EBITDA (as defined in the Senior Secured Term Loans Agreement) of the Issuer and the Guarantors is at least 85% of the Consolidated EBITDA of the Parent, the Company and its Restricted Subsidiaries and the consolidated total assets of the Issuer and the Guarantors is at least 85% of the consolidated total assets of the Parent, the Company and its Restricted Subsidiaries, in each case, calculated in accordance with, and in the manner provided by and subject to the same exceptions as those set forth in, Section 7.11(a) of the Senior Secured Term Loans Agreement as in effect on the Issue Date (but excluding the Consolidated EBITDA and consolidated total assets of any Project Finance Entity and INEOS Belgium and their respective subsidiaries);

(i) with respect to any Subsidiary Guarantee, other than the Guarantee of any Restricted Subsidiary that is a parent entity of the Issuer, and so long as no Event of Default has occurred and is continuing or would be caused thereby, to the extent that such Guarantor is released from its guarantee of the Senior Secured Credit Facilities, the 2025 Senior Secured Notes, the Schuldschein Loan and the 2024 IGH Notes; *provided* that (A) the Notes have achieved Investment Grade Status and (B) no other Indebtedness is at that time guaranteed by the relevant Guarantor that would have otherwise given rise to an obligation to guarantee the Notes pursuant to the covenant described under "Certain Covenants—Limitation on Issuance of Guarantees of

Indebtedness by Restricted Subsidiaries" had the relevant Guarantor not already been a Guarantor;

(j) with respect to any Guarantor, upon written notice from the Company to the Trustee, as part of any Permitted Reorganization;

(k) upon the full and final payment of all obligations of the Issuer under the Notes and the Indenture; and

(l) in accordance with the Intercreditor Deed;

provided, *however*, that the Company shall have the right, in its sole discretion, by written notice to the Trustee delivered prior to the automatic release and termination of any Guarantee as specified above, to (A) waive such automatic release and termination of such Guarantee and maintain such Guarantee in effect until such time as the Company shall instruct and direct the Trustee in writing to release and terminate such Guarantee or (B) elect that the release and termination of such Guarantee shall not occur automatically as contemplated by this paragraph but shall occur at such time or times, in such manner and order and upon the occurrence of such other events as shall be specified by the Company in such notice to the Trustee; *provided further* that nothing in this clause (B) shall allow the Company to require the release and termination of any Guarantee prior to (unless such release and termination is to occur substantially concurrently with) the occurrence of the applicable event(s) set forth in clauses (a) through (l) above providing for the release and termination thereof.

In addition, the Intercreditor Deed will provide for the release of certain Guarantees upon an enforcement sale and as otherwise specified in the Intercreditor Deed. See "Description of Other Indebtedness—Intercreditor Deed." The Indenture will provide that any release of a Guarantee may be evidenced, at the Issuer's option, by the delivery by the Issuer to the Trustee of an Officer's Certificate of the Issuer, and the Trustee shall, at the Issuer's request, acknowledge and confirm receipt of such Officer's Certificate.

Security

The obligations of the Issuer under the Notes and the obligations of the Guarantors under the Guarantees will be secured by, subject to Permitted Collateral Liens, first-ranking Liens over the Collateral (or, with respect to French and certain German security interests, junior ranking security interests) as described in "Description of the Collateral and the Guarantees."

Certain Liens securing the Notes created under German and French law will, as a matter of local law, be granted as junior ranking Liens in relation to the Liens in respect of the Senior Secured Credit Facilities, the 2025 Senior Secured Notes and the Schuldschein Loan. Nevertheless, the Intercreditor Deed provides that as a contractual matter as among Senior Secured Creditors (as defined in the Intercreditor Deed), the Notes will be secured on a *pari passu* basis with the Senior Secured Credit Facilities, the 2025 Senior Secured Notes, the Schuldschein Loan, certain Hedging Obligations and certain Cash Management Arrangements and will be treated as such for purposes of the application of proceeds from the enforcement of such Collateral.

The existing first-ranking Liens securing the Senior Secured Credit Facilities, the 2025 Senior Secured Notes and the Schuldschein Loan that were created under New York, Luxembourg, Scottish, Norwegian and Jersey law will remain in place and will extend to secure the Notes. In some jurisdictions, the Security Documents creating the existing first-ranking Liens securing the Senior Secured Credit Facilities, the 2025 Senior Secured Notes and the Schuldschein Loan will be amended to extend such Liens (or, with respect to Belgian security, to confirm that these Liens extend) to the Notes (or, with respect to French and certain German security interests, junior ranking security interests will be granted). The existing first-ranking Liens securing the Senior Secured Credit Facilities, the 2025 Senior Secured Notes and the Schuldschein Loan that were created under English law and

Singapore law will remain in place, and new Liens over the same Collateral will be created in these jurisdictions to secure the Notes. In these jurisdictions where new Liens are created, the ranking of these new Liens relative to the existing Liens will, as a matter of general law, depend on a number of factors, such as the nature of the Liens, the order of creation of the Liens, compliance with the jurisdiction's perfection requirements with respect to the Liens and the order of giving notices with respect to the Liens, and accordingly without the Intercreditor Deed, the new Liens would be likely to rank after the existing Liens. However, the Intercreditor Deed provides that, as a contractual matter, the Liens securing the Notes, the 2025 Senior Secured Notes, the Schuldschein Loan and the Senior Secured Credit Facilities will rank *pari passu* and will be treated as having equal priority with respect to the application of proceeds from the enforcement of any Collateral.

The Collateral will also secure the obligations under the Senior Secured Credit Facilities, the 2025 Senior Secured Notes, the Schuldschein Loan, the Hedging Liabilities and the Cash Management Liabilities on a *pari passu* basis. The Liens on the Collateral securing the Senior Secured Credit Facilities, the 2025 Senior Secured Notes and the Schuldschein Loan are already in place. In some jurisdictions, the Security Documents creating such Liens will be amended to extend such Liens (or, with respect to Belgian security, to confirm that these Liens extend) to the Notes (or, with respect to French and certain German security interest, junior ranking security interests will be granted). The existing first-ranking Liens securing the Senior Secured Credit Facilities, the 2025 Senior Secured Notes and the Schuldschein Loan that were created under New York, Luxembourg, Scottish, Norwegian and Jersey law will remain in place and will extend to secure the Notes. The existing first-ranking Liens securing the Senior Secured Credit Facilities, the 2025 Senior Secured Notes and the Schuldschein Loan that were created under English law and Singapore law will remain in place, and new Liens over the same Collateral will be created in these jurisdictions to secure the Notes. In these jurisdictions where new Liens are created, the ranking of these new Liens relative to the existing Liens will, as a matter of general law, depend on a number of factors, such as the nature of the Liens, the order of creation of the Liens, compliance with the jurisdiction's perfection requirements with respect to the Liens and the order of giving notices with respect to the Liens, and accordingly without the Intercreditor Deed, the new Liens would be likely to rank after the existing Liens. However, the Intercreditor Deed provides that, as a contractual matter, the Liens securing the Notes, the 2025 Senior Secured Notes, the Schuldschein Loan and the Senior Secured Credit Facilities will rank *pari passu* and will be treated as having equal priority with respect to the application of proceeds from the enforcement of any Collateral.

The Collateral is granted pursuant to the Security Documents and the Intercreditor Deed to the Security Trustee on behalf of the holders of the secured obligations that are secured by the Collateral, including the Notes. For a description of the Collateral and the Security Documents, see "Description of the Collateral and the Guarantees." For a discussion of the ranking of the Collateral and the application of the proceeds thereof, see "Description of Other Indebtedness—Intercreditor Deed."

The requirements for the granting of Liens under the Indenture, arising at any time on or after the Issue Date, will generally be subject to certain security principles described under "—Security Principles." In addition, the Liens on the Collateral will be subject to certain limitations and are at all times in all cases subject to the requirements of applicable law. Please see "Risk Factors—Risks Relating to the Notes and Our Capital Structure—Insolvency laws—Relevant insolvency laws in England, Luxembourg and other jurisdictions may provide you with less protection than U.S. bankruptcy law," "Risk Factors—Risks Relating to the Notes and Our Capital Structure—Guarantees and Collateral limitations—The guarantees and pledges of Collateral will be subject to certain limitations on enforcement and may be limited by applicable laws or subject to certain defenses that may limit their validity and enforceability", "Risk Factors—Enforcement of French share pledges—Under the security interests governed by French law, you may be required to pay a "*soulte*" in the event you decide to enforce the pledges of the shares by judicial or contractual foreclosure of the Collateral consisting of shares of INEOS Technologies France SAS and INEOS France SAS rather than by a sale of such Collateral in a public auction.” and “Limitations on Validity and Enforceability of the Guarantees and the Security Interests.”

A Lien on certain of the Collateral described under “Description of the Collateral and the Guarantees—Summary of the Guarantees and Collateral for the Notes” will be granted to secure the Obligations under the Indenture, the Notes and the Guarantees on the Issue Date (such Collateral, the “**Initial Collateral**”), and, to the extent not also granted on the Issue Date, the Issuer and the Guarantors will be required to grant the other Collateral described under “Description of the Collateral and the Guarantees—Summary of the Guarantees and Collateral for the Notes” (such other Collateral, the “**Additional Collateral**”) no later than 30 days after the Issue Date or, in the case of certain deposit accounts and security account control agreements and certain real property collateral, 60 and 90 days after the Issue Date, respectively. The Notes and the related Guarantees will be secured by first priority Liens (subject to certain exceptions) on the same assets that secure the Senior Secured Credit Facilities. Please see “Risk Factors—Risks Relating to the Notes and Our Capital Structure—Post-Closing Collateral—The Post-Closing Collateral will not initially secure the Notes.”

The Issuer and each Guarantor shall take such necessary actions and shall cause its respective Restricted Subsidiaries to take such necessary actions so that Liens over the Collateral in respect of the Notes shall be granted to the Security Trustee on behalf of, and for the benefit of, the holders of the Notes pursuant to the Security Documents as contemplated by the Indenture.

The Issuer and each Guarantor shall, and shall procure that each of its respective Subsidiaries shall, at its own expense, execute and do all such acts and things and provide such assurances as the Security Trustee may reasonably require (i) for registering any Security Document relating to the Collateral in any required register and for perfecting or protecting the security intended to be afforded by such Security Document relating to the Collateral and (ii) if such Security Document has become enforceable in accordance with the terms of the Indenture, the relevant Security Document and the Intercreditor Deed, for facilitating the realization of all or any part of the Collateral which is subject to such Security Document and for facilitating the exercise of all powers, authorities and discretions vested in the Security Trustee or in any receiver of all or any part of such Collateral. The Issuer and each Guarantor shall, and shall procure that each of its respective Subsidiaries shall, execute such transfers, conveyances, assignments and releases of that property whether to the Security Trustee or to its nominees and give such notices, orders and directions which the Security Trustee may reasonably request.

Security Documents

The Notes and the Guarantees will be secured by, subject to Permitted Collateral Liens, first-ranking Liens over the Collateral (or, with respect to French and certain German security interests, junior ranking security interests). Certain of the Liens on the Initial Collateral will be perfected after the Issue Date and certain of the Liens on the Additional Collateral will be perfected after the date that is 30 days following the Issue Date, in accordance with applicable law. Please see “Risk Factors—Risks Relating to the Notes and Our Capital Structure—Perfection of security interests—Your rights in the Collateral may be adversely affected by the failure to perfect security interests in the Collateral.” The Collateral will be granted pursuant to the Security Documents to the Security Trustee on behalf of the holders of the Notes.

Certain Liens securing the Notes created under German and French law will, as a matter of local law, be granted as junior ranking Liens in relation to the Liens in respect of the Senior Secured Credit Facilities, the 2025 Senior Secured Notes and the Schuldschein Loan. Nevertheless, the Intercreditor Deed provides that as a contractual matter as among Senior Secured Creditors (as defined in the Intercreditor Deed), the Notes will be secured on a *pari passu* basis with the Senior Secured Credit Facilities, the 2025 Senior Secured Notes, the Schuldschein Loan, certain Hedging Obligations and certain Cash Management Arrangements and will be treated as such for purposes of the application of proceeds from the enforcement of such Collateral.

In certain jurisdictions, due to the laws and other jurisprudence governing the creation and perfection of security interests in such jurisdictions, the Indenture and/or the Intercreditor Deed will provide for the creation of "parallel debt" obligations in favor of the Security Trustee, and the security interests in such jurisdictions will secure the parallel debt (and not the Indebtedness under the Notes). The parallel debt construct has not been tested under law in certain of these jurisdictions. Please see "Risk Factors—Risks Relating to the Notes and Our Capital Structure—Decisions regarding Collateral—Holders of the Notes will not control certain decisions regarding the Collateral."

Subject to certain conditions, including compliance with the covenants described under "—Certain Covenants—Impairment of Security Interest" and "—Certain Covenants—Limitation on Liens," the Issuer and the Guarantors are permitted to grant Liens on the Collateral in connection with certain future incurrences of Indebtedness, including any Additional Notes permitted under the Indenture, on terms consistent with the relative priority of such Indebtedness. In addition, the Indenture and the Intercreditor Deed also will permit the Company and its Restricted Subsidiaries to issue Indebtedness secured by Liens on the Collateral, which Liens may, under certain circumstances, rank ahead of the Liens on the Collateral securing the Notes. Please see "—Certain Covenants—Limitation on Liens" and "—Certain Covenants—Impairment of Security Interest."

Each holder of the Notes, by accepting a Note, shall be deemed (i) to have authorized (a) the Trustee and the Security Trustee to enter into the Intercreditor Deed and (b) the Security Trustee to enter into the Security Documents and (ii) in each case, to have agreed to be bound thereby. Each holder of the Notes, by accepting a Note, appoints the Security Trustee as its agent under the Security Documents and authorizes it to act as such.

The Indenture will provide that, subject to the terms thereof and of the Security Documents (including the terms described under "—Enforcement of Security" and "—Release of Security"), the Notes and the Indenture, as applicable, will be secured by the Liens on the Collateral until all obligations under the Notes and the Indenture have been discharged.

In the event that the Issuer, the Parent, the Company or any of their Subsidiaries enters into insolvency, bankruptcy or similar proceedings, the Liens securing the Notes created under the Security Documents could be subject to potential challenges. If any challenge to the validity of such Liens is successful, the holders of the Notes may not be able to recover any amounts under the Security Documents. Please see "Risk Factors—Risks Relating to the Notes and Our Capital Structure—Insolvency laws—Relevant insolvency laws in England, Luxembourg and other jurisdictions may provide you with less protection than U.S. Bankruptcy Law", "Risk Factors—Risks Relating to the Notes and Our Capital Structure—Guarantees and Collateral Limitations—The guarantees and pledges of Collateral will be subject to certain limitations on enforcement and may be limited by applicable laws or subject to certain defenses that may limit their validity and enforceability", and "Risk Factors—Enforcement of French share pledges—Under the security interests governed by French law, you may be required to pay a "*soulte*" in the event you decide to enforce the pledges of the shares by judicial or contractual foreclosure of the Collateral consisting of shares of INEOS Technologies France SAS and INEOS France SAS rather than by a sale of such Collateral in a public auction."

Security Principles

The Indenture will provide that certain requirements for the providing of Guarantees and the granting and perfecting of Liens in favor of the holders of the Notes and the Trustee will generally be subject to the following principles, which will provide that no Guarantee or Lien will be required to be provided, granted or perfected (and no deliverables or other formalities in connection therewith will be required to be provided or taken), as applicable, by any Person if such Guarantee or Lien could reasonably be expected to give rise to or result in:

(1) (A) any conflict with the fiduciary duties of directors or officers of such Person or any personal, civil or criminal liability on the part of any director, officer or shareholder of such Person (and the Guarantees and Liens will be limited so as to mitigate any risk of any of the foregoing) or (B) any violation of applicable law, rule or regulation that, in each case, cannot be avoided or otherwise prevented through measures reasonably available to the Company or the applicable Restricted Subsidiary;

(2) any breach of general statutory limitations, financial assistance, capital maintenance, corporate benefit, fraudulent preference, "thin capitalization" or similar laws, rules or regulations; *provided* that the Company will use commercially reasonable efforts (A) to assist in demonstrating that adequate corporate benefit accrues to such Person, (B) to complete any whitewash or similar procedure required under any relevant financial assistance laws and (C) otherwise to overcome or mitigate any such limitations through measures reasonably available to such Person; or

(3) any cost, expense, liability or obligation (including with respect of any taxes) which is disproportionate relative to the benefit accruing to the holders of the Notes (taking into account, without limitation, the extent of the obligations that can be secured and the priority that will be achieved thereby) (it being understood and agreed that the cost of providing a Guarantee or granting or perfecting a Lien shall in any event be deemed to be so disproportionate (and such Guarantee or Lien, as the case may be, shall not be required to be granted or perfected) if such cost shall exceed the realizable value of such Guarantee or Lien, as the case may be); *provided* that this clause (3) will not apply in respect of Guarantees by Persons that also guarantee, or Liens to secure assets that also secure, the Senior Secured Credit Facilities, the Schuldschein Loan or the 2025 Senior Secured Notes or, in the case of Liens required to be created under the covenant set forth under the heading "—Certain Covenants—Limitation on Liens," any other Indebtedness secured by Initial Liens.

With respect to any Guarantee or Lien, the maximum amount guaranteed or secured may be limited in a manner consistent with current and customary market practice in the relevant jurisdiction to minimize stamp duty, notarization, registration or other applicable fees, taxes and duties, in each case, where the level of such costs, fees, taxes and duties is disproportionate relative to the benefit to the holders of the Notes of increasing the guaranteed or secured amount (taking into account, without limitation, the extent of the obligations that can be guaranteed or secured and the priority that will be achieved thereby). Each Guarantee and Lien will also be limited as necessary to recognize certain defenses generally available to guarantors and grantors of Liens (including those that relate to fraudulent conveyance or transfer, voidable preference, financial assistance, capital maintenance, corporate benefit or similar laws, rules or regulations or defenses affecting the rights of creditors generally) or other similar considerations under applicable law.

Enforcement of Security

The Security Documents generally will only become enforceable after the Security Trustee gives notice of an intention to enforce following the occurrence of an event of default under the Senior

Secured Term Loans, an event of default under the 2025 Senior Secured Notes Indenture, an event of default under the Schuldschein Loan, an Event of Default under the Indenture or an event of default (or similar event, however described) under other Senior Secured Indebtedness which is subject to the Intercreditor Deed. The Security Trustee will only be permitted to enforce the Security Documents in accordance with instructions permitted to be given under the Intercreditor Deed and each relevant Security Document.

The Intercreditor Deed restricts the ability of the Trustee or the holders of the Notes to instruct the Security Trustee to take enforcement action, and the Security Trustee will act only at the direction of creditors holding a simple majority in aggregate principal amount of committed or funded debt under the Senior Secured Credit Facilities, the Schuldschein Loan, the 2025 Senior Secured Notes, the Notes, any Additional Notes and any other Senior Secured Indebtedness incurred in the future will be able to instruct the Security Trustee to enforce the security. For a description of security enforcement and other intercreditor provisions, please see "Description of Other Indebtedness—Intercreditor Deed."

Priority

The relative priority among (a) the lenders under the Senior Secured Credit Facilities, (b) the Trustee and the holders of the Notes, (c) the trustee under the 2025 Senior Secured Notes Indenture and the holders of the 2025 Senior Secured Notes, (d) the trustee under the 2024 IGH Notes Indenture and the holders of the 2024 IGH Notes, (e) the lenders under the Schuldschein Loan, (f) the Hedge Counterparties to the extent that they are owed Hedging Liabilities and (g) the Cash Management Banks to the extent they are owed Cash Management Liabilities with respect to the Liens on the Collateral that are created by the Security Documents and secure obligations under the Notes or the Guarantees and the Indenture, will be established by the terms of the Intercreditor Deed and the Security Documents, which will provide that the obligations under the Senior Secured Credit Facilities, the 2025 Senior Secured Notes, the Schuldschein Loan, the Hedging Liabilities, the Cash Management Liabilities and the Notes are secured equally and ratably by, subject to Permitted Collateral Liens, a first priority interest in the Collateral (or, with respect to French and certain German security interests, junior ranking security interests).

Certain Liens securing the Notes created under German and French law will, as a matter of local law, be granted as junior ranking Liens in relation to the Liens in respect of the Senior Secured Credit Facilities. Nevertheless, the Intercreditor Deed provides that as a contractual matter as among Senior Secured Creditors (as defined in the Intercreditor Deed), the Notes will be secured on a *pari passu* basis with the Senior Secured Credit Facilities, the Schuldschein Loan, certain hedging obligations and certain cash management obligations and will be treated as such for purposes of the application of proceeds from the enforcement of such Collateral.

The existing first-ranking Liens securing the Senior Secured Credit Facilities, the 2025 Senior Secured Notes and the Schuldschein Loan that were created under New York, Luxembourg, Scottish, Norwegian and Jersey law will remain in place and will extend to secure the Notes. In some jurisdictions, the Security Documents creating the existing first-ranking Liens securing the Senior Secured Credit Facilities, the 2025 Senior Secured Notes and the Schuldschein Loan will be amended to extend such Liens (or, with respect to Belgian security, to confirm that these Liens extend) to the Notes (or, with respect to French and certain German security interests, junior ranking security interests will be granted). The existing first-ranking Liens securing the Senior Secured Credit Facilities, the 2025 Senior Secured Notes and the Schuldschein Loan that were created under English law and Singapore law will remain in place, and new Liens over the same Collateral will be created in these jurisdictions to secure the Notes. In these jurisdictions where new Liens are created, the ranking of these new Liens relative to the existing Liens will, as a matter of general law, depend on a number of factors, such as the nature of the Liens, the order of creation of the Liens, compliance with the jurisdiction's perfection requirements with respect to the Liens and the order of giving notices with respect to the Liens, and accordingly without the Intercreditor Deed, the new Liens would be likely to rank after the existing Liens. However, the Intercreditor Deed provides that, as a contractual matter, the Liens securing the Notes, the 2025 Senior Secured Notes, the Schuldschein Loan and the Senior Secured Credit Facilities will rank *pari passu* and will be treated as having equal priority with respect to the application of proceeds from the enforcement of any Collateral.

The holders of 2024 IGH Notes have, subject to Permitted Collateral Liens, a second priority interest in the High Yield Notes Shared Collateral.

Release of Security

The Liens on the Collateral will be automatically and unconditionally released and discharged, without any action by, or the necessity of the consent of, the Trustee, the Security Trustee or the holders of the Notes, as follows (and each holder of the Notes will be deemed to have irrevocably authorized the Trustee and the Security Trustee to execute and deliver (and, at the request and cost of the Issuer, each of the Trustee and the Security Trustee will execute and deliver) any document to the extent necessary or reasonably requested by the Issuer to evidence such release and discharge):

(a) in connection with any sale, assignment, transfer or other disposition of such Collateral (other than Capital Stock in the Company) to a Person that is not the Parent, a Parent Intermediate Holdco, the Company or a Restricted Subsidiary or, subject to the requirements of clause (iv) of the first paragraph of the covenant described under "—Certain Covenants—Impairment of Security Interest," any other Person that is not the Issuer or a Guarantor, in each case, if such sale, assignment, transfer or other disposition does not violate the requirements of the covenant set forth under "—Certain Covenants—Limitation on Sale of Assets" or is otherwise permitted in accordance with the Indenture;

(b) if such Collateral is an asset of any Guarantor (other than the Parent, any Parent Intermediate Holdco or the Company) or any of its Subsidiaries, in connection with any sale, assignment, transfer or other disposition of Capital Stock of such Guarantor or such Subsidiary (or of the Capital Stock of any direct or indirect parent company of such Guarantor or such Subsidiary, in each case, other than the Parent, any Parent Intermediate Holdco, the Company or the Issuer) as a result of which such Guarantor or such Subsidiary shall cease to be a Restricted Subsidiary of the Company, if such sale, assignment, transfer or other disposition does not violate the requirements of the covenant set forth under "—Certain Covenants—Limitation on Sale of Assets" or is otherwise permitted in accordance with the Indenture;

(c) in the case of any Guarantor that is released from its Guarantee pursuant to the terms of the Indenture, the Security Documents, the Intercreditor Deed or any additional intercreditor agreement (which release shall be of the Liens on the property and assets, and Capital Stock, of such Guarantor);

(d) in connection with any Permitted Receivables Financing (which release shall be of the Liens on the Receivables Assets transferred in connection therewith);

(e) in connection with any inventory financing or similar arrangements incurred pursuant to clause (22) of the definition of Permitted Indebtedness (which release shall be of the Liens on the inventory transferred in connection therewith);

(f) if the Company designates any Restricted Subsidiary to be an Unrestricted Subsidiary in accordance with the applicable provisions of the Indenture (which release shall be of the Liens on the property and assets, and Capital Stock, of such Subsidiary);

(g) with respect to the Collateral, upon legal defeasance, covenant defeasance or satisfaction and discharge of the Indenture as provided below under the captions "—Defeasance or Covenant Defeasance of Indenture" and "—Satisfaction and Discharge;"

(h) as described under "—Modifications and Amendments" and "—Certain Covenants—Limitation on Liens";

(i) if the Lien granted in favor of each of the Senior Secured Credit Facilities, the Schuldschein Loan and the 2025 Senior Secured Notes and, to the extent applicable, the 2024 IGH Notes is released (only to the extent that there is no other Indebtedness secured by a Lien on the assets constituting such Collateral that would result in the requirement for the Notes and/or the Guarantees to be secured on such property or assets pursuant to the covenant described under the caption "—Certain Covenants—Limitation on Liens", it being understood that the foregoing limitation will not be applicable to the extent that such Indebtedness is secured by a Permitted Lien, *provided* that, for the purposes of this provision only, clauses (a) and (bb) of the definition of "Permitted Lien" shall not apply and clause (hh) of the definition of "Permitted Liens" shall not apply to any Indebtedness that was outstanding on the Issue Date);

(j) in connection with an enforcement sale pursuant to, or other sales contemplated and permitted by, the Intercreditor Deed;

(k) in the case of any Collateral (other than Capital Stock in the Company), upon written notice by the Issuer to the Trustee if such Collateral is intended to secure Indebtedness incurred under (i) Capital Lease Obligations or Purchase Money Obligations or other Indebtedness of the Parent (to the extent consistent with the covenant described under "—Certain Covenants—Limitation on Parent and Parent Intermediate Holdcos Activities"), the Company or any Restricted Subsidiary incurred for the purpose of funding all or a part of the acquisition, development, construction or improvement of real or personal, movable or immovable, property or assets (including Capital Stock) used or to be used in the business of the Company and its Restricted Subsidiaries, or any refinancing of any such Indebtedness, or (ii) lines of credit, bilateral facilities, working capital or overdraft facilities or other operating facilities permitted to be incurred by the covenant described under "—Certain Covenants—Limitation on Indebtedness"; *provided* that the Fair Market Value of all the Collateral released from Liens under this clause (k) (excluding any portion thereof to the extent Liens thereon subsequently granted in favor of the Security Trustee, for the benefit of the holders of the Notes, and with the Fair Market Value of any Collateral being measured at the time of the release and without giving effect to subsequent changes in value) does not exceed €50.0 million in the aggregate;

(l) in the case of any Escrowed Proceeds, in accordance with the release provisions set forth in the applicable Security Documents creating Liens thereon;

(m) with respect to Liens on any Proceeds Loan, upon the payment in full or other discharge of such Proceeds Loan (including as a result of any merger or consolidation of the payor or the payee thereunder);

(n) to release and/or re-take any Lien on any Collateral to the extent otherwise permitted by the terms of the Indenture, the Security Documents or the Intercreditor Deed or any additional intercreditor agreement;

(o) in connection with any merger, consolidation, sale, assignment, conveyance, transfer or other disposition made in compliance with the covenant described under "—Certain Covenants—Consolidation, Merger, Sale of Assets";

(p) in accordance with "—Certain Covenants—Impairment of Security Interests";

(q) with respect to all Collateral, upon the full and final payment and performance of all obligations of the Issuer under the Notes and the Indenture;

(r) in connection with a Permitted Reorganization;

(s) in connection with the funding of, or by, German pension trusts or in respect of sale and leaseback transactions funded directly or indirectly by any such pension trusts; and

(t) with respect to Liens on any Capital Stock of INEOS Belgium, any of its Restricted Subsidiaries that is not a Guarantor or any other Restricted Subsidiary formed after the Issue Date that is not a Guarantor, in connection with incurrence of Indebtedness by any such Restricted Subsidiary or any of its Restricted Subsidiaries;

provided, *however*, that the Company shall have the right, in its sole discretion, by written notice to the Trustee and Security Trustee delivered prior to the automatic release and discharge of any Lien as specified above, to (A) waive such automatic release and discharge of such Lien and maintain such Lien in effect until such time as the Company shall instruct and direct the Security Trustee in writing to release and discharge such Lien or (B) elect that the release and discharge of such Lien shall not occur automatically as contemplated by this paragraph but shall occur at such time or times, in such manner and order and upon the occurrence of such other events as shall be specified by the Company in such notice to the Trustee and Security Trustee; *provided further* that nothing in this clause (B) shall allow the Company to require the release and discharge of any Lien prior to (unless such release and discharge is to occur substantially concurrently with) the occurrence of the applicable event(s) set forth in clauses (a) through (t) above providing for the release and discharge thereof.

Notwithstanding the above, the Issuer and each Guarantor that granted a Lien under a Security Document, may, without any release or consent by the Security Trustee or the Trustee, take any action in the ordinary course in respect of the Collateral not prohibited under the Security Documents, the Intercreditor Deed and the Indenture including, without limitation, selling, transferring or otherwise disposing of assets in the ordinary course of business. See "—Other".

The Indenture will provide that any release of a Lien on Collateral may be evidenced, at the Issuer's option, by the delivery by the Issuer to the Security Trustee and the Trustee of an Officer's Certificate of the Issuer, and that the Trustee and the Security Trustee shall, at the Issuer's request, acknowledge and confirm receipt of such Officer's Certificate and the release of such Lien evidenced thereby.

Other

Subject to the terms of the Security Documents, and subject to certain exceptions required to ensure the Liens securing the Notes and the Guarantees under the Security Documents are perfected, the Issuer and the Guarantors will have the right to remain in possession and retain exclusive control of the Collateral, to collect, invest and dispose of any income therefrom and to vote in relation to the pledged shares. The Issuer and the Guarantors may, among other things, without any release or consent by the Trustee or the Security Trustee, conduct ordinary course activities with respect to the Collateral, including, without limitation but subject to the covenant contained under the caption "—Certain Covenants—Asset Sales", (i) selling or otherwise disposing of, in any transaction or series of related transactions, any property and assets subject to Liens under the Security Documents which has become worn out, defective or obsolete or no longer used or useful in the business, and (ii) selling, transferring or otherwise disposing of assets in the ordinary course of business.

No appraisal of any of the Collateral has been prepared by or on behalf of the Issuer, the Parent or the Company in connection with the issuance of the Notes. There can be no assurance that the proceeds from the sale of the Collateral remaining after sharing with other creditors entitled to share in such proceeds would be sufficient to satisfy the obligations owed to the holders of the Notes. By its nature, some or all of the Collateral will be illiquid and may have no readily ascertainable market value. Accordingly, there can be no assurance that the Collateral will be able to be sold in a short period of time, if at all. In addition, the Intercreditor Deed places limitations on the ability of the Security Trustee to cause the sale of the Collateral, by reference to the interests of certain creditors, including holders of the Notes, lenders under the SFA Loans, the lenders under the Schuldschein Loan, the holders of the 2025 Senior Secured Notes and the holders of the 2024 IGH Notes. These limitations may include requirements that some or all of the Collateral be disposed of only pursuant to public auctions or only at a price confirmed by a valuation.

The Indenture will provide that each holder, by accepting a Note, shall be deemed to have authorized the execution and delivery of, and to have agreed to and accepted the terms and conditions of, the Security Documents and the Intercreditor Deed.

The Notes Proceeds Loan

Upon the issuance of the Notes, the Issuer, as lender, and IHL, as borrower, will enter into the Notes Proceeds Loan Agreement pursuant to which the Issuer will loan to IHL the proceeds from the issuance of the Notes.

The Notes Proceeds Loan will be denominated in euro and will be in an aggregate principal amount equal to the aggregate principal amount of the Notes. The Notes Proceeds Loan will bear interest at a rate at least equal to the rate required to enable the Issuer to make payments of principal, premium and interest (including Additional Amounts and default interest) and any costs, fees and expenses under the Notes.

The Notes Proceeds Loan Agreement will be subject to the terms of the Intercreditor Deed and will provide that IHL will pay the Issuer interest and principal due and payable on the Notes and, in each case, any Additional Amounts due thereunder and any costs, fees and expenses. All amounts payable under the Notes Proceeds Loan will be payable to such account or accounts with such Person or Persons as the Issuer may designate. The maturity date of the Notes Proceeds Loan will be the same as the maturity date of the Notes.

The obligations of IHL in respect of the Notes Proceeds Loan will rank senior to the obligations of IHL in respect of its guarantee of the 2024 IGH Notes, in accordance with the Intercreditor Deed, and *pari passu* with the obligations of IHL in respect of its guarantee of the Senior Secured Credit Facilities, the Notes, the 2025 Senior Secured Notes and its obligations under the 2025 Senior Secured Notes Proceeds Loans, the Schuldschein Loan and its obligations under the Schuldschein Proceeds Loan and the SFA Proceeds Loans. Except as otherwise required by law, all payments under the Notes Proceeds Loan Agreement will be made without deductions or withholding for, or on account of, any applicable tax. In the event that IHL is required to make any such deduction or withholding, it shall gross-up each payment to the Issuer to ensure that the Issuer receives and retains a net payment equal to the payment which it would have received had no such deduction or withholding been made.

The Notes Proceeds Loan Agreement will provide that IHL will make all payments pursuant thereto on a timely basis in order to ensure that the Issuer can satisfy its payment obligations under the

Notes and the Indenture, taking into account the administrative and timing requirements under the Indenture with respect to amounts payable on the Notes.

The Notes Proceeds Loan will be assigned by way of security to the Security Trustee for the benefit of holders of the Notes and the 2025 Senior Secured Notes, the creditors under the Senior Secured Credit Facilities and the Schuldschein Loan, the Hedge Counterparties and the banks in respect of Cash Management Arrangements as described in "Description of the Collateral and the Guarantees."

Principal, Maturity and Interest

The Notes initially will be issued in the aggregate principal amount of €770.0 million and will mature on , 2026, unless redeemed prior thereto as described herein. The Indenture will allow additional notes (the "**Additional Notes**") to be issued from time to time, subject to certain limitations described under "—Certain Covenants—Limitation on Indebtedness"; *provided*, *however*, that any Additional Notes that are issued with the same ISIN or common code number will be fungible with the previously issued Notes for U.S. federal income tax purposes. The Notes and any Additional Notes will be treated as a single class for all purposes of the Indenture, including, without limitation, waivers, amendments, redemptions and offers to purchase, except as otherwise provided for in the Indenture.

The Notes will bear interest at the rate of % per annum and, in each case, from and including , 2019 or from and including the most recent interest payment date to which interest has been paid, payable semi-annually in arrears on and in each year, commencing on , 2019. The Issuer will make each interest payment to the holders of record of the Notes on the immediately preceding and . Interest on the Notes will accrue from the date of original issuance or, if interest has already been paid, from the interest payment date it was most recently paid. Interest on the Notes will be computed on the basis of a 360-day year composed of twelve 30-day months. Interest on overdue principal and, to the extent permitted by law, on overdue installments of interest will accrue at the rate of interest borne by the Notes.

Principal of, premium, if any, any applicable Additional Amounts (as defined below) and interest on the Notes will be payable, and the Notes will be exchangeable and transferable, at the office or agency of the Issuer in London maintained for such purposes (which initially will be the corporate trust office of the Trustee) and, so long as the Notes are listed on the Official List of the Luxembourg Stock Exchange and are traded on the Luxembourg Stock Exchange's Euro MTF Market, at the offices of the Paying Agent in Luxembourg. Principal, interest and premium, if any, on the global notes (as described below) will be payable at the specified office or agency of one or more paying agents; *provided* that all such payments with respect to Notes represented by one or more global notes registered in the name of or held by a nominee of Euroclear and/or Clearstream, as applicable, will be made by wire transfer of immediately available funds to the account specified by the holder or holders thereof.

The Notes will initially be represented by one or more global notes and will be issued in fully registered form without coupons attached and in minimum denominations of €100,000 and integral multiples of €1,000 in excess thereof. The global notes will be deposited with a common depository for Euroclear or Clearstream, as applicable. Ownership of interests in the global notes, referred to as "book-entry interests," will be limited to Persons that have accounts with Euroclear and/or Clearstream, as applicable, or Persons that may hold interests through such participants. Book-entry interests will be shown on, and transfers thereof will be effected only through, records maintained in book-entry form by Euroclear and/or Clearstream, as applicable, and their participants. Please see "Book-Entry; Delivery and Form."

Settlement for the Notes will be made in same day funds. All payments of principal, any applicable Additional Amounts and interest will be made by the Issuer in same day funds.

If the due date for any payment in respect of the Notes is not a Business Day, payment shall be made on the next succeeding day that is a Business Day, and no interest shall accrue for the intervening period.

When issued, the Notes will each be a new issue of securities with no established trading market. No assurance can be given as to the liquidity of the trading market for the Notes. Application will be made for the Notes to be listed on the Official List of the Luxembourg Stock Exchange and to be traded on the Luxembourg Stock Exchange's Euro MTF Market.

Optional Redemption

The Notes will be subject to redemption at any time prior to , 2022, at the option of the Issuer, in whole or in part, on not less than 10 nor (except as provided under "—Selection and Notice of Optional Redemption") more than 60 days' prior notice at a redemption price equal to 100% of the principal amount thereof, plus the Applicable Redemption Premium and accrued and unpaid interest and Additional Amounts (if any) to, but not including, the redemption date (subject to the right of holders of record on the relevant record date to receive interest due on the relevant interest payment date).

The Notes will be subject to redemption at any time on or after , 2022, at the option of the Issuer, in whole or in part, on not less than 10 nor (except as provided under "—Selection and Notice of Optional Redemption") more than 60 days' prior notice at the following redemption prices (expressed as percentages of the aggregate principal amount), if redeemed during the 12-month period beginning on of the year indicated below:

Twelve-month period beginning on	Notes Redemption Price
, 2022,	%
, 2023,	%
, 2024, and thereafter	100.000%

together with any applicable Additional Amounts and accrued and unpaid interest, if any, to, but not including, the redemption date (subject to the rights of holders of record on relevant record dates to receive interest due on an interest payment date).

In addition, at any time on or prior to , 2022, the Issuer or any Parent Holdco, at its option, on not less than 10 nor (except as provided under "—Selection and Notice of Optional Redemption") more than 60 days' prior notice, may use the net cash proceeds of one or more Public Equity Offerings (plus amounts equal to any Additional Amounts and accrued and unpaid interest, if any, to, but not including, the redemption date) to redeem the Notes and Additional Notes in an amount up to an aggregate of 40% of the sum of the initial aggregate principal amount of the Notes originally issued under the Indenture and the initial aggregate principal amount of any Additional Notes issued under the Indenture after the Issue Date at a redemption price equal to % of the aggregate principal amount of the Notes, plus any applicable Additional Amounts and accrued and unpaid interest, if any, to, but not including, the redemption date (subject to the rights of holders of record on relevant record dates to receive interest due on an interest payment date); *provided* that Notes and Additional Notes in an amount equal to at least 60% of the sum of the initial aggregate principal amount of Notes originally issued under the Indenture and the initial aggregate principal amount of any Additional Notes issued under the Indenture after the Issue Date remains outstanding immediately after the occurrence of such redemption. In order to effect the foregoing redemption, the Issuer must consummate such redemption within 180 days of the closing of the Public Equity Offering.

In connection with any tender offer for, or other offer to purchase, all of the Notes, if holders of not less than 90% of the aggregate principal amount of the then outstanding Notes validly tender and do not validly withdraw such Notes in such tender offer and the Issuer, or any other Person making such tender offer in lieu of the Issuer, purchases all of the Notes validly tendered and not validly withdrawn by such holders, all of the holders of the Notes that remain outstanding will be deemed to have consented to a redemption of the Notes on the terms set forth in this paragraph, and, accordingly, within 60 days of such purchase, the Issuer or such other Person will have the right upon not less than 10 nor more than 60 days' notice following such purchase date, to redeem all (but not less than all) Notes that remain outstanding following such purchase at a price equal to the highest price (excluding any early tender premium or similar payment) paid to each other holder in such tender offer, plus, to the extent not included in the tender offer payment, accrued and unpaid interest and Additional Amounts, if any, thereon, to, but not including, the date of such redemption (subject to the rights of holders of record on the relevant record dates to receive interest due on an interest payment date).

Selection and Notice of Optional Redemption

If less than all of the Notes, are to be redeemed at any time, the Paying Agent or the Registrar shall select the Notes for redemption on a *pro rata* basis or by lot (or, in the case of Notes issued in global form as discussed under "Book-Entry; Delivery and Form," based on a method that most nearly approximates a *pro rata* or by lot selection as the Paying Agent or Registrar, as applicable, deems fair and appropriate) unless otherwise required by applicable law or applicable stock exchange or depositary requirements. None of the Trustee, the Paying Agent, or the Registrar shall be liable for any selection made under this paragraph.

No Notes shall be redeemed in part if the resulting Note would have a minimum denomination that is less than €100,000. Notices of redemption shall be mailed by first class mail at least 10 but not more than 60 days before the redemption date to each holder of Notes to be redeemed at its registered address, except that a redemption notice may be mailed more than 60 days prior to a redemption date if the notice is issued in connection with a defeasance of the Notes or a satisfaction and discharge of the Indenture or as specified in the next paragraph, in each case in accordance with the provisions of the Indenture. For Notes represented by global certificates held on behalf of Euroclear and Clearstream, notices may be given by delivery to Euroclear and Clearstream for communication to entitled account owners in substitution for the aforesaid mailing.

A notice of redemption shall state: the redemption date and record date; the redemption price and the amount of accrued and unpaid interest, if any, and Additional Amounts, if any, to be paid; the paragraph of the Notes pursuant to which such Notes are being redeemed; the name and address of the Paying Agent; that the Notes called for redemption must be surrendered to the Paying Agent to collect the redemption price, plus accrued and unpaid interest, if any, and Additional Amounts, if any; that, unless the Issuer defaults in making the redemption payment, interest, if any, and Additional Amounts, if any, on the Notes called for redemption shall cease to accrue on and after the redemption date; if any Note is being redeemed in part, the portion of the principal amount of such Note to be redeemed, and that the only remaining right of the holders of such Notes is to receive payment of the redemption price upon surrender to the Paying Agent of such Notes; that, if less than all of the Notes are to be redeemed, the identification of the particular Notes and the principal amount (or portion thereof) of such Notes to be redeemed and the aggregate principal amount of such Notes to be outstanding after such partial redemption; whether the redemption is conditioned on any events and, if so, a detailed explanation of such conditions; and that no representation is made as to the correctness or accuracy of the ISIN or Common Code numbers, if any, listed in such notice or printed on the applicable Notes. Subject to the satisfaction of any conditions precedent set forth in a notice of redemption, Notes called for redemption become due on the date fixed for redemption. If such redemption is subject to the satisfaction of one or more conditions precedent, the related notice may, for the avoidance of doubt, state that, in the Issuer's discretion, the redemption date may be delayed until such time as any or all such conditions shall be satisfied or waived (*provided* that in no event shall the redemption date be delayed to a date later than 60 days from the date of the original notice of redemption, except that redemption notices may be given more than 60 days prior to a redemption date if the notice is issued in connection with a defeasance of the Notes or a satisfaction and discharge of the Indenture), and the Issuer shall provide notice of the satisfaction or waiver of such conditions at least one Business Day prior to the redemption date for any conditional redemption, or such redemption may not occur and such notice may be rescinded in the event that any or all such conditions shall not have been satisfied or waived by the redemption date, or by the redemption date so delayed. On and after the redemption date, interest will cease to accrue on the Notes, or the portions thereof, called for redemption.

So long as any Notes are listed on the Official List of the Luxembourg Stock Exchange and are traded on the Luxembourg Stock Exchange's Euro MTF Market and the rules of the Luxembourg Stock Exchange so require, the Issuer will inform the Luxembourg Stock Exchange of any such redemption and will publish a notice regarding such redemption in a leading newspaper having a general circulation in Luxembourg (which is expected to be the Luxemburger Wort) or on the Luxembourg Stock Exchange's official website, www.bourse.lu.

Redemption upon Changes in Withholding Taxes

If, as a result of:

(a) any amendment to, or change in, the laws or treaties (or regulations or rulings promulgated thereunder) of any Relevant Taxing Jurisdiction (as defined below under "—Payment of Additional Amounts"); or

(b) any change in the official application or the official interpretation or administration of such laws, treaties, regulations or rulings (including a holding, judgment or order by a court of competent jurisdiction or a change in published administrative practice)

(each of the foregoing in clauses (a) and (b), a "**Change in Tax Law**"), the Issuer, any Guarantor or any Surviving Entity (as defined below under "—Consolidation, Merger, Sale of Assets") would be obligated to pay, on the next date for any payment, Additional Amounts, as described below under "—Payment of Additional Amounts", which the Issuer, such Guarantor or such Surviving Entity cannot avoid by the use of reasonable measures available to it (including, without limitation, making payment through a paying agent located in another jurisdiction), then the Issuer or the Surviving Entity, as the case may be, may redeem, at its option, all, but not less than all, of the Notes at any time on or after the Issue Date and following such Change in Tax Law, upon not less than 30 nor more than 60 days' notice to the holders of the Notes, at a redemption price of 100% of their principal amount, plus accrued and unpaid interest, if any, to, but not including, the redemption date. In the case of the United Kingdom or any other jurisdiction that is a Relevant Taxing Jurisdiction on the Issue Date, the applicable Change in Tax Law must become effective on or after the date of this offering memorandum. In the case of a jurisdiction that becomes a Relevant Taxing Jurisdiction after the Issue Date, the applicable Change in Tax Law must become effective after the date that such jurisdiction becomes a Relevant Taxing Jurisdiction.

Prior to the giving of any notice of redemption described in this section, the Issuer or the Surviving Entity, as the case may be, will deliver to the Trustee in form and substance reasonably satisfactory to the Trustee:

(i) an Officer's Certificate of the Issuer, or the Surviving Entity, as the case may be, stating that the obligation to pay such Additional Amounts cannot be avoided by the

Issuer, such Guarantor or such Surviving Entity taking reasonable measures available to it; and

(ii) a written opinion of independent legal counsel of recognized standing addressed to the Issuer or the Surviving Entity, as the case may be, to the effect that the Issuer, such Guarantor or such Surviving Entity has or will become obligated to pay such Additional Amounts as a result of a Change in Tax Law described above.

The Trustee will accept such Officer's Certificate and opinion as sufficient evidence of the satisfaction of the conditions without further inquiry to a redemption upon a Change in Tax Law, including any changes in withholding Taxes, in which event it will be conclusive and binding on the holders of the Notes.

Notwithstanding the foregoing, no such notice will be given (a) earlier than 90 days prior to the earliest date on which the Issuer or the relevant Surviving Entity or Guarantor, as the case may be, would be obligated to pay such Additional Amounts if a payment were then due and (b) unless, at the time such notice is given, such obligation to pay such Additional Amounts remains in effect.

Payment of Additional Amounts

All payments by or on behalf of the Issuer or any Surviving Entity under or with respect to the Notes, or any Guarantor or any Surviving Entity with respect to any Guarantee, will be made free and clear of, and without withholding or deduction for, or on account of, any present or future tax, duty, levy, impost, assessment, withholding or other governmental charges (including, without limitation, penalties, interest and other similar liabilities related thereto) of whatever nature imposed by a taxing authority (collectively, "**Tax**" or "**Taxes**"), unless such withholding or deduction is required by law or by the official interpretation or administration of law, or by an applicable certification, identification, information or other reporting requirement or agreement, if entering into or complying with such requirement or agreement is required by law or by a taxing authority as a precondition to relief or exemption from such Tax. If any amount for, or on account of, Taxes imposed or levied by or on behalf of any jurisdiction in which the Issuer, any Guarantor or, if applicable, any Surviving Entity, is incorporated, organized, resident for tax purposes or otherwise subject to Tax or from or through which any payment is made on the Notes or by any taxing authority therein or political subdivision thereof (each, as applicable, a "**Relevant Taxing Jurisdiction**") is required to be withheld or deducted from any payment made under or with respect to the Notes or any Guarantee, the Issuer, such Guarantor or such Surviving Entity, as the case may be, will pay such additional amounts ("**Additional Amounts**") as may be necessary to ensure that the net amount received after such withholding or deduction will be not less than the amount that would have been received if such Taxes had not been required to be withheld or deducted.

Notwithstanding the foregoing, no Additional Amounts will be payable in respect of or on account of:

(a) any Taxes that are imposed or levied by a Relevant Taxing Jurisdiction by reason of the holder's or beneficial owner's present or former connection with such Relevant Taxing Jurisdiction, including, without limitation, the holder or beneficial owner being, or having been, a citizen, national, or resident, being, or having been, engaged in a trade or business, being, or having been, physically present in or having or having had a permanent establishment in a Relevant Taxing Jurisdiction (but not including, in each case, any connection arising from the mere holding of Notes or the receipt of payments thereunder or under a Guarantee or the exercise or enforcement of rights under any Notes or the Indenture or a Guarantee);

(b) any Taxes that are imposed or levied by reason of the failure of the holder or beneficial owner of Notes (or any financial institution through which the holder or beneficial owner holds the Notes or through which payment on the Notes is made), following the written request of the Issuer, any Guarantor or any Surviving Entity (as the case may be) made at a time that would enable the holder or beneficial owner (or any such financial institution) acting reasonably to comply with that request and in accordance with the notice procedures set forth in the Indenture, to comply with any certification, identification, information or other reporting requirements, whether required by statute, treaty, regulation or administrative practice of a Relevant Taxing Jurisdiction, as a precondition to exemption from, or reduction in the rate of withholding or deduction of, Taxes imposed by the Relevant Taxing Jurisdiction (including, without limitation, a certification that the holder or beneficial owner is not resident in the Relevant Taxing Jurisdiction);

(c) any estate, inheritance, gift, sale, excise, transfer, personal property or similar Taxes;

(d) any Tax that is payable otherwise than by withholding or deduction from payments made under or with respect to the Notes or a Guarantee;

(e) any Tax that is imposed or levied by reason of the presentation (where presentation is required in order to receive payment) of such Notes for payment on a date more than 30 days after the date on which such payment became due and payable or the date on which payment thereof is duly provided for, whichever is later, except to the extent that the beneficial owner or holder thereof would have been entitled to Additional Amounts had the Notes been presented for payment on any date during such 30-day period;

(f) any Tax that is imposed or levied on or with respect to a payment made to a holder or beneficial owner of Notes who would have been able to avoid such withholding or deduction by presenting the Notes to another Paying Agent in a Member State of the European Union;

(g) any Taxes, duties, assessments or other governmental charges imposed on a payment in respect of the Notes required to be made pursuant to laws enacted by Switzerland providing for the taxation of payments according to principles similar to those laid down in the draft legislation of the Swiss Federal Council of December 17, 2014, or otherwise changing the Swiss federal withholding tax system from an issuer-based system to a paying-agent-based system pursuant to which a person other than the issuer is required to withhold tax on any interest payments;

(h) any Taxes that are imposed or withheld pursuant to Sections 1471 through 1474 of the Code, as of the Issue Date (or any amended or successor version of such sections), any regulations promulgated thereunder, any official interpretations thereof, any agreements entered into pursuant to Section 1471(b)(1) of the Code, any intergovernmental agreement between a non-U.S. jurisdiction and the United States with respect to the foregoing or any law or regulation implementing any such intergovernmental agreement; or

(i) any combination of items (a) through (h) above.

Notwithstanding the first paragraph of this section, Additional Amounts will not be paid with respect to the Notes to a holder who is a fiduciary, a partnership, a limited liability company or any person other than the sole beneficial owner of the payment under or with respect to the Notes, to the extent that a beneficiary or settlor with respect to the fiduciary, a member of that partnership, an interest holder in that limited liability company or a beneficial owner would not have been entitled to the Additional Amounts had it been the holder of the Notes.

The Issuer, the relevant Guarantor or the relevant Surviving Entity, as the case may be, will (i) make such withholding or deduction as is required by applicable law and (ii) remit the full amount withheld or deducted to the relevant taxing authority in accordance with applicable law.

At least 30 calendar days prior to each date on which any payment under or with respect to the Notes is due and payable, if the Issuer, any Guarantor or a Surviving Entity will be obligated to pay Additional Amounts with respect to such payment (unless such obligation to pay Additional Amounts arises after the 30th day prior to the date on which payment under or with respect to the Notes is due and payable, in which case it will be promptly thereafter), the Issuer, the relevant Guarantor or the relevant Surviving Entity (as the case may be) will deliver to the Trustee an Officer's Certificate in form and substance reasonably satisfactory to the Trustee stating that such Additional Amounts will be payable and the amounts so payable and will set forth such other information necessary to enable the Paying Agent to pay such Additional Amounts to holders on the payment date. The Trustee shall be entitled to rely solely on such Officer's Certificate as conclusive proof that such payments are necessary. The Issuer, the relevant Guarantor or the relevant Surviving Entity, as the case may be, will promptly publish a notice in accordance with the notice provisions set forth in the Indenture stating that such Additional Amounts will be payable and describing the obligation to pay such amounts.

Upon written request, the Issuer, the relevant Guarantor or the relevant Surviving Entity, as the case may be, will furnish to the Trustee or to a holder of the Notes copies of tax receipts evidencing the payment of any Taxes by the Issuer, such Guarantor or such Surviving Entity in such form as provided in the normal course by the taxing authority imposing such Taxes and as is reasonably available to the Issuer, such Guarantor or such Surviving Entity. If, notwithstanding the efforts of the Issuer, such Guarantor or such Surviving Entity to obtain such receipts, the same are not obtainable, the Issuer, such Guarantor or such Surviving Entity will provide the Trustee or such holder with other evidence reasonably satisfactory to the Trustee or such holder.

In addition, the Issuer, any Guarantor and any Surviving Entity, as the case may be, will pay any present or future stamp, issue, registration, court, documentation, excise or property taxes or other similar taxes, charges and duties, including interest and penalties with respect thereto, imposed by or in any Relevant Taxing Jurisdiction in respect of the execution, issue, enforcement or delivery of the Notes or any other document or instrument referred to thereunder (other than on or in connection with (i) a transfer of the Notes other than the initial resale by the Initial Purchasers or (ii) the issue of replacement Notes or certificated Notes pursuant to the Indenture).

Whenever the Indenture, the Notes or this "Description of the Notes" refers to, in any context, the payment of principal, premium, if any, interest or any other amount payable under or with respect to any Note or with respect to any Guarantee, such reference includes the payment of Additional Amounts, if applicable.

Currency Indemnity

The euro is the sole currency of account and payment for all sums payable by the Issuer or any Guarantor under the Notes and any Guarantee of the Notes. Any amount received or recovered in currency other than euro in respect of the Notes (whether as a result of, or as a result of the enforcement of, a judgment or order of a court of any jurisdiction, in the winding up or dissolution of the Parent, the Issuer, any Subsidiary of the Parent or otherwise) by the Trustee or holder in respect of any sum expressed to be due to it from the Issuer or any Guarantor of the Notes shall constitute a discharge of the Issuer or any Guarantor of the Notes only to the extent of the euro amount which the recipient is able to purchase with the amount so received or recovered in other currency on the date of that receipt or recovery (or, if it is not possible to make that purchase on that date, on the first date on which it is possible to do so). If that euro amount is less than the euro amount expressed to be due to the recipient under any Note, the Issuer and each Guarantor of the Notes, jointly and severally, shall indemnify the recipient against the cost of making any such purchase. For the purposes of this indemnity, it will be sufficient for the holder to certify (indicating the sources of information used) that it would have suffered a loss had the actual purchase of euro been made with the amount so received in that other currency on the date of receipt or recovery (or, if a purchase of euro on such date had not been possible, on the first date on which it would have been possible).

Each of the above indemnities will, to the extent permitted by law:

- constitute a separate and independent obligation from the other obligations of the Issuer and any Guarantor;
- give rise to a separate and independent cause of action;
- apply irrespective of any waiver granted by any holder; and
- continue in full force and effect despite any other judgment, order, claim or proof for a liquidated amount in respect of any sum due under any Note or any other judgment or order.

Sinking Fund

The Notes will not be entitled to the benefit of any sinking fund.

Open Market Purchases

The Parent, the Company and the Restricted Subsidiaries may at any time and from time to time purchase Notes in the open market or otherwise.

Purchase of Notes upon a Change of Control

If a Change of Control shall occur at any time, then each holder of Notes shall have the right to require that the Issuer purchase such holder's Notes in whole or in part (equal to €100,000 or an integral multiple of €1,000 in excess thereof), at a purchase price (the "**Change of Control Purchase Price**") in cash in an amount equal to 101% of the principal amount of such Notes, plus any Additional Amounts and accrued and unpaid interest, if any, to, but not including, the date of purchase (the "**Change of Control Purchase Date**") (subject to the rights of holders of record on relevant record dates to receive interest due on an interest payment date), pursuant to the offer described below (the "**Change of Control Offer**") and in accordance with the other procedures set forth in the Indenture; *provided*, *however*, that the Issuer shall not be obliged to repurchase Notes as described under this heading "—Purchase of Notes upon a Change of Control" in the event and to the extent that it has unconditionally exercised its right to redeem all of the Notes as described under "—Optional Redemption." No such purchase in part shall reduce the principal amount at maturity of the Notes held by any holder to below €100,000.

Within 30 days of any Change of Control, the Issuer shall notify the Trustee in writing thereof and give written notice of such Change of Control to each holder of Notes by first class mail, postage prepaid, at the address appearing in the security register, stating, among other things:

- that a Change of Control has occurred and the date of such event;
- the circumstances and relevant facts regarding such Change of Control (including, but not limited to, applicable information with respect to *pro forma* historical income, cash flow and capitalization after giving effect to the Change of Control);

- the purchase price and the purchase date which shall be fixed by the Issuer on a Business Day no earlier than 10 days nor later than 60 days from the date such notice is mailed, or such later date as is necessary to comply with requirements under the U.S. Exchange Act;
- that any Note not tendered will continue to accrue interest and, unless the Issuer defaults in payment of the Change of Control Purchase Price, any Notes accepted for payment pursuant to the Change of Control Offer shall cease to accrue interest after the Change of Control Purchase Date; and
- any other procedures that a holder of Notes must follow to accept a Change of Control Offer or to withdraw such acceptance.

The Issuer shall make available to the newswire service of Bloomberg (or if Bloomberg does not then operate, any similar agency) and, so long as the Notes are listed on the Official List of the Luxembourg Stock Exchange and are traded on the Luxembourg Stock Exchange's Euro MTF Market and the rules of the Luxembourg Stock Exchange so require, a newspaper having general circulation in Luxembourg (which is expected to be the *Luxemburger Wort*) or on the Luxembourg Stock Exchange's official website, www.bourse.lu, the notice described above.

The ability of the Issuer to repurchase Notes pursuant to a Change of Control Offer may be limited by a number of factors. The occurrence of certain of the events that constitute a Change of Control would constitute an event of default under the Senior Secured Term Loans Agreement. In addition, certain events that may constitute a change of control under the Senior Secured Term Loans Agreement may not constitute a Change of Control under the Indenture. The future Indebtedness of the Issuer, the Parent and its Subsidiaries may also contain prohibitions of certain events that would constitute a Change of Control or require such Indebtedness to be repurchased upon a Change of Control. Moreover, the exercise by the holders of the Notes of their right to require the Issuer to repurchase the Notes could cause a default under such Indebtedness, even if the Change of Control itself does not, due to the financial effect of such repurchase on the Issuer, the Parent and its Subsidiaries. Finally, the ability of the Issuer to pay cash to the holders of the Notes upon a repurchase may be limited by its and the Company's then existing financial resources. There can be no assurance that sufficient funds will be available when necessary to make any required repurchases.

The Change of Control provisions described above will be applicable whether or not any other provisions of the Indenture are applicable, except, for the avoidance of doubt, to the extent satisfaction and discharge of the Indenture, as described under "—Satisfaction and Discharge," has occurred or the Issuer has elected to exercise its option for Legal Defeasance or Covenant Defeasance, as described under "—Defeasance or Covenant Defeasance of Indenture," in each case prior to the occurrence of a Change of Control. Except as described above with respect to a Change of Control, the Indenture will not contain provisions that permit the holders of the Notes to require that the Issuer repurchase or redeem the Notes in the event of a takeover, recapitalization or similar transaction. The existence of a holder's right to require the Issuer to repurchase such holder's Notes upon the occurrence of a Change of Control may deter a third party from seeking to acquire the Issuer, the Parent or its Subsidiaries in a transaction that would constitute a Change of Control.

The Issuer will not be required to make a Change of Control Offer upon a Change of Control if a third party makes the Change of Control Offer in the manner, at the times and otherwise in compliance with the requirements set forth in the Indenture applicable to a Change of Control Offer made by the Issuer and purchases all Notes validly tendered and not withdrawn under such Change of Control Offer.

The Paying Agent will promptly deliver to each holder of Notes properly tendered the Change of Control Purchase Price for such Notes and the Trustee will, in respect of the global notes, make such notations thereon as are necessary to reflect the Notes (or interest therein) purchased in such

Change of Control Offer and, in respect of certificated notes, cause to be authenticated and mailed to each holder a new note or notes equal in principal amount to any unpurchased portion of Notes surrendered, if any; *provided* that each such new note will be in a principal amount of €100,000 or an integral multiple of €1,000 in excess thereof. The Issuer will publicly announce the results of the Change of Control Offer on, or as soon as practicable after, the Change of Control Purchase Date.

The definition of "Change of Control" includes a disposition of "all or substantially all" of the assets of the Company. Although there is a limited body of case law interpreting the phrase "all or substantially all," there is no precise established definition of the phrase under applicable law.

Accordingly, in certain circumstances there may be a degree of uncertainty as to whether a particular transaction would involve a disposition of "all or substantially all" of the assets of the Company. As a result, it may be unclear as to whether a Change of Control has occurred and whether the Issuer must make an offer to repurchase the Notes as described above.

The Issuer will comply with the applicable tender offer rules, including Rule 14e-1 under the U.S. Exchange Act, and any other applicable securities laws or regulations, including administrative interpretations thereof (including those of the United States and the United Kingdom), in connection with a Change of Control Offer. To the extent that the provisions of any applicable securities laws or regulations conflict with the provisions of this covenant (other than the obligation to make an offer pursuant to this covenant), the Issuer will comply with the securities laws and regulations and will not be deemed to have breached its obligations described in this covenant by virtue thereof.

Certain Calculations

(a) Notwithstanding any other provision of the Indenture, solely for the purposes of determining whether an Acquisition, Investment, Restricted Payment or Permitted Payment may be consummated or Indebtedness or Liens may be incurred in connection therewith, at the Company's election, each of the Parent's Consolidated Fixed Charge Coverage Ratio, the Parent's Consolidated Net Total Leverage Ratio, the Parent's Consolidated Senior Secured Leverage Ratio and Total Assets shall be determined as of the last day of or for the most recent period of four full fiscal quarters for which financial statements are available as of the date the definitive agreement for such Acquisition, Investment, Restricted Payment or Permitted Payment is entered into (and shall not be tested again on the date on which such Acquisition, Investment, Restricted Payment or Permitted Payment is consummated or such Indebtedness or Lien is incurred) and shall be calculated giving *pro forma* effect to both the consummation of such Acquisition, Investment, Restricted Payment or Permitted Payment and the incurrence of such Indebtedness.

(b) For purposes of determining Consolidated EBITDA, the Consolidated Net Total Leverage Ratio, the Consolidated Senior Secured Leverage Ratio, the Consolidated Fixed Charge Coverage Ratio, Consolidated Income Tax Expense, Consolidated Interest Expense, Consolidated Net Income (Loss), Consolidated Non-Cash Charges, Consolidated revenues, Excess Proceeds, Net Cash Proceeds (including for purposes of paragraph (b) under the covenant described under "—Limitation on Restricted Payments") or any other financial ratio, basket calculation or financial measurement of any kind whatsoever of the Parent, the Company, the Parent and its Restricted Subsidiaries or the Company and its Restricted Subsidiaries in respect of a period commencing prior to the date of completion of any Permitted Reorganization and ending on or after such date, such determination shall be made using the results for the applicable period prior to such date of the Parent, the Company, the Parent and its Restricted Subsidiaries or the Company and its Restricted Subsidiaries as in effect during such prior period and the results for the applicable period on and after such date of the Parent, the Company, the Parent and its Restricted Subsidiaries or the Company and its Restricted Subsidiaries as in effect during such subsequent period. For purposes of each of clauses (1) and (2) under the first paragraph of the covenant described under "—Provision of Financial Statements", at any time when the most recent fiscal year or fiscal quarter, as applicable, ended after the date of the completion of any Permitted Reorganization and the comparable prior year period ended prior to such date, the financial statements delivered in respect of such prior period may be those of the Parent as of the last day of such prior fiscal year or fiscal quarter, as applicable.

(c) For the avoidance of doubt, for purposes of determining the permissibility of any action, change or event that requires a calculation of any financial ratio, Total Assets, Fair Market Value or any other financial metric, no Default or Event of Default shall be deemed to have occurred solely as a result of a change in such financial ratio, Total Assets, Fair Market Value or other financial metric occurring after the time such action is taken, such change is made or such event is consummated, as the case may be. In furtherance of the foregoing, notwithstanding anything to the contrary in the covenants described under "—Limitation on Indebtedness" and "—Limitation on Liens", any Indebtedness, or any Lien securing any Indebtedness, in each case, incurred in reliance on any exception set forth in such covenants that is based on a percentage of Total Assets will be permitted to be refinanced under such exception (if otherwise complying with the requirements of such exception) notwithstanding that, at the time of and after giving effect to such refinancing, the amount thereof might exceed the applicable percentage of Total Assets.

(d) Notwithstanding anything to the contrary set forth herein, for purposes of determining compliance with the covenants described under "—Limitation on Indebtedness", "—Limitation on Restricted Payments" and "—Limitation on Liens", in the event that any Indebtedness, Lien, Restricted Payment or Investment (each of the foregoing, a "**Reclassifiable Item**") (or any portion thereof) meets the criteria of more than one of the exceptions set forth in such covenant (or in any applicable defined term used in such covenant), the classification of such Reclassifiable Item (or any portion thereof) on the date of its incurrence, making or undertaking under any such exception shall be made by the Company in its sole discretion and the Company may, at any time or from time to time thereafter, in its sole discretion, reclassify such Reclassifiable Item (or any portion thereof) as having been incurred, made or undertaken under one or more other exceptions set forth in such covenant (or in any applicable defined term used in such covenant) if, at the time of such reclassification, such Reclassifiable Item (or such portion thereof) would have met the criteria set forth in such other exception or exceptions if then incurred, made or undertaken; *provided* that, notwithstanding the foregoing, Indebtedness incurred under the Senior Secured Term Loans Agreement outstanding on the Issue Date shall be deemed to have been incurred pursuant to clause (1)(A) of the definition of Permitted Indebtedness and may not be subsequently reclassified. It is understood and agreed that for purposes of assessing whether any financial ratio or test set forth in any exception set forth in the covenants described under "—Limitation on Indebtedness", "—Limitation on Restricted Payments" and "—Limitation on Liens" (or in any applicable defined term used in such covenant) has been complied with in connection with any Reclassifiable Item (or any portion thereof), any other Reclassifiable Item (or any portion thereof) contemporaneously incurred, made or undertaken, in each case, pursuant to and in accordance with any other available exceptions that do not require such other Reclassifiable Item (or such portion thereof) to comply with such financial ratio or test (including, in the case of Indebtedness limited by clause (1)(D) of the definition of "Permitted Indebtedness", any other clause of such clause (1)), will be disregarded (including, in the case of Indebtedness or Liens securing any Indebtedness, if such other item is Indebtedness of the same tranche or series as such Indebtedness being incurred under such financial ratio or test).

Certain Covenants

The Indenture will contain, among others, the following covenants:

Limitation on Indebtedness

(a) The Company will not, and will not cause or permit any of its Restricted Subsidiaries to, create, issue, incur, assume, guarantee or otherwise in any manner become directly or indirectly liable for the payment of or otherwise incur, contingently or otherwise (collectively, "**incur**"), any Indebtedness (including any Acquired Indebtedness); *provided*, *however*, that the Company and its Restricted Subsidiaries may incur Indebtedness if, on the date of such incurrence and after giving effect thereto on a *pro forma* basis (including giving *pro forma* effect to the use of the proceeds thereof, including, in the case of any Escrow Indebtedness, upon the release of such Indebtedness from escrow), the Parent's Consolidated Fixed Charge Coverage Ratio for the most recent period of four full fiscal quarters for which financial statements are available immediately preceding the incurrence of such Indebtedness is at least 2.00 to 1.00.

(b) Notwithstanding paragraph (a) above, the Company and, to the extent specifically set forth below, the Restricted Subsidiaries may incur each and all of the following (collectively, the "**Permitted Indebtedness**"):

(1) Indebtedness of the Company and its Restricted Subsidiaries under Credit Facilities, including such Indebtedness under the Senior Secured Credit Facilities outstanding on the Issue Date, *provided* that, with respect to any incurrence of such Indebtedness after the Issue Date, at the time of incurrence thereof (after giving *pro forma* effect thereto and the use of proceeds thereof, including, in the case of any Escrow Indebtedness, upon the release of such Indebtedness from escrow), the aggregate outstanding principal amount of Indebtedness under this clause (1) does not exceed the sum of (A) the aggregate principal amount of Indebtedness outstanding under the Senior Secured Term Loans Agreement on the Issue Date, plus (B) the greater of (x) €300.0 million and (y) 3.25% of Total Assets, plus (C) the aggregate amount of fees (including original issue discount), underwriting discounts, premiums and other costs and expenses incurred in connection with any refinancing of any Indebtedness permitted under this clause (1), plus (D) an additional amount so long as, in the case of this clause (D), at the time of incurrence thereof (after giving *pro forma* effect thereto and the use of proceeds thereof, including, in the case of any Escrow Indebtedness, upon the release of such Indebtedness from escrow), the Parent's Consolidated Senior Secured Leverage Ratio is not greater than 3.00 to 1.00, *provided* that solely for the purpose of determining Consolidated Senior Secured Leverage Ratio as set forth in this clause (D), any Indebtedness incurred in reliance on this clause (D) shall be deemed to be (whether or not it actually is) Senior Secured Indebtedness;

(2) [Reserved];

(3) Indebtedness of the Issuer pursuant to the Notes (other than Additional Notes) and Indebtedness of the Guarantors pursuant to the Guarantees of the Notes (other than Additional Notes);

(4) Indebtedness of the Company, the Issuer and the Guarantors pursuant to the Schuldschein Loan, the 2025 Senior Secured Notes, the 2023 Senior Secured Notes and the guarantees in respect thereof;

(5) Indebtedness of the Company, the Issuer and the Guarantors pursuant to guarantees of the 2024 IGH Notes;

(6) Indebtedness of the Company or any Restricted Subsidiary outstanding on the Issue Date after giving *pro forma* effect to the use of the proceeds of the offering of the Notes and not otherwise expressly referred to in this definition of "Permitted Indebtedness;"

(7) Indebtedness of the Issuer owing to the Company or any Restricted Subsidiary (other than the Issuer); *provided* that any Indebtedness of the Issuer owing to any Restricted Subsidiary that is not a Guarantor is unsecured and is subordinated in right of payment to the payment and performance of the Company or the Issuer's obligations under the Notes; *provided*, *further*, that any disposition or transfer of any such Indebtedness to a Person (other than a disposition or transfer to the Company or any Restricted Subsidiary) shall be deemed to be an incurrence of such Indebtedness by the Issuer not permitted by this clause (7);

(8) Indebtedness of the Company or any Restricted Subsidiary (other than the Issuer) owing to the Company or any Restricted Subsidiary; *provided* that any Indebtedness of the Company (if the Company is not the Issuer) or a Subsidiary Guarantor owing to any Restricted Subsidiary that is not a Subsidiary Guarantor or the Issuer is unsecured and subordinated in right of payment to the payment and performance of the Company's or such Subsidiary Guarantor's, as the case may be, obligations under its Guarantee; *provided*, *further*, that any disposition or transfer of any such Indebtedness to a Person (other than a disposition or transfer to the Company or any Restricted Subsidiary) shall be deemed to be an incurrence of such Indebtedness by the obligor not permitted by this clause (8);

(9) guarantees by the Company or any Restricted Subsidiary of any Indebtedness of the Company or any Restricted Subsidiary, including any guarantee of an Unrestricted Subsidiary's guarantee of any Indebtedness of the Company or any Restricted Subsidiary, so long as the incurrence of such Indebtedness by the Company or such Restricted Subsidiary is otherwise permitted by the Indenture; *provided* that if the Indebtedness being guaranteed is subordinated in right of payment to the Notes or any Guarantee, then such guarantee, if provided by the Issuer, the Company or a Subsidiary Guarantor, will be subordinated to the Notes or such Guarantee, as applicable, substantially to the same extent as the relevant Indebtedness guaranteed;

(10) [Reserved];

(11) obligations of the Company or any Restricted Subsidiary in respect of:

    (A) any Interest Rate Agreement,

(B) any Currency Hedging Agreement, or

(C) any Commodity Price Protection Agreement,

in each case, entered into for bona fide business purposes (including any commodity trading or commodity risk management business) and not for speculative purposes, as determined in good faith by the Board of Directors or senior management of the Company;

(12) Indebtedness of the Company or any Restricted Subsidiary incurred after the Issue Date represented by Capital Lease Obligations or Purchase Money Obligations and other Indebtedness of the Company or any Restricted Subsidiary incurred for the purpose of financing all or any part of the acquisition, development, construction or improvement of real or personal, movable or immovable, property or assets (including Capital Stock) used or to be used in the business of the Company and its Restricted Subsidiaries, or the refinancing of any such Indebtedness; *provided* that, at the time of incurrence of any such Indebtedness (after giving *pro forma* effect thereto and the use of proceeds thereof, including, in the case of any Escrow Indebtedness, upon the release of such Indebtedness from escrow) the aggregate outstanding principal amount of Indebtedness permitted under this clause (12) shall not exceed the sum of (A) the greater of (x) €200.0 million and (y) 2.00% of Total Assets plus (B) the aggregate amount of fees (including original issue discount), underwriting discounts, premiums and other costs and expenses incurred in connection with any refinancing of any Indebtedness permitted under this clause (12);

(13) Indebtedness of the Company or any Restricted Subsidiary represented by Permitted Refinancing Indebtedness with respect to Indebtedness that was permitted to be incurred under paragraph (a) of this covenant or clauses (1) (in the case of Indebtedness incurred in reliance on clause (D) thereof), (3), (4), (5), (6), (13) or (18) of this paragraph (b);

(14) to the extent constituting Indebtedness, obligations of the Company and its Restricted Subsidiaries in respect of (A) letters of credit issued in the ordinary course of business with respect to trade payables relating to purchase of materials (including obligations under any LC Facility) and (B) other letters of credit, bank guarantees, surety, performance, Tax or appeal bonds, completion guarantees, judgment, advance payment, customs, VAT or other Tax guarantees or similar instruments issued in the ordinary course of business and not in connection with the borrowing of money, including letters of credit, bank guarantees or similar instruments in respect of self-insurance and workers compensation obligations (including obligations under any LC Facility) *provided*, *however*, that, upon the drawing of such letters of credit, bank guarantees or other instruments, such obligations are reimbursed within 30 days following such drawing;

(15) Indebtedness of the Company and its Restricted Subsidiaries owed to their employees in connection with loan stock issued under employee stock purchase plans; *provided* that the aggregate principal amount of Indebtedness under this clause (15) shall not exceed €10.0 million outstanding at any one time;

(16) Indebtedness of the Company and its Restricted Subsidiaries in connection with (A) any Permitted Receivables Financing and (B) any sales and

leasebacks (or similar arrangements) of inventory with customers so long as the Fair Market Value of such inventory shall not exceed 5.0% of the Fair Market Value of the Consolidated inventories of the Company and its Restricted Subsidiaries at any one time;

(17) Indebtedness of the Company and its Restricted Subsidiaries represented by Management Advances in the form of guarantees;

(18) (A) Acquisition Indebtedness incurred by the Issuer or any Guarantor and (B) Acquired Indebtedness incurred by the Company and its Restricted Subsidiaries; *provided*, *however*, that (x) at the time of the acquisition or other transaction pursuant to which such Acquired Indebtedness or such Acquisition Indebtedness, as applicable, was incurred, the Company would have been able to incur €1.00 of additional Indebtedness pursuant to paragraph (a) of this covenant after giving *pro forma* effect to the incurrence of such Indebtedness pursuant to this clause (18) (including giving *pro forma* effect to the use of the proceeds thereof, including, in the case of any Escrow Indebtedness, upon the release of such Indebtedness from escrow) or (y) the Consolidated Fixed Charge Coverage Ratio of the Parent for the most recent period of four full fiscal quarters for which financial statements are available immediately preceding the incurrence of such Indebtedness would not be less, after giving *pro forma* effect as set forth above to such incurrence, than it would be for such period prior to giving *pro forma* effect thereto;

(19) Indebtedness arising from agreements of the Company or any Restricted Subsidiary providing for customary indemnification, obligations in respect of earnouts or other adjustments of purchase price or, in each case, similar obligations, in each case, incurred in connection with the acquisition or disposition of any business or assets or Person or any Capital Stock of a Subsidiary (other than guarantees of Indebtedness incurred by any Person acquiring or disposing of such business or assets or such Subsidiary for the purpose of financing such acquisition or disposition);

(20) Indebtedness of the Company and its Restricted Subsidiaries arising from the honoring by a bank or other financial institution of a check, draft or similar instrument drawn against insufficient funds in the ordinary course of business or owed in respect of Cash Management Arrangements; *provided*, *however*, that such Indebtedness is extinguished within 30 days of incurrence;

(21) Indebtedness of the Company and its Restricted Subsidiaries incurred in connection with Permitted Joint Ventures, including guarantees by the Company and its Restricted Subsidiaries of Indebtedness of Permitted Joint Ventures; *provided* that, at the time of incurrence of any such Indebtedness (after giving *pro forma* effect thereto and the use of proceeds thereof, including, in the case of any Escrow Indebtedness, upon the release of such Indebtedness from escrow), the aggregate outstanding principal amount of Indebtedness permitted under this clause (21), together with the aggregate outstanding amount of Investments made pursuant to clause (l) of the definition of "Permitted Investments" (and without duplication to the extent proceeds of any such Indebtedness are used to make any such Investment), shall not exceed the greater of (x) €475.0 million and (y) 5.00% of Total Assets;

(22) Indebtedness of the Company and its Restricted Subsidiaries in connection with inventory financing or similar arrangements or any guarantees thereof; *provided* that the aggregate principal amount of Indebtedness outstanding at any one time under this clause (22) shall not exceed the sum of (A) the greater of (x) €500.0 million and (y) 4.5% of Total Assets plus (B) the aggregate amount of fees (including original issue discount), underwriting discounts, premiums and other costs and expenses incurred in connection with any refinancing of any Indebtedness permitted under this clause (22) outstanding at any one time;

(23) Indebtedness of the Company and its Restricted Subsidiaries under the Proceeds Loans Documents;

(24) Indebtedness of the Company and its Restricted Subsidiaries incurred in connection with a Permitted Reorganization; *provided* that after the consummation of such Permitted Reorganization, such Indebtedness is owed to the Company or its Restricted Subsidiaries (including, for the avoidance of doubt, any Surviving Entity) and would be permitted by clause (7) or (8) above; and

(25) Indebtedness of the Company and its Restricted Subsidiaries in addition to that described in clauses (1) through (24) above; *provided* that, at the time of incurrence of any such Indebtedness (after giving *pro forma* effect thereto and the use of proceeds thereof, including, in the case of any Escrow Indebtedness, upon the release of such Indebtedness from escrow), the aggregate outstanding principal amount of Indebtedness permitted under this clause (25) shall not exceed the sum of (A) the greater of (x) €550.0 million and (y) 6.00% of Total Assets plus (B) the aggregate amount of fees (including original issue discount), underwriting discounts, premiums and other costs and expenses incurred in connection with any refinancing of any Indebtedness permitted under this clause (25).

(c) [Reserved];

(d) For purposes of determining any particular amount of Indebtedness under this "—Limitation on Indebtedness" covenant and compliance with this "—Limitation on Indebtedness" covenant, (i) guarantees, Liens or obligations with respect to letters of credit, bank guarantees, bankers' acceptances or similar instruments supporting Indebtedness that is otherwise included in the determination of any such particular amount will be disregarded, (ii) in the case of any new Indebtedness of the Company and its Restricted Subsidiaries the net proceeds of which are to be applied to refinance any existing Indebtedness of the Company and its Restricted Subsidiaries, the determination of any such particular amount and such compliance will be made on a *pro forma* basis giving effect to the application of the net proceeds of such new Indebtedness as if such application occurred on the date of incurrence thereof, (iii) Proceeds Loans made by a Parent Holdco or Financing Subsidiary with the proceeds of any Indebtedness incurred by such Parent Holdco or Financing Subsidiary, which Indebtedness is guaranteed by the Company or any of its Restricted Subsidiaries in accordance with this "—Limitation on Indebtedness" covenant, will be disregarded and (iv) if obligations in respect of letters of credit, bank guarantees, bankers' acceptances or other similar instruments are incurred pursuant to any Credit Facility and are being treated as incurred pursuant to clause (1), (12), (21) or (25) of paragraph (b) of this "—Limitation on Indebtedness" covenant or pursuant to paragraph (a) of this "—Limitation on Indebtedness" covenant and such letters of credit, bank guarantees, bankers' acceptances or other similar instruments support other Indebtedness, then such other Indebtedness shall be disregarded.

(e) For purposes of determining compliance with this "—Limitation on Indebtedness" covenant, the "—Limitation on Restricted Payments" covenant and the "—Limitation on Liens" covenant and for purposes of calculating the Parent's Consolidated Fixed Charge Coverage Ratio, the Parent's Consolidated Senior Secured Leverage and the Parent's Consolidated Net Total Leverage Ratio, (i) the outstanding principal amount of Indebtedness issued at a price that is less than the principal amount thereof shall be equal to the amount of the liability in respect thereof determined in conformity with IFRS; (ii) the accrual of interest, the accrual of dividends, the accretion of accreted value and the payment of interest in the form of additional shares of Preferred Stock or the payment of interest in the form of additional Indebtedness of the same kind shall not be deemed to be an incurrence of Indebtedness; (iii) any Escrow Indebtedness shall be deemed to be incurred on the date of the original incurrence thereof (and, for the avoidance of doubt, not on the date of the release of such Indebtedness from escrow or the date on which the obligor in respect of such Indebtedness becomes a Restricted Subsidiary or transfers its assets to, or merges or consolidates with, the Company or any Restricted Subsidiary); *provided* that, for the avoidance of doubt, any Escrow Indebtedness that is redeemed pursuant to a special mandatory redemption or the proceeds of which are not released to the Company or any Restricted Subsidiary for any other reason shall be deemed not to have been incurred by the Company or any Restricted Subsidiary on the date of original incurrence thereof; and (iv) such determinations and calculations in connection with any Acquisition, Investment, Restricted Payment or Permitted Payment shall be subject to the provisions of the Indenture described under "—Certain Calculations" above.

(f) For purposes of determining compliance with any euro-denominated restriction on the incurrence of Indebtedness where Indebtedness is denominated in a different currency, the amount of such Indebtedness will be the Euro Equivalent determined on the date of such determination; *provided*, *however*, that if any such Indebtedness that is denominated in a different currency is subject to a Currency Hedging Agreement (with respect to euro) covering principal amounts payable on such Indebtedness, the amount of such Indebtedness expressed in euro will be adjusted to take into account the effect of such agreement. The principal amount of any Permitted Refinancing Indebtedness, if incurred in the same currency as the Indebtedness being refinanced, will be the Euro Equivalent of the Indebtedness refinanced, determined on the date such Indebtedness being refinanced was initially incurred. The principal amount of any Permitted Refinancing Indebtedness, if incurred in a different currency from the Indebtedness being refinanced, will be calculated based on the currency exchange rate applicable to the currencies in which such Permitted Refinancing Indebtedness is denominated that is in effect on the date of such refinancing. Notwithstanding any other provision of this "—Limitation on Indebtedness" covenant, the maximum amount that the Company or any Restricted Subsidiary may incur pursuant to this "—Limitation on Indebtedness" covenant shall not be deemed to be exceeded, with respect to any outstanding Indebtedness, solely as a result of fluctuations in the exchange rates of currencies (and, for the avoidance of doubt, such Indebtedness will be permitted to be refinanced notwithstanding that, after giving effect to such refinancing, such excess will continue).

Limitation on Restricted Payments

(a) The Company will not, and will not cause or permit any Restricted Subsidiary to, directly or indirectly take any of the following actions (each of which, other than any such action that is a Permitted Payment (as defined below), is referred to as a "**Restricted Payment**"):

(1) declare or pay any dividend on, or make any distribution on, the Company's Capital Stock to any Person (other than dividends or distributions payable solely in shares of its Qualified Capital Stock or in options, warrants or other rights to acquire shares of such Qualified Capital Stock) or make any payment of cash interest in respect of Subordinated Shareholder Funding;

(2) purchase, redeem, defease or otherwise retire or acquire for value, directly or indirectly, (A) the Company's Capital Stock or any Capital Stock of any Affiliate of the Company (other than a Restricted Subsidiary) held by Persons other than the Company or a Restricted Subsidiary, (B) options, warrants or other rights to acquire such Capital Stock or (C) any Subordinated Shareholder Funding held by any Person;

(3) make any principal payment on, or repurchase, redeem, defease, retire or otherwise acquire for value, prior to any scheduled principal payment, sinking fund payment or maturity, (A) any Subordinated Indebtedness (other than the purchase, repurchase, redemption, defeasance or other retirement or acquisition of (x) Subordinated Indebtedness in anticipation of satisfying a sinking fund obligation, principal installment or final maturity, in each case, due within one year of the date of purchase, repurchase, redemption, defeasance or other acquisition or retirement and (y) any Indebtedness incurred pursuant to clause (7) or (8) of paragraph (b) of the covenant described under "—Limitation on Indebtedness") or (B) any Subordinated Shareholder Funding (it being understood, for the avoidance of doubt, that payment of interest on any Subordinated Indebtedness or, to the extent permitted by the definition of such term, Subordinated Shareholder Funding is not subject to this paragraph (a)(3));

(4) declare or pay any dividend or distribution on any Capital Stock of any Restricted Subsidiary to any Person (other than (A) to the Company or any of its Wholly Owned Restricted Subsidiaries, (B) dividends or distributions made by a Restricted Subsidiary on a pro rata basis (or, if not on a pro rata basis, on a basis more favorable to the Company and its Restricted Subsidiaries) to all stockholders of such Restricted Subsidiary or (C) dividends or distributions payable solely in its Qualified Capital Stock or in options, warrants or other rights to acquire shares of such Qualified Capital Stock or in Subordinated Shareholder Funding); or

(5) make any Investment in any Person;

provided that (i) the Company and the Restricted Subsidiaries may make any Permitted Investment and (ii) for the avoidance of doubt, any payment on, or repurchase, redemption, defeasance or otherwise acquisition or retirement for value of, any Senior Secured Term Loans, the Schuldschein Loan, Notes, 2025 Senior Secured Notes or 2023 Senior Secured Notes or any other Senior Secured Notes (as defined in the Intercreditor Deed) held by any Affiliate of the Company does not constitute a Restricted Payment.

(b) Notwithstanding paragraph (a) above, the Company or any Restricted Subsidiary may make a Restricted Payment if, at the time of and after giving *pro forma* effect to such proposed Restricted Payment:

(1) no Default or Event of Default shall have occurred and be continuing;

(2) the Company could incur at least €1.00 of additional Indebtedness under paragraph (a) under the "—Limitation on Indebtedness" covenant; and

(3) the aggregate amount of all Restricted Payments (together with, except as otherwise provided in paragraph (d) below, the aggregate amount of all Permitted Payments) made (and not returned or rescinded) after the Issue Date does not exceed the sum of:

(A) 50% of the aggregate Consolidated Net Income (Loss) of the Parent determined on a cumulative basis for the period beginning on the Issue Date (and, for the avoidance of doubt, calculated from the first day of the first fiscal quarter of the Parent ended prior to the Issue Date immediately following the most recent fiscal quarter for which financial statements are available (without double counting)) and ending on the last day of the Parent's most recent fiscal quarter for which financial statements are available ending immediately prior to the date of such Restricted Payment (or, if such aggregate cumulative Consolidated Net Income (Loss) shall be a loss, minus 100% of such loss);

(B) the aggregate Net Cash Proceeds and the Fair Market Value of property, assets or marketable securities received after the Issue Date by the Company either (x) as capital contributions to the Company in respect of Qualified Capital Stock of the Company or (y) from the issuance or sale (other than to any of its Restricted Subsidiaries) of Qualified Capital Stock of the Company or any options, warrants or rights to purchase such Qualified Capital Stock of the Company or from any Subordinated Shareholder Funding (except, in each case, to the extent such Net Cash Proceeds are used as set forth in clause (2) or (3) of paragraph (c) below) (and excluding the Net Cash Proceeds and the Fair Market Value of property, assets or marketable securities from the issuance of Capital Stock or Subordinated Shareholder Funding financed, directly or indirectly, using funds borrowed from, or the borrowing of which is guaranteed by, the Company or any Restricted Subsidiary except to the extent such borrowing is repaid in cash);

(C) the aggregate Net Cash Proceeds and the Fair Market Value of property, assets or marketable securities received after the Issue Date by the Company (other than from any of its Restricted Subsidiaries) upon the exercise of any options, warrants or rights to purchase Qualified Capital Stock of the Company (and excluding the Net Cash Proceeds and the Fair Market Value of property, assets or marketable securities from the exercise of any options, warrants or rights to purchase such Qualified Capital Stock financed, directly or indirectly, using funds borrowed from, or the borrowing of which is guaranteed by, the Company or any Restricted Subsidiary except to the extent such borrowing is repaid);

(D) the aggregate Net Cash Proceeds and the Fair Market Value of property, assets or marketable securities received after the Issue Date by the Company or its Restricted Subsidiaries from the conversion or exchange, if any, of Indebtedness or Redeemable Capital Stock of the Company or its Restricted Subsidiaries into or for Qualified Capital Stock of the Company plus, to the extent such Indebtedness or Redeemable Capital Stock was incurred or issued after the Issue Date, the aggregate Net Cash Proceeds and the Fair Market Value of property, assets or marketable securities received from their original incurrence or issuance (except, in each case, to the extent such Net Cash Proceeds are used as set forth in clause (2) or (3) of paragraph (c) under this "—Limitation on Restricted Payments" covenant) (and excluding the Net Cash Proceeds and the Fair Market Value of property, assets or marketable securities from the conversion or exchange of Indebtedness or Redeemable Capital Stock financed, directly or indirectly, using funds borrowed from, or the borrowing of which is guaranteed by, the Company or any Restricted Subsidiary except to the extent such borrowing is repaid); and

(E) the amount equal to the sum of (without duplication):

(i) 100% of the aggregate Net Cash Proceeds and the Fair Market Value of property, assets or marketable securities received by the Company or any Restricted Subsidiary upon the sale or other disposition of an Investment that had been a Restricted Payment or, for the avoidance of doubt, a Permitted Payment (to the extent such Permitted Payment is included in the sum under this clause (b)(3)) or from repayments of an Investment (including by way of dividend, distribution, interest payment, return of capital or other transfer of assets) to the Company or any Restricted Subsidiary;

(ii) upon the full and unconditional release of a guarantee that had been a Restricted Payment or, for the avoidance of doubt, a Permitted Payment (to the extent such Permitted Payment is included in the sum under this clause (b)(3)) made by the Company or any Restricted Subsidiary in favor of any Person (other than the Company or any Restricted Subsidiary), to the extent not included in clause (i) above, an amount equal to the amount of such guarantee;

(iii) upon the redesignation of any Unrestricted Subsidiary as a Restricted Subsidiary, the Fair Market Value of the Company's or any Restricted Subsidiary's interest in such Unrestricted Subsidiary;

(iv) 100% of the Net Cash Proceeds and the Fair Market Value of property, assets or marketable securities received by the Company or any Restricted Subsidiary from a sale or disposition of Capital Stock of an Unrestricted Subsidiary (other than to the Company or any Restricted Subsidiary or an employee stock ownership plan or trust established by the

Company or any of its Restricted Subsidiaries for the benefit of its employees);

(v) to the extent any Investment constituting a Restricted Payment or, for the avoidance of doubt, a Permitted Payment (to the extent such Permitted Payment is included in the sum under this clause (b)(3)) was made after the Issue Date in a Person that subsequently becomes a Restricted Subsidiary, the Fair Market Value of such Investment as of the date such Person becomes a Restricted Subsidiary; and

(vi) 100% of the Net Cash Proceeds and the Fair Market Value of property, assets or marketable securities received by the Company or any Restricted Subsidiary from any dividend or distribution made by any Unrestricted Subsidiary; and

(F) an amount equal to the amount available as of the Issue Date for making Restricted Payments pursuant to Section 8.3(b)(iii) (*i.e.*, the restricted payments build-up basket) of the Senior Secured Term Loans Agreement (without double counting) (we estimate that the amount available for Restricted Payments pursuant to this clause (F) would have been approximately €1,051 million as of December 31, 2018, after giving effect to the February 2019 Dividend);

provided, *however*, that in the case of any amount referred to in clause (E) above that would also be included in Consolidated Net Income (Loss) for the purposes of clause (A) above, such amount (or any portion thereof) may be included for the purposes of clause (E) above or for the purposes of clause (A) above, all as determined by the Company in its discretion (but without duplication).

(c) Notwithstanding paragraph (a) above, the provisions thereof shall not prohibit the following actions (any action permitted under clauses (1) through (17) below being referred to as a "**Permitted Payment**"):

(1) the payment of any dividend within 60 days after the date of declaration thereof, if at such date of declaration such payment was permitted by this covenant (and such payment shall be deemed to have been paid on such date of declaration);

(2) any Restricted Payment included in clauses (2), (3) and (5) of the definition thereof made by exchange for (including any such exchange pursuant to the exercise of a conversion right or privilege in connection with which cash is paid in lieu of the issuance of fractional shares or scrip), or in an amount not in excess of the Net Cash Proceeds of a substantially concurrent issuance and sale (other than to a Restricted Subsidiary of the Company and excluding the Net Cash Proceeds from the issuance of any Capital Stock or of Subordinated Shareholder Funding financed, directly or indirectly, using funds borrowed from, or the borrowing of which is guaranteed by, the Company or any Restricted Subsidiary except to the extent such borrowing is repaid in cash) of, Qualified Capital Stock or Subordinated Shareholder Funding of, or a capital contribution to, the Company; *provided* that the Net Cash Proceeds from the issuance of such Qualified Capital Stock or Subordinated Shareholder Funding or from such capital contribution (to the extent such Net Cash Proceeds are

used to make such Permitted Payment) are excluded from clause (3)(B) and (3)(D) of paragraph (b) of this covenant;

(3) the repurchase, redemption, defeasance, retirement or acquisition for value of, or payment of principal of, any Subordinated Indebtedness in exchange for (including any such exchange pursuant to the exercise of a conversion right or privilege in connection with which cash is paid in lieu of the issuance of fractional shares or scrip), or in an amount not in excess of the Net Cash Proceeds of a substantially concurrent issuance and sale (other than to any Restricted Subsidiary of the Company) of, any Qualified Capital Stock or Subordinated Shareholder Funding of, or a capital contribution to, the Company; *provided* that the Net Cash Proceeds from the issuance of such Qualified Capital Stock or Subordinated Shareholder Funding (to the extent such Net Cash Proceeds are used to repurchase, redeem, defease, retire or acquire such Subordinated Indebtedness) are excluded from clause (3)(B) and 3(D) of paragraph (b) of this covenant;

(4) the repurchase, redemption, defeasance, retirement, refinancing or other acquisition for value of, or payment of principal of, any Subordinated Indebtedness (other than Redeemable Capital Stock and Subordinated Shareholder Funding) through the substantially concurrent incurrence of new Indebtedness of the Company or any Restricted Subsidiary that (x) is permitted by paragraph (a), (b)(1) or (b)(25) of the covenant under the caption "—Limitation on Indebtedness" or (y) qualifies as Permitted Refinancing Indebtedness;

(5) the repurchase, redemption, defeasance, retirement, refinancing or other acquisition for value of, or payment of principal of, (A) Subordinated Indebtedness (other than Subordinated Shareholder Funding) of the Company or any Restricted Subsidiary (other than Subordinated Indebtedness held by Affiliates of the Company) upon a Change of Control or Asset Sale to the extent required by the agreement governing such Subordinated Indebtedness, but only (x) if the Issuer shall have complied with the covenant described under the caption "—Purchase of Notes upon a Change of Control" or "—Limitation on Sale of Assets," as the case may be, and the Issuer shall have repurchased, or shall repurchase, all Notes tendered pursuant to the offer required by such covenants prior to or substantially concurrently with such repurchase, redemption, defeasance, retirement, refinancing or other acquisition for value of, or payment of principal of, Subordinated Indebtedness and (y) in the case of an Asset Sale, to the extent of the Excess Proceeds offered to holders of the Notes pursuant to the offer made pursuant to the Asset Sale; (B) Subordinated Indebtedness (other than Subordinated Shareholder Funding) of the Company or any Restricted Subsidiary that constitutes Acquired Indebtedness (other than such Subordinated Indebtedness held by Affiliates of the Company); and (C) Subordinated Indebtedness (including Subordinated Shareholder Funding) to the extent of any mandatory prepayment amounts under the Senior Secured Term Loans Agreement that are declined by the lenders thereof;

(6) to the extent constituting Restricted Payments, the Specified Affiliate Payments;

(7) the declaration and payment of dividends or other distributions by the Company, and the declaration and payment of dividends or other distributions, or the making of loans and advances, by the Company or any Restricted Subsidiary to any Parent Holdco to make payments of dividends or other distributions by any Parent Holdco, in respect of Qualified Capital Stock of the Company or any Parent Holdco issued in a Public Equity Offering; *provided* that the aggregate amount (without duplication) of all such dividends or other distributions, or loans and advances, under this clause (7) shall not exceed in any fiscal year 6% of the Net Cash Proceeds received by the Company from such Public Equity Offering;

(8) payments by the Company, or loans, advances, dividends or distributions to any Parent Holdco to make payments, to holders of Capital Stock of the Company or any Parent Holdco in lieu of the issuance of fractional shares of such Capital Stock; *provided* that the aggregate amount of any such payments, loans, advances, dividends or distributions made since the Issue Date (in the case of any loans or advances, to the extent outstanding) shall not exceed €10.0 million;

(9) dividends or other distributions of Capital Stock, Indebtedness or other securities of Unrestricted Subsidiaries;

(10) payment of any Receivables Fees and purchases of Receivables Assets pursuant to a Receivables Repurchase Obligation or any other fees and payments in connection with a Permitted Receivables Financing;

(11) any Restricted Payment consisting of or including (A) any and all equity, debt and other interests held by the Company and the Restricted Subsidiaries in INEOS Investments and (B) any dividends, payments or other distributions equal to amounts received as dividends, payments and other distributions or proceeds of any sale or other disposition in respect of such interests;

(12) loans, advances, dividends, distributions or other payments by the Company or any of its Restricted Subsidiaries to or on behalf of any Parent Holdco or Financing Subsidiary to service the substantially concurrent payment of interest, premiums, make-whole amounts, fees, costs, expenses, hedging, tax, breakage costs and indemnification obligations as and when due under or in respect of Indebtedness of any Parent Holdco or Financing Subsidiary that has been guaranteed by, or is otherwise considered Indebtedness of, the Company or any of its Restricted Subsidiaries incurred in accordance with the covenant described under the caption "—Limitation on Indebtedness"; *provided* that (x) the Net Cash Proceeds of such Indebtedness have been contributed or loaned to the Company or any of its Restricted Subsidiaries or (y) at the time such Indebtedness is incurred by such Parent Holdco or such Financing Subsidiary, the Company is deemed to have made, and is able to make in accordance with this covenant "—Limitation on Restricted Payments", a Restricted Payment, a Permitted Payment or a Permitted Investment, or a combination thereof (as determined by the Company in accordance with this covenant "—Limitation on Restricted Payments"), in an aggregate amount equal to the Net Cash Proceeds of such Indebtedness;

(13) any other Restricted Payment; *provided* that (x) no Default or Event of Default has occurred and is continuing at the time of the making of such Restricted Payment and (y) the Consolidated Net Total Leverage Ratio of the Parent as of the last day of the most recent period of four full fiscal quarters for which financial statements are available immediately prior to the making of such Restricted Payment, after giving *pro forma* effect thereto, is not greater than 1.75 to 1.00;

(14) any Restricted Payments made as part of any Permitted Reorganization, or to pay or reimburse (prior to or within a reasonable time after the consummation thereof) any costs and expenses related to the consummation thereof;

(15) any payments or other transactions pursuant to Tax Sharing Agreements between the Company and any other Person or any Restricted Subsidiary and any other Person with which the Company or any Restricted Subsidiary files a consolidated tax return or with which the Company or any Restricted Subsidiary is part of a group for tax purposes or any tax advantageous group contribution made pursuant to applicable legislation; *provided*, *however*, that any such Tax Sharing Agreement does not permit or require payments in excess of the amount of Taxes that would be payable by the Company and its Restricted Subsidiaries on a stand-alone basis;

(16) any Restricted Payments made in connection with the funding of, or by, German pension trusts (which, for the avoidance of doubt, does not extend to any Restricted Payments to which clause (22) of the covenant described in "—Limitation on Transactions with Affiliates" would apply); and

(17) any other Restricted Payment; *provided* that, at the time of such Restricted Payment and after giving effect thereto, the aggregate amount of Restricted Payments made under this clause (17) (in the case of any Investment, to the extent outstanding) does not exceed the greater of (A) €350.0 million and (B) 3.75% of Total Assets.

(d) In determining the amount of Restricted Payments made after the Issue Date, Permitted Payments made pursuant to clauses (2), (3), (4), (5)(B), (5)(C), (6), (8), (9), (10), (11), (12), (13), (14), (15), (16) and (17) of paragraph (c) of this covenant (or pursuant to clause (1) of paragraph (c) of this covenant to the extent relating to any such other clause) shall be excluded from such calculation.

(e) The amount of any Restricted Payment or Permitted Payment that is not made in cash shall be deemed to be equal to the Fair Market Value thereof at the date of the making of such Restricted Payment or Permitted Payment.

Limitation on Transactions with Affiliates

(a) The Company will not, and will not cause or permit any of its Restricted Subsidiaries to, directly or indirectly, enter into any transaction or series of related transactions (including the sale, purchase, exchange or lease of assets, property or services) with any Affiliate of the Company (other than a Restricted Subsidiary) involving aggregate consideration in excess of €10.0 million, unless such transaction or series of related transactions is entered into in good faith and in writing and:

(1) such transaction or series of related transactions is on terms that are no less favorable to the Company or such Restricted Subsidiary, as the case may be, than those that could reasonably be expected to be obtained in a comparable

transaction in arm's length dealings with an unrelated third party, as determined by the Company in good faith;

(2) with respect to any transaction or series of related transactions involving aggregate consideration in excess of €25.0 million, the Company delivers to the Trustee either (A) an Officer's Certificate of the Company attaching a resolution of the Board of Directors of the Company (or, in the case of a transaction or series of related transactions to be entered into by IHL or any of its Restricted Subsidiaries, a resolution of the Board of Directors of IHL or the Company) pursuant to which such transaction or series of related transactions has been approved by a majority of the Disinterested Directors of the Board of Directors of the Company or IHL, as applicable, or in the event there is only one Disinterested Director, by such Disinterested Director, or (B) a written opinion of an accounting, appraisal or investment banking firm of international standing, or other recognized independent expert with experience appraising the terms and conditions of the type of transaction or series of related transactions for which an opinion is required, stating that such transaction or series of related transactions is fair from a financial point of view taking into account all relevant circumstances; *provided* that the liability of such accounting, appraisal or investment banking firm or such other independent expert in giving such opinion may be limited in accordance with its engagement policies; and

(3) with respect to any transaction or series of related transactions involving aggregate consideration in excess of €50.0 million, the Company delivers to the Trustee (A) an Officer's Certificate of the Company attaching a resolution of the Board of Directors of the Company (or, in the case of a transaction or series of related transactions to be entered into by IHL or any of its Restricted Subsidiaries, a resolution of the Board of Directors of IHL or the Company) pursuant to which such transaction or series of related transactions has been approved by a majority of the Disinterested Directors of the Board of Directors of the Company or IHL, as applicable, or in the event there is only one Disinterested Director, by such Disinterested Director and (B) a written opinion of an accounting, appraisal or investment banking firm of international standing, or other recognized independent expert with experience appraising the terms and conditions of the type of transaction or series of related transactions for which an opinion is required, stating that such transaction or series of related transactions is on terms not less favorable than might have been obtained in a comparable transaction at such time on an arm's length basis from a Person that is not an Affiliate; *provided* that the liability of such accounting, appraisal or investment banking firm or such other independent expert in giving such opinion may be limited in accordance with its engagement policies.

(b) The restrictions in paragraph (a) shall not apply to:

(1) any employment agreement, collective bargaining agreement, consultant agreement or other employee benefit arrangements with any employee, consultant, officer or director of any Parent Holdco, the Company or any Restricted Subsidiary, including under any stock option, stock appreciation rights, stock incentive or similar plans, entered into in the ordinary course of business;

(2) payment of compensation to employees, consultants, officers or directors of any Parent Holdco, the Company or any Restricted Subsidiary in the ordinary course of business;

(3) maintenance in the ordinary course of business (and payments required thereby) of benefit programs and other arrangements for employees, consultants, officers or directors of any Parent Holdco, the Company or any Restricted Subsidiary, including vacation plans, health and life insurance plans, deferred compensation plans, severance plans, employees', consultants', directors' and officers' indemnification agreements and retirement or savings plans and similar plans;

(4) Management Advances;

(5) transactions between or among the Company and its Restricted Subsidiaries (including any Person that becomes a Restricted Subsidiary as a result of such transaction), between or among the Restricted Subsidiaries (including any Person that becomes a Restricted Subsidiary as a result of such transaction) and between or among the Restricted Subsidiaries and any Receivables Subsidiary;

(6) any Restricted Payment or Permitted Investment;

(7) any Permitted Payment;

(8) any transaction in the ordinary course of business between or among the Company or any Restricted Subsidiary and any Affiliate of the Company or a joint venture or similar Person that would otherwise be subject to this covenant solely because the Company or a Restricted Subsidiary owns any of the Capital Stock of or otherwise controls such Affiliate, joint venture or similar Person;

(9) any payments or other transactions pursuant to Tax Sharing Agreements between the Company and any other Person or any Restricted Subsidiary and any other Person with which the Company or any Restricted Subsidiary files a consolidated tax return or with which the Company or any Restricted Subsidiary is part of a group for tax purposes or any tax advantageous group contribution made pursuant to applicable legislation; *provided*, *however*, that any such Tax Sharing Agreement does not permit or require payments in excess of the amount of Tax that would be payable by the Company and its Restricted Subsidiaries on a stand-alone basis;

(10) the Senior Secured Term Loans Agreement, the Schuldschein Loan Agreement, the 2025 Senior Secured Indenture, the 2023 Senior Secured Indenture, the Indenture or other Senior Secured Note Documents (as defined in the Intercreditor Deed), the Intercreditor Deed, the 2024 IGH Notes Indenture or other High Yield Documents (as defined in the Intercreditor Deed), any collateral for (including the High Yield Notes Shared Collateral) or guarantee by the Company or any Restricted Subsidiaries of any of the foregoing or any Permitted Refinancing Indebtedness in respect thereof, the Proceeds Loans Documents, the Proceeds Loans, any collateral for or guarantee of any Proceeds Loans, any release of any Proceeds Loans or any release of any guarantee or collateral with respect thereto and any similar agreement or action relating to any other Indebtedness not prohibited by the Indenture;

(11) (A) issuances or sales of Capital Stock of the Company, any receipt of capital contributions by the Company and any issuance or incurrence of any Subordinated Shareholder Funding; *provided* that the interest rate and other financial terms of such Subordinated Shareholder Funding are approved by a majority of the members of the Board of Directors of the Company and (B) any amendment, waiver or other transaction with respect to any Subordinated Shareholder Funding that is in compliance with the other provisions of the Indenture and, if applicable, the Intercreditor Deed or any additional intercreditor agreement, as applicable;

(12) any transaction effected in connection with a Permitted Receivables Financing;

(13) Specified Affiliate Payments;

(14) to the extent that a Refining/Entrepreneurial Entity or the Infrastructure Entity may be deemed to be an Affiliate of the Company, the provision of administrative or infrastructure goods or services, asset sharing, the allocation of customers, contracts or other business or any other transaction in the ordinary course of business between the Company or a Restricted Subsidiary and such Refining/Entrepreneurial Entity or the Infrastructure Entity, as the case may be, *provided* that, in each case, such transactions, when taken together with all other transactions between the Company and its Restricted Subsidiaries, on the one hand, and either the Refining/Entrepreneurial Entities or the Infrastructure Entity, on the other hand, are in all material respects on terms substantially consistent with those that might have been obtained in comparable transactions at such time on an arm's length basis from a Person that is not an Affiliate, as determined by the Company in good faith (it being understood that where such transactions are entered into pursuant to a master agreement or similar arrangement, such arm's length determination may be made with respect to such agreement or arrangement, which will cover all transactions entered into pursuant thereto);

(15) any transaction by any Person referred to in clause (a)(3) of the definition of Permitted Investment that is entered pursuant to an arrangement existing (or that is made pursuant to, and as required under, legally binding agreements that exist) on the date such Person becomes a Restricted Subsidiary or is merged or consolidated with or into, or transfers or conveys substantially all of its assets to, or is liquidated into, the Company or any Restricted Subsidiary; *provided* that such agreement was not entered into in contemplation of such Person becoming a Restricted Subsidiary or such merger, consolidation, transfer, conveyance or liquidation;

(16) to the extent that a Lavéra Entity may be deemed to be an Affiliate of the Company, the provision of administrative or infrastructure goods or services, asset sharing, the allocation of customers, contracts or other business, or any other transaction in the ordinary course of business between the Company or a Restricted Subsidiary and such Lavéra Entity; *provided* that such transactions, when taken together with all other transactions between the Company and its Restricted Subsidiaries, on the one hand, and the Lavéra Entities, on the other hand, are in all material respects not inconsistent with those applying prior to the Lavéra Divestiture for similar transactions among such Persons;

(17) to the extent that a Grangemouth Entity may be deemed to be an Affiliate of the Company, the provision of administrative or infrastructure goods or

services, asset sharing, the allocation of customers, contracts or other business or any other transaction in the ordinary course of business between the Company or a Restricted Subsidiary and such Grangemouth Entity; *provided* that in each such case such transactions, when taken together with all other transactions between the Company and its Restricted Subsidiaries, on the one hand, and the Grangemouth Entities, on the other hand, are in all material respects on terms substantially consistent with those that would have been obtained in comparable transactions at such time on an arm's length basis from a Person who is not an Affiliate, as determined by the Company in good faith (it being understood that where such transactions are entered into pursuant to a master agreement or similar arrangement, such arm's length determination may be made with respect to such agreement or arrangement, which will cover all transactions entered into pursuant thereto);

(18) a sale or disposition of (A) any and all equity, debt and other interests held by the Company and the Restricted Subsidiaries in INEOS Investments or (B) any dividends, payments or other distributions equal to amounts received as dividends, payments and other distributions or proceeds of any sale or other disposition in respect of such interests;

(19) to the extent that any LAO Entity may be deemed to be an Affiliate of the Company, the provision of administrative or infrastructure goods or services, asset sharing, the allocation of customers, contracts or other business, or any other transaction in the ordinary course of business between the Company or a Restricted Subsidiary and such LAO Entity; *provided* that, in each case, such transactions, when taken together with all other transactions between the Company and its Restricted Subsidiaries, on the one hand, and the LAO Entities, on the other hand, are in all material respects on terms substantially consistent with those that might have been obtained in comparable transactions at such time on an arm's length basis from a Person that is not an Affiliate, as determined by the Company in good faith (it being understood that where such transactions are entered into pursuant to a master agreement or similar arrangement, such arm's length determination may be made with respect to such agreement or arrangement, which will cover all transactions entered into pursuant thereto);

(20) to the extent that a Project Finance Entity may be deemed to be an Affiliate of the Company, the provision of administrative or infrastructure goods or services, asset sharing, the allocation of customers, contracts or other business or any other transaction in the ordinary course of business between the Company or a Restricted Subsidiary and such Project Finance Entity; *provided* that, in each case, such transactions, when taken together with all other transactions between the Company and its Restricted Subsidiaries, on the one hand, and the Project Finance Entity, on the other hand, are in all material respects on terms substantially consistent with those that might have been obtained in comparable transactions at such time on an arm's length basis from a Person that is not an Affiliate, as determined by the Company in good faith (it being understood that where such transactions are entered into pursuant to a master agreement or similar arrangement, such arm's length determination may be made with respect to such agreement or arrangement, which will cover all transactions entered into pursuant thereto);

(21) any transaction effected pursuant to an inventory financing or similar arrangement that is incurred pursuant to clause (22) of the definition of Permitted Indebtedness;

(22) to the extent that a German pension trust or any other Person to which such German pension trust may loan funds may be deemed to be an Affiliate of the Company, the provision of administrative or infrastructure goods or services, asset sharing or other business or any other transaction in the ordinary course of business or sale and leaseback transactions between the Company or a Restricted Subsidiary and such German pension trust or other Person; *provided* that, in each case, such transactions, when taken together with all other transactions between the Company and its Restricted Subsidiaries, on the one hand, and the German pension trust or other Person, on the other hand, are in all material respects on terms substantially consistent with those that might have been obtained in comparable transactions at such time on an arm's length basis from a Person that is not an Affiliate, as determined by the Company in good faith (it being understood that where such transactions are entered into pursuant to a master agreement or similar arrangement, such arm's length determination may be made with respect to such agreement or arrangement, which will cover all transactions entered into pursuant thereto); and

(23) any transaction effected as part of a Permitted Reorganization.

Limitation on Liens

The Company will not, and will not cause or permit any Restricted Subsidiary to, directly or indirectly, create, incur, assume, affirm or suffer to exist any Lien (the "**Initial Lien**") of any kind securing any Indebtedness upon any property or assets of the Company or any Restricted Subsidiary, including any Capital Stock or intercompany notes or other Indebtedness of any Restricted Subsidiary, owned on the Issue Date or acquired after the Issue Date, or any income, profits or proceeds therefrom, except (a) in the case of any property or asset that does not constitute Collateral, (i) Permitted Liens and (ii) Liens on property or assets that are not Permitted Liens if the Notes and the Guarantees are, subject to the Security Principles, directly secured equally and ratably or on a prior basis with the Indebtedness secured by such Initial Lien (and if such Indebtedness so secured is Subordinated Indebtedness, on a senior priority basis), and (b) in the case of any property or asset that constitutes Collateral, Permitted Collateral Liens (for the avoidance of doubt, it being understood that any Lien existing in reliance on clause (a)(ii) above shall not also be required to be a Permitted Collateral Lien notwithstanding that the assets subject thereto shall have become Collateral).

Any Lien created for the benefit of the holders of the Notes pursuant to clause (a)(ii) of the preceding paragraph of this covenant will, and will be deemed to, provide by its terms that such Lien shall be automatically and unconditionally released and discharged, without any action by the Trustee, the Security Trustee or the holders of the Notes (and each holder of the Notes will be deemed to have irrevocably authorized the Trustee and the Security Trustee to execute and deliver (and, at the request and cost of the Company, each of the Trustee and the Security Trustee will execute and deliver) any document to the extent necessary or reasonably requested by the Company to evidence such release and discharge), (a) upon the release and discharge of the applicable Initial Lien, (b) upon the sale or other disposition of the property or assets subject to such Initial Lien (or the sale or other disposition of the Person that owns such property or assets) in compliance with the terms of the Indenture, (c) with respect to the property or assets or Capital Stock of any Guarantor that are encumbered by such Lien, upon the release of the Guarantee of such Guarantor in accordance with the terms of the Indenture, (d) with respect to the property or assets of, or the Capital Stock of, any Restricted Subsidiary that are encumbered by such Lien, upon the designation of such Restricted Subsidiary as an

Unrestricted Subsidiary in accordance with the terms of the Indenture, (e) upon the effectiveness of any defeasance or satisfaction and discharge of the Notes as specified in the Indenture, (f) in the case of any Lien on any Proceeds Loan, upon the payment in full or other discharge of such Proceeds Loan (including as a result of any merger or consolidation of the payor or the payee thereunder) or (g) as otherwise provided under "—Brief Description of the Notes, the Guarantees and the Security—Release of Security"; *provided*, *however*, that the Company shall have the right, in its sole discretion, by written notice to the Trustee and the Security Trustee delivered prior to the automatic release and discharge of any such Lien as specified above, to (i) waive such automatic release and discharge of such Lien and maintain such Lien in effect until such time as the Company shall instruct and direct the Security Trustee in writing to release and discharge such Lien or (ii) elect that the release and discharge of such Lien shall not occur automatically as contemplated by this paragraph but shall occur at such time or times, in such manner and order and upon the occurrence of such other events as shall be specified by the Company in such notice to the Trustee and the Security Trustee (and the Trustee and the Security Trustee, at the request of the Company, shall execute and deliver any document reasonably requested by the Company to effect and evidence the release and discharge of such Lien); *provided further* that nothing in this clause (ii) shall allow the Company to require the release and discharge of any Lien prior to (unless such release and discharge is to occur substantially concurrently with) the occurrence of the applicable event(s) set forth in clauses (a) through (g) above providing for the release and discharge thereof.

For the avoidance of doubt, for purposes of determining compliance with any euro-denominated restriction on the incurrence of any Lien where the Indebtedness secured by such Lien is denominated in a different currency, the amount of such Indebtedness shall be the Euro Equivalent determined on the date of such determination; *provided*, *however*, that if any such Indebtedness is Indebtedness that is denominated in a different currency and is subject to a Currency Hedging Agreement (with respect to euro) covering principal amounts payable on such Indebtedness, the amount of such Indebtedness expressed in euro shall be adjusted to take into account the effect of such agreement. Notwithstanding any other provision of this covenant, the maximum amount of Indebtedness secured by any Lien that the Company or a Restricted Subsidiary may incur pursuant to this covenant shall not be deemed to be exceeded, with respect to any outstanding Indebtedness, solely as a result of fluctuations in the exchange rates of currencies (and such Indebtedness will be permitted to be refinanced with other secured Indebtedness notwithstanding that, after giving effect to such refinancing, such excess shall continue).

Limitation on Sale of Assets

(a) The Company will not, and will not cause or permit any of its Restricted Subsidiaries to, directly or indirectly, consummate an Asset Sale unless:

(1) at least 75% of the consideration from such Asset Sale or series of related Asset Sales is received (A) in cash, cash equivalents or Temporary Cash Investments or (B) in the form of the assumption by the purchaser of liabilities of the Company or any of its Restricted Subsidiaries (other than liabilities (or guarantees thereof) that are by their terms subordinated to the Notes or Guarantees) as a result of which the Company and its Restricted Subsidiaries are no longer obligated with respect to such liabilities; and

(2) the Company or such Restricted Subsidiary receives consideration at the time of such Asset Sale at least equal to the Fair Market Value of the properties or assets subject to such Asset Sale.

(b) Within 540 days after the receipt of any Net Cash Proceeds from an Asset Sale, the Company or any of the Restricted Subsidiaries may apply all or a portion of such Net Cash Proceeds (at the option of the Company or any Restricted Subsidiary):

(1) to invest in properties and other assets (including Capital Stock) that (as determined by the Board of Directors or senior management of the Company) replace the properties and assets (including Capital Stock) that were the subject of such Asset Sale or in properties and assets that will be used in or are related to the businesses of the Company or its Restricted Subsidiaries existing on the Issue Date or prior to such Asset Sale;

(2) to either (i) purchase Notes pursuant to an offer to all holders of such Notes at a purchase price equal to or greater than 100% of the principal amount thereof, plus accrued and unpaid interest to (but not including) the date of purchase (a "**Notes Offer**"), and/or (ii) redeem the Notes on a *pro rata* basis pursuant to the redemption provisions set forth above under the caption "—Optional Redemption";

(3) to repurchase, prepay, redeem, repay or otherwise acquire for value (A) any Indebtedness under the Senior Secured Credit Facilities, the Schuldschein Loan or the 2025 Senior Secured Notes (or, in each case, any Permitted Refinancing Indebtedness in respect thereof) or (B) any Pari Passu Indebtedness that is secured by a Permitted Collateral Lien on any assets that ranks equal to or prior to any Lien on such assets securing the Notes, any Guarantee or the Indenture;

(4) to repurchase, prepay, redeem, repay or otherwise acquire for value Indebtedness that is (or, immediately prior to such Asset Sale, was) secured by a Lien (other than a Permitted Collateral Lien (except a Permitted Collateral Lien referred to in clause (k) of the definition of such term)) on any of the properties or assets which are the subject of such Asset Sale;

(5) to repurchase, prepay, redeem, repay or otherwise acquire for value any Indebtedness of the Company or a Restricted Subsidiary that is not Pari Passu Indebtedness or Subordinated Indebtedness; or

(6) pursuant to a binding commitment (including pursuant to an offer to purchase), to apply such Net Cash Proceeds in a manner described in any of clauses (1) through (5) of this paragraph; *provided* that such binding commitment shall be treated as a permitted application of such Net Cash Proceeds from the date of such commitment until the earlier of (A) the date on which such application of such Net Cash Proceeds occurs and (B) the 180th day following the expiration of the aforementioned 540-day period.

The amount of Net Cash Proceeds not applied as specified above within such 540-day period shall constitute "**Excess Proceeds**." Pending the final application of the Net Cash Proceeds of any Asset Sale, the Company or any Restricted Subsidiary may temporarily reduce Indebtedness, invest such Net Cash Proceeds in Temporary Cash Investments or otherwise use such Net Cash Proceeds for general corporate purposes.

(c) When the aggregate amount of Excess Proceeds exceeds €100.0 million, the Company (or a Restricted Subsidiary on the Company's behalf) will apply the Excess Proceeds to the repurchase, prepayment, redemption, repayment or acquisition for value of Indebtedness under the Notes and any Pari Passu Indebtedness secured by a Permitted Collateral Lien that ranks equal to or prior to any Lien on the applicable assets securing the Notes (which, solely for purposes of this clause (c), shall be deemed to include any Permitted Receivables Financing) outstanding with similar provisions requiring the Company or a Restricted Subsidiary to make an offer to repurchase, prepay, redeem, repay or acquire for value such Indebtedness with the proceeds from any Asset Sale as follows:

(1) the Company or a Restricted Subsidiary will make an offer to purchase (an "**Asset Sale Offer**") from all holders of the Notes in accordance with the procedures set forth in the Indenture in respect of an aggregate maximum principal amount of Notes (expressed as a multiple of €1,000) (the "**Note Amount**") equal to the product of such Excess Proceeds multiplied by a fraction, the numerator of which is the outstanding principal amount of the Notes, and the denominator of which is the sum of the outstanding principal amount of the Notes and such Pari Passu Indebtedness (subject to proration in the event the Note Amount is less than the aggregate Offered Price (as defined herein) of all Notes tendered);

(2) to the extent required by such Pari Passu Indebtedness to permanently reduce the principal amount of such Pari Passu Indebtedness, the Company or a Restricted Subsidiary, as the case may be, will make an offer to repurchase, prepay, redeem, repay or otherwise acquire for value such Pari Passu Indebtedness (a "**Pari Passu Offer**") in an amount (the "**Pari Passu Debt Amount**") equal to the excess of the Excess Proceeds over the Note Amount; *provided* that in no event will the Company or a Restricted Subsidiary be required to make a Pari Passu Offer in a Pari Passu Debt Amount exceeding the principal amount of such Pari Passu Indebtedness plus the amount of any premium required to be paid to repurchase such Pari Passu Indebtedness; and

(3) the offer price for the Notes will be payable in cash in an amount equal to 100% of the principal amount of the Notes plus accrued and unpaid interest, if any, to the date (the "**Offer Date**") such Asset Sale Offer is consummated (the "**Offered Price**"), in accordance with the procedures set forth in the Indenture. To the extent that the aggregate Offered Price of the Notes tendered pursuant to the Asset Sale Offer is less than the Note Amount relating thereto or the aggregate amount of Pari Passu Indebtedness that is repurchased, prepaid, redeemed, repaid or otherwise acquired for value in a Pari Passu Offer is less than the Pari Passu Debt Amount, the Company or any Restricted Subsidiary may use any remaining Excess Proceeds for general corporate purposes. If the aggregate principal amount of Notes and Pari Passu Indebtedness surrendered by holders thereof exceeds the amount of Excess Proceeds, the Company shall select the Notes to be purchased on a pro rata basis, unless otherwise required by applicable law or applicable stock exchange or depositary requirements. Upon the completion of the purchase of all the Notes tendered pursuant to an Asset Sale Offer and the completion of a Pari Passu Offer, the amount of Excess Proceeds, if any, shall be reset at zero.

The Issuer, the Company or a Restricted Subsidiary, as the case may be, may make an Asset Sale Offer prior to the expiration of the 540-day period referred to in paragraph (b) above.

(d) If the Company or a Restricted Subsidiary becomes obligated to make an Asset Sale Offer pursuant to paragraph (c) above, the Notes and the Pari Passu Indebtedness shall be purchased by the Company or a Restricted Subsidiary, at the option of the holders thereof, in whole or in part (in a principal amount of €100,000, or an integral multiple of €1,000 in excess thereof, such that no Note of less than €100,000 remains outstanding thereafter) on a date that is not earlier than 30 days and not later than 60 days from the date the notice of the Asset Sale Offer is given to holders, or such later date as may be necessary for the Company or a Restricted Subsidiary to comply with the requirements under the U.S. Exchange Act or other applicable laws or regulations (including, without limitation, those of any securities exchange on which the Notes are listed).

(e) If the Company or a Restricted Subsidiary is required to make an Asset Sale Offer or makes a Notes Offer, the Company and such Restricted Subsidiary will comply with the applicable tender offer rules, including Rule 14e-1 under the U.S. Exchange Act, and any other applicable securities laws or regulations, including administrative interpretations thereof (including those of the United States and the United Kingdom, to the extent applicable), in connection with such Asset Sale Offer or Notes Offer. To the extent that the provisions of any applicable securities laws or regulations conflict with the provisions of this covenant (other than the obligation to make an Asset Sale Offer pursuant to this covenant), the Company and such Restricted Subsidiary, as the case may be, will comply with the securities laws and regulations and will not be deemed to have breached its obligations described in this covenant by virtue thereof.

(f) If the Offer Date is on or after an interest record date and on or before the related interest payment date, any accrued and unpaid interest will be paid to the Person in whose name a Note is registered at the close of business on such record date, and no additional interest will be payable to holders of the Notes who tender Notes pursuant to the Asset Sale Offer or Notes Offer.

(g) Compliance with paragraph (a) of this covenant shall be determined as of the date of consummation of the applicable Asset Sale, without giving effect to any post-closing purchase price adjustments not then determined, and for purposes of sub-clause (1) thereof, the following will be deemed to be cash:

(1) securities, notes or other obligations received by the Company or any Restricted Subsidiary from the transferee that are converted by the Company or such Restricted Subsidiary into cash, cash equivalents or Temporary Cash Investments within 180 days following the closing of such Asset Sale;

(2) liabilities of any Restricted Subsidiary that is no longer a Restricted Subsidiary as a result of such Asset Sale, *provided* that the Company and each other Restricted Subsidiary are released from any guarantee of payment of such liabilities in connection with such Asset Sale;

(3) consideration consisting of liabilities of the Company or any Restricted Subsidiary (other than Subordinated Indebtedness) received after the Issue Date from Persons that are not the Company or any Restricted Subsidiary;

(4) any properties and assets (including Capital Stock of a business) of the kind referred to in clause (b)(1) above; and

(5) any Designated Non-Cash Consideration received by the Company or any Restricted Subsidiary in such Asset Sale having an aggregate Fair Market Value, taken together with all other Designated Non-Cash Consideration received pursuant to this covenant that is at that time outstanding, not to exceed (for the avoidance of doubt, with the Fair Market Value of each item of Designated Non-Cash Consideration being measured at the time received and without giving effect to subsequent changes in value) 5% of Total Assets.

Limitation on Issuance of Guarantees of Indebtedness by Restricted Subsidiaries

(a) The Company will not cause or permit any Restricted Subsidiary (which is not a Guarantor or the Issuer), directly or indirectly, to guarantee (i) any Indebtedness of the Issuer or any Guarantor, in each case, under any Credit Facilities or (ii) any Public Debt (including, for the avoidance of doubt, any guarantee of Public Debt) of the Issuer or any Guarantor, unless such Restricted Subsidiary (if not a Guarantor or the Issuer) simultaneously executes and delivers a supplemental indenture to the Indenture providing for a Guarantee of the Notes on the same terms as the other Guarantees of the Notes (subject to any applicable Guarantee limitations) by the Guarantors; *provided* that:

(1) no Guarantee shall be required as a result of any guarantee of Indebtedness that existed at the time such Person became a Restricted Subsidiary if the guarantee was not incurred in connection with, or in contemplation of, such Person becoming a Restricted Subsidiary;

(2) no Guarantee shall be required as a result of any guarantee in connection with a Permitted Receivables Financing;

(3) such Guarantee need not be secured unless required pursuant to the "—Limitation on Liens" covenant;

(4) if such Indebtedness is by its terms expressly subordinated to the Notes or any Guarantee, any such guarantee by such Restricted Subsidiary of such Indebtedness shall be subordinated to such Restricted Subsidiary's Guarantee of the Notes at least to the same extent as such Indebtedness is subordinated to the Notes or any other Guarantee;

(5) no Guarantee shall be required as a result of any guarantee given in connection with any Cash Management Arrangement of the Company or any Restricted Subsidiary;

(6) no Guarantee shall be required under this covenant if such Guarantee would not be required under the Security Principles, including if such Guarantee could reasonably be expected to give rise to or result in (A) personal, whether civil or criminal, liability for any officers, directors or shareholders of such Restricted Subsidiary, (B) any violation of applicable law that cannot be avoided or otherwise prevented through measures reasonably available to the Company or such Restricted Subsidiary or (C) any significant cost, expense, liability or obligation (including with respect to any Taxes) other than reasonable out of pocket expenses and other than reasonable expenses incurred in connection with any governmental or regulatory filings required as a result of, or any measures pursuant to clause (B) undertaken in connection with, such Guarantee, which cannot be avoided through measures reasonably available to the Company or such Restricted Subsidiary (it being understood, for the avoidance of doubt, that the cost of providing a Guarantee shall in any event be deemed to be significant and unreasonable (and such Guarantee shall not be required to be provided) if the cost shall exceed the realizable value of such Guarantee); and

(7) each such Guarantee will be limited as set forth in or contemplated by the Indenture and the Security Principles, including as necessary to recognize certain defenses generally available to guarantors (including those that relate to fraudulent conveyance or transfer, voidable preference, financial assistance,

corporate purpose, capital maintenance or similar laws, rules or regulations or defenses affecting the rights of creditors generally) or other considerations under applicable law.

(b) Notwithstanding the foregoing, any Guarantee by a Restricted Subsidiary created pursuant to paragraph (a) above will be deemed to provide by its terms that it shall be automatically and unconditionally released and discharged, without any action by the Trustee, the Security Trustee or the holders of the Notes, upon:

(1) any sale, exchange or transfer, directly or indirectly, to any Person that is not the Company or any of its Restricted Subsidiaries, of all of the Capital Stock held by the Company and other Restricted Subsidiaries in, or all or substantially all the assets of, such Restricted Subsidiary (which sale, exchange or transfer is not prohibited by the Indenture) and such Restricted Subsidiary is released from all guarantees, if any, by it of Credit Facilities and Public Debt of the Company or any Restricted Subsidiaries;

(2) with respect to any Guarantees created after the Issue Date, the release by the holders of the Credit Facilities and Public Debt of the Issuer or any Guarantor described in paragraph (a) above of their guarantee by such Restricted Subsidiary at such time as (A) no other Credit Facility or Public Debt of the Issuer or any other Guarantor has been guaranteed by such Restricted Subsidiary or (B) the holders of all such other Credit Facilities and Public Debt of the Issuer or any Guarantor which is guaranteed by such Restricted Subsidiary also release their guarantee by such Restricted Subsidiary;

(3) any defeasance or discharge of the Notes as provided in "—Defeasance or Covenant Defeasance of Indenture" or "—Satisfaction and Discharge"; or

(4) the satisfaction of the requirements of any of the other provisions described under "—Brief Description of the Notes, the Guarantees and the Security—Release of the Guarantees";

provided, *however*, that the Company shall have the right, in its sole discretion, by written notice to the Trustee delivered prior to the automatic release and discharge of any such Guarantee as specified above, to (A) waive such automatic release and discharge of such Guarantee and maintain such Guarantee in effect until such time as the Company shall instruct and direct the Trustee in writing to release and discharge such Guarantee or (B) elect that the release and discharge of such Guarantee shall not occur automatically as contemplated by this paragraph (b) but shall occur at such time or times, in such manner and order and upon the occurrence of such other events as shall be specified by the Company in such notice to the Trustee (and the Trustee, at the request of the Company, shall execute and deliver any document requested by the Company to effect and evidence the release of such Guarantee); *provided further* that nothing in this clause (B) shall allow the Company to require the release and discharge of any Guarantee prior to (unless such release and discharge is to occur substantially concurrently with) the occurrence of the applicable event(s) set forth in clauses (b)(1) through (4) above providing for the release and discharge thereof.

Limitation on Dividend and Other Payment Restrictions Affecting Restricted Subsidiaries

(a) The Company will not, and will not cause or permit any of its Restricted Subsidiaries to, directly or indirectly, create or otherwise cause to exist or become effective any consensual encumbrance or restriction on the ability of any Restricted Subsidiary to:

(1) pay dividends or make any other distribution on its Capital Stock or any other interest or participation in, or measured by, its profits to the Company or any Restricted Subsidiary;

(2) pay any Indebtedness owed to the Company or any Restricted Subsidiary;

(3) make any loans or advances to the Company or any Restricted Subsidiary; or

(4) transfer any of its properties or assets to the Company or any Restricted Subsidiary;

provided that (x) the priority of any Preferred Stock in receiving dividends or liquidating distributions prior to dividends or liquidating distributions being paid on common stock and (y) the subordination of (including the application of any standstill requirements to) any Indebtedness owed to the Company or any Restricted Subsidiary to other Indebtedness incurred by the Company or any Restricted Subsidiary shall not be deemed to constitute such an encumbrance or restriction.

(b) Notwithstanding anything to the contrary in paragraph (a) above, the provisions of such paragraph will not prohibit:

(1) any encumbrance or restriction pursuant to (A) the Senior Secured Term Loans Agreement, the Schuldschein Loan Agreement, any LC Facility, the 2025 Senior Secured Indenture, the 2023 Senior Secured Indenture, the Indenture, other Senior Secured Notes Documents (as defined in the Intercreditor Deed), the 2024 IGH Notes Indenture, other High Yield Documents, the Intercreditor Deed, the Proceeds Loans Documents and the Security Documents, (B) any other agreement in effect on the Issue Date and (C) any indenture for any Public Debt of the Company or any Restricted Subsidiary;

(2) any encumbrance or restriction with respect to a Restricted Subsidiary that is not a Restricted Subsidiary of the Company on the Issue Date in existence at the time such Person becomes a Restricted Subsidiary of the Company and not incurred in connection with, or in contemplation of, such Person becoming a Restricted Subsidiary; *provided* that such encumbrances and restrictions are not applicable to the Company or any Restricted Subsidiary or the properties or assets of the Company or any Restricted Subsidiary other than such Person (and its properties or assets or Capital Stock) that is becoming a Restricted Subsidiary;

(3) any encumbrance or restriction pursuant to an agreement or instrument of a Person or relating to any Capital Stock or Indebtedness of a Person which is assumed by the Company or any Restricted Subsidiary in connection with an acquisition of assets (other than Capital Stock or Indebtedness incurred as consideration in, or to provide all or any portion of the funds utilized to consummate, the transaction or series of related transactions pursuant to which the Company or any Restricted Subsidiary entered into such acquisition) and outstanding on the date of consummation of such acquisition, which encumbrance or restriction is not applicable to any Person, or the properties or

assets of any Person, other than the Person, or property or assets or Capital Stock of the Person, so acquired;

(4) any encumbrance or restriction under the Indenture and the Notes (including Additional Notes);

(5) any encumbrance or restriction under Purchase Money Obligations and Capital Lease Obligations that imposes restrictions with respect only to the property and assets that are the subject thereof (and any rights relating thereto) and any restriction pursuant to a joint venture agreement that imposes restrictions on the transfer of the assets of the joint venture;

(6) any encumbrance or restriction (A) that restricts in a customary manner the subletting, assignment or transfer of any property or asset that is subject to a lease, license or similar contract, (B) by virtue of any transfer of, agreement to transfer, option or right with respect to or a Lien on, any property or assets of the Company or any Restricted Subsidiary not otherwise prohibited by the Indenture, (C) contained in security agreements, mortgages or other agreements relating to any secured Indebtedness to the extent such encumbrance or restriction restricts the transfer of the property or assets subject to the Liens securing such Indebtedness, (D) pursuant to customary provisions restricting dispositions of real property interests set forth in any reciprocal easement agreements of the Company or any Restricted Subsidiary or (E) in respect of Intellectual Property contained in licenses or sublicenses of, or other grants of rights to use or exploit, such Intellectual Property;

(7) any encumbrances or restrictions pursuant to contracts for the sale of assets, including any encumbrance or restriction with respect to any Restricted Subsidiary imposed pursuant to an agreement entered into for the sale or disposition of all or substantially all of the Capital Stock or assets of such Restricted Subsidiary pending the closing of such sale or disposition as determined in good faith by the Board of Directors or the senior management of the Company;

(8) customary provisions in leases, licenses and other agreements restricting the assignment thereof;

(9) any encumbrances or restrictions created under any agreement (A) with respect to Indebtedness permitted to be incurred subsequent to the Issue Date pursuant to the provisions of the covenant described under the caption "—Limitation on Indebtedness" if (i) the encumbrances and restrictions are not materially less favorable to the holders of the Notes than those contained in the Senior Secured Term Loans Agreement or the Indenture, in each case, on the Issue Date or in comparable financings (as determined in good faith by the Company) or (ii) the Company determines at the time of the incurrence of such Indebtedness that such encumbrances or restrictions will not materially adversely affect the ability of the Issuer to make principal or interest payments on the Notes or (B) constituting an additional intercreditor agreement entered into in compliance with the covenant described under "—Intercreditor Deed; Additional Intercreditor Agreements";

(10) any encumbrances or restrictions required by any Governmental Authority having jurisdiction over the Company or any of its Restricted Subsidiaries or any of their businesses;

(11) in the case of (A) any Restricted Subsidiary that is not a Wholly Owned Restricted Subsidiary or (B) with respect to clause (4) of the preceding paragraph (a) only, the Capital Stock in any Person that is not a Restricted Subsidiary (including any Unrestricted Subsidiary), encumbrances and restrictions imposed by the organizational documents of such Restricted Subsidiary or such other Person or contained in any related joint venture, shareholders' or similar agreement or, in the case of clause (B), in any agreement or instrument relating to Indebtedness of such Person; *provided* that such encumbrances and restrictions apply only to such Restricted Subsidiary (and its properties and assets) and/or to any Capital Stock in such Restricted Subsidiary or such other Person; *provided further* that the Company determines that such encumbrances or restrictions will not materially adversely affect the ability of the Issuer to make principal or interest payments on the Notes;

(12) encumbrances or restrictions existing by reason of any Lien permitted under "—Limitation on Liens";

(13) any encumbrance or restriction on cash or other deposits or net worth imposed under leases, agreements with customers entered into in the ordinary course of business or other agreements entered into in the ordinary course of business;

(14) any encumbrance or restriction pursuant to Hedging Obligations;

(15) any encumbrance or restriction effected in connection with a Permitted Receivables Financing that, in the good faith determination of the Board of Directors or senior management of the Company, is necessary or advisable to effect such Permitted Receivables Financing;

(16) contracts entered into in the ordinary course of business, not relating to Indebtedness, and that do not, individually or in the aggregate, (A) detract from the value of property or assets of the Company or any Restricted Subsidiary of the Company in any manner material to the Company and its Restricted Subsidiaries, taken as a whole, or (B) materially adversely affect the ability of the Issuer to make principal or interest payments in respect of the Notes; or

(17) any encumbrance or restriction existing under any agreement that extends, renews, refinances or replaces the agreements containing the encumbrances or restrictions in the foregoing clauses (1) through (16) or in this clause (17); *provided* that the terms and conditions of any such encumbrances or restrictions are no more restrictive in any material respect than those under or pursuant to the agreement so extended, renewed, refinanced or replaced, as determined by the Board of Directors or senior management of the Company in good faith.

Limitation on Layered Debt

The Company and the Issuer will not, and the Company will not permit any other Guarantor to, directly or indirectly, incur or otherwise permit to exist any Indebtedness (including Permitted Indebtedness) that is contractually subordinated in right of payment to any other Indebtedness of the Issuer or any Guarantor, as the case may be, unless such Indebtedness is also contractually subordinated in right of payment to the Notes or the applicable Guarantor's Guarantee on reasonably similar terms (or, for the avoidance of doubt, on terms consistent with the provisions of the Intercreditor Deed); *provided*, *however*, that no Indebtedness consisting of, or Indebtedness consisting of guarantees of, Second Secured Liabilities incurred after the Issue Date shall be subject to the limitations set forth in this covenant; and *provided further*, that no Indebtedness will be deemed to be subordinated in right of payment to any other Indebtedness of the Issuer or any Guarantor solely by virtue of being unsecured or by virtue of being secured with different collateral, by virtue of being secured on a first or junior priority basis, by virtue of claims with respect thereto being subject to a waterfall or other payment ordering provisions affecting different tranches of Indebtedness or by virtue of not being guaranteed. In addition, junior liens, second liens and other contractual arrangements that provide for priorities among holders of the same or different issues of Indebtedness with respect to any collateral or the proceeds of collateral or tranching of Indebtedness under Credit Facilities shall not constitute subordination in right of payment.

Limitation on Unrestricted Subsidiaries

The Company may designate after the Issue Date (a "**Designation**") any Subsidiary of the Company (other than the Issuer) as an Unrestricted Subsidiary under the Indenture; *provided* that:

(a) no Default or Event of Default shall have occurred and be continuing at the time of or after giving effect to such Designation or would occur as a consequence of such Designation;

(b) either (i) the Subsidiary to be so designated has total assets of €1,000 or less or (ii) the Company would be permitted to make a Restricted Payment, Permitted Payment or Permitted Investment at the time of such Designation (assuming the effectiveness of such Designation) pursuant to the covenant described under "—Limitation on Restricted Payments" in an amount (the "**Designation Amount**") equal to the greater of (1) the net book value of the Company's interest in such Subsidiary calculated in accordance with IFRS or (2) the Fair Market Value of the Company's interest in such Subsidiary;

(c) such Subsidiary does not own directly or indirectly any Capital Stock of the Company or any Restricted Subsidiary of the Company which is not simultaneously being designated an Unrestricted Subsidiary; and

(d) such Subsidiary is not a party to any agreement, contract, arrangement or understanding at the time of such Designation with the Company or any Restricted Subsidiary (other than any Restricted Subsidiary that is to be simultaneously designated as an Unrestricted Subsidiary) unless (i) the terms of any such agreement, contract, arrangement or understanding are no less favorable in any material respect to the Company or such Restricted Subsidiary than those that might be obtained at the time from Persons that are not Affiliates of the Company or would be permitted under the covenant described in "—Limitation on Transactions with Affiliates" or (ii) to the extent the requirements of clause (i) above are not satisfied, the value of such agreement, contract, arrangement or understanding to such Unrestricted Subsidiary (to the extent, for the avoidance of doubt, not already included in the Designation Amount) shall be deemed a Restricted Payment.

For purposes of the foregoing, the Designation of a Subsidiary of the Company as an Unrestricted Subsidiary shall be deemed to be the Designation of all of the Subsidiaries of such Subsidiary as Unrestricted Subsidiaries.

In the event of any Designation, unless sub-clause (i) of clause (b) of the first paragraph of this covenant applies, the Company will be deemed to have made an Investment constituting a Restricted Payment in an amount equal to the Designation Amount.

The Company will not and will not cause or permit any Restricted Subsidiary to at any time (a) provide a guarantee of, or subject any of its property or assets (other than the Capital Stock of any Unrestricted Subsidiary) to the satisfaction of, any Indebtedness of any Unrestricted Subsidiary (including any undertaking, agreement or instrument evidencing such Indebtedness) or (b) be directly or indirectly liable for any Indebtedness of any Unrestricted Subsidiary, in each case, except to the extent permitted under the covenants "—Limitation on Indebtedness" and "—Limitation on Restricted Payments."

The Company may redesignate any Unrestricted Subsidiary as a Restricted Subsidiary (a "**Redesignation**") if:

(a) no Default or Event of Default shall have occurred and be continuing at the time of and after giving effect to such Redesignation or would occur as a consequence of such Redesignation;

(b) all Liens and Indebtedness of such Unrestricted Subsidiary outstanding immediately following such Redesignation would, if incurred at such time, have been permitted to be incurred for all purposes of the Indenture; and

(c) unless such redesignated Subsidiary shall not have any Indebtedness outstanding (other than Indebtedness that would be Permitted Indebtedness), immediately after giving effect to such proposed Redesignation, and after giving *pro forma* effect to the incurrence of any such Indebtedness of such redesignated Subsidiary as if such Indebtedness was incurred on the date of the Redesignation, the Company could incur €1.00 of additional Indebtedness (other than Permitted Indebtedness) pursuant to the covenant described under "—Limitation on Indebtedness."

All Designations and Redesignations made in accordance with this covenant shall be evidenced by a resolution of the Board of Directors of the Company delivered to the Trustee certifying compliance with the foregoing provisions.

Impairment of Security Interest

The Parent and the Company will not, and the Company will not permit any Restricted Subsidiary to, take or knowingly or negligently omit to take any action which action or omission would have the result of materially impairing the security interests with respect to the Collateral for the benefit of the Trustee and the holders of the Notes, and the Parent and the Company shall not, and the Company shall not permit any Restricted Subsidiary to, grant to any Person other than the Security Trustee or Trustee, for the benefit of Trustee and the holders of the Notes (other than Additional Notes) and the other beneficiaries described in the Security Documents, any Lien whatsoever on any of the Collateral, in each case, except as otherwise permitted in the Indenture (including pursuant to the following paragraph or as described under "—Brief Description of the Notes, the Guarantees and the Security—Release of Security") or the Security Documents, including (i) the grant of any other Lien that is not prohibited by the "—Limitation on Liens" covenant, (ii) the implementation of any transaction that is subject to the covenant described under the caption "—Consolidation, Merger, Sale of Assets" and is completed in compliance therewith, (iii) the implementation of any transaction as part of a Permitted Reorganization and (iv) any sale, transfer or other disposition of Collateral that is permitted by the covenant described under the caption "—Limitation on Sale of Assets" or that does not constitute an Asset Sale under the definition thereof; *provided* that in the case of any sale, transfer or other disposition, other than in the ordinary course of business, by the Issuer or any Guarantor to the Company or any Restricted Subsidiary of any assets that constitute Collateral and that are material to the business and operations of the Issuer or such Guarantor, unless (A) the transferee thereof would be permitted, were it a Guarantor, to be released from its Guarantee pursuant to clause (a), (b), (c), (f) and (g) under the caption "—Brief Description of the Notes, the Guarantees and the Security—

Release of the Guarantees", (B) the transferee thereof would be permitted, were it a Guarantor, to be released from its Guarantee pursuant to clause (h) under the caption "—Brief Description of the Notes, the Guarantees and the Security—Release of the Guarantees" if the calculations set forth therein were redetermined on a *pro forma* basis to give effect to such sale, transfer or other deposition or (C) the release of Liens on such assets would be permitted under clause (f) or (k) under the caption "—Brief Description of the Notes, the Guarantees and the Security—Release of Security", then either the transferee thereof shall have granted or shall grant, substantially concurrently with such sale, transfer or other disposition, a Lien on such Collateral to the Security Trustee for the benefit of the Trustee and the holders of the Notes or an existing Lien on such Collateral in favor of the Security Trustee for the benefit of the Trustee and the holders of the Notes shall remain in effect immediately after such sale, transfer or other disposition, subject to any subsequent release thereof as provided under the caption "—Brief Description of the Notes, the Guarantees and the Security—Release of Security".

At the request of the Company from time to time, the Trustee and the Security Trustee shall, and will be deemed to have been irrevocably authorized and directed by the holders of the Notes to, in each case on behalf of such holders and without any further consent, authorization or other action by such holder, execute and deliver one or more amendments, supplements or other modifications to the Security Documents to:

(i) cure any ambiguity, omission, defect or inconsistency therein or reflect changes of a minor, technical or administrative nature;

(ii) provide for Permitted Collateral Liens;

(iii) add to the Collateral;

(iv) make any change necessary or desirable, in the good faith determination of the Board of Directors or senior management of the Company, in order to implement any transaction that is subject to and is completed in compliance with the covenant described under the caption "—Consolidation, Merger, Sale of Assets";

(v) implement any transaction as part of a Permitted Reorganization (including any such change to any Security Document to provide for upstream security and guarantees or security and guarantees over or in favor of Proceeds Loans);

(vi) provide for the release of any properties and assets constituting Collateral from the Liens created under any Security Document; *provided* that such release is followed by the substantially concurrent (as determined in good faith by the Company, it being agreed that in making such determination the Company may take into account the occurrence of any related transactions and that the re-taking need not occur on the same day as the release) re-taking (irrespective of the Security Principles) of a Lien in favor of the Security Trustee, for the benefit of the Trustee and the holders of the Notes, securing the Notes and/or the applicable Guarantees, as the case may be, on such properties or assets of at least equivalent priority (subject to any Liens thereon permitted hereunder); *provided further* that, in the case of this clause (vi), the Company will deliver to the Trustee either (1) a solvency opinion, in form and substance reasonably satisfactory to the Trustee, from an accounting, appraisal or investment banking firm of national standing confirming the solvency of the Company and its Restricted Subsidiaries, taken as a whole, after giving effect to any transactions relating to such release and/or re-taking, (2) a certificate substantially in the form of an exhibit attached to the Indenture from the chief financial officer or the Board of Directors of the Company (acting in good faith) which confirms the solvency of the Company and its Restricted Subsidiaries, taken as a whole, after giving effect to any transactions relating to such release and re-taking or (3) an opinion of counsel, in form and substance reasonably satisfactory to the Trustee (subject to customary exceptions and qualifications), confirming that, after giving effect to any such transactions, the Lien or Liens securing the Notes and/or the applicable Guarantees created under the Security Documents are valid and perfected Liens not otherwise subject to any limitation, imperfection or new hardening period, in equity or at law, to which such Lien or Liens were not otherwise subject immediately prior to such release and re-taking;

(vii) (A) provide for the release of the Liens on any Proceeds Loans upon the payment in full or other discharge of such Proceeds Loans (including as a result of any merger or consolidation of the payor or the payee thereunder) (and the release of the Liens on any amounts so repaid or discharged) or (B) with respect to any repayment, defeasance, satisfaction, cancellation or other discharge of all or any portion of the underlying Indebtedness giving rise to any Proceeds Loans, provide for the repayments, defeasance, satisfaction, cancellation or other discharge of such Proceeds Loans; *provided* that any amount remaining under such Proceeds Loan after such repayments, defeasance, satisfaction, cancellation or discharge remains subject to a valid Lien;

(viii) make any other change to the Security Documents to provide for additional Indebtedness (which may be Pari Passu Indebtedness or Subordinated Indebtedness) or other obligations that are permitted by the terms of the Indenture to be secured by a Lien on the Collateral on a senior, *pari passu* or junior basis with the Liens securing the Notes or the Guarantees, including, without limitation, changes to the definition of the term "Secured Obligations" in the Security Documents (or any other term, however described, relating to the obligations of the Company, the Guarantors and the Restricted Subsidiaries that are subject to the security interest created therein); *provided* that, in the case of this clause (viii), the Company shall deliver to the Trustee either (1) a solvency opinion, in form and substance reasonably satisfactory to the Trustee from an accounting, appraisal or investment banking firm of national standing confirming the solvency of the Company and its Restricted Subsidiaries, taken as a whole, after giving effect to any transactions relating to such change, (2) a certificate substantially in the form of an exhibit attached to the Indenture from the chief financial officer or the Board of Directors of the Company (acting in good faith) which confirms the solvency of the Company and its Restricted Subsidiaries, taken as a whole, after giving effect to the transactions relating to such change or (3) an opinion of counsel, in form and substance reasonably satisfactory to the Trustee (subject to customary exceptions and qualifications), confirming that, after giving effect to the transactions relating to such change, the Lien or Liens securing the Notes and the Guarantees created under the applicable Security Documents are valid and perfected Liens not otherwise subject to any limitation, imperfection or new hardening period, in equity or at law, to which such Lien or Liens were not otherwise subject to immediately prior to such transactions;

(ix) amend or otherwise modify any Security Document to the extent necessary (A) to conform any restriction or limitation contained therein to any analogous restriction or limitation contained in the Indenture or to eliminate any restriction or limitation therein that is not contained in the Indenture except to the extent such restriction or limitation is necessary to create, preserve, perfect or enforce the security interest in the Collateral purported to be created by such Security Document, (B) to conform to the Security Principles or the security principles under the Senior Secured Term Loans Agreement ("**SFA Security Principles**") (including any amendment or other modification to exclude from the Liens created or purported to be created by such

Security Document any assets that, in accordance with the Security Principles or the SFA Security Principles, would not or would no longer be required to be subject to such Liens (it being understood and agreed that such exclusion may provide that its effectiveness is delayed until the satisfaction of any requirement set forth on the Security Principles or the SFA Security Principles that must be satisfied in order for such assets to not be required, in accordance with the Security Principles or the SFA Security Principles, to be subject to such Liens)), (C) to amend, supplement or modify any one or more Security Documents to eliminate or reduce administrative burdens imposed on the Parent, the Company or any of its Restricted Subsidiaries by (i) eliminating, reducing the frequency of or delaying the timing of notices or other informational requirements, (ii) limiting representations and covenants and undertakings in the Security Documents to those necessary for the creation, perfection or maintenance of the security and excluding such representations and covenants and undertakings to the extent that the subject matter thereof is the same as the corresponding covenant or undertaking in the Indenture or the Senior Secured Term Loans Agreement; *provided* that (x) representations (to the extent included) need only be given as of the date of the relevant Security Document, (y) representations, covenants and undertakings may be included to the extent consistent with applicable law and current and customary practice in the relevant jurisdiction, in which event such representation, covenant and undertaking shall be on the same terms as the corresponding provisions in the Indenture or the Senior Secured Term Loans Agreement, and (iii) eliminating restrictions on any action, transaction or other matter that is permitted or not restricted under the Notes Documents (for the avoidance of doubt, excluding such Security Document) and any required additional notices or consents with respect to any such action, transaction or other matter (it being understood that nothing in this clause (iii) shall affect any such notices or consents required under such applicable Notes Documents); *provided* that each of clauses (i), (ii) and (iii) shall not apply to the extent that its application would adversely affect the validity, ranking, priority or enforceability of, or materially adversely affect the ability to take enforcement over, the security interest(s) created under such Security Document (other than any such security interests that, in accordance with the Security Principles or the SFA Security Principles, would not have been required to be created), in each case, as determined by the Company in good faith or (D) to amend, supplement or modify any one or more Security Documents to the extent necessary or appropriate to eliminate any conflict or inconsistency between provisions of the Security Documents and those of any other Note Document;

(x) make any other change thereto that does not adversely affect the holders of the Notes in any material respect; or

(xi) effect or confirm transfers of Collateral permitted under the first paragraph of this covenant.

Notwithstanding the foregoing, no Security Document may be amended and no waiver of any of the requirements of, or granting of any consent under, any Security Document may be made unless any such amendment, waiver or consent applies equally to all holders of the Notes. In the event of any action under this covenant, the consent of the holders, the Trustee or the Security Trustee will not be required, but each of the Trustee and the Security Trustee will be entitled to receive, if requested, indemnity and/or security (including by way of pre-funding) reasonably satisfactory to it in connection with such action.

Intercreditor Deed; Additional Intercreditor Agreements

The Trustee and the Security Trustee will become parties to the Intercreditor Deed by executing an accession and/or amendment deed thereto on or about the Issue Date, and each holder of a Note, by accepting such Note, will be deemed to have irrevocably (i) authorized and directed each of the Trustee and the Security Trustee to execute and deliver the Intercreditor Deed and any other intercreditor agreement contemplated by the Indenture, in each case on behalf of such holder and without any further consent, authorization or other action by such holder, (ii) consented to the treatment of Liens to be provided for under the Intercreditor Deed and any other intercreditor agreement contemplated by the Indenture, (iii) agreed that, upon the execution and delivery thereof, such holder will be bound by the provisions of the Intercreditor Deed and/or any other intercreditor agreement contemplated by the Indenture as if it were a signatory thereto and will take no actions contrary to the provisions of the Intercreditor Deed and any other intercreditor agreement contemplated by the Indenture, (iv) appointed each of the Trustee and the Security Trustee to act on its behalf and to perform the duties and exercise the rights, powers and discretions that are specifically given to them under the Intercreditor Deed and any other intercreditor agreement contemplated by the Indenture, (v) authorized and directed the Trustee and the Security Trustee to carry out the provisions and intent of this section and the Intercreditor Deed and any other intercreditor agreement contemplated by the Indenture, (vi) authorized and directed the Trustee and the Security Trustee to take such actions as shall be required to release Liens on the Collateral in accordance with the terms of the Intercreditor Deed and any other intercreditor agreement contemplated by the Indenture and (vii) agreed that no holder of the Notes shall have any right of action whatsoever against the Trustee or the Security Trustee as a result of any action taken by the Trustee or the Security Trustee pursuant to this covenant or in accordance with the terms of the Intercreditor Deed and/or any other intercreditor agreement contemplated by the Indenture.

At the request of the Company, at the time of, or prior to, the incurrence or establishment of any Indebtedness or other obligations that are permitted to be secured by Liens on the Collateral pursuant to the definition of Permitted Collateral Liens, the Trustee and the Security Trustee shall, and by accepting a Note, each holder of the Notes shall be deemed to have irrevocably authorized and directed the Trustee and the Security Trustee to, in each case on behalf of such holder and without any further consent, authorization or other action by such holder, execute and deliver (i) an additional intercreditor agreement on terms that are substantially the same as those contained in the Intercreditor Deed (or terms that are no less favorable to the holders of the Notes) or (ii) an accession and/or amendment to the Intercreditor Deed to permit such Indebtedness or other obligations to be subject to (and benefit from) substantially the same terms with respect to the release of the Collateral and Guarantees, enforcement of security interests, turnover, limitations on enforcement and other rights and limitations of the creditors of Senior Secured Indebtedness or Subordinated Indebtedness, as applicable, as those contained in the Intercreditor Deed (or, in the case of any such terms, terms that are no less favorable to the holders of the Notes), it being understood and agreed, in each case, that the execution and delivery by the Trustee and the Security Trustee of any such additional intercreditor agreement or any such accession or amendment shall be conclusive evidence of the satisfaction of the foregoing requirements as to the terms thereof.

At the request of the Company from time to time, the Trustee and Security Trustee shall, and by accepting a Note, each holder of the Notes shall be deemed to have irrevocably authorized and directed the Trustee and the Security Trustee to, in each case on behalf of such holder and without any further consent, authorization or other action by such holder, execute and deliver one or more amendments, supplements or other modifications to the Intercreditor Deed and any other intercreditor agreement contemplated by the Indenture to: (i) cure any ambiguity, omission, defect or inconsistency therein or reflect changes of a minor, technical or administrative nature; (ii) increase or decrease the amount or change the type of Indebtedness or other obligations covered thereby that are permitted by the terms of the Indenture to be incurred by the Company or a Restricted Subsidiary and to be subject thereto; (iii) add Restricted Subsidiaries, Guarantors or other parties (such as representatives of new issuances or incurrences of Indebtedness or other obligations) thereto; (iv) further secure the Notes, including to make provision for the grant of Liens on the Collateral to secure Additional Notes; (v) implement any Permitted Collateral Liens and provide for other Liens not prohibited by the covenant described under "—Limitation on Liens"; (vi) make any other change to the Intercreditor Deed (or such other intercreditor agreement) to provide for additional Indebtedness (which may be Pari Passu Indebtedness or Subordinated Indebtedness) or other obligations that are permitted by the terms of the Indenture to be secured by a Lien on the Collateral on a senior, *pari passu* or junior basis with the Liens securing the Notes and the Guarantees; (vii) provide for the release of the Liens on any Proceeds Loans upon the payment in full or other discharge of such Proceeds Loans (including as a result of any merger or consolidation of the payor or the payee thereunder) (and the release of the Liens on any amounts so repaid or discharged) or the repayment, defeasance, satisfaction, cancellation or other discharge of the relevant SFA Loans, the Schuldschein Loan, the 2025 Senior Secured Notes, the 2023 Senior Secured Notes, the Notes, other Senior Secured Notes (as defined in the Intercreditor Deed), the 2024 IGH Notes or other High Yield Notes (as defined in the Intercreditor Deed) or any other Indebtedness; (viii) provide for (A) the cancellation and discharge of all or a portion of the principal amount of any Proceeds Loans in excess of the aggregate principal amount of the corresponding Indebtedness giving rise thereto then outstanding, (B) the cancellation and discharge of a corresponding amount of the principal amount of any Proceeds Loans upon the repayment, defeasance, satisfaction, cancellation or other discharge of the corresponding Indebtedness giving rise thereto and (C) the cancellation and discharge of any Guarantor from its obligations and liabilities in respect of any Proceeds Loans upon the repayment, defeasance, satisfaction, cancellation or other discharge of all of the corresponding Indebtedness giving rise thereto then outstanding; (ix) make any change necessary or desirable, in the good faith determination of the Board of Directors of the Company, in order to implement any transaction that is subject to the covenant described under the caption "—Consolidation, Merger, Sale of Assets"; (x) implement any transaction in connection with the renewal, extension, refinancing, replacement or increase of Indebtedness permitted by the Indenture; (xi) make any other change thereto that does not adversely affect the rights of the holders of the Notes in any material respect, as determined in good faith by the Board of Directors of the Company; (xii) reflect appropriately therein any changes made to the definitions in any Senior Secured Term Loans Agreement that are referred to or included in the Intercreditor Deed (or any such other intercreditor agreement); *provided* that no such changes shall be permitted under this clause (xii) to the extent they affect the ranking of any Note or Guarantee in a manner than would adversely affect the rights of the holders of the Notes in any material respect except as otherwise permitted by the Indenture or the Intercreditor Deed (or any such other intercreditor agreement); or (xiii) permit payments to be made to the Issuer that would not otherwise have been permitted pursuant to the terms thereof. The Company will not otherwise direct the Trustee or the Collateral Agent to enter into any amendment, supplement or other modification to the Intercreditor Deed and any other intercreditor agreement contemplated by the Indenture without the consent of the holders of a majority in principal amount of the outstanding Notes, other than any such amendment, supplement or other modification that, pursuant to the covenant described under "—Modifications and Amendments" or the Intercreditor Deed, does not require the consent of at least the holders of a majority in principal amount of the outstanding Notes.

If (i) (A) any payment, repayment, redemption, acquisition or defeasance in respect of any Second Secured Liabilities, Subordinated High Yield Liabilities, Subordinated Liabilities or Hedging Liabilities or (B) the taking, acceptance or receipt of the benefit of any Lien, guarantee, indemnity or assurance against loss in respect of any Intra-Group Liabilities is permitted or not otherwise prohibited under the Indenture (each a "**Permitted Action**"); and (ii) any such Permitted Action is not permitted, or the Company determines that any such Permitted Action may not be permitted, under clauses 4.1

(*Second Secured Creditors: Rights and Obligations—Payment*), 6.1 (*High Yield Creditors: Rights and Obligations—Payment*), 7.2 (*Intra-Group Creditors: Rights and Obligations—Security Interests*), 8.1 (*Subordinated Creditors: Rights and Obligations—Payment*) or, as the case may be, 9.2 (*Hedge Counterparties: Rights and Obligations—Payment*) of the Intercreditor Deed, each holder of the Notes shall, by accepting a Note, be deemed to have agreed that such Permitted Action shall be deemed, for the purposes of the Intercreditor Deed, to have been prohibited under the Indenture and each holder of the Notes shall, by accepting such Notes, be deemed to have given its prior consent to such Permitted Action and to have authorized each of the Trustee and the Security Trustee to execute and deliver such document as the Company may request confirming such consent; *provided* that this paragraph shall be without prejudice to and shall not affect the rights and obligations under clause 11 (*Stop Events and Payment Blockage Events*) of the Intercreditor Deed. In this paragraph, capitalized words and expressions shall have the meaning given them in the Intercreditor Deed.

Provision of Financial Statements

For so long as any Notes are outstanding, the Parent will provide to the Trustee the following reports:

(1) within 120 days after the end of each fiscal year, beginning with the fiscal year ending December 31, 2019: (i) the audited consolidated balance sheet of the Parent as of the end of, and the audited consolidated statements of income and cash flows of the Parent for, such fiscal year, setting forth in each case in comparative form the figures for the prior fiscal year, together with complete footnotes to such financial statements and the report of the independent auditors on such financial statements (which report shall be prepared in accordance with IFRS), (ii) *pro forma* consolidated income statement and balance sheet information of the Parent (which need not comply with Article 11 of Regulation S-X under the U.S. Exchange Act, "Regulation S-X"), together with explanatory footnotes, for any material acquisitions, dispositions or recapitalizations that have occurred since the beginning of such fiscal year, unless *pro forma* information with respect thereto has been previously provided pursuant to clause (2) below, (iii) an operating and financial review of the audited consolidated financial statements, including a discussion of the consolidated results of operations, financial condition, and liquidity and capital resources of the Parent, and a discussion of material commitments and contingencies and critical accounting policies, (iv) a description of the business, management and shareholders of the Parent, all material affiliate transactions and a description of all material contractual arrangements, including material debt instruments, (v) a description of material risk factors and material recent developments, (vi) a presentation of earnings before interest, taxes, depreciation and amortization, (vii) a presentation of capital expenditures, and (viii) a presentation of depreciation and amortization; *provided* that any disclosure with respect to any such item that complies in all material respects with the requirements that would be applicable under Form 20-F under the U.S. Exchange Act with respect to such item shall be deemed to satisfy the requirements under this clause (1) with respect to such item;

(2) within 60 days after the end of the first three fiscal quarters in each fiscal year, beginning with the fiscal quarter ended March 31, 2019: (i) the unaudited condensed consolidated balance sheet of the Parent as of the end of such fiscal quarter and the unaudited condensed consolidated statements of income and cash flows of the Parent for the portion of the fiscal year then ended, setting forth in each case in comparative form the figures for the comparable prior year period, together with condensed footnotes to such financial statements, (ii) *pro forma* condensed consolidated income

statement and balance sheet information of the Parent (which need not comply with Article 11 of Regulation S-X), together with explanatory footnotes, for any material acquisitions, dispositions or recapitalizations that have occurred since the beginning of such fiscal year, unless *pro forma* information with respect thereto has been previously provided pursuant to clause (1) or this clause (2), (iii) an operating and financial review of the unaudited condensed consolidated financial statements, including a discussion of the consolidated results of operations, financial condition, and liquidity and capital resources of the Parent, and a discussion of material commitments and contingencies and critical accounting policies, and (iv) a description of material recent developments and any material changes to the risk factors disclosed in the most recent annual report; *provided* that any disclosure with respect to any such item that complies in all material respects with the requirements that would be applicable under Form 10-Q under the U.S. Exchange Act with respect to such item shall be deemed to satisfy the requirements under this clause (2) with respect to such item; and

(3) promptly after the occurrence of any acquisition, disposition or restructuring that is material to the Company and its Restricted Subsidiaries, taken as a whole, or any senior executive officer changes at the Parent or the Issuer or change in auditors of the Parent or the Issuer or any other material event that the Parent or any of its Restricted Subsidiaries announces publicly, a report containing a description of such event.

Delivery of such reports, information and documents to the Trustee shall be for informational purposes only and the Trustee's receipt of such shall not constitute actual or constructive notice of any information contained therein or determinable from information contained therein, including the Company's compliance with any of its covenants under the Indenture or the Notes (as to which the Trustee shall be entitled to rely exclusively on Officer's Certificates).

All financial statements and *pro forma* financial information will be prepared in accordance with IFRS on a consistent basis for the periods presented; *provided*, *however*, that the reports set forth in clauses (1) and (2) above may, in the event of a change in applicable IFRS, present earlier periods on a basis that applied to such periods, subject to the provisions of the Indenture. Except as provided for above, no report need include separate financial statements for Subsidiaries of the Parent or any disclosure with respect to the results of operations or any other financial or statistical disclosure not of a type included in this offering memorandum. For the purposes of this covenant, IFRS shall be deemed to be IFRS as in effect from time to time, without giving effect to the proviso in the definition thereof.

Contemporaneously with the furnishing of each such report discussed above, the Company will also post such report on the Parent's website. In the event that the Parent becomes subject to the reporting requirements of Section 13(a) or 15(d) of the U.S. Exchange Act, or elects to comply with such provisions, the Parent will, for so long as it continues to file the reports required by Section 13(a) or 15(d) with the Commission, make available to the Trustee the annual reports, information, documents and other reports that the Parent is required to file with the Commission pursuant to such Section 13(a) or 15(d). Upon complying with the foregoing requirement, the Parent will be deemed to have complied with the provisions contained in the preceding three paragraphs.

The Indenture will also provide that, so long as any of the Notes remain outstanding, the Parent will make available to any prospective purchaser of Notes or beneficial owner of Notes in connection with any sale thereof the information required by Rule 144A(d)(4) under the U.S. Securities Act. The Parent and the Issuer will also make any of the foregoing information available during normal business hours at the offices of the listing agent in Luxembourg if and so long as the Notes are listed on the Official List of the Luxembourg Stock Exchange and are traded on the Luxembourg Stock Exchange's Euro MTF Market and the rules of the stock exchange so require.

Listing

Each of the Company and the Issuer will use its commercially reasonable efforts to obtain on or prior to the first interest payment date a listing of the Notes on the Official List of the Luxembourg Stock Exchange and the admission of the Notes to trading on the Euro MTF Market of the Luxembourg Stock Exchange, and use its commercially reasonable efforts to maintain such listing for so long as such Notes are outstanding; *provided* that if at any time the Issuer determines that it will not seek or maintain such listing, it will use commercially reasonable efforts to obtain, prior to the first interest payment date or prior to the delisting of the Notes from the Official List of the Luxembourg Stock Exchange for trading on the Euro MTF Market of the Luxembourg Stock Exchange, a listing of such Notes on another "recognised stock exchange" as defined in section 1005 of the United Kingdom Income Tax Act 2007.

Limitation on Parent and Parent Intermediate Holdcos Activities

Notwithstanding anything contained in the Indenture:

(1) neither the Parent nor any Parent Intermediate Holdco will engage in any business activity, except any such activity (i) reasonably relating to the offering, sale, issuance, incurrence and servicing, purchase, redemption, amendment, exchange, refinancing or retirement of the Notes or other Indebtedness not prohibited by the Indenture or of any Capital Stock; (ii) undertaken with the purpose of fulfilling any other obligations under the Senior Secured Term Loans Agreement, the Schuldschein Loan Agreement, the 2025 Senior Secured Notes, the 2023 Senior Secured Notes, the Notes or other Senior Secured Notes (as defined in the Intercreditor Deed), the 2024 IGH Notes or other High Yield Notes (as defined in the Intercreditor Deed), the Proceeds Loans, any Hedging Obligations or any agreements or instruments relating to any other Indebtedness or other obligations not prohibited by the Indenture, including any Proceeds Loan or any guarantees or Liens relating to any of the foregoing; (iii) involving the provision of administrative services (excluding treasury services) to its Subsidiaries of a type customarily provided by a holding company to its Subsidiaries and the receipt of any amounts related thereto; (iv) related to the establishment and/or maintenance of such Person's corporate existence or corporate activities, the acquisition, holding or disposition of assets not prohibited to be held by it under the Indenture or reasonably related to its function as a holding company, including, for the avoidance of doubt, (1) the participation in tax and accounting matters as a member of the consolidated group with the Company and its Subsidiaries, (2) the entry into, and performance of its obligations with respect to, contracts and other arrangements with officers, directors, employees and consultants, (3) the obtainment of, and the payment of any fees and expenses for, management, consulting, monitoring, investment banking, advisory and other services, (4) the payment of dividends and distributions and the purchase of Capital Stock of, and the making of capital contributions to, its Subsidiaries and (5) preparing reports to Governmental Authorities and complying with applicable law; (v) undertaken in connection with any Permitted Reorganization or the Transactions; or (vi) other activities not specifically enumerated above that are immaterial in nature; and

(2) neither the Parent nor any Parent Intermediate Holdco will own any assets or property other than (i) Capital Stock of another Parent Intermediate Holdco, any Financing Subsidiary or the Company, (ii) intercompany Indebtedness, (iii) any rights under any contract or agreement, *provided* that the Parent or such Parent Intermediate Holdco shall remain in compliance with the preceding clause (1), and (iv) other assets and properties that are immaterial in nature; *provided* that each of the Parent and any

Parent Intermediate Holdco may from time to time receive in a transaction otherwise permitted under the Indenture and the Security Documents properties and assets (including cash, cash equivalents, Temporary Cash Investments, shares of Capital Stock of another Person and/or Indebtedness and other obligations) for the purpose of transferring such properties and assets to any Parent Holdco, any Subsidiary or any other Person, so long as in any case such further transfer is made promptly by the Parent or such Parent Intermediate Holdco, as applicable, and, after giving effect thereto, the Parent or such Parent Intermediate Holdco, as applicable, is in compliance with this clause (2).

Limitations on Use of Proceeds

The net proceeds from each issue of Notes will be applied by the Issuer outside Switzerland unless (i) use in Switzerland is permitted under the Swiss taxation laws in force from time to time or (ii) it is confirmed in a tax ruling by the Swiss Federal Tax Administration that such use of proceeds is permitted, in each case without payments in respect of the Notes becoming subject to withholding or deduction for Swiss withholding tax as a consequence of such use of proceeds in Switzerland.

Suspension of Covenants on Achievement of Investment Grade Status

If on any date following the Issue Date, the Notes have achieved Investment Grade Status and no Default or Event of Default has occurred and is continuing (a "**Suspension Event**"), then, beginning on such date and continuing until such time, if any, at which the Notes cease to have Investment Grade Status, the provisions of the Indenture summarized under the following captions will not apply to the Notes: "—Limitation on Indebtedness," "—Limitation on Restricted Payments," "—Limitation on Transactions with Affiliates," "—Limitation on Sale of Assets," "—Limitation on Dividend and Other Payment Restrictions Affecting Restricted Subsidiaries," the first paragraph of "—Impairment of Security Interest", "—Limitation on Layered Debt," "—Limitation on Unrestricted Subsidiaries" and clause (c) of the covenant described under "—Consolidation, Merger, Sale of Assets—The Issuer" and clause (c) of the covenant described under "—Consolidation, Merger, Sale of Assets—The Company and the Parent" and any related default provisions of the Indenture will cease to have any force and effect (and the Company and its Restricted Subsidiaries shall not be required to comply therewith); *provided* that such covenants (and any related default provisions) will again apply in accordance with their terms from the first day on which a Suspension Event ceases to be in effect; *provided*, *however*, that such covenants (and any related default provisions) will not be of any effect with regard to actions of the Company or any Restricted Subsidiary properly taken during the continuance of the Suspension Event, and the "—Limitation on Restricted Payments" covenant will be interpreted as if it had been in effect since the Issue Date except that no default will be deemed to have occurred solely by reason of a Restricted Payment made while such covenant was suspended.

Additional Covenants

The Indenture also contains covenants with respect to the following matters: (a) payment of principal, premium, any Additional Amounts and interest; (b) maintenance of certain offices or agencies; and (c) arrangements regarding the handling of money held in trust.

Consolidation, Merger and Sale of Assets

The Parent, the Parent Intermediate Holdcos and the Company

Subject to the provisions described under "—General" below, neither the Parent, any Parent Intermediate Holdco or the Company will, in a single transaction or through a series of related transactions, consolidate with or merge with or into any other Person (whether or not the Parent, such

Parent Intermediate Holdco or the Company, as applicable, is the surviving Person), or sell, assign, convey, transfer, lease or otherwise dispose of its properties and assets (or permit any of its Restricted Subsidiaries to enter into any such transaction or series of transactions), if such transaction or series of transactions, in the aggregate, would result in a sale, assignment, conveyance, transfer, lease or disposition to any other Person or group of Persons of all or substantially all of the properties and assets of the Parent and its Restricted Subsidiaries, such Parent Intermediate Holdco and its Restricted Subsidiaries or the Company and its Restricted Subsidiaries, as the case may be, on a Consolidated basis, unless at the time of the transaction and after giving effect thereto:

(a) either:

(1) the Parent, such Parent Intermediate Holdco or the Company, as the case may be, will be the continuing Person; or

(2) the Person (if other than the Parent, such Parent Intermediate Holdco or the Company, as the case may be) formed by such consolidation or into which the Parent, such Parent Intermediate Holdco or the Company is merged or the Person which acquires by sale, assignment, conveyance, transfer, lease or disposition all or substantially all of the properties and assets of the Parent and its Restricted Subsidiaries, such Parent Intermediate Holdco and its Restricted Subsidiaries or the Company and its Restricted Subsidiaries, as the case may be, on a Consolidated basis (for the purposes of this subsection of the covenant described under "—Consolidation, Merger, Sale of Assets", the "**Surviving Entity**") will be a Person duly organized and validly existing under the laws of any EU state which is a member of the EU on the Issue Date, the United Kingdom, Norway, Switzerland, the United States of America, any state thereof or the District of Columbia or the Island of Jersey and such Person expressly assumes all the obligations of the Parent, such Parent Intermediate Holdco or the Company, as the case may be, under the Notes, the Indenture, the Intercreditor Deed and the Security Documents to which it is a party pursuant to agreements reasonably satisfactory to the Trustee (and the Guarantees will be confirmed as applying to such Surviving Entity's obligations);

(b) immediately after giving effect to such transaction on a *pro forma* basis (and treating any Indebtedness not previously an obligation of the Company or any of its Restricted Subsidiaries which becomes the obligation of the Company or any of its Restricted Subsidiaries as a result of such transaction as having been incurred at the time of such transaction), no Default or Event of Default will have occurred and be continuing;

(c) immediately after giving effect to such transaction on a *pro forma* basis (on the assumption that such transaction occurred on the first day of the most recent four-quarter period for which financial statements are available ending immediately prior to the consummation of such transaction with the appropriate adjustments with respect to such transaction, including treating any obligation incurred by the Company or any Restricted Subsidiary in connection with or as a result of such transaction as having been incurred by the Company or such Restricted Subsidiary at the time of such transaction, being included in such *pro forma* calculation), (x) the Company (or the Surviving Entity if the Company is not the continuing obligor under the Indenture) could incur €1.00 of additional Indebtedness pursuant to paragraph (a) of the covenant "—Certain Covenants—Limitation on Indebtedness;" or (y) the Consolidated Fixed Charge Coverage Ratio of the Parent for such period would not be less than it would be for such period prior to giving *pro forma* effect to such transaction; and

(d) at the time of such transaction, the Parent, such Parent Intermediate Holdco or the Company or the Surviving Entity, as applicable, will have delivered, or caused to be delivered, to the Trustee, in form and substance reasonably satisfactory to the Trustee, an Officer's Certificate and an opinion of legal counsel, each to the effect that such consolidation, merger, transfer, sale, assignment, conveyance, lease or other transaction and the supplemental indenture in respect thereof comply with the Indenture and that all conditions precedent therein provided for relating to such transaction have been complied with; *provided* that in giving an opinion of counsel, counsel may rely on an Officer's Certificate as to any matters of fact. The Trustee shall be entitled to rely conclusively on such Officer's Certificate and opinion of counsel without independent verification.

In the event of any transaction (other than a lease) described in and complying with the conditions listed in the immediately preceding paragraph in which the Parent, the applicable Parent Intermediate Holdco or the Company, as the case may be, is not the Surviving Entity, the Surviving Entity will succeed to, and be substituted for, and may exercise every right and power of the Parent, the Parent Intermediate Holdco or the Company, as the case may be, and the Parent, the Parent Intermediate Holdco or the Company, as applicable, will, subject to the second paragraph of the provisions described under "—General", be automatically and unconditionally released and discharged from all obligations and covenants under the Indenture (including its Guarantee) and each of the other Notes Documents to which the Parent, such Parent Intermediate Holdco or the Company, as applicable, is a party.

The Issuer

Subject to the provisions described under "—General" below, the Issuer will not, in a single transaction or through a series of related transactions, consolidate with or merge with or into any other Person (whether or not the Issuer is the surviving Person), or sell, assign, convey, transfer, lease or otherwise dispose of its properties and assets if such transaction or series of transactions, in the aggregate, would result in a sale, assignment, conveyance, transfer, lease or disposition to any other Person or group of Persons of all or substantially all of the properties and assets of the Issuer, unless at the time of the transaction and after giving effect thereto:

(a) either:

(1) the Issuer will be the continuing Person; or

(2) the Person (if other than the Issuer) formed by such consolidation or into which the Issuer is merged or the Person which acquires by sale, assignment, conveyance, transfer, lease or disposition all or substantially all of the properties and assets of the Issuer and its Restricted Subsidiaries on a Consolidated basis (for the purposes of this subsection of the covenant described under "—Consolidation, Merger, Sale of Assets", the "**Surviving Entity**") will be a Person duly organized and validly existing under the laws of any EU state which is a member of the EU on the Issue Date, the United Kingdom, Norway, Switzerland, the United States of America, any state thereof or the District of Columbia or the Island of Jersey, and such Person expressly assumes all the obligations of the Issuer under the Notes, the Indenture, the Intercreditor Deed and the Security Documents to which the Issuer is a party pursuant to agreements reasonably satisfactory to the Trustee (and the Guarantees will be confirmed as applying to such Surviving Entity's obligations);

(b) immediately after giving effect to such transaction on a *pro forma* basis (and treating any Indebtedness not previously an obligation of the Company or any of its Restricted Subsidiaries which becomes the obligation of the Company or any of its Restricted Subsidiaries as a result of such transaction as having been incurred at the time of such transaction), no Default or Event of Default will have occurred and be continuing; and

(d) at the time of such transaction, the Issuer or the Surviving Entity will have delivered, or caused to be delivered, to the Trustee, in form and substance reasonably satisfactory to the Trustee, an Officer's Certificate and an opinion of legal counsel, each to the effect that such consolidation, merger, transfer, sale, assignment, conveyance, lease or other transaction and the supplemental indenture in respect thereof comply with the Indenture and that all conditions precedent therein provided for relating to such transaction have been complied with; *provided* that in giving an opinion of counsel, counsel may rely on an Officer's Certificate as to any matters of fact. The Trustee shall be entitled to rely conclusively on such Officer's Certificate and opinion of counsel without independent verification.

In the event of any transaction (other than a lease) described in and complying with the conditions listed in the immediately preceding paragraph in which the Issuer is not the Surviving Entity, the Surviving Entity will succeed to, and be substituted for, and may exercise every right and power of the Issuer, and the Issuer will, subject to the second paragraph of the provisions described under "—General", be automatically and unconditionally released and discharged from all obligations and covenants under the Indenture, the Notes and each of the Notes Documents to which the Issuer is a party.

Subsidiary Guarantors

Subject to the provisions described under "—General", a Subsidiary Guarantor (other than a Subsidiary Guarantor whose Guarantee is to be released in accordance with the terms of the Guarantee and the Indenture) will not, in a single transaction or through a series of related transactions, consolidate with or merge with or into any other Person (whether or not such Subsidiary Guarantor is the surviving Person), or sell, assign, convey, transfer, lease or otherwise dispose of its properties and assets (or permit any of its Restricted Subsidiaries to enter into any such transaction or series of transactions) if such transaction or series of transactions, in the aggregate, would result in a sale, assignment, conveyance, transfer, lease or disposition to any other Person or group of Persons of all or substantially all of the properties and assets of such Subsidiary Guarantor and its Restricted Subsidiaries on a Consolidated basis, unless at the time of the transaction and after giving effect thereto:

(a) either:

(1) such Subsidiary Guarantor will be the continuing Person; or

(2) the Person (if other than such Subsidiary Guarantor) formed by such consolidation or into which such Subsidiary Guarantor is merged or the Person which acquires by sale, assignment, conveyance, transfer, lease or disposition all or substantially all of the properties and assets of such Subsidiary Guarantor and its Restricted Subsidiaries on a Consolidated basis (for the purposes of this subsection of the covenant described under "—Consolidation, Merger, Sale of Assets", the "**Surviving Entity**") will be a Person duly organized and validly existing under the laws of any state which was a member of the European Union on the Issue Date, the United Kingdom, Norway, Switzerland, the United States of America, any State thereof or the District of Columbia, the Island of Jersey or any other jurisdiction where one or more

Subsidiary Guarantors are organized and such Person expressly assumes all the obligations of such Guarantor under the Indenture (including its Guarantee), the Intercreditor Deed and the Security Documents to which such Subsidiary Guarantor is a party pursuant to agreements reasonably satisfactory to the Trustee (it being agreed that the Guarantee of such Surviving Entity may contain limitations set forth in or contemplated by "Limitations on Validity and Enforceability of the Guarantees and the Security Interests" and as contemplated by the Security Principles);

(b) immediately after giving effect to such transaction on a *pro forma* basis (and treating any Indebtedness not previously an obligation of the Company or any of its Restricted Subsidiaries which becomes the obligation of the Company or any of its Restricted Subsidiaries as a result of such transaction as having been incurred at the time of such transaction), no Default or Event of Default will have occurred and be continuing; and

(c) at the time of the transaction, such Subsidiary Guarantor, the Company or the Surviving Entity will have delivered, or caused to be delivered, to the Trustee, in form and substance reasonably satisfactory to the Trustee, an Officer's Certificate and an opinion of legal counsel, each to the effect that such consolidation, merger, transfer, sale, assignment, conveyance, lease or other transaction and the supplemental indenture in respect thereof comply with the Indenture and that all conditions precedent therein provided for relating to such transaction have been complied with; *provided* that in giving an opinion of counsel, counsel may rely on an Officer's Certificate as to any matters of fact. The Trustee shall be entitled to rely conclusively on such Officer's Certificate and opinion of counsel without independent verification.

In the event of any transaction (other than a lease) described in and complying with the conditions listed in the immediately preceding paragraph in which the applicable Subsidiary Guarantor is not the Surviving Entity, the Surviving Entity will succeed to, and be substituted for, and may exercise every right and power of such Subsidiary Guarantor and such Subsidiary Guarantor will, subject to the second paragraph under "—General" below, be automatically and unconditionally released and discharged from all obligations and covenants under the Indenture (including its Guarantees), the Proceeds Loans Documents and each of the other Notes Documents to which such Guarantor is a party.

General

Notwithstanding anything to the contrary in paragraphs (b) and (c) of the subsection "—Parent, the Parent Intermediate Holdco and the Company" and paragraph (b) of the subsection "—The Issuer" and paragraph (b) of the subsection "—Subsidiary Guarantors" (which shall not apply to transactions referred to in this sentence), (i) any Restricted Subsidiary of the Company may consolidate or otherwise combine with, amalgamate with, merge with or into or sell, assign, convey, transfer, lease or otherwise dispose of all or any part of its properties and assets to the Issuer, the Company or any other Restricted Subsidiary and (ii) the Parent, any Parent Intermediate Holdco, the Company or the Issuer may consolidate or otherwise combine with, amalgamate with or merge with or into an Affiliate incorporated or organized for the primary purpose of changing the legal domicile of the Parent, such Parent Intermediate Holdco, the Company or the Issuer in another jurisdiction, reincorporating the Parent, such Parent Intermediate Holdco, the Company or the Issuer in another jurisdiction or changing the legal form of the Parent, such Parent Intermediate Holdco, the Company or the Issuer (in each case, in a jurisdiction that would be permitted under paragraph (a)(2) under the caption "—the Parent, the Parent Intermediate Holdco and the Company" or paragraph (a)(2) under the caption "—The Issuer", as applicable).

Notwithstanding anything to the contrary set forth in this covenant, upon the succession and substitution of any Guarantor by any Surviving Entity in a sale, assignment, conveyance, transfer, lease or other disposition of properties and assets subject to this covenant, upon the written request of the Company to the Trustee, such Guarantor shall not be released and discharged from its Guarantee and shall continue to be bound by its obligations and covenants under the Indenture and the other Notes Documents to which it is a party as a Guarantor; *provided* that, in the event such Guarantor is the Parent, any Parent Intermediate Holdco, the Company or the Issuer and to the extent provided in such request, such Guarantor shall continue to be bound by its obligations and covenants under the Indenture and the other Notes Documents solely in its capacity as a Guarantor and shall not be subject to or bound by any of the obligations and covenants applicable to the Parent, a Parent Intermediate Holdco, the Company or the Issuer, as applicable, and only the applicable Surviving Entity shall be subject to and bound by such obligations and covenants.

Although there is a limited body of case law interpreting the phrase "substantially all," there is no precise established definition of the phrase under applicable law. Accordingly, in certain circumstances there may be a degree of uncertainty as to whether a particular transaction would involve "all or substantially all" of the property or assets of a Person.

Notwithstanding anything to the contrary set forth in the Indenture and in any other Notes Document, the Parent, any Parent Intermediate Holdco, the Company and its Restricted Subsidiaries may implement a Permitted Reorganization.

Events of Default

An Event of Default will occur under the Indenture if:

(a) there shall be a default in the payment of any interest or Additional Amounts on any Note when it becomes due and payable, and such default shall continue for a period of 30 days;

(b) there shall be a default in the payment when due (at maturity, upon redemption or otherwise) of the principal of (or premium, if any, on) any Note;

(c) (1) there shall be a default in the performance, or breach, of any covenant or agreement of the Issuer or any Guarantor under the Indenture or any Guarantee (other than a default in the performance, or breach, of a covenant or agreement which is specifically dealt with in clause (a), (b) or in clause (2), (3) or (4) of this clause (c)) and such default or breach shall continue for a period of 60 days after written notice has been given, by certified mail, (x) to the Issuer by the Trustee or (y) to the Issuer and the Trustee by the holders of at least 30% in aggregate principal amount of the outstanding Notes voting as a single class,

(2) there shall be a default in the performance or breach of the provisions described in "—Consolidation, Merger, Sale of Assets,"

(3) the Company or a Restricted Subsidiary shall have failed to make or consummate an Asset Sale Offer in accordance with the provisions of "—Certain Covenants—Limitation on Sale of Assets," or

(4) the Issuer or the Company shall have failed to make or consummate a Change of Control Offer in accordance with the provisions of "—Purchase of Notes upon a Change of Control;"

(d) any default in the payment of the principal or premium, if any, on any Indebtedness shall have occurred under any of the agreements, indentures or instruments under which the Issuer, any Guarantor or any Significant Restricted Subsidiary then has outstanding Indebtedness in excess of €50.0 million when the same shall become due and payable in full and such default shall have continued after any applicable grace period and shall not have been cured or waived and, if not already matured at its final maturity in accordance with its terms, the holder of such Indebtedness shall have accelerated such Indebtedness;

(e) any Guarantee by the Parent, the Company, the Issuer or a Significant Restricted Subsidiary is held in any judicial proceeding to be unenforceable or invalid or ceases for any reason to be, or shall for any reason be asserted in writing by any Guarantor or the Issuer not to be, in full force and effect and enforceable in accordance with its terms, except to the extent contemplated by the Indenture and any such Guarantee;

(f) (i) one or more of the Security Documents that, taken as a whole, create Liens on a material portion of the Collateral shall, at any time, cease to be in full force and effect, or shall be declared invalid or unenforceable by a court of competent jurisdiction, other than, in each case, pursuant to limitations on enforceability, validity or effectiveness imposed by applicable law or the terms of such Security Document or except in accordance with the terms of such Security Document, the Intercreditor Deed or the Indenture, including the release provisions hereof and thereof, and such failure to be in full force and effect shall have continued uncured for a period of 15 days after the Company becomes aware of such failure, or (ii) repudiation or disaffirmation by the Issuer or any Guarantor of any of their respective obligations under the Security Documents that, taken as a whole, create Liens on a material portion of the Collateral;

(g) one or more judgments, orders or decrees of any court or regulatory or administrative agency for the payment of money in excess of €50.0 million, either individually or in the aggregate (to the extent not covered by independent third party insurance), shall be rendered against the Issuer, the Company or any Significant Restricted Subsidiary or any of their respective properties and shall not be discharged and there shall have been a period of 60 consecutive days during which a stay of enforcement of such judgment or order, by reason of an appeal or otherwise, shall not be in effect;

(h) [Reserved]; or

(i) certain events of bankruptcy or insolvency described in the Indenture with respect to the Parent, the Company, the Issuer or any Significant Restricted Subsidiary shall have occurred.

If an Event of Default (other than as specified in clause (i) of the prior paragraph) shall occur and be continuing with respect to the Indenture, the Trustee or the holders of not less than 30% in aggregate principal amount of the Notes then outstanding may, and the Trustee, at the request of such holders, shall declare all unpaid principal of, premium, if any, any Additional Amounts and accrued interest on all Notes to be due and payable immediately, by a notice in writing to the Company (and to the Trustee if given by the holders of the Notes) and upon any such declaration, such principal, premium, if any, any Additional Amounts and interest shall become due and payable immediately.

If an Event of Default specified in clause (i) of the prior paragraph occurs and is continuing, then all the Notes shall automatically become and be due and payable immediately in an amount equal to the principal amount of the Notes, together with any Additional Amounts and accrued and unpaid interest, if any, to the date the Notes become due and payable, without any declaration or other act on the part of the Trustee or any holder. Thereupon, the Trustee may, at its discretion, proceed to protect and enforce the rights of the holders of the Notes by appropriate judicial proceedings. In the event of a declaration of acceleration of the Notes because an Event of Default described in clause (d) of the prior paragraph has occurred and is continuing, the declaration of acceleration of the Notes shall be automatically annulled if the event of default or payment default triggering such Event of Default pursuant to clause (d) shall be remedied or cured, or waived by the holders of the Indebtedness that gave rise to such Event of Default, or such Indebtedness shall be discharged in full, within 30 days after the declaration of acceleration with respect thereto and if (1) the annulment of the acceleration of the Notes would not conflict with any judgment or decree of a court of competent jurisdiction and (2) all existing Events of Default, except non-payment of principal, premium or interest on the Notes that became due solely because of the acceleration of the Notes, have been cured or waived.

After a declaration of acceleration, but before a judgment or decree for payment of the money due has been obtained by the Trustee, the holders of a majority in aggregate principal amount of Notes outstanding by written notice to the Issuer and the Trustee may rescind an acceleration and annul such declaration and its consequences under the Indenture if:

(a) the Issuer has paid or deposited with the Trustee a sum sufficient to pay:

(1) all sums paid or advanced by the Trustee under the Indenture and the properly incurred compensation, expenses, disbursements and advances of the Trustee, its agents and counsel,

(2) all overdue interest and Additional Amounts on all Notes then outstanding,

(3) the principal of and premium, if any, on any Notes then outstanding which have become due otherwise than by such declaration of acceleration and interest thereon at the rate borne by the Notes, and

(4) to the extent that payment of such interest is lawful, interest upon overdue interest at the rate borne by the Notes;

(b) the rescission would not conflict with any judgment or decree of a court of competent jurisdiction; and

(c) all Events of Default, other than the non-payment of principal of, premium, if any, and any Additional Amounts and interest on the Notes, which have become due solely by such declaration of acceleration, have been cured or waived as provided in the Indenture. No such rescission shall affect any subsequent default or impair any right consequent thereon.

The holders of not less than a majority in aggregate principal amount of all outstanding Notes may, by written notice to the Trustee, on behalf of the holders of all outstanding Notes, waive any past default under the Indenture and its consequences, except a default in respect of a covenant or provision hereof which under the Indenture cannot be modified or amended without the consent of the holders of not less than 90% of the then outstanding amount of Notes, in which case the consent of the holders of at least 90% of the then outstanding Notes shall be required.

Subject to certain limitations, holders of a majority in aggregate principal amount of the then outstanding Notes may direct the Trustee in its exercise of any trust of power. The Trustee may withhold from holders of the Notes notice of any continuing Default or Event of Default if it determines that withholding notice is in their interest, except a Default or Event of Default relating to the payment of principal, interest or Additional Amounts or premium, if any.

No holder of any of the Notes has any right to institute any proceedings with respect to the Indenture or any remedy thereunder, unless the holders of at least 30% in aggregate principal amount of the outstanding Notes have made written request, and offered satisfactory indemnity and/or security (including by way of pre-funding), to the Trustee to institute such proceeding as the Trustee under the

Notes and the Indenture, the Trustee has failed to institute such proceeding within 60 days after receipt of such notice and offer of satisfactory indemnity and for security (including by way of pre-funding) and the Trustee, during such 60-day period, has not received directions inconsistent with such written request from the holders of a majority in aggregate principal amount of the outstanding Notes. Such limitations do not, however, apply to a suit instituted by a holder of a Note for the enforcement of the payment of the principal of, premium, if any, and any Additional Amounts or interest on such Note on or after the respective due dates expressed in such Note.

The Company will promptly, and in any event within 15 Business Days of becoming aware of such Default or Event of Default, notify the Trustee of the occurrence of any Default or Event of Default that is continuing. Except in the case of a Default or an Event of Default in payment of principal of, premium, if any, Additional Amounts or interest on any Notes, the Trustee may withhold the notice to the holders of such Notes if a committee of its trust officers in good faith determines that withholding the notice is in the interests of the holders of the Notes. If a Default or an Event of Default occurs and is continuing and the Trustee is informed in writing, the Trustee will mail to each holder of the Notes notice of the Default or Event of Default within five Business Days after being notified of its occurrence. The Company will deliver to the Trustee, on or before a date not more than 120 days after the end of each fiscal year, a written statement as to compliance with the Indenture, including whether or not any Default has occurred. The Trustee is under no obligation to exercise any of the rights or powers vested in it by the Indenture at the request or direction of any of the holders of the Notes unless such holders offer to the Trustee indemnity and/or security (including by way of pre-funding) satisfactory to the Trustee against the costs, expenses and liabilities which might be incurred thereby.

Defeasance or Covenant Defeasance of Indenture

The Issuer may, at its option and at any time, elect to have all of its obligations terminated with respect to the outstanding Notes and all obligations of the Guarantors discharged with respect to the Guarantees ("**Legal Defeasance**") and cure all then existing Events of Default, except for, among other things, certain obligations, including those relating to the defeasance trust, obligations to transfer or exchange Notes, to pay any Additional Amounts, to replace mutilated, destroyed, lost or stolen Notes and to maintain a paying agent, and obligations with respect to the rights, powers, trusts, duties and immunities of the Trustee.

In addition, the Issuer may, at its option and at any time, elect to have its obligations and the obligations of the Guarantors released with respect to certain covenants that are described in the Indenture and the Guarantees ("**Covenant Defeasance**") and thereafter any omission to comply with such obligations shall not constitute a Default or Event of Default with respect to the Notes. In the event Covenant Defeasance occurs, certain events (not including non-payment, and, solely with respect to the Issuer, bankruptcy and insolvency events) described under "—Events of Default" will no longer constitute an Event of Default with respect to the Notes.

In order to exercise either Legal Defeasance or Covenant Defeasance:

(a) the Issuer must irrevocably deposit in trust with the Trustee, for the benefit of the holders of the Notes, cash in euro or European Government Obligations, or a combination thereof, in such aggregate amounts as will be sufficient to pay the principal of, interest and premium, if any, on the Notes to maturity;

(b) in the case of Legal Defeasance, the Issuer must deliver to the Trustee:

    (1) an opinion of United States counsel reasonably acceptable to the Trustee confirming that (A) the Issuer has received from, or there has been published by, the U.S. Internal Revenue Service a ruling or (B) since the Issue Date,

there has been a change in the applicable U.S. federal income tax law, in either case to the effect that, and based thereon such opinion of counsel will confirm that, the holders of the outstanding Notes will not recognize income, gain or loss for U.S. federal income tax purposes as a result of such Legal Defeasance and will be subject to U.S. federal income tax on the same amounts, in the same manner and at the same times as would have been the case if such Legal Defeasance had not occurred; and

(2) an opinion of counsel in the jurisdiction of incorporation of the Issuer and reasonably acceptable to the Trustee to the effect that the holders of the Notes will not recognize income, gain or loss for tax purposes of such jurisdiction as a result of such Legal Defeasance and will be subject to tax in such jurisdiction on the same amounts and in the same manner and at the same times as would have been the case if such Legal Defeasance had not occurred; and

(c) in the case of Covenant Defeasance, the Issuer must deliver to the Trustee:

(1) an opinion of United States counsel reasonably acceptable to the Trustee confirming that the holders of the outstanding Notes will not recognize income, gain or loss for U.S. federal income tax purposes as a result of such Covenant Defeasance and will be subject to U.S. federal income tax on the same amounts, in the same manner and at the same times as would have been the case if such Covenant Defeasance had not occurred; and

(2) an opinion of counsel in the jurisdiction of incorporation of the Issuer and reasonably acceptable to the Trustee to the effect that the holders of the Notes will not recognize income, gain or loss for tax purposes of such jurisdiction as a result of such Covenant Defeasance and will be subject to tax in such jurisdiction on the same amounts and in the same manner and at the same times as would have been the case if such Covenant Defeasance had not occurred.

Satisfaction and Discharge

The Indenture will be discharged and will cease to be of further effect (except as to transfer or exchange of the Notes as expressly provided for in the Indenture) as to all the outstanding Notes issued under the Indenture when:

(a) either:

(1) all such Notes theretofore authenticated and delivered (except lost, stolen or destroyed Notes which have been replaced or paid or Notes whose payment has been deposited in trust or segregated and held in trust by the Issuer and thereafter repaid to the Issuer or discharged from such trust as provided for in the Indenture) have been delivered to the Trustee for cancellation; or

(2) all Notes not theretofore delivered to the Trustee for cancellation (A) have become due and payable, (B) will become due and payable at their Stated Maturity within one year, or (C) are to be called for redemption within one year under arrangements satisfactory to the Trustee for the giving of notice of redemption by the Trustee in the name, and at the expense, of the Issuer; and the Issuer or any Guarantor has irrevocably deposited or caused to be deposited with the Trustee as trust funds in trust an amount in euro, European Government Obligations, or a combination thereof sufficient to pay and discharge the entire indebtedness on the Notes not theretofore delivered to

the Trustee for cancellation, including the principal of, premium, if any, any Additional Amounts and accrued interest on, such Notes at such Maturity, Stated Maturity or redemption date;

(b) the Issuer or any Guarantor has paid or caused to be paid all other sums payable under the Indenture by the Issuer and any Guarantor; and

(c) the Issuer has delivered to the Trustee an Officer's Certificate and an opinion of independent counsel, in form and substance reasonably satisfactory to the Trustee, each stating that:

(1) all conditions precedent under the Indenture relating to the satisfaction and discharge of the Indenture have been complied with; and

(2) such satisfaction and discharge will not result in a breach or violation of, or constitute a default under, the Indenture or any other material agreement or instrument to which the Issuer, any Guarantor or any Subsidiary is a party or by which the Issuer, any Guarantor or any Subsidiary is bound,

provided that any such counsel may rely on any Officer's Certificate as to matters of fact (including as to compliance with this clause (c) and the foregoing clauses (a) and (b)). The Trustee shall be entitled to rely conclusively on such Officer's Certificate and opinion of counsel without independent verification.

If requested by the Issuer, the Trustee may distribute any amounts deposited in trust to the holders prior to maturity or the redemption date, as the case may be. In such case, the payment to each holder will equal the amount such holder would have been entitled to receive at the stated maturity or on the relevant redemption date, as the case may be. For the avoidance of doubt, the distribution and payment to holders prior to the maturity or redemption date as set forth above will not include any negative interest, present value adjustment, break cost or any other premium on such amounts.

Modifications and Amendments

Without limiting the Issuer's and the Guarantors' ability to effect modifications or amendments that are expressly permitted under "—Certain Covenants—Impairment of Security Interest" or "—Certain Covenants—Intercreditor Deed; Additional Intercreditor Agreements" or are otherwise permitted under this caption "—Modifications and Amendments", modifications and amendments of the Indenture, the Notes, any Guarantee, the Intercreditor Deed, any additional intercreditor agreement and/or the Security Documents may be made by the Issuer, the Guarantors, the Trustee and the Security Trustee, in each case, to the extent a party thereto, with the consent of the holders of at least a majority in aggregate principal amount of the Notes then outstanding; *provided*, *however*, that no such modification or amendment may, without the consent of the holders of at least 90% of the then outstanding aggregate principal amount of the Notes:

(a) change the Stated Maturity of the principal of, or any installment of any Additional Amounts or interest on any Note, or change to an earlier date the time at which any Note may be redeemed, or waive a default in the payment of the principal of, premium, if any, any Additional Amounts or interest on, any such Note or reduce the principal amount thereof or the rate of interest thereon or any premium payable upon the redemption thereof, or change the coin or currency in which the principal of any such Note or any premium or any Additional Amounts or the interest thereon is payable, or impair the right to institute suit for the enforcement of any such payment after the Stated Maturity thereof (or, in the case of redemption, on or after the redemption date);

(b) reduce the percentage in principal amount of such outstanding Notes, the consent of whose holders is required for any such supplemental indenture, or the consent of whose holders is required for any amendment, waiver of or compliance with provisions of the Indenture;

(c) modify any of the provisions relating to any supplemental indentures requiring the consent of holders or relating to the waiver of past defaults or relating to the waiver of certain covenants, except to increase the percentage of such outstanding Notes required for such actions or to provide that certain other provisions of the Indenture cannot be modified or waived without the consent of the holder of each such Note affected thereby;

(d) except as otherwise permitted under "—Consolidation, Merger, Sale of Assets" or the definition of the term "Parent", "Parent Intermediate Holdco" or "Company" or as part of a Permitted Reorganization, assign or transfer any of the rights and obligations under the Indenture of the Issuer or any Guarantor;

(e) release all or substantially all of the Collateral from the Liens created in favor of the Trustee or the Security Trustee pursuant to the Security Documents or all or substantially all of the Guarantors from the Guarantees created pursuant to the Indenture or any supplemental indenture thereto, except as otherwise permitted by the terms of the Indenture, the Security Documents or the Intercreditor Deed or any additional intercreditor agreement;

(f) except as permitted by the Indenture or the Intercreditor Deed (or any additional intercreditor agreement), make any change to any provision of the Indenture or the Intercreditor Deed affecting the ranking or priority of any Note or Guarantee that would adversely affect the rights of the holders of the Notes in any material respect;

(g) make any change in the provisions of the Indenture described under "—Payment of Additional Amounts" that adversely affects the holder's or beneficial owner's entitlement to (x) any exemption, in whole or in part, from withholding Taxes or (y) Additional Amounts, in each case as described thereunder, unless the Issuer agrees to pay Additional Amounts (if any) in respect thereof; or

(h) except as permitted by the Indenture or the Intercreditor Deed (or any additional intercreditor agreement), release the Guarantee of the Parent or the Company.

Notwithstanding the preceding paragraph, the Indenture will provide that certain Guarantees or Liens on the Collateral may be released in connection with sales or other dispositions of property or assets (including Capital Stock) that do not violate the requirements of the covenants described under the caption "—Certain Covenants—Limitation on Restricted Payments" or "—Certain Covenants—Limitation on Sale of Assets", as each such covenant may be amended from time to time.

For the avoidance of doubt, it shall not be necessary for the consent of the holders of the Notes to approve the particular form of any proposed amendment, waiver or other modification but it shall be sufficient if such consent approves the substance thereof.

In addition to any modifications and amendments that are permitted under, or governed by, the covenants set forth under the captions "—Certain Covenants—Impairment of Security Interest," "—Certain Covenants—Intercreditor Deed; Additional Intercreditor Agreements," or the other provisions of this caption "—Modifications and Amendments" and not in limitation thereof, without the consent of any holders of the Notes, the Issuer, the Trustee and the Security Trustee, in each case to the extent a party thereto (without the need for any consent of or authorization or execution by any other party to the Indenture) may modify or amend the Indenture, any Guarantee, the Intercreditor Deed, any additional intercreditor agreement or any Security Document:

(a) to evidence the succession of another Person to the Issuer or any Guarantor or any other obligor under the Notes and the assumption by any such successor of the covenants of the Issuer or such Guarantor in the Indenture (including any supplemental indenture), the Notes any Guarantee, the Intercreditor Deed, any additional intercreditor agreement or any Security Document, as applicable, in accordance with "—Consolidation, Merger, Sale of Assets";

(b) to add to the covenants of the Issuer, any Guarantor or any other obligor upon the Notes for the benefit of the holders of the Notes or to surrender any right or power conferred upon the Issuer or any Guarantor or any other obligor upon the Notes, as applicable, in the Indenture (including any supplemental indenture), the Notes, any Guarantee, the Intercreditor Deed, any additional intercreditor agreement or any Security Document;

(c) to cure any ambiguity, or to correct or supplement any provision in the Indenture (including any supplemental indenture), the Notes, any Guarantee, the Intercreditor Deed, any additional intercreditor agreement or any Security Document which may be defective or inconsistent with any other provision in the Indenture (including any supplemental indenture), the Notes, any Guarantee, the Intercreditor Deed, any additional intercreditor agreement or any Security Document or to make any other provisions with respect to matters or questions arising under the Indenture (including any supplemental indenture), the Notes, any Guarantee, the Intercreditor Deed, any additional intercreditor agreement or any Security Document that shall not adversely affect the legal rights of the holders of the Notes in any material respect or that shall improve or increase the rights of the holders of the Notes;

(d) to add a Guarantor under the Indenture and to provide for or confirm the existence of any limitations in any Guarantee authorized under the Indenture;

(e) to evidence and provide the acceptance of the appointment of a successor Trustee under the Indenture;

(f) to mortgage, pledge, hypothecate or grant a security interest in favor of the Security Trustee for the benefit of the holders of the Notes as additional security for the payment and performance of the Issuer's or any Guarantor's obligations under the Indenture, in any property, or assets, including any of which are required to be mortgaged, pledged or hypothecated, or in which a security interest is required to be granted to the Security Trustee pursuant to the Indenture or otherwise (any such additional security shall be deemed to be Collateral for all purposes under the Indenture);

(g) to provide for the issuance of Additional Notes in accordance with the Indenture;

(h) to conform the text of the Indenture or the Notes to any passage in this "Description of the Notes" to the extent that such passage was intended to be a verbatim recitation of a provision of the Indenture or the Notes;

(i) to make, complete or confirm any grant of Collateral permitted or required by the Indenture;

(j) to evidence or provide for the release of any Guarantee or any Lien on any Collateral that is otherwise permitted by the terms of the Indenture, the Security Documents or the Intercreditor Deed or any additional intercreditor agreement; or

(k) to provide for uncertificated Notes in addition to or in place of certificated Notes (*provided* that the uncertificated Notes are issued in registered form for purposes of Section 163(f) of the Code, or in a manner such that the uncertificated Notes are described in Section 163(f)(2)(B) of the Code).

In connection with its execution of any amendment pursuant to the preceding paragraph, the Trustee shall be entitled to request and rely on such evidence as to whether such amendment is authorized by such paragraph as the Trustee may request, which may include an Officer's Certificate and/or an opinion of counsel.

Notwithstanding anything to the contrary in the paragraph above, in order to effect an amendment authorized by clause (d) above to add a Guarantor under the Indenture, it shall only be necessary for the supplemental indenture providing for the accession of such additional Guarantor to be duly authorized and executed by (i) the Issuer, (ii) such additional Guarantor and (iii) the Trustee. Except as otherwise set forth herein, any amendments permitted by the Indenture need only be duly authorized and executed by the Issuer and the Trustee.

The holders of a majority in aggregate principal amount of the Notes outstanding may waive compliance with the restrictive covenants and provisions of the Indenture.

For the avoidance of doubt, no modification or amendment to, or deletion of, or actions taken in compliance with, any of the covenants described under "—Certain Covenants," shall be deemed to impair or affect any rights of the holders of the Notes to receive payment of principal of, or premium, if any, or interest on, the Notes.

Governing Law

The Indenture, the Notes and the Guarantees will be governed by, and construed in accordance with, the laws of the State of New York. The Intercreditor Deed will be governed by, and construed in accordance with, English law. The application of the provisions of articles 470-1 to 470-19 of the Luxembourg law of 10 August 1915 on commercial companies, as amended, is hereby expressly excluded.

Consent to Jurisdiction and Service

The Indenture will provide that the Issuer and each Guarantor will appoint INEOS USA LLC, with its registered offices at Corporation Trust Center, 1209 Orange Street, Wilmington, DE 19801, as its agent for service of process in any suit, action or proceeding with respect to the Indenture, the Notes and the Guarantees brought in any U.S. federal or New York state court located in the Borough of Manhattan, New York, New York and will submit to such jurisdiction.

Enforceability of Judgments

Since many of the assets of the Issuer and the Guarantors are outside the United States, any judgment obtained in the United States against the Issuer or any Guarantor, including judgments with respect to the payment of principal, premium, interest, Additional Amounts, redemption price and any purchase price with respect to the Notes, may not be collectable within the United States.

No Personal Liability of Directors, Officers, Employees and Shareholders

No director, officer, employee, incorporator, member or shareholder of the Issuer, any Guarantor, any of their respective parent companies or any of their respective Subsidiaries or Affiliates as such, shall have any liability for any obligations of the Issuer under the Indenture (including the Guarantees), the Notes or the Security Documents or for any claim based on, in respect of, or by reason of, such obligations or their creation. Each holder by accepting a Note waives and releases all such liability. The waiver and release are part of the consideration for issuance of the Notes. Such waiver may not be effective to waive liabilities under the U.S. federal securities laws and it is the view of the Commission that such a waiver is against public policy.

Prescription

Claims against the Issuer or any Guarantor for the payment of principal, or premium, if any, on the Notes will be prescribed 10 years after the applicable due date for payment thereof. Claims against the Issuer or any Guarantor for the payment of interest on the Notes will be prescribed five years after the applicable due date for payment of interest.

Concerning the Trustee

The Trustee will be permitted to engage in other transactions with the Issuer and its Affiliates and Subsidiaries.

The holders of a majority in principal amount of the then outstanding Notes will have the right to direct the time, method and place of conducting any proceeding for exercising any remedy available to the Trustee, subject to certain exceptions. The Indenture will provide that in case an Event of Default occurs (which has not been cured), the Trustee will be required, in the exercise of its power, to use the degree of care of a prudent man in the conduct of his own affairs. Subject to such provisions, the Trustee will be under no obligation to exercise any of its rights or powers under the Indenture at the request of any holder of Notes unless such holder shall have offered to the Trustee security and indemnity satisfactory to it against any loss, liability or expense.

Acknowledgment and Consent to Bail-In

Under this caption "—Acknowledgment and Consent to Bail-In":

"**Bail-in Legislation**" means, in relation to a member state of the European Economic Area which has implemented, or at any time implements, the BRRD, the relevant implementing law or regulation as described in the EU Bail-in Legislation Schedule from time to time.

"**BRRD**" means Directive 2014/59/EU establishing a framework for the recovery and resolution of credit institutions and investment firms.

"**BRRD Liability**" means a liability in respect of which the relevant write-down and conversion powers in the applicable Bail-in Legislation may be exercised.

"**BRRD Party**" means The Bank of New York Mellon (Luxembourg) S.A., as Registrar, Luxembourg Paying Agent and Luxembourg Transfer Agent under the Indenture.

"**Bail-in Powers**" means any write-down and conversion powers as defined in relation to the relevant Bail-in Legislation.

"**EU Bail-in Legislation Schedule**" means the document described as such and published by the Loan Market Association (or any successor person) from time to time.

"**Relevant Resolution Authority**" means the resolution authority with the ability to exercise any Bail-in Powers in relation to the relevant BRRD Party.

Notwithstanding and to the exclusion of any other term of the Indenture or any other agreements, arrangements, or understanding between the parties, each counterparty to a BRRD Party under the Indenture shall acknowledge and accept that a BRRD Liability arising under the Indenture may be subject to the exercise of Bail-in Powers by the Relevant Resolution Authority, and acknowledge, accept, and agree to be bound by:

(a) the effect of the exercise of Bail-in Powers by the Relevant Resolution Authority in relation to any BRRD Liability of any BRRD Party to it under the Indenture, that (without limitation) may include and result in any of the following, or some combination thereof:

(i) the reduction of all, or a portion, of the BRRD Liability or outstanding amounts due thereon;

(ii) the conversion of all, or a portion, of the BRRD Liability into shares, other securities or other obligations of the relevant BRRD Party or another person (and the issue to or conferral on it of such shares, securities or obligations);

(iii) the cancellation of the BRRD Liability; or

(iv) the amendment or alteration of the amounts due in relation to the BRRD Liability, including any interest, if applicable, thereon, the maturity or the dates on which any payments are due, including by suspending payment for a temporary period; and

(b) the variation of the terms of the Indenture, as deemed necessary by the Relevant Resolution Authority, to give effect to the exercise of Bail-in Powers by the Relevant Resolution Authority.

Certain Definitions

"**2023 Senior Secured Indenture**" means the Indenture dated as of May 5, 2015, among the Issuer, the guarantors named therein, The Bank of New York Mellon, London Branch, as trustee, The Bank of New York Mellon (Luxembourg) S.A., as registrar, paying agent and Luxembourg transfer agent, and Barclays Bank PLC, as security trustee under the indenture and senior security agent under the Intercreditor Deed, as it may from time to time be supplemented or amended by one or more indentures supplemental thereto entered into pursuant to the applicable provisions thereof.

"**2023 Senior Secured Notes**" means the €770,000,000 aggregate principal amount 4.00% Senior Secured Notes due May 1, 2023, issued by the Issuer on May 5, 2015, which will be redeemed in full with the proceeds from the offering of the Notes.

"**2023 Senior Secured Notes Proceeds Loans**" means the loan of the gross proceeds of the 2023 Senior Secured Notes pursuant to the 2023 Senior Secured Notes Proceeds Loans Agreement, and all loans directly or indirectly replacing or refinancing such loan or any portion thereof as amended and repaid from time to time, including the full repayment thereof in connection with the Transactions.

"**2023 Senior Secured Notes Proceeds Loans Agreement**" means that certain loan agreement made on May 5, 2015, by and among IHL, as borrower, and the Issuer, as lender.

"**2024 IGH Notes Indenture**" means the Indenture dated as of August 9, 2016, among the Parent, the guarantors named therein, The Bank of New York Mellon, London Branch, as trustee, collateral agent and principal paying agent and The Bank of New York Mellon (Luxembourg) S.A., as Luxembourg paying agent, registrar and transfer agent, as it may from time to time be supplemented or amended by one or more indentures supplemental thereto entered into pursuant to the applicable provisions thereof.

"**2024 IGH Notes**" means the €500,000,000 aggregate principal amount 5⅝% Senior Notes due 2024 and the €650,000,000 aggregate principal amount 5⅜% Senior Notes due 2024 issued on August 9, 2016 by the Parent.

"**2024 IGH Notes Proceeds Loans**" means the loans of the gross proceeds of the 2024 IGH Notes pursuant to the 2024 IGH Notes Proceeds Loans Agreement, and all loans directly or indirectly replacing or refinancing such loan or any portion thereof.

"**2024 IGH Notes Proceeds Loans Agreement**" means that certain loan agreement made on August 9, 2016, by and among IHL, as borrower, and the Parent, as lender.

"**2025 Senior Secured Indenture**" means the Indenture dated as of November 3, 2017, among the Issuer, the guarantors named therein, The Bank of New York Mellon, London Branch, as trustee and principal paying agent, The Bank of New York Mellon SA/NV, Luxembourg Branch, as registrar, Luxembourg transfer agent and paying agent and Barclays Bank PLC, as security trustee, under the indenture and senior security agent under the Intercreditor Deed, as it may from time to time be supplemented or amended by one or more indentures supplemental thereto entered into pursuant to the applicable provisions thereof.

"**2025 Senior Secured Notes**" means the €550,000,000 aggregate principal amount of 2⅛% Senior Secured Notes due November 15, 2025, issued by the Issuer on November 3, 2017.

"**2025 Senior Secured Notes Proceeds Loans**" means the loan of the gross proceeds of the 2025 Senior Secured Notes pursuant to the 2025 Senior Secured Notes Proceeds Loans Agreement, and all loans directly or indirectly replacing or refinancing such loan or any portion thereof.

"**2025 Senior Secured Notes Proceeds Loans Agreement**" means that certain loan agreement made on November 3, 2017, by and among IHL, as borrower, and the Issuer, as lender.

"**Acquired Indebtedness**" means Indebtedness of any Person:

(a) existing at the time such Person becomes a Restricted Subsidiary;

(b) assumed in connection with the acquisition of assets from such Person; or

(c) existing at the time such Person merges or consolidates with the Company or any Restricted Subsidiary,

in each case, other than Indebtedness incurred in connection with, or in contemplation of, such Person becoming a Restricted Subsidiary or such acquisition, merger or consolidation, as the case may be.

Except as otherwise expressly provided herein, Acquired Indebtedness shall be deemed to be incurred on the date such Person becomes a Restricted Subsidiary, on the date of such acquisition of assets from such Person or at the time of such merger or consolidation, as the case may be.

"**Acquisition**" means any acquisition of Capital Stock in, or all or substantially all the assets of (or all or substantially all the assets constituting a business unit, division, product line or line of business of), any Person.

"**Acquisition Indebtedness**" means Indebtedness of a Person incurred to finance any Acquisition, including, for the avoidance of doubt, Indebtedness incurred to refinance existing Indebtedness of any Person that is the subject of such Acquisition.

"**Additional Collateral**" means the Collateral granted pursuant to the Security Documents entered into after the Issue Date.

"**Affiliate**" means, with respect to any specified Person, any other Person directly or indirectly controlling or controlled by or under direct or indirect common control with such specified Person.

For the purposes of this definition, "control," when used with respect to any specified Person, means the power to direct the management and policies of such Person, directly or indirectly, whether through ownership of Voting Stock, by contract or otherwise; and the terms "controlling" and "controlled" have meanings correlative to the foregoing.

"**Applicable Redemption Premium**" means, with respect to any Note on any redemption date, the greater of (a) one percent of the principal amount of the Note and (b) the excess of:

(1) the present value at such redemption date of the redemption price of such Note at , 2022, plus all required interest payments that would otherwise be due to be paid on such Note during the period between the redemption date and , 2022, excluding accrued but unpaid interest, computed using a discount rate equal to the Bund Rate at such redemption date plus 50 basis points, over

(2) the principal amount of such Note.

For the avoidance of doubt, calculation of the Applicable Redemption Premium shall not be a duty or obligation of the Trustee or the Paying Agents.

"**Asset Sale**" means any sale, issuance, conveyance, transfer, lease or other disposition (including by way of merger, consolidation or sale and leaseback transaction) (collectively, a "**disposition**"), directly or indirectly, in one or a series of related transactions, of:

(a) any Capital Stock of any Restricted Subsidiary (other than directors' qualifying shares and other nominal amounts of Capital Stock that are required to be held by other Persons under applicable law);

(b) all or substantially all of the properties and assets of any division or line of business of the Company and its Restricted Subsidiaries; or

(c) any other properties or assets of the Company or any Restricted Subsidiary other than in the ordinary course of business.

Notwithstanding the foregoing, the term "**Asset Sale**" shall not include any disposition of properties and assets:

(i) that is governed by the provisions described under "—Consolidation, Merger, Sale of Assets;"

(ii) that is by the Company to any Restricted Subsidiary, or by any Restricted Subsidiary to the Company or any Restricted Subsidiary, in accordance with the terms of the Indenture;

(iii) that is a disposition of cash, cash equivalents or Temporary Cash Investments;

(iv) that is a disposition of inventory, trading stock or other assets (A) in the ordinary course of business or (B) pursuant to an inventory financing or similar arrangement that is incurred pursuant to clause (22) of the definition of Permitted Indebtedness;

(v) that is a disposition of obsolete, surplus or worn out equipment or other assets or of any assets that are no longer useful or economically practicable to maintain in the conduct of the business of the Company or any Restricted Subsidiary (including allowing any registrations or any applications for registration of any Intellectual Property Rights to lapse or go abandoned);

(vi) the Fair Market Value of which, in the aggregate, does not exceed €50.0 million in any transaction or series of related transactions;

(vii) that is a Restricted Payment permitted by the covenant under the caption "—Certain Covenants—Limitation on Restricted Payments" or a Permitted Payment or a Permitted Investment or a disposition of Capital Stock, Indebtedness or other securities of an Unrestricted Subsidiary;

(viii) that is a disposition as part of any Permitted Reorganization;

(ix) that is a disposition of receivables in connection with the compromise, settlement or collection thereof in the ordinary course of business or in bankruptcy or similar proceedings and exclusive of factoring or similar arrangements;

(x) that is a foreclosure, condemnation or any similar action with respect to any property or assets or a surrender or waiver of contract rights or the settlement, release or surrender of contract, tort or other claims of any kind, including the unwinding of any Hedging Agreement in accordance with the terms thereof;

(xi) that is a disposition of receivables (and related assets, including, for the avoidance of doubt, any credit insurance relating to such receivables) in connection with any Permitted Receivables Financing or in the ordinary course of business or the conversion or exchange of accounts receivable for notes receivable;

(xii) that is by the Company or a Restricted Subsidiary by way of lease or license in respect of land to a trading counterparty to which the Company or such Restricted Subsidiary, as applicable, provides services on that land in the ordinary course of its trading;

(xiii) that is a disposition of (A) any and all equity, debt and other interests held by the Company and the Restricted Subsidiaries in INEOS Investments or (B) any dividends, payments or other distributions equal to amounts received as dividends, payments and other distributions or proceeds of any sale or other disposition in respect of such interests;

(xiv) that is a disposition of assets to a joint venture in which the Company or a Restricted Subsidiary holds or receives, directly or indirectly, at least 49% of the Capital Stock in such joint venture; *provided* that (A) no other party to such joint venture is an Affiliate of the Company, (B) such disposition must be for fair consideration as determined in good faith by the Board of Directors of the Company or the senior management of the Company and (C) the aggregate amount of the dispositions made to joint ventures pursuant to this clause (xiv), less the aggregate amount of cash, cash equivalents and Temporary Cash Investments received by the Company and the Restricted Subsidiaries in exchange for such dispositions, does not exceed the greater of (x) €475.0 million and (y) 5.00% of Total Assets at the time of (but prior to giving effect to) such disposition;

(xv) that is a disposition of an Investment in any joint venture to the extent required by, or made pursuant to, contractual buy/sell or similar arrangements between the joint venture parties set forth in the agreements relating to such joint venture; *provided* that the relevant agreement resulted from bona fide arm's length negotiation at the time it was entered into;

(xvi) that is a grant of a Lien that is not prohibited by the covenant described under the caption "—Certain Covenants—Limitation on Liens" or a disposition in connection with any such Lien;

(xvii) that is a grant of licenses to Intellectual Property Rights to third parties on an arm's length basis in the ordinary course of business;

(xviii) that is a lease, sublease, license, sublicense or other grant of rights to use or exploit, occupancy agreements in respect of or other assignments of, any property, including Intellectual Property Rights, in each case that does not, individually or in the aggregate, materially interfere with the business of the Company and the Restricted Subsidiaries, taken as a whole, as determined in good faith by the Board of Directors or senior management of the Company; or

(xix) that is a disposition of Capital Stock of a Restricted Subsidiary pursuant to an agreement or other obligation with or to a Person (other than the Company or a Restricted Subsidiary) from which such Restricted Subsidiary was acquired, or from which such Restricted Subsidiary acquired its business and assets (having been newly formed in connection with such acquisition), made as a part of such acquisition and in each case comprising all or part of the consideration in respect of such acquisition.

In the event that a transaction (or a portion thereof) meets the definition of an Asset Sale or an exclusion from the definition of Asset Sale and would also be a permitted Restricted Payment, Permitted Payment or Permitted Investment, the Issuer, in its sole discretion, will be entitled to divide and classify such transaction (or portion thereof) as an Asset Sale or an exclusion from an Asset Sale and/or one or more of the types of permitted Restricted Payments, Permitted Payments or Permitted Investments.

"**Attributable Debt**" means, with respect to any sale and leaseback transaction at the time of determination, the present value (discounted at the interest rate implicit in the lease determined in accordance with IFRS, or, if not known, at the Company's incremental borrowing rate) of the total obligations of the lessee of the property subject to such lease for rental payments during the remaining term of the lease included in such sale and leaseback transaction, including any period for which such lease has been extended or may, at the option of the lessor, be extended, or until the earliest date on which the lessee may terminate such lease without penalty or upon payment of penalty (in which case the rental payments shall include such penalty), after excluding from such rental payments all amounts required to be paid on account of maintenance and repairs, insurance, taxes, assessments, water, utilities and similar charges.

"**Average Life**" means, as of the date of determination with respect to any Indebtedness, the quotient obtained by dividing:

(a) the sum of the products of:

  (x) the number of years from the date of determination to the date or dates of each successive scheduled principal payment of such Indebtedness, multiplied by

  (y) the amount of each such principal payment, by

(b) the sum of all such principal payments.

"**Bankruptcy Law**" means (a) Title 11, United States Bankruptcy Code of 1978, as amended, or any successor thereto, (b) the England and Wales Insolvency Act 1986 (as amended, or any successor thereto), (c) when it relates to a Luxembourg entity, bankruptcy (*faillite*) proceedings within the meaning of Articles 437 ff. of the Luxembourg Commercial Code, voluntary or judicial liquidation (*liquidation volontaire ou judiciaire*), composition with creditors (*concordat préventif de faillite*) within the meaning of the law of 14 April 1886 on arrangements to prevent insolvency, as amended, reprieve from payment (*sursis de paiement*) within the meaning of Articles 593 ff. of the Luxembourg Commercial Code, controlled management (*gestion contrôlée*) within the meaning of the grand ducal regulation of 24 May 1935 on controlled management or (d) any other law of the United States, England and Wales or any other jurisdiction (or, in each case, any political subdivision thereof) relating to bankruptcy, insolvency, receivership, examinership, winding-up, liquidation, reorganization or relief of debtors or any amendment to, succession to or change in any such law.

"**Board of Directors**" means:

(a) with respect to a corporation, the board of directors (or analogous governing body) of such corporation or any committee thereof duly authorized to act on behalf of such board;

(b) with respect to a partnership, the board of directors (or analogous governing body) of such partnership or of the general partner of such partnership or, in each case, any committee thereof duly authorized to act on behalf of such board;

(c) with respect to a limited liability company (including, for the avoidance of doubt, a public limited company and a private limited company incorporated under the laws of England and Wales), the board of directors (or analogous governing body) of such company or of the managing member or members thereof, or any committee thereof duly authorized to act on behalf of such board, or the managing member or members thereof, or any controlling committee of managing members thereof; and

(d) with respect to any other Person, the board or committee of such Person serving a similar function.

"**Bund Rate**" means, as of any redemption date, the greater of (i) 0% and (ii) the rate per annum equal to the equivalent yield to maturity as of such redemption date of the Comparable German Bund Issue, assuming a price for the Comparable German Bund Issue (expressed as a percentage of its principal amount) equal to the Comparable German Bund Price for such relevant date, where:

(a) "**Comparable German Bund Issue**" means the German Bundesanleihe security selected by any Reference German Bund Dealer as having a fixed maturity most nearly equal to the period from such redemption date to , 2022, and that would be utilized, at the time of selection and in accordance with customary financial practice, in pricing new issues of euro-denominated corporate debt securities in a principal amount approximately equal to the then outstanding principal amount of the Notes and of a maturity most nearly equal to , 2022, *provided*, *however*, that, if the period from such redemption date to , 2022, is less than one year, a fixed maturity of one year shall be used;

(b) "**Comparable German Bund Price**" means, with respect to any relevant date, the average of all Reference German Bund Dealer Quotations for such date (which, in any event, must include at least two such quotations), after excluding the highest and lowest such Reference German Bund Dealer Quotations, or if the Issuer obtains fewer than four such Reference German Bund Dealer Quotations, the average of all such quotations;

(c) "**Reference German Bund Dealer**" means any dealer of German Bundesanleihe securities appointed by the Issuer in good faith; and

(d) "**Reference German Bund Dealer Quotations**" means, with respect to each Reference German Bund Dealer and any relevant date, the average as determined by the Issuer of the bid and offered prices for the Comparable German Bund Issue (expressed in each case as a percentage of its principal amount) quoted in writing to the Issuer by such Reference German Bund Dealer at 3:30 p.m. Frankfurt am Main, Germany time on the third business day in Germany preceding the relevant date.

"**Business Day**" means each day that is not a Saturday, Sunday or other day on which banking institutions in Luxembourg, London, United Kingdom, or New York, United States or any other place of payment under the Indenture are authorized or required by law or other governmental actions to remain closed; *provided*, *however*, that for any payments to be made in euro under the Indenture, such day shall also be a day on which the Trans-European Automated Real-time Gross Settlement Express Transfer ("**TARGET**") payment system is open for the settlement of payments.

"**Capital Lease Obligation**" of any Person means any obligation of such Person under any lease of (or other agreement conveying the right to use) real or personal property which, in accordance with IFRS, is required to be recorded as a capital lease obligation; *provided* that for purposes of any calculations pursuant to the Indenture, IFRS shall be deemed to treat operating leases in a manner consistent with the treatment thereof under IFRS as in effect on January 1, 2018, notwithstanding any modifications or interpretative changes thereto that may have occurred after January 1, 2018.

"**Capital Stock**" of any Person means any and all shares, interests, participations, rights in or other equivalents (however designated) of such Person's capital stock, partnership interests (whether general or limited), other equity interests and any other interest or participation that confers on a Person the right to receive a share of the profits and losses of, or distributions of assets of, such Person and any rights (other than debt securities or other Indebtedness exchangeable or convertible into Capital Stock prior to the exchange or conversion thereof), warrants or options exchangeable for or convertible into such Capital Stock.

"**Cash Management Arrangements**" means any cash management, cash pooling or netting or setting off arrangements, any arrangements for the honoring of checks, drafts or similar instruments and any other treasury, depository or similar services, including services with respect to commercial credit cards, stored value cards, purchasing cards, treasury management, check drawing and automated payment services (including depository, overdraft, controlled disbursement, ACH transactions, return items, interstate depository network services, Society for Worldwide Interbank Financial Telecommunication transfers, cash pooling and operational foreign exchange management), dealer incentive or similar programs, current account facilities and arrangements or services similar to any of the foregoing.

"**Change of Control**" means the occurrence of any of the following events:

(a) prior to the consummation of an initial Public Equity Offering, the Permitted Holders cease to be the "beneficial owners" (as defined in Rules 13d-3 and 13d-5 under the U.S. Exchange Act), directly or indirectly, of at least 50% of the total voting power represented by the outstanding Voting Stock of the Company;

(b) on and after the consummation of an initial Public Equity Offering, any "person" or "group" (as such terms are used in Sections 13(d) and 14(d) of the U.S. Exchange Act), other than the Permitted Holders, is or becomes the "beneficial owner" (as defined in Rules 13d-3 and 13d-5 under the U.S. Exchange Act), directly or indirectly, of more than 50% of the total voting power represented by the outstanding Voting Stock of the Company; *provided* that any Voting Stock of which any Permitted Holder is the "beneficial owner" (other than deemed beneficial ownership derived from membership in a "group") shall not be included in any Voting Stock of which any other "person" or "group" is the "beneficial owner", unless such "person" or "group" is not an Affiliate of a Permitted Holder and has the sole voting power with respect to such Voting Stock; or

(c) the Company consolidates with or merges with or into any Person or sells, assigns, conveys, transfers, leases or otherwise disposes of all or substantially all of its Consolidated assets to any Person (other than any Restricted Subsidiary), or any Person consolidates with or merges into or with the Company, in any such event pursuant to a transaction in which the outstanding Voting Stock of the Company is converted into or exchanged for cash, securities or other property, other than any such transaction where (i) the outstanding Voting Stock of the Company is converted into or exchanged for Voting Stock of the surviving corporation which is not Redeemable Capital Stock and (ii) immediately after such transaction, no "person" or "group" (as such terms are used in Sections 13(d) and 14(d) of the U.S. Exchange Act), other than the Permitted Holders, is the "beneficial owner" (as defined in Rules 13d-3 and 13d-5 under the U.S. Exchange Act), directly or indirectly, of more than 50% of the total voting power represented by the outstanding Voting Stock of the surviving corporation; *provided* that any Voting Stock of which any Permitted Holder is the "beneficial owner" (other than deemed beneficial ownership derived from membership in a "group") shall not be included in any Voting Stock of which any other "person" or "group" is the "beneficial owner", unless such "person" or "group" is not an Affiliate of a Permitted Holder and has the sole voting power with respect to such Voting Stock.

For purposes of this definition, any transfer of Capital Stock of an entity that was formed for the purpose of acquiring Voting Stock of the Company will be deemed to be a transfer of such portion of such Voting Stock as corresponds to the portion of the Capital Stock of such entity that has been so transferred.

"**Clearstream**" means Clearstream Banking, S.A.

"**Code**" means the U.S. Internal Revenue Code of 1986, as amended from time to time.

"**Collateral**" means the Initial Collateral and the Additional Collateral and all other rights, property and assets in which a security interest is granted or purported to be granted pursuant to any Security Document to secure the Notes or any Guarantee.

"**Commission**" means the U.S. Securities and Exchange Commission, as from time to time constituted, created under the U.S. Exchange Act, or if at any time after the execution of the Indenture, the U.S. Securities and Exchange Commission is not existing and performing the duties now assigned to it under the U.S. Securities Act and U.S. Exchange Act, then the body performing such duties at such time.

"**Commodity Price Protection Agreement**" means any forward contract, commodity swap, commodity option or other similar financial agreement or arrangement relating to, or the value of which is dependent upon, fluctuations in commodity prices.

"**Company**" means:

(a) INEOS Luxembourg I S.A., a Luxembourg public limited liability company (*société anonyme*) organized under the laws of the Grand Duchy of Luxembourg, having its registered office at 58 rue Charles Martel, L-2134 Luxembourg, Grand Duchy of Luxembourg and registered with the Luxembourg Register of Commerce and Companies under number B158195, until any designation is made in accordance with clause (b) below; or

(b) any other Subsidiary of the Parent (A) that guarantees (or, substantially concurrently with such designation, will guarantee, including as a result of the assumption of obligations referred to in clause (iii) below) the Notes and (B) is designated, as part of any Permitted Reorganization, by the then current Company to be the "Company" by written notice to the Trustee; *provided* that (i) such other Subsidiary is wholly owned by the Parent, (ii) the Issuer is wholly owned by such other Subsidiary and (iii) such other Subsidiary expressly assumes the obligations of the Company under each of the Notes Documents to which the Company is a party pursuant to agreements reasonably satisfactory to the Trustee;

in each case, until a successor replaces such Person pursuant to the covenant described under the caption "—Consolidation, Merger, Sale of Assets", and thereafter (unless another Subsidiary of the Parent is designated in accordance with clause (b) of this definition), shall mean such successor. It is understood and agreed that any designation under clause (b) of this definition may be made concurrently with any designation under clause (b) of the definition of Parent, in which case the satisfaction of the requirements set forth in clause (b) of this definition shall be determined on a *pro forma* basis immediately after giving effect to each such designation.

In the event any other Subsidiary of the Parent is designated as the "Company" pursuant to and in accordance with the provisions of clause (b) above, upon the effectiveness of such designation the Subsidiary that was the Company immediately prior thereto shall cease to be the "Company" for all purposes of the Notes and the other Notes Documents.

"**Consolidated EBITDA**" of any Person shall mean, for any period, the sum of (a) Consolidated Net Income (Loss) for such period of such Person and its Restricted Subsidiaries on a Consolidated basis, *plus* (b) the sum of, in each case to the extent deducted in computing Consolidated Net Income (Loss) for such period, Consolidated Interest Expense, Consolidated Income Tax Expense and Consolidated Non-Cash Charges for such period of such Person and its Restricted Subsidiaries on a Consolidated basis, all determined in accordance with IFRS, *plus* (c) the amount of cost savings, operating expense reductions, other operating improvements and synergies relating to the Transactions, any acquisition, disposition, divestiture, restructuring or implementation of a cost savings or other similar initiative (collectively, "**Cost Savings**") that are projected by the Company in good faith to be realized (calculated on a *pro forma* basis as though such items had been realized on the first day of such period) as a result of actions with respect to which substantial steps have been, will be or are expected to be (in the good faith determination of the Company) taken within 18 months after the consummation, adoption or implementation of the transaction or other event giving rise thereto.

"**Consolidated Fixed Charge Coverage Ratio**" of any Person shall mean, for any period, the ratio of (a) Consolidated EBITDA for such period of such Person and its Restricted Subsidiaries on a Consolidated basis to (b) the sum of Consolidated Interest Expense for such period of such Person and its Restricted Subsidiaries on a Consolidated basis, determined in accordance with IFRS, *plus* cash and noncash dividends due (whether or not declared) on any Preferred Stock of such Person or its Restricted Subsidiaries paid or payable during such period to a Person other than the Parent, the Company and its Restricted Subsidiaries, in each case after giving *pro forma* effect to:

(1) the incurrence of the Indebtedness giving rise to the need to make such calculation and (if applicable) the application of the net proceeds therefrom, including to refinance other Indebtedness, as if such Indebtedness was incurred, and the application of such proceeds occurred, on the first day of such period;

(2) the incurrence, repayment or retirement of any other Indebtedness by such Person and its Restricted Subsidiaries since the first day of such period as if such Indebtedness was incurred, repaid or retired at the beginning of such period; *provided*, *however*, that the *pro forma* calculation of Consolidated Interest Expense shall not give effect to (A) any Indebtedness incurred on the date of determination pursuant to paragraph (b) of the covenant described under "—Certain Covenants—Limitation on Indebtedness" (other than clause (18) of paragraph (b) thereof) and (B) any repayment or retirement of any Indebtedness on the date of determination to the extent such repayment or retirement results from the proceeds of Indebtedness incurred pursuant to paragraph (b) of the covenant described under "—Certain Covenants—Limitation on Indebtedness" (other than clause (18) of paragraph (b) thereof);

(3) any acquisition or disposition by such Person and its Restricted Subsidiaries of any Person or any business or any assets out of the ordinary course of business, whether by merger, stock purchase or sale or asset purchase or sale, and any related incurrence or repayment or retirement of Indebtedness, in each case since the first day of such period, assuming such acquisition or disposition had been consummated on the first day of such period;

provided that, in making any computation under clause (1), (2) or (3) above, (A) the Consolidated Interest Expense attributable to interest on any Indebtedness computed on a *pro forma* basis and (x) bearing a floating interest rate shall be computed as if the rate in effect on the date of computation had been the applicable rate for the entire period and (y) which was not outstanding during the period for which the computation is being made but which bears, at the option of such Person, a fixed or floating rate of interest, shall be computed by applying at the option of such Person either the fixed or floating rate (in the case of clauses (x) and (y), taking into account any Interest Rate Agreement applicable to such Indebtedness for a period equal to the remaining term of such Interest Rate Agreement) and (B) the Consolidated Interest Expense attributable to interest on any Indebtedness under a revolving credit facility computed on a *pro forma* basis shall be computed based upon the average daily balance of such Indebtedness during the applicable period.

For purposes of this definition, whenever *pro forma* effect is to be given to any acquisition, disposition or other transaction or any calculation, the *pro forma* calculations will be as determined in good faith by a responsible financial or accounting officer of the Parent (including in respect of anticipated Cost Savings).

"**Consolidated Income Tax Expense**" of any Person means, for any period, the provision for federal, national, state and local income taxes of the United States, the United Kingdom or any other jurisdiction of such Person and its Restricted Subsidiaries for such period, determined on a Consolidated basis in accordance with IFRS.

"**Consolidated Interest Expense**" of any Person means, without duplication, for any period, the sum of:

(a) the interest expense (net of interest income) of such Person and its Restricted Subsidiaries for such period, determined on a Consolidated basis in accordance with IFRS (excluding any debt issuance costs and currency translation differences, and in each case any amortization thereof, and any interest expense on employee benefit liabilities), but including:

(1) amortization of debt discount;

(2) the net costs associated with Interest Rate Agreements and, to the extent relating to Indebtedness, Currency Hedging Agreements;

(3) the interest portion of any deferred payment obligation;

(4) all commissions, discounts and other fees and charges owed with respect to letters of credit and bankers acceptance financing; and

(5) accrued interest; *plus*

(b) (1) the interest component of the Capital Lease Obligations accrued (or, to the extent not accrued during such period or any prior period, paid) by such Person and its Restricted Subsidiaries during such period; and

(2) all capitalized interest of such Person and its Restricted Subsidiaries,

in each case determined on a Consolidated basis in accordance with IFRS; *plus*

(c) the interest expense under any Guaranteed Debt of such Person or any of its Restricted Subsidiaries to the extent not included under clause (a) above, to the extent paid by such Person or its Restricted Subsidiaries during such period, determined on a Consolidated basis in accordance with IFRS (excluding any debt issuance costs).

"**Consolidated Net Income (Loss)**" of any Person means, for any period, the net income (or loss) of such Person and its Restricted Subsidiaries for such period determined on a Consolidated basis in accordance with IFRS, adjusted, to the extent included (or, in the case of lost profits referred to in clause (o) below, not included) in calculating such net income (or loss), to exclude (or, in the case of lost profits referred to in clause (o) below, to include), without duplication:

(a) all extraordinary or exceptional gains or charges, losses or expenses, net of taxes;

(b) the portion of net income (or loss) of such Person and its Restricted Subsidiaries on a Consolidated basis attributable to interests in unconsolidated Persons or Unrestricted Subsidiaries, except to the extent that cash dividends or distributions have actually been received by such Person or any of its Restricted Subsidiaries (or, in the case of net loss of any such unconsolidated Person or Unrestricted Subsidiary, to the extent such Person or any of its Restricted Subsidiaries has made a cash investment in such Person or Unrestricted Subsidiary);

(c) net income (or loss) of any Person combined with such Person or any of its Restricted Subsidiaries on a "pooling of interests" basis attributable to any period prior to the date of combination;

(d) (i) any gain or charge, loss or expense, net of taxes, realized upon the termination of any employee benefit plan or (ii) any non-cash interest expense on employee benefit liabilities, net of any non-cash interest income on defined benefit pension plan assets;

(e) gains or losses, net of taxes (less all fees and expenses relating thereto), in respect of dispositions of assets other than in the ordinary course of business;

(f) the net income of any Restricted Subsidiary to the extent that the declaration of dividends or similar distributions by such Restricted Subsidiary of that income is not at the time permitted, directly or indirectly, by operation of the terms of its charter or any agreement, instrument, judgment, decree, order, statute, rule or governmental regulation applicable to such Restricted Subsidiary or its shareholders, in each case, other than by encumbrances and restrictions which are permitted under the covenant "—Certain Covenants—Limitation on Dividend and Other Payment Restrictions Affecting Restricted Subsidiaries;"

(g) any restoration to net income of any contingency reserve, except to the extent provision for such reserve was accrued at any time following the Issue Date;

(h) any net gain or loss arising from the acquisition of any securities or extinguishment of any Indebtedness of such Person or any of its Restricted Subsidiaries;

(i) any non-cash compensation charge arising from any grant of stock, stock options or other equity based awards;

(j) all deferred financing costs amortized or written off and premiums paid in connection with any early extinguishment of Indebtedness;

(k) (i) any unrealized foreign currency translation or transaction gains or losses in respect of Indebtedness or other obligations of such Person or any of its Restricted Subsidiaries, (ii) any unrealized foreign currency gains or losses relating to translation of assets and liabilities denominated in foreign currencies and (iii) any unrealized gains or losses arising from changes in the fair value of Hedging Obligations;

(l) the impact of capitalized or accreting or pay-in-kind interest or principal on Subordinated Shareholder Funding;

(m) any losses arising on the sale or a writedown of fixed assets or deducting any profit from a sale or revaluation of a fixed asset;

(n) the cumulative effect of a change in accounting principles;

(o) to the extent covered by insurance and actually reimbursed or, so long as the Company has made a determination that there exists reasonable evidence that such amount will in fact be reimbursed by the insurer and only to the extent that such amount is (i) not denied by the applicable carrier in writing within 180 days and (ii) in fact reimbursed within 365 days of the date of such evidence (with a deduction for any amount so added back to the extent not so reimbursed within 365 days), losses and expenses and lost profits (as determined in good faith by a responsible financial or accounting officer of the Parent) with respect to business interruption;

(p) any gains or charges, losses or expenses relating to contingent or deferred consideration payable by such Person or its Restricted Subsidiaries in connection with any Acquisition for such period, including any gains or charges, losses or expenses arising from changes in the fair value of such contingent or deferred consideration;

(q) any charge, loss or expense (including non-cash charges) relating to any Permitted Reorganization, including the amount of incremental amortization or depreciation arising as a result of any adjustments to inventory, equipment and other assets arising as a result of the consummation of, and any other charge, loss or expense arising from other accounting effects of the consummation of, such Permitted Reorganization; and

(r) any charge, loss or expense (including non-cash charges) relating to the Transactions.

"**Consolidated Net Total Leverage Ratio**" of any Person means, as at any date of determination, the ratio of (a)(i) the outstanding principal amount of Indebtedness (other than any Hedging Obligations and any Cash Management Arrangements) of such Person and its Restricted Subsidiaries, determined on a Consolidated basis in accordance with IFRS, as of such date, minus (ii) the aggregate amount of cash, cash equivalents and Temporary Cash Investments of such Person and its Restricted Subsidiaries, determined on a Consolidated basis in accordance with IFRS, as of such date, to (b) the Consolidated EBITDA of such Person and its Restricted Subsidiaries on a Consolidated basis for the period of four most recent full fiscal quarters ending immediately prior to such date for which financial statements are available, in each case after giving *pro forma* effect to:

(i) the incurrence of any Indebtedness incurred in connection with a transaction giving rise to the need to make such calculation and (if applicable) the application of the net proceeds therefrom, including to refinance other Indebtedness, as if such Indebtedness was incurred, and the application of such proceeds occurred, on the first day of such period;

(ii) the incurrence, repayment or retirement of any other Indebtedness by such Person and its Restricted Subsidiaries since the first day of such period as if such Indebtedness was incurred, repaid or retired at the beginning of such period; and

(iii) any acquisition or disposition by such Person and its Restricted Subsidiaries of any Person or any business or any assets out of the ordinary course of business, whether by merger, stock purchase or sale or asset purchase or sale, and any related incurrence or repayment or retirement of Indebtedness, in each case since the first day of such period, assuming such acquisition or disposition had been consummated on the first day of such period.

For purposes of this definition, whenever *pro forma* effect is to be given to any acquisition, disposition or other transaction or any calculation, the *pro forma* calculations will be as determined in good faith by a responsible financial or accounting officer of the Parent (including in respect of anticipated Cost Savings).

"**Consolidated Non-Cash Charges**" of any Person means, for any period, the aggregate depreciation, amortization and other non-cash charges, losses or expenses of such Person and its Restricted Subsidiaries on a Consolidated basis for such period, as determined in accordance with IFRS (excluding any non-cash charge, loss or expense which represents an accrual or reserve for cash payments in any future period).

"**Consolidated Senior Secured Leverage Ratio**" of any Person means, as at any date of determination, the ratio of (a) the outstanding principal amount of Senior Secured Indebtedness (other than any Hedging Obligations and any Cash Management Arrangements) of such Person and its Restricted Subsidiaries, determined on a Consolidated basis in accordance with IFRS, as of such date to (b) the Consolidated EBITDA of such Person and its Restricted Subsidiaries on a Consolidated basis for the period of four most recent full fiscal quarters ending immediately prior to such date for which financial statements are available, in each case after giving *pro forma* effect to:

(i) the incurrence of the Indebtedness giving rise to the need to make such calculation and (if applicable) the application of the net proceeds therefrom, including to refinance other Indebtedness, as if such Indebtedness was incurred, and the application of such proceeds occurred, on the first day of such period;

(ii) the incurrence, repayment or retirement of any other Indebtedness by such Person and its Restricted Subsidiaries since the first day of such period as if such Indebtedness was incurred, repaid or retired at the beginning of such period, *provided*, *however*, that the *pro forma* calculation of Consolidated Senior Secured Leverage Ratio shall not give effect to (A) any Indebtedness incurred on the date of determination pursuant to paragraph (b) of the covenant described under "—Certain Covenants—Limitation on Indebtedness" (other than clause (1)(D) of such paragraph or, to the extent such Indebtedness is Senior Secured Indebtedness and is incurred in reliance on clause (m) of the definition of Permitted Collateral Liens, clause (18) of such paragraph) and (B) any repayment or retirement of any Indebtedness on the date of determination to the extent such repayment or retirement results from the proceeds of Indebtedness incurred pursuant to paragraph (b) of the covenant described under "—Certain Covenants—Limitation on Indebtedness" (other than clause (1)(D) of such paragraph or, to the extent such Indebtedness is Senior Secured Indebtedness and is incurred in reliance on clause (m) of the definition of Permitted Collateral Liens, clause (18) of such paragraph); and

(iii) any acquisition or disposition by such Person and its Restricted Subsidiaries of any Person or any business or any assets out of the ordinary course of business, whether by merger, stock purchase or sale or asset purchase or sale, and any related incurrence or repayment or retirement of Indebtedness, in each case since the first day of such period, assuming such acquisition or disposition had been consummated on the first day of such period.

For purposes of this definition, whenever *pro forma* effect is to be given to any acquisition, disposition or other transaction or any calculation, the *pro forma* calculations will be as determined in good faith by a responsible financial or accounting officer of the Parent (including in respect of anticipated Cost Savings).

"**Consolidation**" means, with respect to any Person, the consolidation of the accounts of such Person and each of its Subsidiaries (or, to the extent specified herein, its Restricted Subsidiaries or the Guarantors) if and to the extent the accounts of such Subsidiary would be required to be consolidated with those of such Person, in accordance with IFRS. The term "**Consolidated**" shall have a similar meaning.

"**Cost Savings**" has the meaning provided in the definition of Consolidated EBITDA.

"**Credit Facilities**" means one or more debt facilities (including, without limitation, debt facilities made available under, or in accordance with, the Senior Secured Term Loans Agreement) or commercial paper facilities, agreements, credit facility documentation, notes, bonds, debentures, indentures, trust deeds, fiscal agency agreements, note purchase agreements, debt instruments or arrangements with banks, insurance companies or other institutional lenders or investors providing for revolving credit loans, term loans, receivables financing (including through the sale or factoring of receivables to such lenders or investors or to special purpose entities formed to borrow from or issue securities to such lenders against such receivables), letters of credit or other forms of guarantees and assurances, notes, bonds, debentures, indentures, trust deeds, fiscal agency agreements, note purchase agreements, debt instruments or other indebtedness, including overdrafts, in each case, as amended, restated, modified, renewed, refunded, replaced, refinanced, increased or extended in whole or in part from time to time, and whether or not with the original administrative agent and lenders or another administrative agent or agents or trustee or trustees or fiscal agents or agents or other banks or other institutional lenders or investors and whether provided under the Senior Secured Term Loans Agreement or one or more other credit agreements or financing agreements or indentures or trust deeds or fiscal agency agreements or note purchase agreements or other debt instruments and in each case including all agreements, instruments and documents executed and delivered pursuant to or in connection with the foregoing (including any notes, bonds, debentures and letters of credit issued pursuant thereto and any guarantee and collateral agreement, patent and trademark security agreement, mortgages or letter of credit applications and other guarantees, pledges, agreements, security agreements and collateral documents). Without limiting the generality of the foregoing, the term "Credit Facility" shall include any agreement or instrument (a) changing the maturity of any Indebtedness incurred thereunder or contemplated thereby, (b) adding Subsidiaries of the Company as additional borrowers or guarantors thereunder, (c) increasing the amount of Indebtedness incurred thereunder or available to be borrowed thereunder or (d) otherwise altering the terms and conditions thereof.

"**Currency Hedging Agreements**" means any foreign exchange contracts, currency swap agreements or other similar agreements or arrangements designed to protect against fluctuations in currency values.

"**Default**" means any event, act or condition that with notice or lapse of time, or both, would constitute an Event of Default.

"**Designated Non-Cash Consideration**" means the Fair Market Value of non-cash consideration received by the Company or any of its Restricted Subsidiaries in connection with an Asset Sale that is designated as Designated Non-Cash Consideration pursuant to an Officer's Certificate, which shall set forth the basis of such valuation, less the amount of cash, cash equivalents or Temporary Cash Investments received in connection with a subsequent payment, redemption, retirement, sale or other disposition of such Designated Non-Cash Consideration. A particular item of Designated Non-Cash Consideration will no longer be considered to be outstanding when and to the extent it has been paid, redeemed, retired, sold or otherwise disposed of in compliance with the covenant described under "—Certain Covenants—Limitation on Sale of Assets."

"**Disinterested Director**" means, with respect to any transaction or series of related transactions, a member of the Board of Directors of the Company or IHL, as the context requires, who does not have any material direct or indirect financial interest in or with respect to such transaction or series of related transactions. A member of the Board of Directors of the Company or IHL, as the case may be, shall not be deemed to have such a financial interest by reason of such member's holding Capital Stock of the Company, IHL or any Parent Holdco or any options, warrants or other rights in respect of such Capital Stock.

"**Escrow Indebtedness**" means Indebtedness that is initially incurred by a Person that is not the Company or a Restricted Subsidiary and the proceeds of which are initially funded and held in escrow pending such Person becoming a Restricted Subsidiary or transferring its assets to, or merging or consolidating with, the Company or a Restricted Subsidiary.

"**Escrowed Proceeds**" means the proceeds from the issuance of any debt securities or incurrence of any other Indebtedness paid into any escrow account on the date of the applicable issuance or incurrence pursuant to escrow arrangements that permit the release of amounts on deposit in such escrow account upon satisfaction of certain conditions or the occurrence of certain events, together with any cash, cash equivalents or Temporary Cash Investments paid into such escrow account to prefund the payment of interest, premiums, make-whole amounts, fees, costs or other expenses on such debt securities or such other Indebtedness. The term "Escrowed Proceeds" shall include any such escrow account and all funds, securities, interest, dividends, distributions and other property and payments deposited into or credited to such escrow account.

"**Euro Equivalent**" means, with respect to any monetary amount in a currency other than euro, as of any date, the amount of euro obtained by translating such other currency into euro at the spot rate for the purchase of euro with the applicable other currency as published in The Financial Times (or, if The Financial Times is no longer published, or if such information is no longer available in The Financial Times, a comparable source as may be selected in good faith by the Company) on the date two Business Days prior to such date.

"**Euroclear**" means Euroclear Bank SA/NV.

"**European Government Obligations**" means direct obligations (or certificates representing an ownership interest in such obligations) of a member state of the European Union (including any agent or instrumentality thereof) for the payment of which the full faith and credit of such government is given.

"**Fair Market Value**" means, with respect to any asset or property, the fair market value thereof as shall be determined by the Board of Directors of the Company in good faith, and may be conclusively established by means of an Officer's Certificate of the Company or a resolution of the Board of Directors of the Company delivered to the Trustee, in each case, setting forth such fair market value as so determined.

"**Financing Subsidiary**" means a financing Subsidiary of any Parent Holdco that is not a Parent Intermediate Holdco, the Company or a Restricted Subsidiary.

"**Fitch**" shall mean Fitch Ratings, and any successor to its rating agency business.

"**Governmental Authority**" shall mean any nation, sovereign or government, any state, province, territory or other political subdivision thereof, and any entity or authority exercising executive, legislative, judicial, regulatory or administrative functions of or pertaining to government, including a central bank or stock exchange.

"**Grangemouth Business**" means the petrochemicals business and assets transferred to INEOS Grangemouth plc (formerly INEOS Grangemouth Limited) pursuant to the Grangemouth Divestiture.

"**Grangemouth Divestiture**" means the disposition by the Company and its Restricted Subsidiaries of INEOS Chemicals Grangemouth Limited and INEOS Commercial Services UK Limited, which include the assets, liabilities (including pension liabilities) and business of the Grangemouth petrochemical operations to INEOS Grangemouth plc (formerly INEOS Grangemouth Limited), a newly formed subsidiary of INEOS Holdings AG, a related party, with effect from October 1, 2013.

"**Grangemouth Entity**" means any Person that conducts the Grangemouth Business or owns, directly or indirectly, any Capital Stock in any other Person that conducts the Grangemouth Business.

“**Guarantee**” means the guarantee by any Guarantor of the Notes.

“**Guaranteed Debt**” of any Person means, without duplication, all Indebtedness of any other Person (the “**debtor**”) guaranteed directly or indirectly in any manner by such Person, or in effect guaranteed directly or indirectly by such Person through an agreement:

(a) to pay or purchase such Indebtedness or to advance or supply funds for the payment or purchase of such Indebtedness;

(b) to purchase property or services, primarily for the purpose of enabling the debtor to make payment of such Indebtedness or to assure the holder of such Indebtedness against loss;

(c) to supply funds to, or in any other manner invest in, the debtor (including any agreement to pay for property or services without requiring that such property be received or such services be rendered);

(d) to maintain working capital or equity capital of the debtor, or otherwise to maintain the net worth, solvency or other financial condition of the debtor or to cause such debtor to achieve certain levels of financial performance; or

(e) otherwise to assure the holder of such Indebtedness against loss;

provided that the term “Guaranteed Debt” shall not include (i) endorsements for collection or deposit, in either case in the ordinary course of business or (ii) for the avoidance of doubt, any liability owing to customers or suppliers in respect of volume offtake, transportation or capacity reservation arrangements (including pursuant to take-or-pay arrangements) or forward purchase arrangements.

“**Guarantors**” means (i) INEOS (Malta) Company, INEOS 2010 Limited, INEOS Americas LLC, INEOS Belgium Holdco NV, INEOS Belgium NV, INEOS Canada Company, INEOS Canada Investment Company, INEOS Canada Partnership, INEOS Canada Preferred Holdings Limited, INEOS Chocolate Bayou Pipeline LLC, INEOS Deutschland GmbH, INEOS Deutschland Holding GmbH, INEOS Europe AG, INEOS European Holdings Limited, INEOS Feluy SPRL, INEOS Finance Company 3 Limited, INEOS Fluor Holdings Limited, INEOS Fluor Limited, INEOS Group AG, INEOS Group Holdings Limited, INEOS Group Holdings S.A., INEOS Group Limited, INEOS Holdings (Investments) Limited, INEOS Holdings International Limited, INEOS Holdings Limited, INEOS Holdings Norge AS, INEOS Investment Holdings (Germany) Limited, INEOS Investments International Limited, INEOS Jersey Limited, INEOS Köln Beteiligungs GmbH & Co. KG, INEOS Köln GmbH, INEOS Köln Verwaltungs GmbH, INEOS LLC, INEOS Luxembourg I S.A., INEOS Luxembourg II S.A., INEOS Manufacturing (Hull) Limited, INEOS Manufacturing Belgium NV, INEOS Manufacturing Deutschland GmbH, INEOS Nitriles (UK) Limited, INEOS Nitriles USA LLC, INEOS NV, INEOS Oligomers USA LLC, INEOS Overseas Company I Limited, INEOS Overseas Company II Limited, INEOS Oxide Limited, INEOS Phenol Belgium NV, INEOS Phenol GmbH, INEOS Phenol Verwaltungsgesellschaft mbH, INEOS Polypropylene LLC, INEOS Sales (UK) Limited, INEOS Silicas Holdings Limited, INEOS Silicas Limited, INEOS Singapore Pte. Ltd., INEOS Technologies Americas LLC, INEOS Technologies USA LLC, INEOS Tenderco Limited, INEOS US Finance LLC, INEOS US I Inc., INEOS USA LLC and INEOS USA Manufacturing LLC and (ii) any other Person that is required after the Issue Date to provide a Guarantee of the Notes pursuant to “—Certain Covenants—Limitation on Issuance of Guarantees of Indebtedness by Restricted Subsidiaries” or that otherwise provides a Guarantee of the Notes after the Issue Date, in each case until (x) the Guarantee of such Person has been released in accordance with the provisions of the Indenture or (y) a successor replaces such Person pursuant to the applicable provisions of the Indenture and, thereafter (until the Guarantee of such successor has been so released), shall mean such successor.

"**Hedge Counterparties**" has the meaning set forth in the Intercreditor Deed.

"**Hedging Agreements**" means any Interest Rate Agreements, Currency Hedging Agreements or Commodity Price Protection Agreements.

"**Hedging Obligations**" means, with respect to any Person, the obligations of such Person under any Hedging Agreement.

"**High Yield Documents**" shall have the meaning provided in the Intercreditor Deed.

"**High Yield Notes**" shall have the meaning provided in the Intercreditor Deed.

"**High Yield Notes Shared Collateral**" means (a) the 2024 IGH Notes Proceeds Loan, any other High Yield Proceeds Loan and any other Proceeds Loan arising from the lending of proceeds of Indebtedness of any Parent Holdco and (b) the Capital Stock of IHL, the Company or any Parent Intermediate Holdco.

"**High Yield Proceeds Loan**" shall have the meaning provided in the Intercreditor Deed.

"**High Yield Proceeds Loan Agreement**" shall have the meaning provided in the Intercreditor Deed.

"**IFRS**" means the accounting standards issued by the International Accounting Standards Board and its predecessors, as adopted by the European Union, as in effect from time to time; *provided* that if the Company, the Parent or IHL, by written notice to the Trustee, shall request an amendment to any provision hereof to eliminate the effect of any change occurring after the Issue Date in IFRS or in the application thereof on the operation of such provision, regardless of whether any such notice is given before or after such change in IFRS or in the application thereof, then such provision shall be interpreted on the basis of IFRS as in effect and applied immediately before such change shall have become effective until such notice shall have been withdrawn or such provision amended in accordance with the Indenture and therewith. Notwithstanding anything else in this definition, for purposes of any calculations pursuant to the Indenture (but not for purposes of the financial statements required to be delivered pursuant to the "—Provision of Financial Statements" covenant), IFRS will be deemed to treat operating leases in a manner consistent with the treatment thereof under IFRS as in effect on January 1, 2018, notwithstanding any modifications or interpretative changes thereto that may occur after January 1, 2018.

"**IHL**" means INEOS Holdings Limited, a company incorporated in England and Wales with registered number 4215887, until a successor replaces such Person pursuant to the covenant described under the caption "—Consolidation, Merger, Sale of Assets", and thereafter means such successor.

"**Immaterial Subsidiary**" means a Subsidiary which has not traded or has ceased trading and which does not own assets or have liabilities, in either case, with an aggregate value greater than €200,000 (or its equivalent); *provided* that any asset or liability which consists solely of a claim by a Subsidiary upon another Subsidiary where but for that asset or liability, both Subsidiaries would be Immaterial Subsidiaries under this definition shall be disregarded.

"**Indebtedness**" means, with respect to any Person, without duplication:

(a) the principal amount of all indebtedness of such Person for borrowed money and the principal component of all obligations of such Person to pay the deferred purchase price of property or services, excluding (i) any trade payables, any obligations owing to customers or suppliers in respect of volume offtake, transportation or capacity reservation arrangements (including pursuant to take-or-pay arrangements) or forward purchase arrangements, and other accrued current liabilities arising in the ordinary course of business and (ii) any guarantees of any obligation referred to in clause (i);

(b) the principal amount of all obligations of such Person evidenced by bonds, notes, debentures or other similar instruments;

(c) all obligations, contingent or otherwise, of such Person in respect of any letters of credit issued under letter of credit facilities, acceptance facilities or other similar facilities (including reimbursement obligations with respect thereto, except to the extent such reimbursement obligations relate to a trade payable and such obligation is satisfied within 30 days of incurrence);

(d) all indebtedness created or arising under any conditional sale or other title retention agreement with respect to property acquired by such Person (even if the rights and remedies of the seller or lender under such agreement in the event of default are limited to repossession or sale of such property), but excluding trade payables arising in the ordinary course of business; *provided* that the amount of Indebtedness under this clause (d) will be the lesser of (i) the Fair Market Value of such property at the date of determination and (ii) the amount of such indebtedness;

(e) all obligations under Hedging Agreements of such Person (the amount of any such obligations to be equal at any time to the termination value of the applicable Hedging Agreement giving rise to such obligation that would be payable by such Person at such time, giving effect to any netting arrangement);

(f) all Capital Lease Obligations of such Person;

(g) all Indebtedness referred to in clauses (a) through (f) above of other Persons the payment of which is secured by (or for which the holder of such Indebtedness has an existing right, contingent or otherwise, to be secured by) any Lien on any property (including accounts and contract rights) owned by such Person, even though such Person has not assumed or become liable for the payment of such Indebtedness; *provided*, *however*, that the amount of Indebtedness under this clause (g) will be the lesser of (i) the Fair Market Value of such property at the date of determination and (ii) the amount of such Indebtedness of such other Person;

(h) all Guaranteed Debt of such Person;

(i) all Attributable Debt of such Person;

(l) all Redeemable Capital Stock issued by such Person valued at the greater of its voluntary or involuntary maximum fixed repurchase price; and

(m) in the case of any Restricted Subsidiary only, all Preferred Stock issued by such Restricted Subsidiary.

Notwithstanding the foregoing, and where applicable, for the avoidance of doubt, the term "Indebtedness" shall not include:

(i) Subordinated Shareholder Funding;

(ii) any lease of (or other agreement conveying the right to use) property (or guarantee thereof) which would be considered an operating lease under IFRS as in effect on January 1, 2018;

(iii) contingent obligations incurred in the ordinary course of business;

(iv) in connection with any Acquisition by the Parent or any of its Restricted Subsidiaries, any post-closing payment adjustments to which the seller may become entitled to the extent such payment is determined by a final closing balance sheet or such payment depends on the performance of the Person or assets acquired after the closing;

provided, *however*, that to the extent such payment becomes fixed and determined, the amount is paid within six months thereafter;

(v) deferred compensation payable to directors, officers, employees or consultants and any obligations in respect of workers' compensation claims, early retirement obligations, pension fund obligations or contributions or social security or wage Taxes;

(vi) deferred or prepaid revenues;

(vii) prepayments or deposits received from clients or customers in the ordinary course of business;

(viii) obligations under any license, permit or other approval (or guarantees given in respect of such obligations) incurred prior to the Issue Date or in the ordinary course of business;

(ix) accrued expenses and trade payables (including non-interest bearing installment obligations and accrued liabilities incurred in the ordinary course of business that are not more than 120 days past due);

(x) obligations in respect of performance, completion, surety, Tax, appeal, judgment, advance payment, customs or VAT bonds, guarantees or similar instruments provided by the Parent or any of its Restricted Subsidiaries in the ordinary course of business;

(xi) obligations in respect of letters of credit and bank guarantees provided by the Parent or any of its Restricted Subsidiaries in the ordinary course of business, to the extent such letters of credit or bank guarantees are not drawn upon or, if and to the extent drawn upon, are reimbursed no later than the fifth Business Day following receipt by such Person of a demand for reimbursement following such drawing; or

(xii) indebtedness incurred by the Parent or any of its Restricted Subsidiaries in connection with a transaction where (A) such indebtedness is borrowed from a bank or trust company, having a combined capital and surplus and undivided profits of not less than €250.0 million and whose debt has a rating immediately prior to the time such transaction is entered into, of at least "BBB−" or the equivalent thereof by S&P and "Baa3" or the equivalent thereof by Moody's and (B) a substantially concurrent Investment is made by the Parent or any of its Restricted Subsidiaries in the form of cash deposited with the lender of such indebtedness, or a Subsidiary or Affiliate thereof, in an amount equal to such indebtedness.

For purposes hereof, the "**maximum fixed repurchase price**" of any Redeemable Capital Stock which does not have a fixed repurchase price shall be calculated in accordance with the terms of such Redeemable Capital Stock as if such Redeemable Capital Stock were purchased on any date on which Indebtedness shall be required to be determined pursuant to the Indenture, and if such price is based upon, or measured by, the "fair market value" of such Redeemable Capital Stock, such "fair market value" is to be determined as set forth in the definition of Fair Market Value.

"**INEOS Belgium**" means INEOS Manufacturing Belgium II (including, for the avoidance of doubt, its successors and assigns) and its Subsidiaries, if any.

"**INEOS Capital**" means the Permitted Holders and any Person controlled by any of them that controls the Parent.

"**INEOS Investments**" means INEOS Investments (Jersey) Limited (including, for the avoidance of doubt, its successors and assigns) and its Subsidiaries, if any.

"**Infrastructure Entity**" means a joint venture between a Refining/Entrepreneurial Entity and an Affiliate of the Company for, among other things, the provision of power, terminal access and other infrastructure goods and services to the Refining/Entrepreneurial Entities, the Company or the Restricted Subsidiaries, and the Subsidiaries of any such joint venture.

"**Initial Collateral**" means the assets and property Liens on which are granted pursuant to the Security Documents entered into on the Issue Date.

"**Initial Purchasers**" means J.P. Morgan Securities plc, Barclays Bank PLC, Banco Santander, S.A., BNP Paribas, Citigroup Global Markets Limited, Goldman Sachs International, ING Bank N.V., London Branch, Merrill Lynch International and NatWest Markets Plc.

"**Intellectual Property**" means the Intellectual Property Rights owned or used by the Company or any Restricted Subsidiary throughout the world or the interests of the Company or any Restricted Subsidiary in any such Intellectual Property Rights, together with the benefit of all agreements entered into or the benefit of which is enjoyed by the Company or any Restricted Subsidiary relating to the use or exploitation of any such Intellectual Property Rights.

"**Intellectual Property Rights**" means all patents and patent applications, trade and service marks and trade and service mark applications (and all goodwill associated with any such registrations and applications), all brand and trade names, all copyrights and rights in the nature of copyright, all design rights, all registered designs and applications for registered designs, all inventions, all trade secrets, all know-how and all other intellectual property rights throughout the world.

"**Intercreditor Deed**" means the intercreditor deed, dated May 12, 2010, between, among others, the Parent, the Issuer, the other Guarantors, the Trustee and the Security Trustee, as amended, restated, supplemented or otherwise modified from time to time and, to the extent applicable, any other intercreditor agreement entered into that is permitted under "Certain Covenants—Intercreditor Deed; Additional Intercreditor Agreements."

"**Interest Rate Agreements**" means any interest rate protection agreements (including interest rate swaps, caps, floors, collars and similar agreements) and any interest rate hedging agreements of any other type.

"**Investment**" means, with respect to any Person, directly or indirectly, any advance, loan, or other extension of credit (including guarantees) or capital contribution to (by means of any transfer of cash or other property to others or any payment for property or services for the account or use of others), or any purchase or acquisition by such Person of any Capital Stock, bonds, notes, debentures or other securities issued by any other Person; *provided* that:

(a) Hedging Obligations entered into for bona fide business purposes (including any commodity trading or commodity risk management business) and not for speculative purposes, as determined in good faith by the Board of Directors or senior management of the Company;

(b) endorsements of negotiable instruments and documents in the ordinary course of business; and

(c) any advances, loans or other extensions of credit to customers or suppliers in the ordinary course of business;

shall, in each case, be deemed not to be an Investment.

For purposes of "—Certain Covenants—Limitation on Restricted Payments":

(a) Investment will include the Designation Amount (defined in clause (b) of the first paragraph of the covenant under the caption "—Certain Covenants—Limitation on

Unrestricted Subsidiaries") as and to the extent set forth in such clause (b); *provided*, *however*, that upon a Redesignation (as defined in the fifth paragraph of the covenant under the caption "—Certain Covenants—Limitation on Unrestricted Subsidiaries") of any Unrestricted Subsidiary as a Restricted Subsidiary, the Company will be deemed to continue to have a permanent "Investment" in such Unrestricted Subsidiary in an amount (if positive) equal to (i) the Company's "Investment" in such Subsidiary at the time of such Redesignation less (ii) the portion (proportionate to the Company's equity interest in such Subsidiary) of the Fair Market Value of the net assets of such Unrestricted Subsidiary at the time that such Unrestricted Subsidiary is so Redesignated as a Restricted Subsidiary; and

(b) any property transferred to or from an Unrestricted Subsidiary will be valued at its Fair Market Value at the time of such transfer.

The amount of any Investment outstanding at any time shall be the original cost of such Investment plus the cost of all additional Investments therein by the Company or any of its Restricted Subsidiaries, without any adjustments for increases or decreases in value, or write-ups, write-downs or write-offs with respect to such Investment, reduced (at the Company's option) by any dividend, distribution, interest payment, return of capital, repayment or other amount or value received in respect of such Investment.

"**Investment Grade Status**" shall occur when the Notes receive any two of the following:

(a) a rating of "BBB−" or higher from S&P;

(b) a rating of "Baa3" or higher from Moody's; and

(c) a rating of "BBB−" or higher from Fitch;

or the equivalent of such rating by any such rating organization or, if no rating of S&P, Moody's or Fitch then exists, the equivalent of such rating by any other "nationally recognized statistical ratings organization" (within the meaning of Rule 436 under the U.S. Securities Act).

"**Issue Date**" means the original issue date of the Notes under the Indenture.

"**LAO Entity**" means any Person formed primarily for the purpose of developing a linear alpha olefins plant (and related facilities and developments) at Chocolate Bayou, Texas.

"**Lavéra Business**" shall mean the petrochemicals assets and businesses transferred to INEOS Chemicals Holdings Luxembourg II S.A. pursuant to the Lavéra Divestiture.

"**Lavéra Divestiture**" shall mean the disposition by the Company and its Restricted Subsidiaries of the Lavéra petrochemical assets and businesses, together with the other French and Italian assets of O&P South, to INEOS Chemicals Holdings Luxembourg II S.A., a Subsidiary of INEOS AG, with effect from July 2, 2014.

"**Lavéra Entity**" shall mean any Person that conducts the Lavéra Business or owns, directly or indirectly, any Capital Stock in any other Person that conducts the Lavéra Business.

"**LC Account Party**" means any Restricted Subsidiary that is an account party, borrower or guarantor in respect of any LC Facility; *provided* that immediately prior to becoming an account party, borrower or guarantor in respect of any LC Facility such Restricted Subsidiary would constitute an Immaterial Subsidiary and thereafter does not carry on any business other than being an account party, borrower or guarantor in respect of (a) such LC Facility or any other LC Facility, (b) any letters of credit issued in the ordinary course of business with respect to trade payables, (c) any other letters of credit, bank guarantees, surety, performance, completion, tax, appeal, judgment, advance payment, customs or VAT bonds, guarantees or similar instruments, in each case issued in the ordinary course of business and not in connection with the borrowing of money, including letters of credit, bank guarantees or similar instruments in respect of self-insurance and workers compensation obligations, or (d) any Cash Management Arrangements.

"**LC Facility**" means (a) the on-demand letter of credit facility entered into on May 4, 2012, between Barclays Bank PLC or an affiliate designated by it, as the issuing bank, and INEOS Treasury (UK) Limited, as the borrower or (b) any other letter of credit, bank guarantee, performance bonds or similar working capital facility; *provided* that, the aggregate outstanding principal amount of Indebtedness under the LC Facilities shall not exceed €350.0 million at any time.

"**Lien**" means any mortgage or deed of trust, charge, pledge, lien (statutory or otherwise), privilege, security interest, assignment or transfer for security purposes, easement, hypothecation, claim, preference, priority or other encumbrance upon or with respect to any property of any kind (including any conditional sale, capital lease or other title retention agreement), real or personal, movable or immovable, now owned or hereafter acquired. A Person will be deemed to own subject to a Lien any property which it has acquired or holds subject to the interest of a vendor or lessor under any conditional sale agreement, Capital Lease Obligation or other title retention agreement.

"**Management Advances**" means loans or advances made to, or guarantees with respect to loans or advances made to, directors, officers, employees or consultants of any Parent Holdco, the Company or any Restricted Subsidiary:

(a) in respect of travel, entertainment or moving related expenses incurred in the ordinary course of business;

(b) in respect of moving related expenses incurred in connection with any closing or consolidation of any facility or office; or

(c) in the ordinary course of business and (in the case of this clause (c)) not exceeding €20.0 million in the aggregate outstanding at any time.

"**Maturity**" means, when used with respect to the Notes, the date on which the principal of the Notes becomes due and payable as therein provided or as provided in the Indenture, whether at Stated Maturity, the Offer Date (as defined in clause (3) of paragraph (c) under "—Certain Covenants—Limitation on Sale of Assets") or the redemption date and whether by declaration of acceleration, offer in respect of Excess Proceeds, Change of Control Offer in respect of a Change of Control, call for redemption or otherwise.

"**Moody's**" means Moody's Investors Service, Inc. or any successor to its rating agency business.

"**Net Cash Proceeds**" means:

(a) with respect to any Asset Sale by any Person, the proceeds thereof (without duplication in respect of all Asset Sales) in the form of cash, cash equivalents or Temporary Cash Investments, including payments in respect of deferred payment obligations or purchase price adjustments when received in the form of, or stock or other assets or any Designated Non-Cash Consideration when disposed of for, cash, cash equivalents or Temporary Cash Investments, but only as and when received and excluding any other consideration received in the form of assumption by the acquiring Person of Indebtedness or other obligations relating to the properties or assets that are the subject of such Asset Sale (in each case, except to the extent that the proceeds of such Asset Sale are financed by, or the properties or assets that are the subject of such

Asset Sale are disposed with recourse to, the Company or any Restricted Subsidiary), net of:

(1) brokerage commissions and other reasonable fees and expenses (including fees and expenses of counsel and investment bankers) related to such Asset Sale;

(2) provisions for all Taxes payable as a result of such Asset Sale;

(3) payments made to retire Indebtedness where such Indebtedness is secured by the assets or properties that are the subject of such Asset Sale (but excluding assets or properties that are subject to Liens created by the Security Documents);

(4) provision for payments made in respect of earn out obligations and other purchase price adjustments, including in respect of working capital items;

(5) amounts required to be paid to any Person (other than the Company or any Restricted Subsidiary) owning a beneficial interest in the assets subject to such Asset Sale; and

(6) appropriate amounts to be provided by the Company or any Restricted Subsidiary, as the case may be, as a reserve, in accordance with IFRS, against any liabilities associated with such Asset Sale and retained by the Company or any Restricted Subsidiary, as the case may be, after such Asset Sale, including pension and other post-employment benefit liabilities, liabilities related to environmental matters and liabilities under any indemnification obligations associated with such Asset Sale, all as reflected in an Officer's Certificate delivered to the Trustee; and

(b) with respect to any capital contributions, issuance or sale or exercise (as applicable) of Capital Stock or options, warrants or rights to purchase Capital Stock, or debt securities or Capital Stock that have been converted into or exchanged for Capital Stock as referred to under "—Certain Covenants—Limitation on Restricted Payments," the proceeds thereof in the form of cash, cash equivalents or Temporary Cash Investments, including payments in respect of deferred payment obligations when received in the form of, or stock or other assets when disposed of for, cash, cash equivalents or Temporary Cash Investments (in each case, except to the extent that the proceeds of such contribution, issuance, sale or exercise are financed by the Company or any Restricted Subsidiary), net of attorney's fees, accountant's fees and brokerage, consultation, underwriting and other fees (including placement agents' fees, listing fees, or other discounts and commissions) and expenses actually incurred in connection therewith and net of Taxes paid or payable as a result thereof.

"**Notes Documents**" means the Notes (including Additional Notes), the Indenture, the Security Documents and the Intercreditor Deed.

"**Notes Proceeds Loan**" means, collectively, (a) the loan of the gross proceeds of the Notes issued on the Issue Date pursuant to the Notes Proceeds Loan Agreement; and (b) any other loan from the Issuer to a Restricted Subsidiary of the gross proceeds from the issuance of Additional Notes permitted by the Indenture and, in each case, all loans directly or indirectly replacing or refinancing each loan or any portion thereof.

"**Notes Proceeds Loan Agreement**" means, that certain loan agreement made as of the Issue Date by and among IHL, as borrower, and the Issuer, as lender.

"**Officer's Certificate**" means a certificate signed (without personal liability) by an officer of the Company, the Issuer or any other Guarantor or a Surviving Entity, as the case may be, and delivered to the Trustee.

"**Parent**" means

(a) INEOS Group Holdings S.A., a public limited liability company (société anonyme) organized under the laws of the Grand Duchy of Luxembourg, having its registered office at 58 rue Charles Martel, L-2134 Luxembourg, Grand Duchy of Luxembourg and registered with the Luxembourg Trade and Companies Register under number B157810, until any designation is made in accordance with clause (b) below; or

(b) any other Person that guarantees (or, substantially concurrently with such designation, will guarantee, including as a result of the assumption of obligations referred to in clause (ii) below) the Notes and is designated, as part of any Permitted Reorganization, by the then current Parent to be the "Parent" by written notice to the Trustee, *provided* that (i) the Company is a wholly owned direct or indirect Subsidiary of such other Person and (ii) such other Person expressly assumes the obligations of the Parent under the Indenture, the Intercreditor Deed and the Notes Documents to which the Parent is a party pursuant to agreements reasonably satisfactory to the Trustee; in each case, until a successor replaces such Person pursuant to "—Certain Covenants—Consolidation, Merger and Sale of Assets—Parent", and thereafter (unless another Person is designated in accordance with clause (b) of this definition), shall mean such successor. It is understood and agreed that any designation under clause (b) of this definition may be made concurrently with any designation under clause (b) of the definition of the Company, in which case the satisfaction of the requirements set forth in clause (b) of this definition shall be determined on a *pro forma* basis immediately after giving effect to each such designation. In the event any other Person is designated as the "Parent" pursuant to and in accordance with the provisions of clause (b) above, upon the effectiveness of such designation the Person that was the Parent immediately prior thereto shall cease to be the "Parent" for all purposes of the Indenture and the Notes Documents.

"**Parent Holdco**" means any Person (other than a natural person) of which the Company is or becomes a direct or indirect Subsidiary; *provided* that the primary purpose of such Person is to serve as a direct or indirect holding company of the Company. Unless the context expressly otherwise requires, the term "Parent Holdco" shall include the Parent.

"**Parent Intermediate Holdco**" means any Parent Holdco that is a direct or indirect Subsidiary of the Parent. As of the Issue Date, there will not be any Parent Intermediate Holdcos.

"**Pari Passu Indebtedness**" means (a) any Indebtedness of the Issuer that is *pari passu* in right of payment to the Notes and (b) any Indebtedness of the Company or any Subsidiary Guarantor that is *pari passu* in right of payment to the Guarantee of the Company or such Subsidiary Guarantor.

"**Paying Agent**" means any Person authorized by the Company or the Issuer to pay the principal of (and premium, if any) or interest on any Note on behalf of the Issuer.

"**Permitted Collateral Liens**" means

(a) Liens to secure the Notes issued on the Issue Date and any related Guarantees (whether provided on or after the Issue Date);

(b) Liens to secure any Indebtedness that is permitted to be incurred under clause (1) of the definition of "Permitted Indebtedness" (or, in the case of Liens on any property or assets of the Parent or any Parent Intermediate Holdco, any guarantee of any such

Indebtedness); *provided* that, subject to the Security Principles, all property and assets (including the Collateral, but excluding any Escrowed Proceeds with respect to such Indebtedness) of the Issuer or any Guarantor securing such Indebtedness also secure the Notes or the Guarantees (x) if such Indebtedness is Pari Passu Indebtedness, on a senior or *pari passu* basis or, if such Indebtedness is Subordinated Indebtedness, on a senior basis, or (y) with respect to certain Liens securing the Senior Secured Credit Facilities or guarantees in respect thereof created under certain Security Documents governed by German or French law in effect on the Issue Date, a junior basis (*provided* that such Liens shall be subject to the ranking, waterfall and loss sharing provisions in the Intercreditor Deed); *provided further* that each holder of such Indebtedness (or a representative acting on its behalf) shall have entered into the Intercreditor Deed as "Senior Creditors" or "Second Secured Creditors" (or other category of creditors with substantially identical rights and obligations as the "Second Secured Creditors") as applicable (or the corresponding terms in any additional intercreditor agreement);

(c) [Reserved];

(d) [Reserved];

(e) Liens to secure any Indebtedness that is permitted to be incurred under clause (25) of the definition of "Permitted Indebtedness" (or, in the case of Liens on any property or assets of the Parent or any Parent Intermediate Holdco, any guarantee of any such Indebtedness); *provided* that, subject to the Security Principles, all property and assets (including the Collateral, but excluding any Escrowed Proceeds with respect to such Indebtedness) of the Issuer or any Guarantor securing such Indebtedness also secure the Notes or the Guarantees, if such Indebtedness is Pari Passu Indebtedness, on a senior or *pari passu* basis or, if such Indebtedness is Subordinated Indebtedness, on a senior basis; *provided further* that each holder of such Indebtedness (or a representative acting on its behalf) shall have entered into the Intercreditor Deed as "Senior Creditors" or "Second Secured Creditors" (or other category of creditors with substantially identical rights and obligations as the "Second Secured Creditors") as applicable (or the corresponding terms in any additional intercreditor agreement);

(f) Liens to secure any Indebtedness that is permitted to be incurred under paragraph (a) of "—Certain Covenants—Limitation on Indebtedness" (or, in the case of Liens on any property or assets of the Parent or any Parent Intermediate Holdco, any guarantee of any such Indebtedness); *provided* that on the date of the incurrence of such Indebtedness and after giving *pro forma* effect thereto (including after giving *pro forma* effect to the use of the proceeds thereof, including, in the case of any Escrow Indebtedness, upon the release of such Indebtedness from escrow), the Parent's Consolidated Senior Secured Leverage Ratio is not greater than 3.00 to 1.0; *provided further* that, subject to the Security Principles, all property and assets (including the Collateral, but excluding any Escrowed Proceeds with respect to such Indebtedness) of the Issuer or any Guarantor securing such Indebtedness also secure the Notes or the Guarantees, if such Indebtedness is Pari Passu Indebtedness, on a senior or *pari passu* basis or, if such Indebtedness is Subordinated Indebtedness, on a senior basis; *provided further* that each holder of such Indebtedness (or a representative acting on its behalf) shall have entered into the Intercreditor Deed as "Senior Creditors" or "Second Secured Creditors" (or other category of creditors with substantially identical rights and obligations as the "Second Secured Creditors") as applicable (or the corresponding terms in any additional intercreditor agreement);

(g) any Lien to secure Indebtedness under the 2025 Senior Secured Notes, 2023 Senior Secured Notes and guarantees in respect thereof; *provided* that, subject to the Security Principles, all property and assets (including the Collateral) securing such Indebtedness also secure the Notes or the Guarantees on a senior or *pari passu* basis; *provided further* that each holder of such Indebtedness (or a representative acting on its behalf) shall have entered into the Intercreditor Deed as "Senior Creditors" (or the corresponding terms in any additional intercreditor agreement);

(h) any Lien on the High Yield Notes Shared Collateral to secure Indebtedness under the 2024 IGH Notes, any other High Yield Notes, and other Indebtedness of a Parent Holdco, or guarantees in respect of any of the foregoing that are Subordinated Indebtedness; *provided* that, subject to the Security Principles, such High Yield Notes Shared Collateral also secure the Notes or the Guarantees on a senior basis; *provided further* that each holder of such Indebtedness (or a representative acting on its behalf) shall have acceded in the applicable capacity to the Intercreditor Deed (or any additional intercreditor agreement on terms substantially similar to those applicable to the 2024 IGH Notes);

(i) Liens to secure Permitted Refinancing Indebtedness in exchange for, or the net proceeds of which are used to refinance any Indebtedness which is secured by a Lien pursuant to clauses (a), (b) (in the case of Indebtedness incurred in reliance on clause (1)(D) of paragraph (b) under "—Certain Covenants—Limitations on Indebtedness"), (f), (g) or (h) above, clause (m) below or this clause (i) (or, in the case of Liens on any property or assets of the Parent or any Parent Intermediate Holdco, any guarantee of any such Permitted Refinancing Indebtedness); *provided* that, subject to the Security Principles, all property and assets (including the Collateral, but excluding any Escrowed Proceeds with respect to such Indebtedness) of the Issuer or any Guarantor securing such Indebtedness also secure the Notes or the Guarantees with Lien priority with respect to the Permitted Refinancing Indebtedness substantially similar to, or higher than, that of the Indebtedness which is being refinanced; *provided further* that each holder of such Indebtedness (or a representative acting on its behalf) shall have entered into the Intercreditor Deed (or any additional intercreditor agreement) in the applicable capacity;

(j) Liens securing obligations in respect of Hedging Agreements entered into in accordance with clause (11) of the definition of "Permitted Indebtedness" or obligations in respect of Cash Management Arrangements entered into in the ordinary course of business (or, in the case of Liens on any property or assets of the Parent or any Parent Intermediate Holdco, any guarantee of any such obligation); *provided* that, subject to the Security Principles, all property and assets (including the Collateral, but excluding any Escrowed Proceeds with respect to such Indebtedness) of the Issuer or any Guarantor securing such obligations also secure the Notes or the Guarantees on a senior or *pari passu* basis; *provided further* that each holder of such obligations (or a representative acting on its behalf) shall have entered into the Intercreditor Deed (or any additional intercreditor agreement) in the applicable capacity;

(k) Liens that are described in one or more of clauses (b), (d), (e), (f), (j), (k), (l), (m), (o), (p), (q), (r), (s), (t), (v), (x), (aa) and (ff) (or in clause (hh) to the extent relating to any of the foregoing clauses) of the definition of "Permitted Liens";

(l) Liens securing obligations of the Company or any Restricted Subsidiary, as a primary obligor or as a guarantor, in respect of Proceeds Loans between the Company or any Restricted Subsidiary, as borrower, and the Company or any other Restricted

Subsidiary, as lender, of the proceeds received from the issuance, incurrence or offering of any Indebtedness under any Credit Facilities and other Indebtedness permitted under "—Certain Covenants—Limitations on Indebtedness" to the extent such Proceeds Loans constitute Collateral; *provided* that such Indebtedness is or could be, at the time of creation of such Liens, secured by Permitted Collateral Liens under any of clauses (a) through (g) or clause (i) above (other than, in the case of clause (i), Permitted Collateral Liens securing Permitted Refinancing Indebtedness in respect of Indebtedness secured by a Permitted Collateral Lien under clause (h) above) and (m) below; and

(m) Liens to secure any Indebtedness that is permitted to be incurred under clause (18) of the definition of "Permitted Indebtedness" (or, in the case of Liens on any property or assets of the Parent or any Parent Intermediate Holdco, any guarantee of any such Indebtedness); *provided* that on the date of the incurrence of such Indebtedness and after giving *pro forma* effect thereto (including after giving *pro forma* effect to the use of the proceeds thereof, including, in the case of any Escrow Indebtedness, upon the release of such Indebtedness from escrow), the Parent's Consolidated Senior Secured Leverage Ratio as of the last day of the most recent four fiscal quarter period for which financial statements are available immediately preceding the incurrence of such Indebtedness is either (i) not greater than 3.00 to 1.00 or (ii) not greater than it was immediately prior to giving *pro forma* effect to the relevant transaction and incurrence of such Indebtedness; *provided further* that, subject to the Security Principles, all property and assets (including the Collateral, but excluding any Escrowed Proceeds with respect to such Indebtedness) of the Issuer or any Guarantor securing such Indebtedness also secure the Notes and the Guarantees, if such Indebtedness is Pari Passu Indebtedness, on a senior or *pari passu* basis, or, if such Indebtedness is Subordinated Indebtedness, on a senior basis; *provided further* that each holder of such Indebtedness (or a representative acting on its behalf) shall have entered into the Intercreditor Deed as "Senior Creditors" or "Second Secured Creditors" (or other category of creditors with substantially identical rights and obligations as the "Second Secured Creditors") as applicable (or the corresponding terms in any additional intercreditor agreement); and

(n) for the avoidance of doubt, Liens securing the obligations owed to agents and other representatives of creditors, in their capacity as such, under Indebtedness referred to under any of clauses (a) through (m) above.

"**Permitted Holders**" means each and any of:

(a) James A. Ratcliffe, John Reece and Andrew Currie and any Affiliate of any of the foregoing;

(b) any person having a relationship with James A. Ratcliffe, John Reece or Andrew Currie by blood, marriage or adoption not more remote than first cousin;

(c) any heir of James A. Ratcliffe, John Reece or Andrew Currie and any beneficiary of their respective estates;

(d) any trust or similar arrangement established solely for the benefit of James A. Ratcliffe, John Reece or Andrew Currie or any Person mentioned in clause (b) or (c) above; *provided* that James A. Ratcliffe, John Reece or Andrew Currie or any such Person retains sole control over the voting rights of the Capital Stock held by such trust or arrangement;

(e) any Person that is directly or indirectly owned solely by any other Permitted Holder described under clause (a), (b), (c) or (d) of this definition; and

(f) for the avoidance of doubt, any Person or group, together with their Affiliates, whose acquisition of beneficial ownership constitutes a Change of Control in respect of which a Change of Control Offer in made in accordance with the requirements of the Indenture.

"**Permitted Investment**" means:

(a) Investments in (1) the Company, (2) any Restricted Subsidiary (including the purchase of Capital Stock of any Restricted Subsidiary) or (3) any Person which, as a result of such Investment, (A) becomes a Restricted Subsidiary or (B) is merged or consolidated with or into, or transfers or conveys substantially all of its assets to, or is liquidated into, the Company or any Restricted Subsidiary;

(b) Indebtedness of the Company or a Restricted Subsidiary described under clauses (7), (8), and (9) of the definition of "Permitted Indebtedness;"

(c) Investments in any of the SFA Loans, the Schuldschein Loan, the Notes, the 2025 Senior Secured Notes, the 2023 Senior Secured Notes, any other Senior Secured Notes, the 2024 IGH Notes, any other High Yield Notes and any Proceeds Loans (including, in each case, any guarantees in respect thereof);

(d) Investments in cash, cash equivalents and Temporary Cash Investments;

(e) Investments acquired by the Company or any Restricted Subsidiary in connection with an Asset Sale permitted under "—Certain Covenants—Limitation on Sale of Assets" to the extent such Investments are non-cash proceeds or deemed cash proceeds as permitted under such covenant and Investments acquired by the Company or any Restricted Subsidiary in connection with a sale or other disposition that is specifically excluded from the definition of "Asset Sale" pursuant to clause (xiv) of such definition;

(f) (i) Investments in existence (or made pursuant to, and as required under, legally binding agreements that exist) on the Issue Date and (ii) Investments consisting of any modification, replacement, renewal, reinvestment or extension of any of the foregoing; *provided* that the amount of any Investment permitted pursuant to this clause (ii) is not increased from the amount of such Investment in existence on (or the amount thereof required under legally binding agreements that exist on) the Issue Date except pursuant to the terms of such Investment as of the Issue Date or as otherwise permitted by the covenant entitled "—Limitations on Restricted Payments";

(g) receivables owing to the Company or any Restricted Subsidiary created or acquired in the ordinary course of business and payable or dischargeable in accordance with customary trade terms; *provided*, *however*, that such trade terms may include such concessionary trade terms as the Company or any such Restricted Subsidiary deems reasonable under the circumstances;

(h) payroll, travel and similar advances to cover matters that are expected at the time of such advances ultimately to be treated as expenses for accounting purposes and that are made in the ordinary course of business;

(i) loans or advances to directors, officers, employees and consultants of any Parent Holdco, the Company or any of its Restricted Subsidiaries made in the ordinary course of business not to exceed €20.0 million in the aggregate at any one time outstanding;

(j) Investments received in satisfaction of judgments or pursuant to any plan of reorganization or similar arrangement upon the bankruptcy or insolvency of a debtor, or in settlement of delinquent obligations of, or other disputes with, customers and suppliers or upon the foreclosure with respect to any secured Investment or other transfer of title with respect to any secured Investment;

(k) Hedging Obligations incurred in compliance with the covenant described under "—Certain Covenants—Limitation on Indebtedness;"

(l) any Investment required by any agreement in respect of any Permitted Joint Venture so long as the aggregate outstanding amount of such Investments, together with the aggregate outstanding principal amount of any Indebtedness incurred pursuant to clause (21) of the definition of "Permitted Indebtedness" (without duplication to the extent proceeds of any such Indebtedness are used to make any such Investment), does not exceed (after giving *pro forma* effect thereto and the use of proceeds thereof) at the time of such Investment the greater of (x) €475.0 million and (y) 5.00% of Total Assets;

(m) Investments of any Person referred to in clause (a)(3) of this definition of "Permitted Investment" that exist (or are made pursuant to, and as required under, legally binding agreements that exist) on the date such Person becomes a Restricted Subsidiary or is merged or consolidated with or into, or transfers or conveys substantially all of its assets to, or is liquidated into, the Company or any Restricted Subsidiary; *provided* that such Investment was not acquired or made in contemplation of such Person becoming a Restricted Subsidiary or such merger, consolidation, transfer, conveyance or liquidation;

(n) loans or other Investments required to be entered into in connection with a Permitted Receivables Financing;

(o) guarantees not prohibited by the covenant described under "—Certain Covenants—Limitation on Indebtedness";

(p) any Investment by the Company or any Restricted Subsidiary that, together with the aggregate outstanding amount of all other Investments under this clause (p), does not exceed (after giving *pro forma* effect thereto and the use of proceeds thereof) at the time of such Investment the greater of (i) €475.0 million and (ii) 5.00% of Total Assets;

(q) Investments received in connection with the sale or licensing of technology, which, together with all other Investments under this clause (q), do not exceed €50.0 million outstanding at any one time;

(r) Investments in joint ventures formed primarily for the purpose of conducting business operations in China, which, together with all other Investments under this clause (r), do not to exceed €150.0 million outstanding at any one time;

(s) loans or advances to directors, officers, employees or consultants of any Parent Holdco, the Company or any of its Restricted Subsidiaries to fund the purchase of Capital Stock of the Company or any Parent Holdco not to exceed €10.0 million in any calendar year (with unused amounts in any calendar year (less any amount carried forward to such calendar year) being carried forward to either of the immediately subsequent two calendar years);

(t) deposits and progress or similar payments made in the ordinary course of business with respect to capital equipment and construction projects;

(u) Investments in any LAO Entity, which, together with all other Investments under this clause (u), do not exceed €150.0 million outstanding at any one time;

(v) Investments that result solely from the receipt by the Company or any of its Restricted Subsidiaries of a dividend, distribution or other payment in respect of Investments held by the Company or any of its Restricted Subsidiaries of the type that would constitute a Restricted Payment if undertaken by the Company or a Restricted Subsidiary in the form of Capital Stock, evidences of Indebtedness or other securities (but not any additions thereto made after the date of the receipt thereof); and

(w) Investments in any Project Finance Entity, which, together with all other Investments under this clause (w), do not exceed €750.0 million outstanding at any one time.

In connection with any assets or property contributed or transferred to any Person as an Investment, such property and assets shall be equal to the Fair Market Value at the time of Investment. For the avoidance of doubt, if an Investment is made pursuant to any clause of this definition in a Person that is not a Restricted Subsidiary at the date of the making of such Investment and such Person subsequently becomes a Restricted Subsidiary or is subsequently designated a Restricted Subsidiary pursuant to the covenant described under "—Certain Covenants—Limitation on Unrestricted Subsidiaries", such Investment shall thereafter be deemed to have been made pursuant to clause (a)(2) or (a)(3) above and not such other clause of this definition.

"**Permitted Joint Venture**" means:

(a) each of the joint ventures of INEOS Jersey Limited, INEOS LLC, INEOS Solutions N.V., INEOS Belgium Holdco NV, INEOS Singapore Pte. Ltd. and INEOS Korea Limited existing on the Issue Date;

(b) (i) a joint venture pursuant to which or a Person with respect to which the liability of the Parent, the Company and the Restricted Subsidiaries is limited in amount; or (ii) a joint venture or other entity in which the Parent, the Company or a Restricted Subsidiary participates through special purpose companies with limited liability and no other business or assets, and, in the case of sub-clauses (i) and (ii), in which the interest of a Guarantor or a directly or indirectly wholly-owned Restricted Subsidiary of a Guarantor is more than 20%;

(c) GEOSEL Manosque SNC, in which the interest of a Guarantor or a directly or indirectly wholly-owned Restricted Subsidiary of a Guarantor is more than 20%;

(d) each of Seminole Pipeline Company and Geosud SAS, in which the interest of a Guarantor or a directly or indirectly wholly-owned Restricted Subsidiary of a Guarantor is more than or equal to 10%;

(e) Aethylen Rohrleitungs GmbH & Co.KG, in which the interest of a Guarantor or a directly or indirectly wholly-owned Restricted Subsidiary of a Guarantor is more than 16%;

(f) Societe Civile Immobiliere Khariessa, in which the interest of a Guarantor or a directly or indirectly wholly-owned Restricted Subsidiary of a Guarantor is more than 9%;

(g) (i) a joint venture pursuant to which the liability of the Company or any of its Restricted Subsidiaries is limited in amount; or (ii) a joint venture in which the Parent, the Company or a Restricted Subsidiary participates through special purpose companies with limited liability and no other assets, and, in the case of sub-clauses (i) and (ii), in which the interest of a Guarantor or a directly or indirectly wholly-owned Restricted Subsidiary of a Guarantor is less than 20% in connection with the payment of license fees;

(h) a joint venture consisting of a Person in which the Company or any of its Restricted Subsidiaries owns, directly or indirectly, not more than 50% of the total voting power represented by the outstanding Voting Stock of such Person; and

(i) any Unrestricted Subsidiary,

provided, in each case under clauses (b), (g) and (h) above, that each such Permitted Joint Venture is in a business relating, incidental or complementary to the business of the Parent, the Company and the Restricted Subsidiaries.

"**Permitted Jurisdiction**" means (a) Luxembourg or England and Wales or (b) any other jurisdiction if the organization of the relevant Person in such other jurisdiction is not, in the good faith determination of the Company, materially adverse to the interests of the holders of the Notes with respect to the Guarantees or the Collateral as compared to a jurisdiction referred to in clause (a) (it being agreed, without limiting the generality of the foregoing, that the organization of the relevant Person in any jurisdiction the laws of which provide for a moratorium, an automatic stay or similar restrictions on the enforcement of any Liens on the Collateral in the form of Capital Stock in the Company shall be deemed to be materially adverse to such interests of the holders of the Notes).

"**Permitted Lien**" means:

(a) any Lien existing as of the Issue Date;

(b) any Lien arising by reason of:

(1) any judgment, decree or order of any court and any Liens that are required to protect or enforce any rights in any administrative, arbitration or other court proceedings in the ordinary course of business;

(2) Taxes, assessments or other governmental charges not yet delinquent, or which are being contested in good faith by appropriate proceedings and to the extent required by IFRS, for which reserves have been established in accordance with IFRS;

(3) security for payment of workers' compensation or other insurance (including general liability exposure of the Parent, any Parent Intermediate Holdco, the Company and its Restricted Subsidiaries);

(4) security for tenders, bids, leases and contracts (other than contracts for the payment of money);

(5) zoning restrictions, building codes, land use laws, easements, licenses, reservations, title defects, conditions revealed by an accurate survey or a physical inspection of real property, rights of others for rights of way, utilities, sewers, electric lines, telephone or telegraph lines, and other similar purposes, provisions, covenants, conditions, waivers, restrictions on the use of real property or minor irregularities of title (and with respect to leasehold interests, mortgages, obligations, liens, easements and other encumbrances incurred, created, assumed or permitted to exist and arising by, through or under a landlord or owner of the leased property, with or without consent of the lessee), none of which materially impairs the use of any parcel of real property material to the operation of the business of the Company or any Restricted Subsidiary or the value of such property for the purpose of such business;

(6) security for public or statutory obligations, or in lieu of surety or appeal bonds; or

(7) operation of law in favor of mechanics, carriers, warehousemen, landlords, materialmen, laborers, employees or suppliers, incurred in the ordinary course of business for sums which are not yet overdue for a period of more than 60 days or are being contested in good faith by negotiations or by appropriate proceedings which suspend the collection thereof;

(c) any Lien securing Hedging Obligations (other than Hedging Obligations that are secured by Permitted Collateral Liens on the Collateral);

(d) any Lien securing Acquired Indebtedness created prior to (and not created in connection with, or in contemplation of) the incurrence of such Indebtedness by the Company or any Restricted Subsidiary; *provided* that such Lien does not extend to any property or assets of the Company or any Restricted Subsidiary other than the assets acquired in connection with the incurrence of such Acquired Indebtedness by the Company or a Restricted Subsidiary and additions and accessions thereto and proceeds therefrom;

(e) any Lien to secure the performance of bids, trade contracts, leases (including statutory and common law landlord's liens), statutory obligations, performance, completion, surety, Tax, appeal, judgment, customs or VAT bonds, guarantees or similar instruments, letters of credit (including obligations under any LC Facility) and other obligations of a like nature incurred in the ordinary course of business of the Parent, any Parent Intermediate Holdco, the Company or any Restricted Subsidiary;

(f) any Lien securing Capital Lease Obligations, Purchase Money Obligations or other Indebtedness that is incurred in connection with the financing of all or any part of the purchase price, lease expense or cost of development, construction or improvement of real or personal, moveable or immovable property (including Capital Stock) used or to be used in the business of the Company, any of its Restricted Subsidiaries or a Permitted Joint Venture, or the refinancing of any such Indebtedness; *provided* that such Lien shall only extend to such acquired, leased, developed, constructed or improved property (and any rights relating thereto) and additions and accessions thereto and proceeds therefrom, such Lien shall secure Indebtedness in an amount not in excess of the original purchase price or the original cost (or, if greater, the Fair Market Value) of any such property or any such development, construction or improvement (or such Indebtedness shall be with recourse solely to such property (including such related rights), additions and accessions thereto and any proceeds therefrom), and the incurrence of such Indebtedness is permitted by the covenant described under "—Certain Covenants—Limitation on Indebtedness";

(g) Liens on Capital Stock of (i) INEOS Belgium or any of its Restricted Subsidiaries that is not a Guarantor securing Indebtedness of any such Person or any of its Restricted Subsidiaries or (ii) any Restricted Subsidiary that is not a Guarantor that is formed after the Issue Date securing Indebtedness of any such Restricted Subsidiary or any of its Restricted Subsidiaries that is not a Guarantor;

(h) Liens on assets of a Restricted Subsidiary that is not a Guarantor securing Indebtedness of any Restricted Subsidiary that is not a Guarantor;

(i) Liens in favor of the Company or any Restricted Subsidiary;

(j) banker's liens, rights of set-off or similar rights and remedies as to deposit accounts, securities accounts or other funds maintained with a depositary institution or securities intermediary; *provided* that such deposit account or securities account is not intended by the Parent, any Parent Intermediate Holdco, the Company or any Restricted Subsidiary to provide collateral to the depository institution or securities intermediary;

(k) Liens arising from Uniform Commercial Code financing statement (or the equivalent in any other jurisdiction) filings regarding operating leases entered into by the Parent, any Parent Intermediate Holdco, the Company and its Restricted Subsidiaries in the ordinary course of business;

(l) (i) mortgages, liens, security interests, restrictions, easements, encumbrances or any other matters that have been placed by any developer, landlord or other third party on property over which the Company or any Restricted Subsidiary has easement rights or on any real property leased by the Company or any Restricted Subsidiary and subordination or similar agreements relating thereto; (ii) easements, restrictions, rights of way, operating agreements and other similar matters with or for the benefit of any developer or other third party purchaser on any real property conveyed by the Company or any Restricted Subsidiary to such developer or third party purchaser in accordance with the covenant described under "—Certain Covenants—Limitation on Sale of Assets" or otherwise permitted under the Indenture; and (iii) any condemnation or eminent domain proceedings or compulsory purchase order affecting real property;

(m) any provision for the retention of title to any asset by the vendor or transferor of such asset which asset is acquired by the Company or any Restricted Subsidiary in a transaction entered into in the ordinary course of business of the Company or such Restricted Subsidiary and for which kind of transaction it is normal market practice for such retention of title provision to be included;

(n) other Liens; *provided* that, immediately after giving effect to the creation, incurrence or assumption of any such Lien, the aggregate outstanding principal amount of all Indebtedness secured pursuant to this clause (n) (after giving *pro forma* effect to the incurrence of such Indebtedness and the use of proceeds thereof, including, in the case of any Escrow Indebtedness, upon the release of such Indebtedness from escrow) does not exceed, at the time such Lien is created, incurred or assumed, the greater of (x) €550.0 million and (y) 6.0% of Total Assets;

(o) leases (including operating leases), licenses, subleases and sublicenses of assets (including real property and Intellectual Property Rights), in each case entered into in the ordinary course of business, including, for the avoidance of doubt (i) ground leases entered into by the Company or any of its Restricted Subsidiaries in connection with any development, construction, operation or improvement of assets on any real property owned by the Company or any of its Restricted Subsidiaries (and any Liens created by the lessee (in the case of any lessee that is the Company or a Restricted Subsidiary, only if such Liens are otherwise permitted under the Indenture) in connection with any such ground lease, including easements and rights of way, or on any of its assets located on the real property subject to such ground lease), and (ii) leases, licenses, subleases and sublicenses in respect of real property to any trading counterparty to which the Company or any of its Restricted Subsidiaries provides services on such real property in the ordinary course of its trading;

(p) Liens on property or assets under construction (and related rights) in favor of a contractor or developer or arising from progress or partial payments by a third party relating to such property or assets;

(q) Liens on Receivables Assets created or incurred in connection with any Permitted Receivables Financing;

(r) Liens on assets or Capital Stock of a Receivables Subsidiary to secure Indebtedness or other obligations incurred in connection with one or more Permitted Receivables Financings;

(s) Liens securing or arising by reason of any netting or set-off arrangement entered into in the ordinary course of banking or other trading activities;

(t) Liens on Capital Stock or other securities of any Unrestricted Subsidiary that secure Indebtedness of any Unrestricted Subsidiary;

(u) any limited recourse Lien to secure Indebtedness incurred in connection with any project financing; *provided* that the assets or revenues which are subject to that Lien are:

 (1) assets which are the subject of the applicable project; or

 (2) claims, revenues or proceeds which arise from the use or operation, failure to meet specifications, failure to complete, expropriation, sale, or loss of or damage to, those assets;

(v) pledges of goods, the related documents of title and/or other related documents arising or created in the ordinary course of the Company's or any Restricted Subsidiary's business or operations as Liens only for Indebtedness to a bank or financial institution directly relating to the goods or documents on or over which that pledge exists;

(w) Liens arising in connection with inventory financing or similar arrangements, in each case, incurred pursuant to clause (22) of the definition of Permitted Indebtedness;

(x) Liens created on any asset acquired by the Company or a Restricted Subsidiary or developed by the Company or a Restricted Subsidiary after the Issue Date for the sole purpose of financing or refinancing such acquisition or development and securing not more than 100% of the cost of acquisition or development, *provided* that (i) such Lien is released within 6 months of such acquisition or completion of such development or (ii) such Lien shall only extend to such acquired or developed asset (and any rights relating thereto, including Capital Stock) and additions and accessions thereto and any proceeds therefrom;

(y) Liens (other than floating charges) constituting finance leases over the assets leased pursuant to such permitted finance leases;

(z) Liens on any escrow account, and all funds, securities, interest, dividends, distributions and other property and payments deposited into or credited to such escrow account, pursuant to any purchase price retention arrangement as part of any permitted disposition by the Company or a Restricted Subsidiary; *provided* that the cash paid into such escrow account in relation to a disposition does not represent more than 15% of the net proceeds of such disposition;

(aa) limited recourse Liens in respect of the ownership interest or assets owned by joint ventures securing obligations of joint ventures; *provided* that the incurrence of the liability secured by such Lien is not prohibited by the covenant described under "Limitation on Indebtedness";

(bb) Permitted Collateral Liens (for the avoidance of doubt, whether such Liens are on Collateral or other assets);

(cc) Liens on any Proceeds Loans made by the Company or any Restricted Subsidiary in connection with any incurrence of Indebtedness (other than any Indebtedness of the type referred to in the proviso to clause (l) of the definition of Permitted Collateral Liens secured by Permitted Collateral Liens) permitted under the Indenture and securing that Indebtedness (without any requirement to secure the Notes or Guarantees with a Lien on such Proceeds Loans);

(dd) Liens incurred to secure Cash Management Arrangements or to implement cash pooling arrangements or to cash collateralize letters of credit, bank guarantees or similar instruments in the ordinary course of business and Liens incurred by any LC Account Party to secure obligations under any LC Facility;

(ee) Liens on cash, cash equivalents and Temporary Cash Investments made to defease or to satisfy and discharge any Indebtedness and such Liens are for the benefit of the related holders of such Indebtedness;

(ff) Liens on Escrowed Proceeds for the benefit of the related holders of debt securities or other Indebtedness (or the underwriters or arrangers thereof);

(gg) Liens arising in connection with any sale and leaseback transaction funded directly or indirectly by a German pension trust; and

(hh) any extension, renewal, refinancing or replacement, in whole or in part, of any Lien described in the foregoing clauses (a) through (gg); *provided* that any such Lien is limited to all or part of the same property or assets (plus improvements, accessions, proceeds or dividends or distributions in respect thereof) that secured (or, under the written arrangements under which the original Lien arose, could secure) the Indebtedness being refinanced or is in respect of property that is the security for a Permitted Lien hereunder.

"**Permitted Receivables Financing**" means any financing pursuant to which the Company or any of its Restricted Subsidiaries may sell, convey or otherwise transfer to any other Person or grant a security interest in, any accounts receivable (and related assets, including for the avoidance of doubt, any credit insurance relating to such accounts receivable) in an aggregate principal amount equivalent to the Fair Market Value of such accounts receivable (and related assets) of the Company or any of its Restricted Subsidiaries; *provided* that (a) the covenants, events of default and other provisions applicable to such financing shall be customary for such transactions and shall be on market terms (as determined in good faith by the Company's Board of Directors) at the time such financing is entered into, (b) the interest rate applicable to such financing shall be a market interest rate (as determined in good faith by the Company's Board of Directors) at the time such financing is entered into and (c) such financing shall be non-recourse to the Company or any of its Restricted Subsidiaries (other than a Receivables Subsidiary) except to a limited extent customary for such transactions. The amount of any Permitted Receivables Financing shall be deemed for the purposes hereof, at any time, to be the amount that would be required to repay, discharge or satisfy all obligations owing to lenders or other third party investors that have made loans or extended credit in respect of such Permitted Receivables Financing, if such Permitted Receivables Financing were to be terminated at such time.

"**Permitted Refinancing Indebtedness**" means any Indebtedness that refinances any Indebtedness, including any successive refinancings, so long as:

(a) such Indebtedness is in an aggregate principal or commitment amount (or, if incurred with original issue discount, the aggregate issue price) not in excess of the sum of (1) the aggregate principal or commitment amount then outstanding or in effect, respectively, of the Indebtedness being refinanced and (2) an amount necessary to pay any fees and expenses, including premiums and defeasance costs, related to such refinancing; and

(b) (1) the Average Life of such Indebtedness is equal to or greater than the Average Life of the Indebtedness being refinanced, (2) the final Stated Maturity of such Indebtedness is no earlier than the final Stated Maturity of the Indebtedness being refinanced, and (3) in the case of a refinancing of Subordinated Indebtedness, such Indebtedness is subordinated to, and subject to any other intercreditor provisions applicable to, the Notes and the Guarantees on substantially the same terms (or on terms (taken as a whole) that are not materially less favorable to the Holders of the Notes) as provided in the Intercreditor Deed, as determined by the Company in good faith; *provided* that the requirements of clauses (1) and (2) above shall not apply to any refinancings of Indebtedness under, or with Indebtedness under, any revolving credit, working capital, commercial paper or letter of credit facilities or any receivables financing; *provided* that Permitted Refinancing Indebtedness shall not include (i) Indebtedness of the Company or a Restricted Subsidiary that refinances Indebtedness of an Unrestricted Subsidiary or (ii) Indebtedness of a Person other than the Issuer or a Guarantor that refinances Indebtedness of the Issuer or a Guarantor.

"**Permitted Reorganization**" means any reorganization or corporate restructuring, on a solvent basis, involving one or more of the then current Parent, any Parent Intermediate Holdco, the then current Company or any of its Restricted Subsidiaries (any such reorganization or corporate restructuring, a "**Reorganization**"), whether or not such Reorganization also involves any other Person, including any merger, demerger, consolidation or amalgamation, any sale or other disposition of any assets or properties and any voluntary liquidation or winding up on a solvent basis, in each case, that is consummated as part of such Reorganization; *provided* that, in the case of any Reorganization and after giving effect to any related designations of a new Parent or a new Company as contemplated by the definition of such terms, (a) all the business and assets of the then current Company and its Restricted Subsidiaries (as in effect prior to such Reorganization) shall remain within the Company and its Restricted Subsidiaries (other than for such period as may be reasonably required, in the good faith determination of the Company, to effect such Reorganization), (b) the Parent, each Parent Intermediate Holdco and the Company shall be organized under the laws of a Permitted Jurisdiction, (c) any Capital Stock or other assets that constitute Collateral and that are subject to any sale or other disposition as part of such Reorganization shall remain (other than for such period, as may be reasonably required, in the good faith determination of the Company, to effect such Reorganization) Collateral (including as a result of Liens thereon granted by the new owner thereof), subject to Liens thereon securing the Notes and the Guarantees that are valid and enforceable substantially to the same extent as the Liens thereon were prior to such sale or other disposition, in each case, as determined by the Company in good faith, it being understood and agreed that, in connection with any Reorganization, Liens on any Collateral may be released and re-taken in a manner consistent with releases and re-takings permitted by clause (vi) of the second paragraph of the covenant described under "—Certain Covenants—Impairment of Security Interest", and (d) in the event of a sale, assignment, conveyance, transfer, lease or other disposition of all or substantially all of the assets of, or a consolidation, amalgamation or merger with or into, the then current Parent, the then current Company, the Issuer or any Subsidiary Guarantor, the Surviving Entity thereof (if not the Parent, the Company, the Issuer or a Subsidiary Guarantor) shall assume the obligations of the Parent, the Company, the Issuer or such Subsidiary Guarantor, as applicable, in a manner consistent with the covenant described under "—Certain Covenants—Consolidation, Merger, Sale of Assets". Nothing in this definition shall be deemed to restrict any merger, demerger, consolidation, amalgamation, sale or other disposition, voluntary liquidation, winding up or other transaction, or any release of any Collateral or any Guarantee, in each case, that is permitted pursuant to the provisions of the Indenture other than those provisions expressly relating to a Permitted Reorganization.

"**Person**" means any individual, corporation, limited liability company (including, for the avoidance of doubt, a public limited company and a private limited company incorporated under the laws of England and Wales), partnership, joint venture, association, joint stock company, trust, unincorporated organization or Governmental Authority.

"**Preferred Stock**" means, with respect to any Person, any Capital Stock of any class or classes (however designated) which is preferred as to the payment of dividends or distributions, or as to the distribution of assets upon any voluntary or involuntary liquidation or dissolution of such Person, over the Capital Stock of any other class in such Person.

"**Proceeds Loans**" means the 2024 IGH Notes Proceeds Loans, the Notes Proceeds Loan, any other High Yield Proceeds Loan, the 2025 Senior Secured Notes Proceeds Loan, the 2023 Senior Secured Notes Proceeds Loan, the SFA Proceeds Loans, the Schuldschein Proceeds Loan and any other proceeds loan or other Indebtedness, in each case, arising from the lending of proceeds of any Indebtedness of any Parent Holdco, any Financing Subsidiary, the Company or any Restricted Subsidiary to the Company or any Restricted Subsidiary.

"**Proceeds Loans Agreements**" means the 2024 IGH Notes Proceeds Loans Agreement, any other High Yield Proceeds Loan Agreement, the Notes Proceeds Loan Agreement, the 2025 Senior Secured Notes Proceeds Loans Agreement, the 2023 Senior Secured Notes Proceeds Loans Agreement, the SFA Proceeds Loans Agreements, the Schuldschein Proceeds Loan Agreement and each loan agreement or any other agreement (a) by and among the Company and its Restricted Subsidiaries or (b) by and among the Company and its Restricted Subsidiaries, on the one hand, and Parent Holdcos or any Financing Subsidiary, on the other, evidencing or governing any Proceeds Loan, in each case, as amended, supplemented, restated or substituted from time to time.

"**Proceeds Loans Documents**" means Proceeds Loans Agreements and any documents that provide a guarantee by any Guarantor of, or create a Lien over any Collateral or other assets of any Guarantor as security for, any Proceeds Loan, in each case, as amended, supplemented, restated or substituted from time to time.

"**Project Finance Entity**" means any Person formed primarily for the purpose of developing facilities and businesses related to the chemical intermediates business segment of the Parent and its Consolidated Subsidiaries in the Middle East.

"**Public Debt**" means any Indebtedness consisting of bonds, debentures, notes or other similar debt securities issued in (a) a public offering registered under the U.S. Securities Act or (b) a private placement to institutional investors whether or not it is underwritten for resale in accordance with Rule 144A or Regulation S, and whether or not it includes registration rights entitling the holders of such debt securities to registration thereof with the Commission.

"**Public Equity Offering**" means an underwritten public offering of ordinary shares (other than Redeemable Capital Stock) of the Company or a Parent Holdco (which shall include an offering pursuant to Rule 144A and/or Regulation S under the U.S. Securities Act to professional market investors or similar Persons) and, with respect to an offering by a Parent Holdco, the Net Cash Proceeds of which are contributed to the Company in the form of a subscription for, or a capital contribution in respect of, Qualified Capital Stock or as Subordinated Shareholder Funding.

"**Purchase Money Obligation**" means any Indebtedness secured by a Lien on assets related to the business of the Company and its Restricted Subsidiaries (and any additions and accessions thereto and proceeds therefrom) which are purchased, acquired, constructed, developed or improved by the Company or any Restricted Subsidiary at any time after the Issue Date; *provided* that

(a) the security agreement or conditional sales or other title retention contract pursuant to which the Lien on such assets is created (collectively a "**Purchase Money Security**

Agreement") shall be entered into within 270 days after the purchase or acquisition or substantial completion of the construction, development or improvement of such assets and shall at all times be confined solely to such assets (and any rights relating thereto), any additions and accessions thereto and any proceeds therefrom; and

(b) either (1) the aggregate outstanding principal amount of Indebtedness secured thereby shall not at the time such Purchase Money Security Agreement is entered into exceed 100% of the purchase or acquisition price or the cost of such construction, development or improvement to the Company or any Restricted Subsidiary of the assets subject thereto or (2) the Indebtedness secured thereby shall be with recourse solely to such assets (including such related rights), any additions and accessions thereto and any proceeds therefrom.

"**Qualified Capital Stock**" of any Person means any and all Capital Stock of such Person other than Redeemable Capital Stock.

"**Receivables Assets**" means any assets that are or will be the subject of a Permitted Receivables Financing.

"**Receivables Fees**" means distributions or payments made directly or by means of discounts with respect to any participation interest issued or sold in connection with, and other fees paid to a Person that is not the Company or a Restricted Subsidiary in connection with, any Permitted Receivables Financing.

"**Receivables Repurchase Obligation**" means any obligation of a seller of Receivables Assets in a Permitted Receivables Financing to repurchase any Receivables Assets arising as a result of a breach of a representation, warranty or covenant or otherwise, including as a result of a receivable or portion thereof becoming subject to any asserted defense, dispute, off-set or counterclaim of any kind as a result of any action taken by, any failure to take action by or any other event relating to the seller.

"**Receivables Subsidiary**" means any Subsidiary of the Company that engages in no activities other than in connection with a Permitted Receivables Financing and that is designated by the Company's Board of Directors as a Receivables Subsidiary, *provided* that:

(a) no portion of the Indebtedness or any other obligations (contingent or otherwise) of such Subsidiary:

(1) is guaranteed by the Company or any Restricted Subsidiary (excluding guarantees of obligations (other than the principal of, and interest on, Indebtedness) pursuant to representations, warranties, covenants, and indemnities entered into in the ordinary course of business in connection with a Permitted Receivables Financing);

(2) is recourse to or obligates the Company or any Restricted Subsidiary in any way other than pursuant to representations, warranties, covenants and indemnities entered into in the ordinary course of business in connection with a Permitted Receivables Financing; or

(3) subjects any property or asset of the Company or any Restricted Subsidiary (other than accounts receivable and related assets as provided in the definition of Permitted Receivables Financing), directly or indirectly, contingently or otherwise, to the satisfaction thereof, other than pursuant to representations, warranties, covenants and indemnities entered into in the ordinary course of business in connection with a Permitted Receivables Financing;

(b) neither the Company nor any Restricted Subsidiary has any material contract, agreement, arrangement or understanding with such Subsidiary other than on terms no less favorable to the Company or such Restricted Subsidiary than those that might be obtained at the time from Persons that are not Affiliates of the Company, other than fees payable in the ordinary course of business in connection with servicing accounts receivable; and

(c) neither the Company nor any Restricted Subsidiary has any obligation to maintain or preserve such Subsidiary's financial condition or cause such Subsidiary to achieve a certain level of operating results.

Any such designation by the Board of Directors of the Company will be evidenced to the Trustee by delivery to the Trustee of an Officer's Certificate attaching a board resolution giving effect to such designation and certifying that such designation complied with the preceding conditions; *provided* that INEOS US Intermediate Finance LLC shall be deemed to have been designated as a Receivables Subsidiary as of the Issue Date in accordance herewith without the need for the delivery of such Officer's Certificate. The Trustee shall be entitled to rely conclusively on such Officer's Certificate and copy of such board resolution without independent verification.

"**Redeemable Capital Stock**" means any Capital Stock that, either by its terms or by the terms of any security into which it is convertible or exchangeable or otherwise, is or upon the happening of an event or passage of time would be, required to be redeemed prior to the final Stated Maturity of the principal of the Notes or is redeemable at the option of the holder thereof at any time prior to such final Stated Maturity (other than upon a change of control or an asset sale (howsoever defined) in circumstances where the holders of the Notes would have similar rights), or is convertible into or exchangeable for debt securities at any time prior to such final Stated Maturity at the option of the holder thereof; *provided*, *however*, that (a) only the portion of Capital Stock which so matures or is mandatorily redeemable, is so convertible or exchangeable or is so redeemable at the option of the holder thereof prior to such date will be deemed to be Redeemable Capital Stock and (b) any Capital Stock that would constitute Redeemable Capital Stock solely because the holders thereof have the right to require the Company to repurchase such Capital Stock upon the occurrence of a change of control or an asset sale (howsoever defined or referred to) shall not constitute Redeemable Capital Stock if any such redemption or repurchase obligation is subject to compliance by the relevant Person with the covenant described under "—Certain Covenants—Limitation on Restricted Payments."

"**refinances**" means renews, extends, repays, substitutes, refinances or replaces; "**refinanced**" and "**refinancing**" shall have correlative meanings.

"**Refineries**" means the refineries located at Grangemouth, Scotland and Lavéra, France.

"**Refining/Entrepreneurial Business**" means the crude oil refining/entrepreneurial business and related entrepreneurial activities conducted from time to time by or in connection with the Refineries and any other refineries owned by the Company and the Restricted Subsidiaries.

"**Refining/Entrepreneurial Entity**" means any Person that conducts the Refining/Entrepreneurial Business or owns, directly or indirectly, any of the Refineries or any Capital Stock in any other Person that conducts the Refining/Entrepreneurial Business or owns, directly or indirectly, any of the Refineries, and the Subsidiaries of any such Person (other than, in each case, PetroChina International (London) Company Limited).

"**Rental Payments**" means rental payments made by the Company and the Restricted Subsidiaries under leases and sub-leases on reasonable commercial terms (as determined in good faith by the Company) in respect of the headquarters or other offices or facilities used by the Company and/or the Restricted Subsidiaries.

"**Restricted Subsidiary**" means any Subsidiary of the Company (or such other Person as the context may require) other than an Unrestricted Subsidiary.

"**RPI**" means the index entitled "General Index of Retail Prices" prepared by the Office for National Statistics from time to time (or, if that index ceases to be so prepared, such other comparable index as is generally accepted).

"**S&P**" means Standard & Poor's Ratings Group, a division of McGraw-Hill Financial, Inc., or any successor to its rating business.

"**Schuldschein Loan**" means the floating rate loan made available under the Schuldschein Loan Agreement on March 26, 2019.

"**Schuldschein Loan Agreement**" means the assignable loan agreement dated March 22, 2019 among, *inter alios*, INEOS Finance plc, as borrower, certain subsidiaries of IGH, Deutsche Bank Aktiengesellschaft, as bank, creditor and paying agent, and Wilmington Trust SP Services (Frankfurt) GmbH, as trustee, as further amended, renewed, extended, substituted, refinanced, restructured, replaced, supplemented or otherwise modified from time to time.

"**Schuldschein Proceeds Loan**" means the loans advanced under the loan agreement, dated March 26, 2019, between the Issuer, as lender, and IHL, as borrower, pursuant to which the gross proceeds of the Schuldschein Loan were advanced to IHL, as amended or partially repaid from time to time, and all loans or bonds directly or indirectly replacing or refinancing such loan or any portion thereof.

"**Schuldschein Proceeds Loan Agreement**" means that certain loan agreement made on March 26, 2019, by and among IHL, as borrower, and the Issuer, as lender.

"**Security Documents**" means each document that provides for a Lien over any Collateral for the benefit of the holders of the Notes, in each case, as amended, supplemented, restated or substituted from time to time.

"**Security Principles**" means the Security Principles set forth in the Indenture (or a schedule thereto), as applied reasonably and in good faith by the Company. For the avoidance of doubt, any requirement set forth in the Indenture with respect to the granting of a Lien or Guarantee under the Indenture shall be subject to the Security Principles.

"**Senior Indebtedness**" means any Indebtedness of the Company or any of its Restricted Subsidiaries that is not Subordinated Indebtedness.

"**Senior Management**" means James A. Ratcliffe, John Reece or Andrew Currie and each member of the Board of Directors of INEOS Limited or the Company from time to time.

"**Senior Secured Credit Facilities**" means the Credit Facilities made available pursuant to the Senior Secured Term Loans Agreement to the extent constituting Senior Secured Indebtedness.

"**Senior Secured Indebtedness**" means any Senior Indebtedness that is secured by a Lien on the Collateral as permitted by the Indenture, excluding any Indebtedness (including the 2024 IGH Notes and any other High Yield Notes) secured on a junior basis by a Lien on the Collateral and, in each case, not also secured on a priority basis by a Lien on any of the Collateral.

"**Senior Secured Notes**" has the meaning provided in the Intercreditor Deed.

"**Senior Secured Term Loans Agreement**" means the credit agreement dated as of April 27, 2012, among, among others, INEOS Finance plc and INEOS US Finance LLC, as borrowers, and Barclays Bank PLC, as administrative agent and security agent, as supplemented by the accession document dated as of May 4, 2012, as amended and restated as of May 8, 2013, as further amended and restated as of February 21, 2014, as further amended as of November 24, 2014 and as further amended on March 31, 2015 and June 5, 2015, and as further amended and restated on February 28, 2017 and November 3, 2017, and all documentation relating thereto, in each case, as further amended, renewed, extended, substituted, refinanced, restructured, replaced, supplemented or otherwise modified from time to time under one or more Credit Facilities (including, without limitation, any successive renewals, extensions, substitutions, refinancings, restructurings, replacements, supplementations or other modifications of the foregoing).

"**Service Contracts**" means the service contracts of each member of Senior Management.

"**SFA Loans**" means the loans and other advances made from time to time under the Senior Secured Term Loans Agreement to the borrowers thereunder.

"**SFA Proceeds Loans**" means, collectively, any loan from any borrower of the SFA Loans to a Restricted Subsidiary of the gross proceeds from the borrowing of such SFA Loans and, in each case, all loans or bonds directly or indirectly replacing or refinancing such loan or any portion thereof.

"**SFA Proceeds Loan Agreements**" means (a) each loan agreement by and among IHL, as borrower, and the Issuer, as lender, pursuant to which the Issuer agrees to on-loan part of the proceeds of the SFA Loans, (b) each deed by IHL together with the additional loan pursuant to which INEOS U.S. Finance LLC agrees to on-loan part of the proceeds of the SFA Loans and (c) each other loan agreement evidencing an SFA Proceeds Loan, in each case as such deed or loan agreement may be amended, supplemented, amended and restated, replaced, substituted or converted from time to time.

"**Significant Restricted Subsidiary**" means, at the date of determination, any Restricted Subsidiary that, on a Consolidated basis with its Restricted Subsidiaries, (a) for the most recent fiscal year for which audited consolidated financial statements of the Parent have been delivered pursuant to paragraph (1) under "—Certain Covenants—Provision of Financial Statements", accounted for more than 10% of the Consolidated revenues of the Parent or (b) as of the end of the most recent fiscal quarter for which consolidated financial statements of the Parent shall have been delivered pursuant to paragraph (2) under "—Certain Covenants—Provision of Financial Statements", was the owner of more than 10% of the Consolidated assets of the Parent.

"**Specified Affiliate Payments**" means:

(a) the purchase of (and any dividend, distribution, loan or other payment to any Parent Holdco, Affiliate or employee trust or similar entity to effect the purchase of) (i) any Capital Stock of the Company, any Restricted Subsidiary or any Parent Holdco or (ii) any employee loan stock of the Company, any Restricted Subsidiary or any Parent Holdco, in each case held by any future, present or former employee, director, officer or consultant of any Parent Holdco, the Company or any of its Restricted Subsidiaries (or their estates or beneficiaries under their estates) pursuant to any management equity subscription agreement, stock option agreement, put agreement, consulting agreement, stockholder agreement or similar agreement or employee loan stock scheme that may be in effect from time to time; *provided* that the aggregate price paid for all such purchased Capital Stock and employee loan stock shall not exceed €10.0 million in any calendar year (with unused amounts in any calendar year being carried over to succeeding calendar years subject to a maximum amount of purchases pursuant to this clause (a) of €20.0 million in any calendar year);

(b) transactions with customers, clients, suppliers, and distributors and other purchases or sales of goods or services, in each case in the ordinary course of business and otherwise in compliance with the terms of the Indenture, which when taken together are fair to the Company and its Restricted Subsidiaries in the good faith determination of the Board of Directors or senior management of the Company, or are on terms not less favorable than might have been obtained in a comparable transaction at such time on an arm's length basis from a Person that is not an Affiliate, as determined in good faith by the Board of Directors or senior management of the Company;

(c) dividends, distributions, loans or other amounts paid to or on behalf of any Parent Holdco in amounts equal to amounts required for such Person to pay (i) audit fees and expenses, (ii) directors' fees, remuneration and expenses (including customary indemnification obligations and director and officer insurance premia), (iii) corporate overhead and salary or other compensation to employees allocable to the Company and the Restricted Subsidiaries (including payments made pursuant to the Service Contracts), (iv) other ordinary course expenses required to maintain its corporate existence, (v) amounts required in relation to public reporting and registration and on-going administration of any securities or other Indebtedness and (vi) payments of fees under management agreements to INEOS Capital pursuant to agreements in effect on the Issue Date and any amendment or modifications thereof; *provided* that any amendments or modifications to the terms thereof are not more disadvantageous to the holders of the Notes in any material respect than such agreements, as in effect on the Issue Date;

(d) dividends, distributions, loans or other amounts paid to or on behalf of any Parent Holdco in amounts equal to amounts required by any Parent Holdco to pay income or corporation taxes or VAT, but only to the extent such income or corporation taxes or VAT are attributable to the business of the Parent, the Company or its Restricted Subsidiaries;

(e) the payment of any other amounts; *provided* that the total aggregate amount of Specified Affiliate Payments made under this clause (e) does not exceed in any fiscal year the greater of (x) €125.0 million and (y) 1.375% of Total Assets at the time such payment is made;

(f) the payment of an annual management fee (for the avoidance of doubt, in whatever form) to any Parent Holdco or any of its Affiliates; *provided* that the total amount of Specified Affiliate Payments made under this clause (f) does not exceed €73.5 million (adjusted, for the avoidance of doubt, since 2011, in accordance with the RPI) in any fiscal year;

(g) Rental Payments; and

(h) the payment of any amount to pay or reimburse the costs and expenses incurred in connection with the Transactions or any other incurrence or repayment, redemption, defeasance or other satisfaction (in whatever form) of any Indebtedness.

"**Stated Maturity**" means, when used with respect to any Indebtedness or any installment of interest thereon, the dates specified in such Indebtedness as the fixed date on which the principal of such Indebtedness or such installment of interest, as the case may be, is due and payable. For the avoidance of doubt, references to the "final Stated Maturity" of any Indebtedness shall mean the final scheduled repayment in respect of such Indebtedness, and in determining such final scheduled repayment date for any Indebtedness incurred in the form of a bridge or other interim credit facility intended to be extended, renewed or refinanced with long-term Indebtedness, the initial maturity date or rollover date (however denominated) thereof shall be disregarded so long as such credit facility includes customary "rollover" provisions that are subject to no conditions precedent other than (i) the occurrence of the date specified for the "rollover" and (ii) that no payment or bankruptcy event of default shall have occurred and be continuing.

"**Subordinated Indebtedness**" means Indebtedness of the Issuer or any Guarantor that is subordinated in right of payment to the Notes or a Guarantee of such Guarantor, as applicable, including the guarantees of the 2024 IGH Notes or other High Yield Notes and the 2024 IGH Notes Proceeds Loan or other High Yield Proceeds Loans.

"**Subordinated Shareholder Funding**" means Subordinated Indebtedness of the Company issued to any Parent Holdco or any Affiliate thereof (other than any Restricted Subsidiary):

(a) which, by its terms or pursuant to the terms of any subordination agreement to which it is subject:

(i) does not (including upon the happening of any event) mature (other than upon acceleration of its maturity permitted by clause (a)(iii) below) or require any amortization and is not (including upon the happening of any event) mandatorily redeemable, pursuant to a sinking fund obligation or otherwise, or redeemable at the option of the holder, in whole or in part, and does not include any provision requiring repurchase by the Company or any Restricted Subsidiary (including upon the happening of any event), in each case, prior to the first anniversary of the Stated Maturity of the Notes;

(ii) does not (including upon the happening of any event) require or provide for the payment of interest (in cash or otherwise), cash withholding amounts or other cash gross-ups or any other cash amounts prior to its final Stated Maturity (*provided* that interest may accrete while such Subordinated Indebtedness is outstanding and accreted interest may become due upon acceleration of maturity permitted by clause (a)(iii) below and any interest may be satisfied at any time by the issue to the holders thereof of additional Subordinated Shareholder Funding);

(iii) contains no change of control or similar provisions, has no right to declare a default or event of default, does not provide (including upon the happening of any event) for the acceleration of its maturity (other than acceleration of its maturity upon the happening of any events described in clause (b)(ii) below, so long as the subordination requirements of such clause are satisfied), the ability to take any enforcement action or the exercise of remedies prior to the date on which the Notes mature and are repaid;

(iv) does not require or provide for, and is not secured by, a Lien on any assets of the Company or any Restricted Subsidiary and is not guaranteed by any Restricted Subsidiary;

(v) does not (including upon the happening of any event) restrict the payment of amounts due in respect of the Notes or compliance by the Issuer with its obligations under the Notes and the Indenture;

(vi) does not contain any covenants (financial or otherwise) other than a covenant to pay such Subordinated Indebtedness, including interest thereon;

(vii) does not (including upon the happening of an event) constitute Voting Stock; and

(viii) is not (including upon the happening of any event) mandatorily convertible or exchangeable, or convertible or exchangeable at the option of the holder, in whole or in part, prior to the Stated Maturity of the Notes other than into or for Capital Stock (other than Redeemable Capital Stock) of the Company; and

(b) which is contractually subordinated and junior (by its terms in favor of, or pursuant to an agreement with, the Trustee) in right of payment to the prior payment in full in cash of all obligations (including principal, interest, premium (if any) and Additional Amounts (if any)) of the Company under the relevant Guarantee of the Notes and the Indenture (other than contingent indemnity, expense reimbursement, tax gross-up or other yield protection obligations for which a claim has not been made) such that:

(i) the Company shall not make any payment in respect of such Subordinated Indebtedness (whether in cash, securities or otherwise, except as permitted by clause (a)(ii) or (a)(iii) above) and may not acquire such Subordinated Indebtedness, in each case, except as permitted by the Indenture until the prior payment in full in cash of all obligations under the relevant Guarantee of the Notes and the Indenture (other than contingent indemnity, expense reimbursement, tax gross-up or other yield protection obligations for which a claim has not been made);

(ii) upon any total or partial liquidation, dissolution or winding up of the Company or in a bankruptcy, reorganization, insolvency, receivership or similar proceeding relating to the Company or its property, the holders of the Notes will be entitled to receive payment in full in cash of the obligations under the Notes and the Indenture (including Additional Amounts, if any, but excluding contingent indemnity, expense reimbursement, tax gross-up or other yield protection obligations for which a claim has not been made), before the holders of such Subordinated Indebtedness will be entitled to receive any payment in respect of such Subordinated Indebtedness;

(iii) such Subordinated Indebtedness may not be amended such that it would cease to qualify as Subordinated Shareholder Funding until a date that is after the prior payment in full in cash of all obligations under the Notes and the Indenture (other than contingent indemnity, expense reimbursement, tax gross-up or other yield protection obligations for which a claim has not been made);

(iv) the holders of such Subordinated Indebtedness shall assign any rights to vote, including by way of proxy, in a bankruptcy, insolvency or similar proceeding to the Trustee to the extent necessary to give effect to the priority and subordination provisions described in this definition; and

(v) the holders of such Subordinated Indebtedness shall agree that, in the event any payment on such Subordinated Indebtedness is received by such holder in contravention of the terms of the Indenture and any applicable subordination agreement, then such payment shall be held in trust as an agent for the benefit of, and shall be paid over or delivered to, the Trustee, on behalf of the holders of the Notes;

provided that any event or circumstance that results in such Subordinated Indebtedness ceasing to qualify as Subordinated Shareholder Funding shall (x) constitute an incurrence of such Indebtedness by the Company and (y) reduce the sum described in clause (3)(B) of paragraph (b) under "—Certain Covenants—Limitation on Restricted Payments," by an amount equal to the amount by which the amount in such clause (3)(B) had been previously increased on account of such Subordinated Shareholder Funding, and any and all Restricted Payments made since the date of the original issuance of such Subordinated Shareholder Funding shall constitute new Restricted Payments that must satisfy the covenant described under "—Certain Covenants—Limitation on Restricted Payments" at a time on or after the date of the original issuance of such Subordinated Shareholder Funding after giving effect to the reduction referred to above in clause (y) of this sentence. Notwithstanding clause (i) of the second sentence of the definition of Indebtedness, "Subordinated Indebtedness", as used in this definition, shall not exclude Subordinated Shareholder Funding.

"**Subsidiary**" of a Person means (a) any corporation more than 50% of the total voting power of the outstanding Voting Stock of which is owned or controlled, directly or indirectly, by such Person or by one or more other Subsidiaries of such Person, or by such Person and one or more other Subsidiaries thereof, (b) any limited partnership of which such Person or any Subsidiary of such Person is a general partner, or (c) any other Person in which such Person, or one or more other Subsidiaries of such Person, or such Person and one or more other Subsidiaries, directly or indirectly, owns more than 50% of the outstanding partnership or similar interests or has the power, by contract or otherwise, to direct or cause the direction of the policies, management and affairs thereof. Unless otherwise expressly provided, all references herein to a "Subsidiary" shall mean a Subsidiary of the Parent.

"**Subsidiary Guarantor**" means each Restricted Subsidiary of the Company that is a Guarantor of the Notes.

"**Tax Sharing Agreement**" means any tax sharing or tax payment agreement with customary terms and any arrangement in respect of the surrender of group relief or the allocation of disallowances of deductions for financing expenses, in each case, entered into with any Parent Holdco, as the same may be amended, supplemented, waived or otherwise modified from time to time in accordance with the terms thereof and of the Indenture.

"**Temporary Cash Investments**" means:

(a) any evidence of Indebtedness, maturing not more than one year after the date of acquisition, issued by the United States of America, Norway, Switzerland or any state that was a member state of the European Union on December 31, 2003, including, for the avoidance of doubt, the United Kingdom (or any state, territory, political subdivision or taxing authority of any of the foregoing) or an instrumentality or agency thereof, and guaranteed fully as to principal, premium, if any, and interest by any of the foregoing;

(b) any certificate of deposit, maturing not more than one year after the date of acquisition, issued by, or time deposit of, a commercial banking institution that is a member of the U.S. Federal Reserve System or a bank or trust company organized in the United States of America, Norway, Switzerland or any state that was a member state of the European Union on December 31, 2003, including, for the avoidance of doubt, the United Kingdom (or any state, territory, political subdivision or taxing authority of any of the foregoing) and that has combined capital and surplus and undivided profits of not less than $500.0 million and whose debt has a rating, at the time as of which any investment therein is made, of "P-2" (or higher) according to Moody's or any successor rating agency or "A-2" (or higher) according to S&P or any successor rating agency;

(c) commercial paper, maturing not more than one year after the date of acquisition, issued by a corporation (other than an Affiliate or Subsidiary of the Company) organized and existing under the laws of the United States of America, Norway, Switzerland or any state that was a member state of the European Union on December 31, 2003, including, for the avoidance of doubt, the United Kingdom (or any state, territory, political subdivision or taxing authority of any of the foregoing) with a rating, at the time as of which any investment therein is made, of "P-2" (or higher) according to Moody's or any successor rating agency or "A-2" (or higher) according to S&P or any successor rating agency;

(d) any money market deposit accounts issued or offered by a commercial bank organized in the United States of America, Norway, Switzerland or any state that was a member state of the European Union on December 31, 2003, including, for the avoidance of doubt, the United Kingdom (or any state, territory, political subdivision or taxing authority of any of the foregoing) having capital and surplus in excess of $500.0 million; *provided* that the short term debt of such commercial bank has a rating, at the time as of which any investment therein is made, of "P-2" (or higher) according to Moody's or any successor rating agency or "A-2" (or higher) according to S&P or any successor rating agency;

(e) repurchase obligations with a term of not more than 30 days for underlying obligations of the types described in clauses (a) and (b) above entered into with any bank meeting the qualifications specified in clause (b) above;

(f) interests in any investment company or money market fund which invests 95% or more of its assets in instruments of the type specified in clauses (a) through (e) above; and

(g) other short-term investments utilized by Restricted Subsidiaries of the Parent in accordance with normal investment practices for cash management in the jurisdiction of organization or operation of such Restricted Subsidiary (as determined in good faith by the Company).

"**Total Assets**" means the Consolidated total assets of the Parent and its Restricted Subsidiaries, as shown on the most recent balance sheet of the Parent; *provided* that in the case of Acquisition Indebtedness and Acquired Indebtedness, and Liens securing such Acquisition Indebtedness or Acquired Indebtedness, assets acquired or to be acquired by the Parent and its Restricted Subsidiaries in the related Acquisition will be included to the extent a definitive agreement for such Acquisition has been entered into. For the avoidance of doubt, for purposes of determining compliance with any Total Asset percentage restriction on the incurrence of Indebtedness, the incurrence of Liens, the making of any Permitted Investment or Permitted Payment, the receipt of any Designated Non-Cash Consideration or any Asset Sale, the amount of the Total Assets will be determined on the date of such incurrence or Permitted Investment or Permitted Payment or receipt or Asset Sale. Notwithstanding any other provision of the Indenture, the maximum amount of Indebtedness or Liens that the Company or any Restricted Subsidiary may incur or Permitted Investment or Permitted Payment that the Company or any Restricted Subsidiary may make or any Designated Non-Cash Consideration that the Company or any Restricted Subsidiary may receive or any Asset Sale that the Company or any Restricted Subsidiary may consummate shall not be deemed to be exceeded, in each case, due solely to the result of fluctuations in the amount of Total Assets (and, for the avoidance of doubt, any such Indebtedness or Lien will be permitted to be refinanced or replaced and such Permitted Investment or Permitted Payment will be permitted to be exchanged notwithstanding that, after giving effect to such refinancing, replacement or exchange, such excess will continue).

"**Transactions**" means, collectively, the issuance of the Notes, the redemption of the 2023 Senior Secured Notes and the other transactions contemplated by the Notes Documents or as described in this Offering Memorandum in "—The Transactions".

"**Unrestricted Subsidiary**" means any Subsidiary of the Company (other than the Issuer) designated as such pursuant to and in compliance with the covenant described under "—Certain Covenants—Limitation on Unrestricted Subsidiaries," in each case unless and until such Subsidiary is redesignated as a Restricted Subsidiary pursuant to a Redesignation as provided in paragraph (d) of such covenant.

"**U.S. Exchange Act**" means the U.S. Securities Exchange Act of 1934, as amended, or any successor statute, and the rules and regulations promulgated by the Commission thereunder.

"**U.S. Securities Act**" means the U.S. Securities Act of 1933, as amended, or any successor statute, and the rules and regulations promulgated by the Commission thereunder.

"**U.S. Trust Indenture Act**" means the U.S. Trust Indenture Act of 1939, as amended, or any successor statute.

"**VAT**" means value added tax as provided for in the Value Added Tax Act 1994 of the United Kingdom, or any replacement or re-enactment thereof, and any other Tax (wherever imposed) of a similar nature.

"**Voting Stock**" of a Person means Capital Stock of such Person of the class or classes pursuant to which the holders thereof have the general voting power under ordinary circumstances to elect at least a majority of the Board of Directors of such Person, managers or trustees of such Person (irrespective of whether or not at the time Capital Stock of any other class or classes shall have or might have voting power by reason of the happening of any contingency).

"**wholly owned**", when used in reference to a Subsidiary of any Person, means that all the Capital Stock of such Subsidiary (other than directors' qualifying shares and other nominal amounts of Capital Stock that are required to be held by other Persons under applicable law) are owned by such Person, another wholly owned Subsidiary of such Person or any combination thereof.

"**Wholly Owned Restricted Subsidiary**" means a Restricted Subsidiary all the Capital Stock of which (other than directors' qualifying shares and other nominal amounts of Capital Stock that are required to be held by other Persons under applicable law) is owned by the Company or another Wholly Owned Restricted Subsidiary or any combination thereof.

DESCRIPTION OF THE COLLATERAL AND THE GUARANTEES

The Notes and the guarantees will be secured by security interests in the assets described below (the "Collateral"). The security interests in the Collateral will (subject to Permitted Collateral Liens) be first-ranking security interests, except for certain security interests granted to secure the Notes which, as a matter of local law, will be granted as junior-ranking security interests in relation to the security granted in respect of the Senior Secured Term Loans, the Schuldschein Loan and the 2025 Senior Secured Notes. The Intercreditor Deed provides that as a contractual matter among Senior Secured Creditors (as defined in the Intercreditor Deed), the Notes will be secured on a *pari passu* basis with the 2025 Senior Secured Notes, the Senior Secured Term Loans, the Schuldschein Loan, certain hedging obligations and certain cash management obligations and will be treated as such for purposes of the application of proceeds from the enforcement of such Collateral. The existing first-ranking liens securing the Senior Secured Term Loans, the Schuldschein Loan and the 2025 Senior Secured Notes that were created under Luxembourg, New York, Scottish, Norwegian and Jersey law will remain in place and will extend to secure the Notes. In some jurisdictions, the security documents creating the existing first-ranking liens securing the Senior Secured Term Loans, the Schuldschein Loan and the 2025 Senior Secured Notes will be amended to extend such liens (or, with respect to Belgian security, to confirm that these liens extend) to the Notes (or, with respect to French and certain of the German security interests, junior ranking security interests will be granted). The existing first-ranking liens securing the Senior Secured Term Loans, the Schuldschein Loan and the 2025 Senior Secured Notes that were created under English law and Singapore law will remain in place, and new liens over the same Collateral will be created in these jurisdictions to secure the Notes. In these jurisdictions where new liens are created, the ranking of these new liens relative to the existing liens will, as a matter of general law, depend on a number of factors, such as the nature of the liens, the order of creation of the liens, compliance with the jurisdiction's perfection requirements with respect to the liens and the order of giving notices with respect to the liens, and accordingly without the Intercreditor Deed, the new liens would be likely to rank after the existing liens. However, the Intercreditor Deed provides that, as a contractual matter, the liens securing the Notes, the 2025 Senior Secured Notes, the Schuldschein Loan and the Senior Secured Term Loans will rank *pari passu* and will be treated as having equal priority with respect to the application of proceeds from the enforcement of any Collateral. See the specific local law security interests described below under "—Summary of the Guarantees and Collateral for the Notes" and "Risk Factors—Prior ranking security interests—Any other creditors with prior ranking liens will have prior access to proceeds of certain Collateral and your rights to enforce your security over the Collateral are limited," "Limitations on Validity and Enforceability of Guarantees and the Security Interests" and "Description of Other Indebtedness—Intercreditor Deed." Upon the completion of the implementation of the security interests in the Collateral, the Notes and the guarantees will, subject to the terms and conditions of the Indenture and to the extent possible, be secured by security interests in all of the assets and property that secure the obligations under the 2025 Senior Secured Notes, the Senior Secured Term Loans, the Schuldschein Loan, certain hedging liabilities and certain cash management liabilities. As of the date of completion of the granting of the guarantees, the Notes will be guaranteed by all of those entities that guarantee the obligations under the 2025 Senior Secured Notes, the Senior Secured Term Loans, the Schuldschein Loan and (on a senior subordinated basis) the 2024 IGH Notes.

The following is a country-by-country summary description of the guarantees and the Collateral that is expected to secure the Notes as of the date of this offering memorandum. This summary is not complete and does not describe any of the limitations of, existing encumbrances on, and defects in respect of the guarantees and Collateral, or any of the specific assets, properties and rights that will be excluded from the guarantees and the Collateral. The granting of the guarantees and the security interests in the Collateral is subject to compliance with the agreed security principles (the "Security Principles") to be set forth in an exhibit to the Indenture, which embody the recognition that there may be certain legal and practical difficulties in obtaining guarantees and security interests in every jurisdiction in which the Guarantors are incorporated and hold assets.

In addition, prior to the execution by the parties thereto of the security documents in respect of the Notes, the composition of the Collateral may change (including due to the application of the Security Principles), and any such change or changes could be material.

As described herein, the security in respect of the Notes will be implemented in two or more stages. Not all the Collateral that will secure the Notes will be implemented as of the Issue Date. In addition, there may be delays in the implementation of the guarantees and the Collateral.

Issue Date

On the Issue Date, the following companies (the "Guarantors") will provide guarantees in respect of the Notes:

- INEOS Group Limited;
- INEOS Group Holdings Limited;
- INEOS Holdings (Investments) Limited;
- INEOS Holdings Limited;
- INEOS Investment Holdings (Germany) Limited;
- INEOS Oxide Limited;
- INEOS Sales (UK) Limited;
- INEOS Tenderco Limited;
- INEOS Investments International Limited;
- INEOS Manufacturing Belgium NV;
- INEOS NV;
- INEOS Phenol Belgium NV;
- INEOS Manufacturing Deutschland GmbH;
- INEOS Phenol GmbH;
- INEOS Deutschland GmbH;
- INEOS Köln Beteiligungs GmbH & Co. KG;
- INEOS Köln GmbH;
- INEOS Köln Verwaltungs GmbH;
- INEOS Phenol Verwaltungsgesellschaft mbH;
- INEOS Deutschland Holding GmbH;
- INEOS Luxembourg I S.A.;
- INEOS Luxembourg II S.A.;
- INEOS Group Holdings S.A.;
- INEOS Europe AG;
- INEOS Group AG;

- INEOS Americas LLC;
- INEOS US Finance LLC;
- INEOS USA LLC;
- INEOS 2010 Limited;
- INEOS USA Manufacturing LLC;
- INEOS Nitriles USA LLC;
- INEOS Oligomers USA LLC;
- INEOS Chocolate Bayou Pipeline LLC;
- INEOS Technologies Americas LLC;
- INEOS European Holdings Limited;
- INEOS Fluor Holdings Limited;
- INEOS Fluor Limited;
- INEOS Holdings International Limited;
- INEOS (Malta) Company;
- INEOS Manufacturing (Hull) Limited;
- INEOS Nitriles (UK) Limited;
- INEOS Overseas Company I Limited;
- INEOS Overseas Company II Limited;
- INEOS Silicas Holdings Limited;
- INEOS Silicas Limited;
- INEOS Belgium Holdco NV;
- INEOS Belgium NV;
- INEOS Feluy SPRL;
- INEOS Canada Partnership;
- INEOS Canada Company;
- INEOS Canada Investment Company;
- INEOS Canada Preferred Holdings Limited;
- INEOS Jersey Limited;
- INEOS Holdings Norge AS;
- INEOS Singapore Pte. Ltd.;
- INEOS LLC;
- INEOS Polypropylene LLC;
- INEOS Technologies USA LLC;
- INEOS Finance Company 3 Limited; and

- INEOS US I Inc.

On the Issue Date, the Notes will be guaranteed by the Guarantors, which are expected to represent 89.8% of the Parent's consolidated EBITDA for the year ended December 31, 2018, and to hold 88.4% of the Parent's consolidated total assets as of December 31, 2018. All of the Guarantors will provide guarantees in respect of the Notes on the Issue Date. INEOS Finance plc is the issuer of the Notes and will provide security in respect of the Notes. The guarantees and the security are subject to various limitations. See "Limitations on Validity and Enforceability of the Guarantees and the Security Interests" and "Risk Factors—Guarantees and Collateral limitations—The guarantees and pledges of Collateral will be subject to certain limitations on enforcement and may be limited by applicable laws or subject to certain defenses that may limit their validity and enforceability."

Summary of the Guarantees and Collateral for the Notes

The following is a country-by-country summary of the guarantees and the Collateral in respect of the Notes that will be in place following the completion of the grants of the guarantees and the Collateral.

The Guarantors will grant security interests in the Collateral described below on the Issue Date or within the number of days thereafter so specified in the Indenture, as applicable (generally within 30 days after the Issue Date, but in the case of certain deposit account and security account agreements and certain real property collateral, within 60 days and 90 days after the Issue Date, respectively).

Belgium

The Notes will be guaranteed by the following Belgian companies: INEOS Manufacturing Belgium NV, INEOS NV, INEOS Phenol Belgium NV, INEOS Belgium Holdco NV, INEOS Belgium NV and INEOS Feluy SPRL.

The Notes will be secured by the following security interests, each governed by Belgian law:

- pledges over shares in INEOS Belgium Holdco NV, INEOS Sales Belgium NV, INEOS Belgium NV, INEOS NV, INEOS Services Belgium NV, INEOS Manufacturing Belgium NV, INEOS Feluy SPRL, INEOS Phenol Belgium NV and INEOS C2T NV;

- mortgages over various properties of INEOS Feluy SPRL for the amount of €10,500,000.00, INEOS NV for the amount of €11,750,000.00, INEOS Phenol Belgium NV for the amount of €10,500,000.00 and INEOS Manufacturing Belgium NV for the amount of €10,500,000.00;

- mortgage mandates over various properties of INEOS Feluy SPRL for the amount of €342,600,000.00, INEOS NV for the amount of €600,150,000.00, INEOS Phenol Belgium NV for the amount of €256,500,000.00 and INEOS Manufacturing Belgium NV for the amount of €336,100,000.00;

- pledges over various receivables of INEOS Belgium NV, INEOS Belgium Holdco NV, INEOS NV, INEOS Feluy SPRL, INEOS Manufacturing Belgium NV and INEOS Phenol Belgium NV;

- pledges over various bank accounts of INEOS Belgium NV, INEOS NV, INEOS Feluy SPRL, INEOS Manufacturing Belgium NV, INEOS Belgium Holdco NV, INEOS Phenol Belgium NV, INEOS Phenol GmbH, INEOS Oxide Limited and INEOS Europe AG;

- pledges over the business assets of INEOS Belgium NV for the amount of €2,000,000.00, INEOS NV for the amount of €11,000,000.00, INEOS Feluy SPRL for the amount of €11,000,000.00, INEOS Manufacturing Belgium NV for the amount of €11,000,000.00 and INEOS Phenol Belgium NV for the amount of €11,000,000.00;

- mandates to establish pledges over the business assets of INEOS Belgium NV for the amount of €6,640,000.00, INEOS NV for the amount of €41,200,000.00, INEOS Feluy SPRL for the amount of €89,000,000.00, INEOS Manufacturing Belgium NV for the amount of €194,000,000.00, INEOS Phenol Belgium NV for the amount of €89,000,000.00 and INEOS Belgium Holdco NV for the amount of €300,000,000.00 and INEOS Europe AG for the amount of €55,000,000; and
- pledges over trademarks and patents of INEOS Manufacturing Belgium NV.

Canada

The Notes will be guaranteed by INEOS Canada Company, INEOS Canada Investment Company, INEOS Canada Partnership and INEOS Canada Preferred Holdings Limited.

The Notes will be secured by security interests over (i) the shares of INEOS Canada Investment Company, INEOS Canada Company and INEOS Canada Preferred Holdings Limited, (ii) the partnership interests of INEOS Canada Partnership and (iii) the leasehold interest held by INEOS Canada Company on behalf of INEOS Canada Partnership in real property near Joffre, Alberta.

The Notes will also be secured pursuant to the following Security Documents:

- second amended and restated general security agreement governed by Alberta law granted by each of INEOS Canada Company, INEOS Canada Investment Company and INEOS Canada Partnership in respect of all present and future after-acquired personal and real property (subject to certain exceptions);
- second amended and restated general security agreement granted by INEOS Canada Preferred Holdings Limited and governed by Nova Scotia law in respect of all present and after- acquired personal and real property (subject to certain exceptions); and
- second amended and restated security agreement (over its Citibank Canada bank accounts) granted by INEOS European Holdings Limited and governed by Ontario law.

England and Wales

The Notes will be guaranteed by the following companies incorporated in England and Wales: INEOS Holdings Limited, INEOS European Holdings Limited, INEOS Fluor Holdings Limited, INEOS Fluor Limited, INEOS Group Holdings Limited (formerly INEOS Group Holdings plc), INEOS Investments International Limited, INEOS Holdings International Limited (formerly INEOS Investment Holdings (Fluor & Silicas) Limited), INEOS Overseas Company I Limited, INEOS Overseas Company II Limited, INEOS Oxide Limited, INEOS Investment Holdings (Germany) Limited (formerly INEOS Phenol Limited), INEOS (Malta) Company, INEOS Manufacturing (Hull) Limited, INEOS Nitriles (UK) Limited, INEOS Silicas Holdings Limited, INEOS Silicas Limited, INEOS Tenderco Limited, INEOS Group Limited, INEOS Holdings (Investments) Limited, INEOS Sales (UK) Limited, INEOS Finance Company 3 Limited and INEOS 2010 Limited.

The Issuer and each of the above companies will be a party to English law debentures creating a legal mortgage in respect of all real property of which it is a registered proprietor and fixed (or floating) charges over substantially all its other assets (including shares in any subsidiary, intellectual property rights, monies credited to certain bank accounts, plant, equipment and other personal property).

The Notes will also be secured by certain additional English law security interests as follows:

- share charges granted by INEOS Jersey Limited (in respect of its shares in INEOS European Holdings Limited), INEOS US Finance LLC (in respect of its shares in INEOS Finance Company), INEOS Europe AG (in respect of all present and future shares in INEOS Europe AG subsidiaries which are incorporated or established in England and Wales) and INEOS US I Inc. (in respect of all shares in INEOS Canada Limited);
- an assignment by the Parent of all its rights in respect of the High Yield Proceeds Loan (as that term is defined in the Intercreditor Deed) and any other intercompany loan;
- charges over intellectual property rights granted by INEOS USA LLC, INEOS Americas LLC, INEOS Manufacturing Belgium NV, INEOS Phenol GmbH, INEOS Technologies USA LLC and INEOS Europe AG;
- charge and security assignment by INEOS Polypropylene LLC relating to contractual arrangements with BP;
- charge and security assignment by each of INEOS Technologies USA LLC, INEOS Technologies Americas LLC and INEOS Sales (UK) Limited relating to contractual arrangements between these entities and BP;
- a charge in respect of any Underlying Agreement to which it is a party to be granted by INEOS Europe AG;
- an assignment by each of INEOS Luxembourg I S.A., INEOS Luxembourg II S.A., INEOS Group AG and INEOS Europe AG of all their rights in respect of any intercompany loans, insurance policies and hedging arrangements;
- an assignment by INEOS US Finance LLC in relation to the floating rate unsecured loan note due 2026 issued by INEOS Holdings Limited and registered in the name of INEOS US Finance LLC and other intercompany receivables;
- an assignment by INEOS Group AG of all its present and future rights and interests in (and claims) under certain assigned intercompany loan agreements;
- account charges granted by INEOS US Finance LLC and INEOS Europe AG in respect of monies credited to certain bank accounts; and
- a floating charge by INEOS Europe AG over all its inventory, inventory monetary claims and all inventory related rights.

France

There will be no guarantor of the Notes incorporated in France. However, the Notes will be guaranteed by the English guarantor INEOS Investments International Limited and secured by a French law ninth ranking financial securities account pledge granted by INEOS Investments International Limited over the shares in INEOS France SAS and a French law eighth ranking financial securities account pledge granted by INEOS Investments International Limited over the shares in INEOS Technologies France SAS.

The abovementioned ninth and eighth ranking security interests will also secure the debt under the Senior Secured Term Loans Agreement, certain hedging liabilities and certain cash management liabilities, and such debt is also secured on a first, second, third, fourth, fifth, sixth and seventh-priority basis and in the case of the ninth ranking financial securities account pledge granted by INEOS Investments International Limited over the shares in INEOS France SAS, also on a eighth-priority basis.

Germany

The Notes will be guaranteed by the following German companies: INEOS Deutschland GmbH, INEOS Phenol Verwaltungsgesellschaft mbH, INEOS Phenol GmbH, INEOS Köln GmbH, INEOS Manufacturing Deutschland GmbH, INEOS Köln Verwaltungs GmbH, INEOS Deutschland Holding GmbH and INEOS Köln Beteiligungs GmbH & Co. KG.

The Notes will be secured by the following German law security interests:

- junior ranking pledges over shares in INEOS Deutschland GmbH, INEOS Phenol Verwaltungsgesellschaft mbH, INEOS Phenol GmbH, INEOS Köln GmbH, INEOS Manufacturing Deutschland GmbH, INEOS Köln Verwaltungs GmbH and INEOS Deutschland Holding GmbH;
- junior ranking pledges over limited partnership interests in INEOS Köln Beteiligungs GmbH & Co. KG;
- land charges on real estate owned by INEOS Phenol GmbH and INEOS Manufacturing Deutschland GmbH, and security purpose agreements with respect to such land charges;
- security transfers in respect of movable assets of INEOS Phenol GmbH, INEOS Köln GmbH, INEOS Manufacturing Deutschland GmbH, INEOS Europe AG and INEOS Oxide Limited;
- junior ranking account pledges over certain bank accounts of INEOS Phenol Verwaltungsgesellschaft mbH, INEOS Phenol GmbH, INEOS Köln GmbH, INEOS Manufacturing Deutschland GmbH, INEOS Köln Verwaltungs GmbH, INEOS Deutschland GmbH, INEOS Köln Beteiligungs GmbH & Co. KG, INEOS Deutschland Holding GmbH, INEOS Oxide Limited and INEOS Europe AG; and
- global assignments in respect of receivables of INEOS Phenol Verwaltungsgesellschaft mbH, INEOS Phenol GmbH, INEOS Köln GmbH, INEOS Manufacturing Deutschland GmbH, INEOS Deutschland GmbH, INEOS Köln Beteiligungs GmbH & Co. KG, INEOS Köln Verwaltungs GmbH and INEOS Deutschland Holding GmbH.

Jersey

The Notes will be guaranteed by INEOS Jersey Limited. The Notes will be secured by a Jersey law security interest over all of the shares of INEOS Jersey Limited held by INEOS Holdings Limited and a Jersey law security interest over all of the shares of INEOS Investments (Jersey) Limited held by INEOS European Holdings Limited.

Luxembourg

The Notes will be guaranteed by INEOS Group Holdings S.A., INEOS Luxembourg I S.A. and INEOS Luxembourg II S.A. The Notes will be secured by the following Luxembourg law security interests:

- pledge over shares of INEOS Luxembourg I S.A., granted by INEOS Group Holdings S.A.; and
- pledge over shares of INEOS Luxembourg II S.A., granted by INEOS Luxembourg I S.A.

Norway

The Notes will be guaranteed by INEOS Holdings Norge AS. The Notes will be secured by Norwegian law security interests over:

- shares of INEOS Holdings Norge AS, granted by INEOS Holdings Limited;
- shares of INEOS Bamble AS and INEOS Sales Norge AS, in each case granted by INEOS Holdings Norge AS; and
- trade receivables, bank accounts held in Norway, claims under intercompany loans and claims under certain acquisition documents for INEOS Bamble AS (formerly Borealis AS) granted by INEOS Holdings Norge AS.

Scotland

The Notes, which are guaranteed by INEOS Europe AG, incorporated in Switzerland, will also be secured by the following Scots Law security interest:

- a Floating Charge by INEOS Europe AG over the entire inventory of INEOS Europe AG located in Scotland and rights and claims relating to such inventory.

Singapore

The Notes will be guaranteed by INEOS Singapore Pte. Ltd.

The Notes will be secured by a security interest over the shares of INEOS Singapore Pte. Ltd., held by INEOS Holdings Limited. The Notes will also be secured by a security interest over substantially all of the assets of INEOS Singapore Pte. Ltd. pursuant to a Singapore law debenture.

Switzerland

The Notes will be guaranteed by INEOS Europe AG and INEOS Group AG. The Notes will be secured by the following Swiss law security interests:

- security assignment in respect of bank account claims granted by INEOS Europe AG;
- assignment agreement of receivables and trade receivables granted by INEOS Europe AG;
- share pledge in respect of shares in INEOS Europe AG granted by INEOS Group AG;
- security assignment in respect of bank account claims granted by INEOS Group AG;
- assignment agreement of receivables and trade receivables granted by INEOS Group AG;
- share pledge in respect of the shares in INEOS Group AG granted by INEOS Luxembourg II S.A.; and
- security assignment agreement in respect of bank account claims granted by INEOS Holdings Limited.

United States of America

The Notes will be guaranteed by the following companies organized under the laws of states of the United States of America: INEOS US Finance LLC, INEOS Americas LLC, INEOS Technologies USA LLC, INEOS LLC, INEOS Polypropylene LLC, INEOS USA LLC, INEOS US I Inc., INEOS USA Manufacturing LLC, INEOS Nitriles USA LLC, INEOS Oligomers USA LLC, INEOS Chocolate Bayou Pipeline LLC and INEOS Technologies Americas LLC.

The Notes will be secured by (i) a security interest in substantially all of the tangible and intangible personal property of the aforementioned companies, (ii) pledges of shares of certain subsidiaries of the aforementioned companies and (iii) mortgages on certain owned real property, including a mortgage granted by INEOS Americas LLC on real property located at Theodore, Alabama and Pasadena, Texas, mortgages granted by INEOS USA LLC on real property located at Alvin (Chocolate Bayou), Texas, and La Porte, Texas and mortgages granted by INEOS Nitriles USA LLC for property located at Lima, Ohio and Port Lavaca (Green Lake), Texas.

Limitations on Guarantees and Collateral

The Indenture, and certain of the security documents in respect of the Notes will contain, and the Senior Secured Term Loans Agreement and Existing Indentures contain, customary language as to limitations on the amount, validity and enforceability of the guarantees and the Collateral. For a description of certain of these limitations, see "Description of the Notes" and "Limitations on Validity and Enforceability of the Guarantees and the Security Interests."

Future Guarantees and Security

The Indenture will include provisions that generally require that INEOS Group companies that guarantee or grant security in respect of the Senior Secured Term Loans, the Existing Indentures or certain other indebtedness simultaneously guarantee the Notes and grant security in respect of the Notes. However, these provisions are subject to a variety of exceptions and limitations. See "Description of the Notes."

LIMITATIONS ON VALIDITY AND ENFORCEABILITY OF THE GUARANTEES AND THE SECURITY INTERESTS

Set out below is a summary of certain limitations on the enforceability of the guarantees and the security interests in each of the jurisdictions in which guarantees or Collateral are being provided.

It is a summary only, and proceedings of bankruptcy, insolvency or a similar event could be initiated in any of these jurisdictions and in the jurisdiction of organization of a future Guarantor of the Notes. The application of these various laws in multiple jurisdictions could trigger disputes over which jurisdiction's law should apply, and could adversely affect your ability to enforce your rights and to collect payment in full under the Notes, the guarantees and the security interests on the Collateral.

Also set out below is a brief description of certain aspects of insolvency law in Belgium, Canada, England and Wales, Germany, Jersey, Luxembourg, Norway, Singapore, Switzerland and the United States. In the event that any one or more of the Issuer, the Guarantors or any other of IGH or IHL's subsidiaries experienced financial difficulty, it is not possible to predict with certainty in which jurisdiction or jurisdictions insolvency or similar proceedings would be commenced, or the outcome of such proceedings.

European Union

The Issuer and several of the Guarantors are organized under the laws of Member States of the European Union.

Regulation (EU) no. 2015/848 of the European Parliament and of the Council of May 20, 2015 on insolvency proceedings (the "Recast EU Insolvency Regulation") entered into force on June 26, 2017 and is applicable to insolvency proceedings opened on or after that date, replacing Council Regulation (EC) no. 1346/2000 on insolvency proceedings (which continues to apply to insolvency proceedings opened prior to June 26, 2017). Pursuant to the Recast EU Insolvency Regulation, which applies within the European Union (other than Denmark), the court which shall have jurisdiction to open main insolvency proceedings in relation to a company is the court of the Member State where the company has its "centre of main interests" (which, according to Article 3(1) of the Recast EU Insolvency Regulation, is "the place where the debtor conducts the administration of its interests on a regular basis and which is ascertainable by third parties"). The determination of where any such company has its "centre of main interests" is a question of fact on which the courts of the different Member States may have differing and even conflicting views.

The term "centre of main interests" is not a static concept and may change from time to time. Although there is a rebuttable presumption under Article 3(1) of the Recast EU Insolvency Regulation that a company has its "centre of main interests" in the Member State in which it has its registered office, this presumption only applies if the registered office has not been moved to another Member State within the 3-month period prior to the request for the opening of insolvency proceedings.

Further, Preamble 30 of the Recast EU Insolvency Regulation states that "it should be possible to rebut this presumption where the company's central administration is located in a Member State other than that of its registered office, and where a comprehensive assessment of all the relevant factors establishes, in a manner that is ascertainable by third parties, that the company's actual centre of management and supervision and of the management of its interests is located in that other Member State." In that respect, factors such as where board meetings are held, the location where the company conducts the majority of its business and the location where the large majority of the company's creditors are established may all be relevant in the determination of the place where the company has its "centre of main interests." The point at which a company's "centre of main interests" is determined is at the time that the relevant insolvency proceedings are opened.

If the centre of main interests of a company is and will remain located in the Member State (other than Denmark) in which it has its registered office, the main insolvency proceedings in respect of the company under the Recast EU Insolvency Regulation may only be commenced in such jurisdiction, and accordingly a court in such jurisdiction would be entitled to commence the types of insolvency proceedings referred to in Annex A to the Recast EU Insolvency Regulation. Main insolvency proceedings opened in one Member State under the Recast EU Insolvency Regulation are to be recognized in the other Member States (other than Denmark), although secondary proceedings may be opened in another Member State. If the "centre of main interests" of a company is in one Member State (other than Denmark) under Article 3(2) of the Recast EU Insolvency Regulation, the courts of another Member State (other than Denmark) have jurisdiction to open "territorial proceedings" only in the event that such company has an "establishment" in the territory of such other Member State. "Establishment" is defined in Article 2(10) of the Recast EU Insolvency Regulation to mean any place of operations where the company carries out or has carried out in the 3-month period prior to the request to open main insolvency proceedings a non-transitory economic activity with human means and assets. The effects of those territorial proceedings are restricted to the assets of the company situated in the territory of such other Member State where proceedings were opened. If a company does not have an establishment in any other Member State, no court of any other Member State has jurisdiction to open territorial proceedings in respect of such company under the Recast EU Insolvency Regulation.

Where main insolvency proceedings in the Member State in which a company has its centre of main interests have not yet been opened, territorial insolvency proceedings can be opened in another Member State where the company has an establishment, *provided* either (a) insolvency proceedings cannot be opened in the Member State in which that company's centre of main interests is situated under that Member State's law; or (b) the territorial insolvency proceedings are opened at the request of either (i) a creditor whose claim arises from or is in connection with the operation of the establishment situated within the territory of the Member State where the opening of territorial proceedings is requested or (ii) a public authority which, under the law of the Member State within whose territory the establishment is situated, has the right to request the opening of insolvency proceedings.

The courts of all Member States (other than Denmark) must recognize the judgment of the court opening the main proceedings and give the same effect to the judgment so long as no secondary proceedings have been opened there. The insolvency practitioner appointed by a court in a Member State (other than Denmark) which has jurisdiction to open main proceedings (because the company's centre of main interests is there) may exercise the powers conferred on him by the law of that Member State in another Member State (other than Denmark), such as to remove assets of the company from that other Member State, subject to certain limitations, so long as no insolvency proceedings have been opened in that other EU member state nor any preservation measure has been taken to the contrary further to a request to open insolvency proceedings in that other EU member state where the company has assets.

It remains to be seen what impact the recent vote by the United Kingdom to leave the EU will have on the regulatory environment in the EU and the United Kingdom, and on the applicability of EU law in the United Kingdom.

Belgium

Insolvency

A number of the Guarantors are incorporated under the laws of Belgium (the "Belgian Guarantors"). Consequently, in the event of an insolvency of any of the Belgian Guarantors, insolvency proceedings may be initiated in Belgium. Such proceedings would then be governed by Belgian law.

Under certain circumstances, Belgian law also allows bankruptcy proceedings to be opened in Belgium over the assets of companies that are not established under Belgian law.

The following is a brief description of certain aspects of Belgian insolvency law.

Belgian insolvency laws provide for two primary insolvency procedures: a judicial restructuring procedure (*gerechtelijke reorganisatie/réorganisation judiciaire*) and a bankruptcy procedure (*faillissement/faillite*).

Judicial Restructuring A debtor (and in limited circumstances, its creditors, interested third parties or the public prosecutor) may file a petition for judicial restructuring if the continuity of the enterprise is at risk, whether immediately or in the future. If the net assets of the debtor have fallen below 50% of the debtor's issued capital, the continuity of the enterprise is always presumed to be at risk.

As from the filing of the petition with the competent commercial court overseeing the judicial restructuring and for as long as such court has not issued a judgment thereon, the debtor cannot be declared bankrupt or wound up by court order. In addition, during this period, none of the debtor's assets may be disposed of by any of its creditors as a result of the enforcement of any security interests that such creditors may hold with respect to such assets.

Within a period of 14 days as from the filing of the petition and subject to the satisfaction of the filing conditions, the court may decide to open the judicial restructuring procedure, thereby granting a temporary moratorium for a maximum period of six months. At the request of the debtor and pursuant to the report issued by the delegated judge, the moratorium period can thereafter be extended (once or several times) up to a total maximum period of twelve months as from the judgment opening the judicial restructuring. In exceptional circumstances (such as due to the size of the business, the complexity of the case or the impact of the procedure on employment), and in the interest of the creditors, the court may order an additional extension of the moratorium period for six months.

The granting of the temporary moratorium operates as a stay. No enforcement measures with respect to pre-existing claims in the moratorium can be continued or initiated against any of the debtor's assets from the time that the moratorium is granted until the end of the period, with limited exceptions. During the duration of the moratorium, no attachments can be made with regard to pre-existing claims.

Conservatory attachments that existed prior to the opening of the judicial restructuring retain their conservatory character, but the court may order their release, *provided* that such release does not have a material adverse effect on the situation of the creditor concerned.

In principle a pledge on receivables will not be affected by the moratorium if the receivables were pledged by the debtor in favor of a creditor prior to the opening of the judicial restructuring proceedings and provided the receivables are pledged specifically to that creditor from the moment the pledge is created. Although challenged in certain case law, the pledgee is permitted to take enforcement measures against the estate of the initial counterparty of the debtor (*e.g.*, the debtor's customers) during the moratorium. Notwithstanding the enforcement prohibition imposed by the moratorium a pledge on financial instruments or cash held on accounts in the meaning of the Financial Collateral Law of 15 December 2004 can be enforced, subject to limited exceptions. Personal guarantees granted by third parties in favor of the debtor's creditors are not covered by the enforcement prohibition imposed by the moratorium, nor are the debts payable by co-debtors. The moratorium also does not prevent the voluntary payment by the debtor of claims covered by the moratorium to the extent such payment is necessary for the continuity of the enterprise. However, in respect of an enforcement over pledged cash falling within the scope of the Financial Collateral Law of 15 December 2004, the enforcement prohibition applies, with limited exceptions (notably in the event of a payment default), if the judicial reorganization procedure affects (i) a corporate debtor which is not a public or financial legal entity in the meaning of the Financial Collateral Law of 15 December 2004 or (ii) a public or financial legal entity but the creditor is not such an entity.

During the judicial restructuring procedure, the board of directors and management of the debtor continue to exercise their management functions. However, upon request of the debtor or any other interested party and to the extent it is deemed useful for reaching the aims of the restructuring, the court may appoint, in its decision to open the judicial restructuring procedure or at any other point in time during the course of the procedure, a judicial administrator (*gerechtsmandataris/mandataire de justice*) to assist the debtor during the restructuring. The court may also appoint a judicial administrator, upon request of any interested party or the public prosecutor, in the event of manifestly grave shortcomings or bad faith of the debtor or any of its corporate bodies, to either exercise particular tasks indicated by the court, or to replace the debtor or any of its corporate bodies for the duration of the moratorium. In addition, in the event of manifestly gross error or manifest bad faith, a court appointed temporary director (*voorlopig bestuurder/administrateur provisoire*) may be appointed.

The restructuring procedure aims to preserve the continuity of a company as a going concern. Consequently, the initiation of the judicial reorganization proceedings does not terminate any contracts, and contractual provisions which provide for the early termination or acceleration of the contract upon the initiation or approval of a restructuring procedure, and certain contractual terms such as default interest, may not be enforceable during such a procedure. Such enforcement prohibition applies, with a few exceptions, to close-out netting provisions as well, if the judicial reorganization procedure affects (i) a corporate debtor which is not a public or financial legal entity in the meaning of the Belgian Collateral Act or (ii) a public or financial legal entity but the creditor is not such an entity. The Belgian law on judicial restructuring provides that a creditor may not terminate a contract on the basis of a debtor's default that occurred prior to the restructuring procedure if the debtor remedies such default within a 15-day period following the notification of such default.

As an exception to the general rule of continuity of contracts, the debtor may cease performing a contract during the restructuring procedure, *provided* that the debtor notifies the creditor, and that such default is necessary for the debtor to be able to propose a reorganization plan to its creditors or to transfer all or part of the enterprise or its assets. The exercise of this right does however not prevent the creditor from suspending in turn the performance of its own obligations.

Judicial Restructuring by Amicable Settlement by Collective Agreement, or by Court-ordered Transfer of Enterprise

A judicial restructuring procedure may result in an amicable settlement between the debtor and two or more of its creditors, or a collective agreement. The type of reorganization may change during the proceedings and may also depend on the position of the court and all parties involved. In the case of an amicable settlement, the parties to such amicable settlement will be bound by the terms they have agreed.

In the case of a judicial restructuring by collective agreement, the creditors agree to a restructuring plan during the restructuring procedure. The plan must be filed with the Clerk's Office of the Commercial Court at least 20 days in advance of the date on which the creditors will vote on the approval of the restructuring plan. The court needs to ratify the restructuring plan prior to its taking effect. The plan may include measures such as the reduction or rescheduling of liabilities and interest obligations and the swap of debt into equity. A restructuring plan approved by a double majority of the creditors (both in headcount and in value of the claims) and by the court will bind all creditors, including those who voted against it or did not vote and whether secured or not (the measures which can be imposed on creditors holding security rights are however limited to suspension of their claims). Under current Belgian law, a secured creditor may not be crammed down pursuant to a restructuring plan. As from 1 May 2018, however, a secured claim could be crammed down pursuant to a restructuring plan to the extent it exceeds (i) the amount recorded in the applicable register in case of registered security, (ii) the book value of pledged receivables or (iii) in respect of other security, the going concern value of the secured assets. Consequently, the amounts secured by the mortgage mandates and the business pledge mandates will not be taken into account when determining which part of the secured claim is protected against a cram down and a creditor benefiting from a mortgage mandate or business pledge mandate is not protected against cram down under such a mortgage mandate or business pledge mandate. The court may refuse ratification if the conditions of the judicial restructuring act were not met, or if the proposed restructuring plan violates public policy.

Within a period of 14 days following the judgment opening the judicial restructuring proceedings, the debtor must inform each of its creditors individually of the amount of its claims against the debtor as recorded in the books of the debtor, as well as of details regarding security interests, if applicable. Creditors with pre-existing claims, as well as any other interested party that claims to be a creditor, can challenge the amounts and the ranking of the secured claims declared by the debtor. The court can determine the disputed amounts and the ranking of such claims on a preliminary basis for the purpose of the restructuring procedure, or definitively, on the condition that it has jurisdiction in that respect, but that the decision relating to the dispute cannot be taken in a sufficiently short time frame. In addition, the court can, upon joint request by the debtor and the creditor, change the amount and the ranking of the claim initially declared by the debtor at the latest 15 days before the date on which the creditors will vote on the reorganization plan. If a creditor has not challenged the amount and the ranking of its claim at least 14 days in advance of the date on which the creditors will vote on the approval of the reorganization plan, the amount of its claim will remain unchanged for voting purposes as well as for the purposes of the reorganization plan.

The debtor must use the moratorium period to complete and finalize a restructuring plan, with the assistance of the court-appointed administrator, as the case may be.

The court ordered transfer of all or part of the debtor's enterprise can be requested by the debtor in his petition or at a later stage in the procedure. It can be requested by the public prosecutor, by a creditor or by any party who has an interest in acquiring, in whole or in part, the debtor's enterprise, and the court can order such transfer in specific circumstances. The court-ordered transfer will be organized by one or more judicial administrators. Following the transfer, the recourse of the creditors will in most cases be limited to the transfer price.

Bankruptcy

A bankruptcy procedure may be initiated by the debtor, by unpaid creditors or upon the initiative of the Public Prosecutor's office, or the provisional administrator of the merchant's assets or the liquidator of "main insolvency proceedings" opened in another EU member state (except Denmark) according to the Recast EU Insolvency Regulation.

Conditions for a bankruptcy order (*déclaration de faillite/aangifte van faillissement*) are that the debtor must be in a situation of cessation of payments (*cessation de paiements/staking van betaling*) and be unable to obtain further credit (*ébranlement de crédit/wiens krediet geschokt is*). Cessation of payments is generally considered as the inability of the debtor to pay its debts as they fall due. Such situation must be persistent and not merely temporary. In bankruptcy, the debtor loses all authority and decision rights concerning the management of the bankrupt business. The bankruptcy receiver (curateur/curator) becomes responsible for the operation of the business and implements the sale of the debtor's assets, the distribution of the sale proceeds to creditors and the liquidation of the debtor. The rights of creditors in the process are limited to being informed of the course of the bankruptcy proceedings on a regular basis by the receiver.

The receiver must decide whether or not to temporarily continue performance under ongoing contracts (*i.e.*, contracts existing before the bankruptcy order). The receiver may decide to continue the business of the debtor, provided the receiver obtains the authorization of the court and such continuation does not cause any prejudice to the creditors. However, two exceptions apply:

(a) the parties to an agreement may contractually agree that the occurrence of a bankruptcy constitutes an automatic early termination or acceleration event; and

(b) *intuitu personae* contracts (*i.e.*, contracts whereby the identity of the other party constitutes an essential element upon the signing of the contract) are automatically terminated as of the bankruptcy judgment, since the debtor is no longer responsible for the management of the company. Parties can agree to continue to perform under such contracts.

The bankruptcy receiver may elect not to perform the obligations of the bankrupt party which are still to be performed after the bankruptcy under any agreement validly entered into by the bankrupt party prior to the bankruptcy if such decision is necessary for the management and liquidation of the bankrupt estate. The counterparty to that agreement may make a claim for damages in the bankruptcy (and such claim will rank *pari passu* with claims of all other unsecured creditors) and/or seek a court order to have the relevant contract dissolved. The counterparty may not seek injunctive relief or require specific performance of the contract.

The enforcement rights of individual creditors are suspended upon the rendering of the court order opening bankruptcy proceedings, and after such order is made, only the bankruptcy trustee may proceed against the debtor and liquidate its assets.

For creditors with claims secured by movable assets, such suspension would normally be limited to the period required for the first report of verification of the claims. At the request of the bankruptcy receiver, the suspension period may be extended for up to one year from the bankruptcy judgment.

Such extension requires a specific order of the court, which can only be made if the further suspension will allow for a realization of the assets in the interest of all creditors but without prejudicing the secured creditors, and *provided* that those secured creditors have been given the opportunity to be heard by the court. However, such suspension does not apply to a pledge of financial instruments or cash held on account.

For creditors with claims secured by immovable assets, the intervention of the bankruptcy receiver is necessary to pursue the sale of the assets. The receiver will do so upon an order of the court, given either at its request or at the request of a mortgagee. A first-ranking mortgagee will generally be entitled to pursue the enforcement of its mortgage as soon as the first report of claims has been finalized; the court may suspend such enforcement for a period of not more than one year from the date of the bankruptcy if the suspension will allow for a realization of the assets without prejudicing the mortgagee, *provided* that the mortgagee has been given the opportunity to be heard by the court. As from the date of the bankruptcy judgment, no further interest accrues against the bankrupt debtor on its unsecured debt, or debts secured by a general privilege, like tax administration or social security.

The debts of the bankrupt estate generally will be ranked as to priority on the basis of complex rules. The following is a general overview of such rules:

(a) Estate debt: Costs and indebtedness incurred by the receiver during the bankruptcy proceedings, the so-called "estate debts," have a senior priority. In addition, if the receiver has contributed to the realization and enforcement of secured assets, such costs will be paid to the receiver in priority out of the proceeds of the realized assets before distributing the remainder to the secured creditors;

(b) Security interests: Creditors that hold a security interest have a priority right over the secured asset (whether by means of appropriation of the asset or on the proceeds upon realization);

(c) Privileges: Creditors may have a particular privilege on certain or all assets (*e.g.*, tax claims, claims for social security premiums, etc.). Privileges on specific assets rank before privileges on all assets of the debtor; and

(d) *Pari passu*: Once all estate debts and creditors having the benefit of security interests and privileges have been satisfied, the proceeds of the remaining assets will be distributed by the receiver among the unsecured creditors who rank *pari passu* (unless a creditor agreed to be subordinated).

Limitation on Enforcement

The grant of a guarantee or collateral by a Belgian company for the obligations of another group company must be for the corporate benefit of the granting company.

The question of corporate benefit is determined on a case-by-case basis and consideration has to be given to any direct and/or indirect benefit that the company would derive from the transaction. Two principles apply to such evaluation: (i) the risk taken by the company in issuing the guarantee must be proportional to the direct and/or indirect benefit derived from the transaction and (ii) the financial support granted by the company should not exceed its financial capabilities.

If the corporate benefit requirement is not met, the directors of the company may be held liable (i) by the company for negligence in the management of the company and (ii) by third parties in tort. Moreover, the guarantee or collateral could be declared null and void and, under certain circumstances, the creditor that benefits from the guarantee or collateral could be held liable for up to the amount of the guarantee. Alternatively, the guarantee or collateral could be reduced to an amount corresponding to the corporate benefit, or the creditor may be held liable for any guarantee amount in excess of such amount. These rules have been seldom tested under Belgian law, and there is only limited case law on this issue.

In order to enable Belgian subsidiaries to grant a guarantee and collateral to secure liabilities of a direct or indirect parent or sister company without the risk of violating Belgian rules on corporate benefit, it is standard market practice for indentures, credit agreements, guarantees and security documents to contain so-called "limitation language" in relation to subsidiaries incorporated or established in Belgium. Accordingly, the Purchase Agreement, the Indenture and the security documents will contain such limitation language and the security and the guarantees of the Belgian Guarantors will be so limited.

The Indenture will expressly provide, substantially to the effect that, the obligations of each Belgian Guarantor under the guarantee clause of the Indenture:

(a) shall not include any liability which would constitute unlawful financial assistance (as determined in article 329/430/629 of the Belgian Company Code); and

(b) shall be limited to a maximum aggregate amount equal to the greater of (a) 90% of such Belgian Guarantor's net assets (as defined in article 320/429/617 of the Belgian Company Code) as shown in its most recent audited annual financial statements as approved at its meeting of shareholders, and (b) the aggregate of the amounts, either directly or through one or more other companies of the INEOS Group, made available to such Belgian Guarantor and its subsidiaries (if any) using all or part of the proceeds of the Notes (increased by all interests, commissions, costs, fees, expenses and other sums accruing or payable in connection with such amount).

Mandates and third party rights

Due to the registration and other fees payable in connection with the grant of Belgian law mortgages in respect of real property, the amounts secured under these security documents will be capped. Additional amounts will be secured by way of a mortgage. Pursuant to such mandates, the respective Belgian Guarantors will grant an irrevocable power of attorney for the purposes of creating one or more mortgages over the relevant property on behalf of the Security Trustee.

The creation of mortgages pursuant to these mandates will not have any retroactive effect, *i.e.*, the security interest will be created as of the date of conversion of the mortgage mandate into a mortgage and will take rank at that date. In addition, if a mortgage mandate is converted into a mortgage during the "hardening period" (*verdachte periode/période suspecte*) as security interest for a pre-existing debt, such security interest will not be enforceable against the bankrupt estate (*niet tegenwerpelijk aan de boedel/inopposable à la masse*).

In addition, various rights may have been granted or may exist in favor of third parties on some parcels of immovable goods on which mortgages will be granted. These rights could either limit the rights of the Security Trustee under the mortgage or impose an obligation that the prior consent of the relevant third party is obtained before the mortgage is granted.

Trust

As there is no established concept of "trust" or "trustee" under the present Belgian legal system, the precise nature, effect and enforceability of the duties, rights and powers of a security agent as agent or trustee for noteholders in respect of security interests such as pledges are debated under Belgian law.

Hardening Periods and Fraudulent Transfer

In the event that bankruptcy proceedings are governed by Belgian law, certain business transactions may be declared ineffective against third parties if concluded or performed during a so-called "hardening period."

Under Belgian law the hardening or suspect period is the period between the date of cessation of payments by the bankrupt party until the date of the bankruptcy judgment. In principle, a debtor is deemed to have stopped paying its debts as of the date of the bankruptcy judgment. The court issuing the bankruptcy order may determine, based on serious and objective indications, that the cessation of payments occurred on an earlier date. Such earlier date may not be earlier than six months before the date of the bankruptcy judgment, except in cases where the bankruptcy order relates to a company that was dissolved more than six months before the date of the bankruptcy order in circumstances suggesting an intent to defraud its creditors, in which case the date of cessation of payments may be determined as being the date of such decision to dissolve the company. The period from the date of cessation of payments up to the declaration of bankruptcy is referred to as the "hardening period."

The business transactions entered into during the hardening period which will be declared ineffective against third parties include, among others, (i) transactions entered into on extremely beneficial terms, (ii) payments other than in money for debts due, and (iii) security provided for existing debt.

The Belgian receiver may request the court to declare payments of a Belgian Guarantor during the hardening period for debts due ineffective against third parties, *provided* that it can be proven that the creditor concerned was aware of the cessation of payment of the company.

Finally, regardless of any declaration by the commercial court of a hardening period, transactions of which it can be demonstrated that they have been entered into with fraudulent prejudice to third creditors may be declared ineffective against third parties.

Grace Periods

In addition enforcement rights may, like those of any other creditor, be subject to Article 1244 of the Belgian Civil Code.

Pursuant to the provisions of these articles, Belgian courts may, in any civil proceeding involving a debtor, defer or otherwise reasonably reschedule the payment dates of payment obligations. Belgian courts can also decide that the interest rate applicable be reduced if it is considered to exceed the normal rate applicable to similar debts.

Canada

INEOS Canada Investment Company and INEOS Canada Company are unlimited companies organized under the laws of the Province of Nova Scotia, Canada, INEOS Canada Preferred Holdings Limited is a limited company organized under the laws of the Province of Nova Scotia, Canada and INEOS Canada Partnership is a general partnership organized under the laws of the Province of Alberta, Canada (collectively, the "Canadian Guarantors" and individually, a "Canadian Guarantor"). Bankruptcy and insolvency matters are within the jurisdiction of the Federal government of Canada, but provincial laws can affect bankruptcy and insolvency proceedings including with respect to establishing priority of payments. In the event of the insolvency of any Canadian Guarantor, insolvency proceedings with respect to that Canadian Guarantor may be initiated in Canada. Canadian insolvency laws and applicable provincial legislation would govern those proceedings (subject to laws or protocols that may be applicable to international insolvencies if proceedings also occur in other jurisdictions in respect of those Guarantors, and those foreign proceedings are recognized by a Canadian Court). The insolvency laws of Canada and related provincial legislation may restrict, delay or limit certain of your rights and remedies, including in respect of priority of claims, the ability to obtain post-filing interest and other amounts and the duration of the insolvency proceedings, and hence may limit your ability to recover payments due on the Notes or to require the performance by the Canadian Guarantors of their obligations, their guarantees or the Security Documents to which they are party.

In Canada, there are two primary Federal statutes that govern insolvency and restructuring proceedings of corporate debtors. The Bankruptcy and Insolvency Act (the "BIA") contains provisions for the liquidation of insolvent companies (in a manner loosely akin, in substance, to U.S. Chapter 7 proceedings, although there are important distinctions) and for the restructuring of corporations (in a manner loosely akin, in substance, to U.S. Chapter 11 proceedings, although there are important distinctions). Similar to bankruptcy proceedings in the United States, a corporate debtor may be petitioned into bankruptcy (*i.e.*, involuntary proceedings) or file for bankruptcy or reorganization (*i.e.*, voluntary proceedings). In addition to the BIA, Canada also has the Companies' Creditors Arrangement Act ("CCAA"), which is a restructuring statute that operates, in practice, in a manner loosely akin to U.S. Chapter 11 proceedings (with important distinctions). CCAA proceedings are only available to insolvent debtor companies having debts in excess of CDN$5 million (or such other amount prescribed by regulation under the CCAA). Insolvency proceedings in Canada, whether under the BIA or the CCAA, are court-supervised.

Upon the bankruptcy of a debtor corporation, whether voluntarily or upon the application of a creditor, the BIA imposes an automatic stay of any action, execution or other proceeding by unsecured creditors in respect of the debtor, unless the creditors obtain leave of the applicable court to continue or commence the proceeding. In a liquidation (as opposed to restructuring) context, the stay of proceedings does not generally apply to secured creditors, who are free to exercise their rights of self-help or to otherwise realize on their security outside of the BIA. However, if requested by formal motion, the court may, in exceptional cases, stay the rights of a secured creditor for up to six months. Upon becoming bankrupt, whether voluntarily or involuntarily, all of a debtor's assets (subject to very limited exceptions) vest in the trustee in bankruptcy (subject to the rights of secured creditors with validly perfected security interests), at which point the debtor no longer has any ability to deal with those assets. The trustee typically proceeds to liquidate the assets and distribute the proceeds of the assets in accordance with the provisions of the BIA.

The BIA sets out the priority scheme for the payment of claims against a bankrupt debtor, which priority scheme takes precedence over any operative priority scheme outside of bankruptcy. Subject to certain statutory priority claims enumerated in the BIA (including, without limitation, "super priority" charge under the BIA against a debtor's current assets for certain employee wages as well as charges to serve certain unremitted source deductions and certain arrears in pension plan contributions) and true trust claims, secured creditors have the right to look first to the assets charged by their validly perfected security for payment. Thereafter, the BIA provides a list of preferred creditors who recover their debts in priority to the general body of unsecured creditors. Preferred claims are paid to the extent of their statutory priority, in order of their ranking, before any payments to lower ranking preferred creditors or general unsecured creditors. All other claims will be considered general unsecured claims and rank *pari passu*.

If there is any surplus after payment to the unsecured creditors, the balance will be used to pay interest from the date of the bankruptcy at 5% per annum on all unsecured claims proved in the bankruptcy according to their priority. Any remaining amount would then be available for shareholders.

The proceeds resulting from the realization of the estate of an insolvent Canadian Guarantor may not be sufficient to satisfy secured claims or your deficiency claims as unsecured creditors under the guarantees granted by each Canadian Guarantor after the applicable Canadian Guarantor's prior-ranking secured creditors and other claims that rank in priority to claims of holders of Notes have been satisfied.

Corporate restructurings in Canada may be implemented under either the BIA or the CCAA, with the latter being more commonly used by larger corporations. In either case, a broad stay of creditors' rights and enforcement proceedings is generally implemented (in the case of the BIA by a statutory stay, and in the case of the CCAA by a court-ordered stay). A CCAA stay generally applies to secured creditors, subject to certain limited exceptions. Under this court-ordered protection, the debtor will typically formulate a restructuring proposal or plan or conduct an orderly wind-down or a sale as a going concern. In the event of a restructuring proposal or plan, a double majority of the creditors (*i.e.*, a simple majority in number, having two-thirds in value of the claims in question) present and voting either in person or by proxy at a meeting of creditors for each designated class or claims must approve the proposal or plan, and the proposal or plan must then be sanctioned by the court. Secured creditors may be included in such a proposal or plan and thereby have their secured claims compromised, reduced or deducted (in which case they may have a right to vote in a separate class) or may be dealt with outside of the proposal or plan. In the event of a sale, proceeds are generally distributed in accordance with the priority established by statute and the court (which may differ in some respects from those in a bankruptcy under the BIA). The court may also authorize the creation of priority charges ranking ahead of other creditors in both CCAA and BIA restructurings (for example, for interim or debtor-in-possession financings, directors' and officers' indemnification and administration costs). A sale under BIA restructuring or CCAA out of the ordinary course requires approval by the court with notice to the secured creditors likely to be affected by the proposed sale. The Court may approve such sales absent a vote by the creditors in certain circumstances.

The manner in which secured and unsecured creditors of the Canadian Guarantors would be treated in a restructuring proposal or plan would generally be proposed by the Canadian Guarantors, subject to (i) the rights of creditors affected by the proposal or plan to vote on such proposal or plan and (ii) approval by the court.

Where a debtor deals with his property in a manner that prejudices its creditors (particularly where such debtor is or becomes thereafter insolvent), such transactions by the debtor may be subject to challenge by creditors, bankruptcy trustees or other interested parties, and the scrutiny of the court as fradulent preference, transfer-at-undervalue or other reviewable transaction. Under Canadian Federal and provincial law, there are a number of statutory means to challenge or void such transactions. Where a transaction subject to review is held to be contrary to Canadian law (including because it preferred one creditor over others or resulted in a loss of value to the debtor estate), the transaction is subject to being voided and a wide variety of possible remedies may be imposed. Should the Canadian Guarantors become insolvent within applicable time periods, the granting of the guarantees, and the grant of security in connection therewith, could be subject to challenge and the guarantees and security potentially avoided, and any amounts obtained under the guarantee or security in support thereof that is avoided would have to be repaid. Should the holders of the Notes be repaid or otherwise recover from the Canadian Guarantors at a time when such Guarantors are insolvent, or if the Canadian Guarantors thereafter become insolvent within applicable time periods, the repayment or recovery may be subject to challenge.

Secured creditors may also enforce their security by, among other things, applying to the court for the appointment of a receiver or a receiver/manager. The conduct of the receivership will be governed by provincial law and the relevant provisions of the BIA and will be under the supervision of the Court.

England and Wales

The Issuer of the Notes and a number of the Guarantors are companies incorporated under the laws of England and Wales (the "English Obligors"). Therefore, any main insolvency proceedings in respect of the English Obligors would likely be commenced in England. However, pursuant to the Recast EU Insolvency Regulation, where an English company conducts business in another member state of the European Union, the jurisdiction of the English courts may be limited if the company's "centre of main interests" is found to be in another Member State (please see "—European Union").

It remains to be seen what impact the vote by the United Kingdom on June 23, 2016 to leave the EU will have on the regulatory environment in the EU and the United Kingdom, and on the applicability of EU law in the United Kingdom. Following the United Kingdom's withdrawal from the European Union, absent alternative arrangements, the United Kingdom would cease to benefit from the reciprocal framework set out in the Recast EU Insolvency Regulation. In a "no deal" Brexit scenario, the Insolvency (Amendment) (EU Exit) Regulations 2018 are expected to come into force, and would make significant amendments to the Recast EU Insolvency Regulation (as would from that point be applicable in the United Kingdom), intended to address this lack of reciprocity by removing provisions that grant automatic recognition to proceedings started elsewhere in the EU and amending the circumstances in which the English courts have jurisdiction to open proceedings (including providing, broadly, that the English courts may have jurisdiction to open proceedings if a company's center of main interests ("COMI") is in the United Kingdom, or if the company's COMI is in a member state of the EU and it has an establishment in the United Kingdom).

Similarly, the U.K. Cross-Border Insolvency Regulations 2006, which implement the UNCITRAL Model Law on Cross-Border Insolvency in the United Kingdom, provide that a foreign (*i.e.*, non-European) court may have jurisdiction where any English company has the centre of its main interests in such foreign jurisdiction or where it has an "establishment" (being a place of operations in such foreign jurisdiction, where it carries out non-transitory economic activities with human means and assets or services). Therefore, the centre of main interests of a company is determined on a factual basis taking into account where the company regularly conducts its affairs and where its creditors perceive a company's centre of main interests to be. As the Issuer of the Notes and a number of the Guarantors are companies incorporated in England and Wales, there is a presumption that their "centre or main interests" is situated in England and Wales.

English insolvency law may not be as favorable to the interests of investors as the laws of the United States or other jurisdictions with which investors are familiar. In the event that the Issuer or any one or more of the Guarantors experiences financial difficulty, it is not possible to predict with certainty the outcome of insolvency or similar proceedings.

The Issuer's obligations under the Notes will be guaranteed by the Guarantors and secured by security interests over the Collateral. English insolvency laws and other limitations could limit the enforceability of a guarantee against a Guarantor and the enforceability of security interests over the Collateral.

The following is a brief description of certain aspects of English insolvency law relating to certain limitations on the guarantees or the security interests over the Collateral.

The application of these laws could adversely affect investors, their ability to enforce their rights under the guarantees and/or the Collateral securing the Notes and therefore may limit any amounts that investors may receive in an insolvency of an English Obligor.

Fixed and Floating Charges

There are a number of ways in which fixed charge security has an advantage over floating charge security: (a) an administrator appointed to a charging company can convert floating charge assets to cash and use such cash, or use cash subject to a floating charge, to meet administration expenses (which can include the costs of continuing to operate the charging company's business) while in administration in priority to the claims of the floating charge holder; (b) a fixed charge, even if created after the date of a floating charge, may have priority as against the floating charge over the charged assets; (c) general costs and expenses (including the liquidator's remuneration) properly incurred in a winding-up are payable out of the company's assets (including the assets that are the subject of the floating charge) in priority to floating charge claims; (d) until the floating charge security crystallizes, a company is entitled to deal with assets that are subject to floating charge security in the ordinary course of business, meaning that such assets can be effectively disposed of by the charging company so as to give a third party good title to the assets free of the floating charge and so as to give rise to the risk of security being granted over such assets in priority to the floating charge security; (e) floating charge security is subject to certain challenges under English insolvency law (please see "—Grant of Floating Charge"); and (f) floating charge security is subject to the claims of preferential creditors (such as occupational pension scheme contributions and salaries owed to employees) and to ring-fencing (please see "—Priority on insolvency").

Under English law there is a possibility that a court could recharacterize fixed security interests purported to be created by a security document as floating charges and the description given to security interests by the parties is not determinative. Whether security interests labeled as fixed will be upheld as fixed security interests rather than floating security interest will depend, among other things, on whether the chargee has the requisite degree of control over the relevant chargor's ability to deal in the relevant assets and the proceeds thereof and, if so, whether such control is exercised by the chargee in practice. Where the chargor is free to deal with the secured assets without the consent of the chargee prior to crystallization, the court is likely to hold that the security interest in question constitutes a floating charge, notwithstanding that it may be described as a fixed charge in the security documents.

Administration and Floating Charges

The relevant English insolvency statutes empower English courts to make an administration order in respect of an English company in certain circumstances. An administration order can be made if the court is satisfied that the relevant company is or is likely to become "unable to pay its debts" and that the administration order is reasonably likely to achieve the purpose of administration. A company is unable to pay its debts if it is insolvent on a "cash flow" basis (unable to pay its debts as they fall due) or if it is insolvent on a "balance sheet" basis (the value of the company's assets is less than the amount of its liabilities, taking into account its contingent and prospective liabilities). Such insolvency is presumed if, among other matters, the company fails either to satisfy a creditor's statutory demand for a debt exceeding £750 or to satisfy in full or in part a judgment debt (or similar court order). An administrator can also be appointed out of court by the company, its directors or the holder of a qualifying floating charge and different procedures apply according to the identity of the appointor.

The purpose of an administration is comprised of three parts that must be looked at successively: rescuing the company as a going concern or, if that is not reasonably practicable, achieving a better result for the company's creditors as a whole than would be likely upon immediate liquidation or, if neither of those objectives is reasonably practicable, and the interests of the creditors as a whole are not unnecessarily harmed thereby, realising property to make a distribution to one or more secured or preferential creditors. The order of priority which applies to any distribution to creditors is set out below (see "Priority on insolvency").

During the administration, in general no proceedings or other legal process may be commenced or continued against the debtor, or security enforced over the company's property, except with leave of the court or the consent of the administrator. Accordingly, if any of the Issuers, the Guarantors or the providers of Collateral were to enter into administration, the Notes, the guarantees and the Collateral, as applicable, could not be enforced while the relevant company was in administration without the permission of the court or consent of the administrator. There can be no assurance that the Security Trustee, would obtain such permission of the court or consent of the administrator.

Certain creditors of a company in administration may be able to realize their security over that company's property notwithstanding the statutory moratorium. This is by virtue of the disapplication of the moratorium in relation to a "security financial collateral agreement" (generally, a charge over cash or financial instruments such as shares, bonds or tradable capital market debt instruments) under the Financial Collateral Arrangements (No. 2) Regulations 2003. If an English Obligor were to enter administration, it is possible that, to the extent that it is not a financial collateral agreement, the security granted by it or the guarantee granted by it may not be enforced while it is in administration, without the leave of the court or consent of the administrator. In addition, other than in limited circumstances, no administrative receiver can be appointed by a secured creditor in preference to an administrator, and any already appointed must resign if requested to do so by the administrator. Where the company is already in administration no other receiver may be appointed and an administrative receiver may only be appointed with the leave of a court or consent of the administrator.

In addition, an administrator is given wide powers to conduct the business and, subject to certain requirements under the U.K. Insolvency Act 1986, dispose of the property of a company in administration (including property subject to a floating charge).

In order to empower the Security Trustee to appoint an administrative receiver or an administrator to the company, the floating charge granted by the relevant English Obligor must constitute a "qualifying floating charge" for purposes of English insolvency law and, in the case of the ability to appoint an administrative receiver, the qualifying floating charge must, unless the security document pre-dates September 15, 2003, fall within one of the exceptions in the U.K. Insolvency Act 1986 (as amended) to the prohibition on the appointment of administrative receivers. In order to constitute a qualifying floating charge, the floating charge must be created by an instrument which (a) states that the relevant statutory provision applies to it, (b) purports to empower the holder to appoint an administrator of the company or (c) purports to empower the holder to appoint an administrative receiver within the meaning given by Section 29(2) of the U.K. Insolvency Act 1986 (as amended). The Security Trustee will be the holder of a qualifying floating charge if such floating charge security, together (if necessary) with the fixed charge security interests, relate to the whole or substantially the whole of the relevant English Obligor's property and at least one such security interest is a qualifying floating charge. Whether the assets that are subject to the floating charges and other security will constitute substantially the whole of the relevant English Obligor's assets at the time that the floating charges are enforced will be a question of fact at that time. The most relevant exception to the prohibition on the appointment of an administrative receiver is the exception relating to "capital market arrangements" (as defined in the U.K. Insolvency Act 1986, as amended), which will apply if the Issuer of the Notes creates a debt of at least £50,000,000 for the relevant company during the life of the arrangement and the arrangement involves the issue of a "capital markets investment" (which is defined in the U.K. Insolvency Act 1986, as amended, but is generally a rated, listed or traded debt instrument).

Liquidation

Liquidation is a termination procedure applicable to companies incorporated under the laws of England and Wales. There are three ways an English company may be placed into liquidation or "wound up," being (1) Members' Voluntary Liquidation (which is a procedure available to solvent companies only), (2) Creditors' Voluntary Liquidation, and (3) Compulsory Winding-Up.

On the voluntary liquidation of an English company, there is no automatic statutory moratorium in place preventing the holders of security interests from taking steps to enforce those security interests (although the liquidator or any creditor or shareholder of the company in liquidation may apply to court for a stay) . Where a company incorporated under the laws of England and Wales is placed into liquidation, a creditor holding a valid mortgage, charge or other security interest has four options: (1) to realize the security, apply the proceeds towards discharge of the secured debt, and prove in the liquidation for any balance; (2) to retain the security and not prove in the liquidation; (3) to value the security and prove for any shortfall between that value and the value of the debt; and (4) to surrender the security and prove for the full amount of the debt.

The effect of a compulsory winding-up differs in a number of respects from that of a voluntary liquidation. In a compulsory winding-up, under Section 127 of the U.K. Insolvency Act 1986, any disposition of the relevant company's property made after the commencement of the winding-up is, unless sanctioned by the court, void. Subject to certain exceptions, when an order is made for the winding-up of a company by the court, it is deemed to have commenced from the time of the presentation of the winding-up petition. Once a winding-up order is made by the court, a stay of all proceedings against the company will be imposed. No legal action may be continued or commenced against the company without permission of the court.

Foreign Currency

Under English insolvency law, where creditors are asked to submit formal proofs of claim for their debts, the office-holder will convert all foreign currency denominated proofs of debt into sterling at a single rate for each currency determined by the office-holder by reference to the exchange rates prevailing on the relevant date. If a creditor considers the rate to be unreasonable, they may apply to the court. Accordingly, in the event that an English Obligor goes into liquidation or administration, holders of the Notes may be subject to exchange rate risk between the date that such English Obligor went into liquidation or administration and receipt of any amounts to which such holders of the Notes may become entitled.

Priority on insolvency

With the exception of the Prescribed Part (as defined below), distributions generally cannot be made to a class of creditors until the claims of the creditors in a prior ranking class have been paid in full. Unless creditors have agreed otherwise, distributions are made on a *pari passu* basis, that is, the assets are distributed in proportion to the debts due to each creditor within a class.

The general priority on insolvency is as follows (in descending order of priority):

- First ranking: holders of fixed charge security and creditors with a proprietary interest in specific assets in the possession (but not full legal and beneficial ownership) of the debtor but only to the extent of the realisations from those secured assets or with respect to the asset in which they have a proprietary interest;
- Second ranking: expenses of the insolvent estate (there are statutory provisions setting out the order of priority in which expenses are paid);
- Third ranking: these are divided into ordinary preferential creditors and secondary preferential creditors with ordinary preferential creditors being paid in priority to secondary preferential creditors. Ordinary preferential debts include (but are not limited to) debts owed by the insolvent company in relation to: (a) contributions to occupational and state pension schemes; (b) wages and salaries of employees for work done in the four months before the insolvency date, up to a maximum of £800 per person; (c) holiday pay due to any employee whose contract has been terminated, whether the termination takes place before or after the date of insolvency; and (d) bank and building deposits eligible for compensation under the Financial Services Compensation Scheme up to the statutory limit. As between one another, ordinary preferential debts rank equally. Secondary preferential debts are the balance of insured bank and building deposits above the statutory limit of amounts insured under the Financial Services Compensation Scheme;
- Fourth ranking: holders of floating charge security, according to the priority of their security.

This would include any floating charge that was stated to be a fixed charge in the document that created it but which, on a proper interpretation, was rendered a floating charge.

However, before distributing asset realisations to the holders of floating charges, the Prescribed Part (as defined below) must, subject to certain exceptions, be set aside for distribution to unsecured creditors;

- Fifth ranking:
    - firstly, provable debts of unsecured creditors and any secured creditor to the extent of any unsecured shortfall, in each case including accrued and unpaid interest on those debts up to the date of commencement of the relevant insolvency proceedings. To pay the secured creditors any unsecured shortfall, the insolvency officeholder can only use realisations from unsecured assets, as secured creditors are not entitled to any distribution from the Prescribed Part unless the Prescribed Part is sufficient to pay out all unsecured creditors;
    - secondly, interest on the company's debts (at the higher of the applicable contractual rate and the official rate) in respect of any period after the commencement of liquidation, or after the commencement of any administration which had been converted into a distributing administration. However, in the case of interest accruing on amounts due under the Notes or the guarantees, such interest due to the holders of the Notes may, if there are sufficient realisations from the secured assets, be discharged out of such security recoveries; and

- thirdly, non-provable liabilities, being liabilities that do not fall within any of the categories above and therefore are only recovered in the (unusual) event that all categories above are fully paid. This however does not include "currency conversion" claims following the English Supreme Court Lehman Brothers ruling dated 17 May 2017; and

- Sixth ranking: shareholders. If after the repayment of all unsecured creditors in full, any remaining funds exist, these will be distributed to the shareholders of the insolvent company.

Subject to the above order of priority, subordinated creditors are ranked according to the terms of the subordination language in the relevant documentation.

An insolvency practitioner of the company (*e.g.*, administrator, administrative receiver or liquidator) will generally be required to ring-fence a certain percentage of the proceeds of enforcement of floating charge security for the benefit of unsecured creditors (after making full provision for preferential creditors and expenses out of floating charge realisations) (the "Prescribed Part"). Under current law, this ring-fence applies to 50% of the first £10,000 of floating charge realisations and 20% of the remainder over £10,000, with a maximum aggregate cap of £600,000. The Prescribed Part must be made available to unsecured creditors unless the cost of doing so would be disproportionate to the resulting benefit to creditors.

Challenges to Guarantees and Security

There are circumstances under English insolvency law in which the granting by an English company of security and guarantees can be challenged. In most cases this will only arise if the company is placed into administration or liquidation within a specified period (as set out in more detail below) of the granting of the guarantee or security. Therefore, if during the specified period an administrator or liquidator is appointed to an English company, he may challenge the validity of the guarantee or security given by such company.

The following potential grounds for challenge may apply to guarantees and charges:

Transaction at an Undervalue

Under English insolvency law, a liquidator or administrator of an English company could apply to the court for an order to set aside the creation of a security interest or a guarantee if such liquidator or administrator believes that the creation of such security interest or guarantee constituted a transaction at an undervalue. There will only be a transaction at an undervalue, if at the time of the transaction or as a result of the transaction, the English company was or becomes unable to pay its debts (as defined in the U.K. Insolvency Act 1986, as amended). The transaction can be challenged if the English company enters into liquidation or administration proceedings within a period of two years (in the case of a transaction entered into between the relevant company and a person who is "connected" with that company, within the meaning of section 249 of the U.K. Insolvency Act 1986 (a "Connected Person") or six months (in the case of a transaction entered into between the relevant company and any person who is not a Connected Person) from the date the English company grants the security interest or the guarantee. A transaction might be subject to being set aside as a transaction at an undervalue if the company makes a gift to a person, if the company receives no consideration or if the company receives consideration of significantly less value, in money or money's worth, than the consideration given by such company. However, a court generally will not intervene if it is satisfied that the company entered into the transaction in good faith and for the purpose of carrying on its business and that, at the time it did so, there were reasonable grounds for believing the transaction would benefit it. If the court determines that the transaction was a transaction at an undervalue, the court can make such order as it thinks fit to restore the position to what it would have been in if the transaction had not been entered into. In any proceedings, it is for the administrator or liquidator to demonstrate that the English company was insolvent unless a beneficiary of the transaction was a Connected Person, in which case there is a presumption of insolvency and the Connected Person must demonstrate the solvency of the English company in such proceedings. The Issuer cannot assure holders of the Notes that in the event of insolvency, the granting of the security or the giving of the guarantees by companies incorporated under the laws of England and Wales would not be challenged by a liquidator or administrator or that a court would support the Group's analysis that (in any event) the security and guarantees were entered into in good faith for the purposes described above.

In general terms, in such circumstances the Courts of England and Wales have the power to make void such transactions, or restore the position to what it would have been if the company had not entered into the transaction. If a court voided any grant of security or giving of any guarantee as a result of a transaction at an undervalue or preference, or held it unenforceable for any other reason, investors would cease to have any security over the grantor or a claim against the Guarantor giving such guarantee.

Preference

Under English insolvency law, a liquidator or administrator of an English company could apply to the court for an order to set aside the creation of a security interest or a guarantee if such liquidator or administrator believes that the creation of such security interest or such guarantee constituted a preference. There will only be a preference if, at the time of the transaction or as a result of the transaction, the English company was or becomes unable to pay its debts (as defined in the U.K. Insolvency Act 1986 (as amended)). The transaction can be challenged if the English company enters into liquidation or administration proceedings within a period of six months (if the beneficiary of the security or the guarantee is not a Connected Person) or two years (if the beneficiary is a Connected Person) from the date the English company grants the security interest or the guarantee. A transaction will constitute a factual preference if it has the effect of putting a creditor of the English company (or a surety or guarantor for any of the company's debts or liabilities) in a better position (in the event of the company going into insolvent liquidation) than such creditor, guarantor or surety would otherwise have been in had that transaction not been entered into. If the court determines that the transaction constituted such a preference, the court has very wide powers for restoring the position to what it would have been if that preference had not been given, which could include reducing payments under the Notes and the guarantees (although there is protection for a third party who enters into one of the transactions in good faith and without notice). However, for the court to do so, it must be shown that in deciding to give the factual preference the English company was influenced by a desire to produce the preferential effect. In any proceedings, it is for the administrator or liquidator to demonstrate that the English company was insolvent at the relevant time and that the company was influenced by a desire to produce the preferential effect, unless the beneficiary of the transaction was a Connected Person, in which case there is a presumption that the company was influenced by a desire to produce the preferential effect and the Connected Person must demonstrate in such proceedings that there was no such influence.

Transaction Defrauding Creditors

Under English insolvency law, where it can be shown that a transaction was at an undervalue and was made for the purposes of putting assets beyond the reach of a person who is making, or may make, a claim against a company, or of otherwise prejudicing the interests of a person in relation to the claim, which that person is making or may make, the transaction may be set aside by the court as a transaction defrauding creditors. This provision may be used by any person who claims to be a "victim" of the transaction and, subject to certain conditions, the U.K. Financial Conduct Authority and the U.K. Pensions Regulator, and is not therefore limited to liquidators or administrators. There is no time limit in the English insolvency legislation within which the challenge must be made (subject to the normal statutory limitations period) and the relevant company does not need to be insolvent at the time of the transaction. If the court determines that the transaction was a transaction defrauding creditors, the court can make such orders as it thinks fit to restore the position to what it would have been if the transaction had not been entered into and to protect the interests of the victims of the transaction.

Extortionate Credit Transaction

An administrator or a liquidator can apply to court to set aside an extortionate credit transaction. The court can review extortionate credit transactions entered into by an English Obligor up to three years before the day on which the English Obligor entered into administration or went into liquidation. A transaction is "extortionate" if, having regard to the risk accepted by the person providing the credit, the terms of it are (or were) such as to require grossly exorbitant payments to be made (whether unconditionally or in certain contingencies) in respect of the provision of the credit or it otherwise grossly contravened ordinary principles of fair dealing.

Grant of Floating Charge

Under English insolvency law, if an English Obligor is unable to pay its debts at the time of (or as a result of) granting the floating charge, and the floating charge was granted within the specified period referred to below, then such floating charge is invalid except to the extent of the value of the money paid to, or goods or services supplied to, or any discharge or reduction of any debt of, the relevant English Obligor at the same time as or after the creation of the floating charge. The requirement for the English Obligor to be insolvent at the time of (or as a result of) granting the floating charge does not apply where the floating charge is granted to a Connected Person and within the specified period referred to below. If the floating charge is granted to a Connected Person, and the floating charge was granted within the specified period referred to below, then the floating charge is invalid except to the extent of the value of the money paid to, or goods or services supplied to, or any discharge or reduction of any debt of, the relevant English Obligor at the same time as or after the creation of the floating charge, whether the relevant English Obligor is solvent or insolvent. The granting of the charge can be challenged only if the relevant English Obligor enters into liquidation or administration proceedings within a period of one year (if the beneficiary is not a Connected Person) or two years (if the beneficiary is a Connected Person) from the date the relevant English Obligor grants the floating charge. However, if the Floating Charge qualifies as a "security financial collateral agreement" under the Financial Collateral Arrangements (No. 2) Regulations 2003, the floating charge will not be subject to challenge as described in this paragraph. An administrator, or a liquidator (as applicable), does not need to apply to court for an order declaring that a floating charge is invalid. Any floating charge created during the relevant time period is automatically invalid except to the extent of the value of the money paid to, or goods or services supplied to, or any discharge or reduction of any debt of, the relevant English company at the same time as or after the creation of the floating charge (plus certain interest), whether the relevant English company is solvent or insolvent at the time of grant.

Ranking of Security Interests

Under English law, there are certain common law rules and equitable principles which will determine the ranking of two or more competing security interests over the same assets. A number of different factors are taken into account, such as the nature of the security interest, the order of creation, compliance with perfection requirements and the order of giving notice. English law security interests are to be granted to secure obligations under the Notes (which will also extend to obligations under the Senior Secured Term Loans, the 2025 Senior Secured Notes, the Schuldschein Loan, certain hedging liabilities and certain cash management liabilities); these security interests will be granted over the same assets in respect of which security interests have already been granted in favor of the lenders under the Senior Secured Term Loans. Accordingly, without the Intercreditor Deed, these new security interests would be likely to rank after the existing security interests. However, the Intercreditor Deed provides that as a contractual matter as among Senior Secured Creditors (as defined in the Intercreditor Deed) the Notes will be secured on a *pari passu* basis with the Senior Secured Term Loans, the 2025 Senior Secured Notes, the Schuldschein Loan, certain hedging liabilities and certain cash management liabilities and will be treated as such for the purposes of the application of proceeds from the enforcement of such assets.

Disclaimer

An English liquidator has the power to disclaim onerous property, which is any unprofitable contract or other property of the company that cannot be sold, readily sold or may give rise to a liability to pay money or perform any other onerous act. A contract may be unprofitable if it gives rise to prospective liabilities and imposes continuing financial obligations on a company that may be detrimental to creditors. However, this power does not apply to an executed contract, nor can it disturb accrued rights and liabilities.

Limitation on enforcement

The grant of a guarantee or Collateral by any of the English Obligors in respect of the obligations of another group company must satisfy certain legal requirements. More specifically, such a transaction must be allowed by the respective company's memorandum and articles of association. To the extent that these documents do not allow such an action, there is the risk that the grant of the guarantee and the subsequent security can be found to be void and the respective creditor's rights unenforceable. Some comfort may be obtained for third parties if they are dealing with an English Obligor in good faith; however, the relevant legislation is not without difficulties in its interpretation. Further, corporate benefit must be established for each English Obligor in question by virtue of entering into the proposed transaction. Section 172 of the Companies Act 2006 provides that a director must act in the way that he considers, in good faith, would be most likely to promote the success of the English Obligor for the benefit of its members as a whole. If the directors enter into a transaction where there is no or insufficient commercial benefit, they may be found as abusing their powers as directors and such a transaction may be vulnerable to being set aside by a court.

Security over shares

Security over shares granted by an English Obligor or over shares of an English Obligor are, under English law, equitable charges, not legal charges. An equitable charge arises where a chargor creates an encumbrance over the property in favour of the chargee but the chargor retains legal title to the shares. Remedies in relation to equitable charges may be subject to equitable considerations or are otherwise at the discretion of the court.

Security over bank accounts

With respect to any security over bank accounts (each an "Account Charge") granted by an English Obligor, the banks with which some of those accounts are held (each an "Account Bank") may hold a right at any time (at least prior to them being notified of a crystallisation event under the Account Charge) to exercise the rights of netting or set-off to which they are entitled under their cash pooling or other arrangements with that guarantor. As a result, and if the security granted over those accounts is merely a floating (rather than fixed) charge, the collateral constituted by those bank accounts will be subject to the relevant Account Bank's rights to exercise netting and set-off with respect to the bank accounts charged under the relevant Account Charge. Once the floating charge has crystallised and converted into a fixed charge (as it would on enforcement or the occurrence of certain insolvency events with respect to the relevant English Obligor) and the Account Bank has been formally notified of that fact, the collateral will no longer be subject to the relevant Account Bank's netting and set-off rights.

Company voluntary arrangements

Pursuant to Part I of the U.K. Insolvency Act 1986, a company (by its directors or its administrator or liquidator as applicable) may propose a company voluntary arrangement to the company's shareholders and creditors which entails a compromise, or other arrangement, between the company and its creditors, typically a rescheduling or reducing of the company's debts. Provided that the proposal is approved by the requisite majority of creditors by way of a decision procedure, it will bind all unsecured creditors who were entitled to vote on the proposal. A company voluntary arrangement cannot affect the right of a secured creditor to enforce its security, or of a preferential creditor to be paid in priority to non-preferential creditors (see "Priority on insolvency"), except with the consent of the secured creditor or the preferential creditor (as applicable).

In order for the company voluntary arrangement proposal to be passed, it must be approved by at least 75% (by value) of the company's creditors who respond in the decision procedure, and no more than 50% (by value) of unconnected creditors may vote against it. Secured debt cannot be voted in a company voluntary arrangement. However, a secured creditor may vote to the extent that it is undersecured. A secured creditor who proves in the company voluntary arrangement for the whole of its debt may be deemed to have given up its security.

Scheme of arrangement

Although it is not an insolvency proceeding, pursuant to Part 26 of the Companies Act 2006, the English courts have jurisdiction to sanction a scheme of arrangement that effects a compromise of a company's liabilities between a company and its creditors (or any class of its creditors). An English Obligor may be able to pursue a scheme in respect of its financial liabilities. In addition, a foreign Guarantor which is liable to be wound up under the U.K. Insolvency Act 1986 and has a "sufficient connection" to England and Wales could also pursue a scheme. In practice, a foreign company is likely to satisfy the first limb of this test and the second limb has been found to be satisfied where, amongst other things, the company's COMI is in England, the company's finance documents are English law-governed, or the company's finance documents have been amended in accordance with their terms to be governed by English law. Ultimately, each case will be considered on its particular facts and circumstances so previous cases will not necessarily determine whether or not any of the grounds of the second limb are satisfied in the present case.

Before the court considers the sanction of a scheme of arrangement at a hearing where the fairness and reasonableness of the scheme will be considered, affected creditors will vote on the proposed compromise or arrangement in respect of their claims in a single class or in a number of classes, depending on the rights of such creditors that will be affected by the proposed scheme and any new rights that such creditors are given under the scheme. Such compromise can be proposed by the company or its creditors. If a majority in number representing 75% or more by value of those creditors present and voting at the meeting(s) of each class of creditors vote in favour of the proposed scheme, irrespective of the terms and approved thresholds contained in the finance documents, then that scheme will (subject to the sanction of the court) be binding on all affected creditors, including those affected creditors who did not participate in the vote and those who voted against the scheme. The scheme then needs to be sanctioned by the court at a sanction hearing where the court will review the fairness of the scheme and consider whether it is reasonable. The court has the discretion as to whether to sanction the scheme as approved, make an order conditional upon modifications being made or reject the scheme.

France

Security over shares held by INEOS Investments International Limited in certain of its French subsidiaries shall be pledged under French law. Therefore, an insolvency event as further described below (including any insolvency proceedings resulting therefrom) affecting such French subsidiaries may significantly reduce the value of such security interests for their beneficiaries. In the event of an insolvency event affecting such French subsidiaries, insolvency proceedings may be initiated in France and would then be governed by French law (subject to the Recast EU Insolvency Regulation (see "Limitations on Validity and Enforceability of the Guarantees and the Security Interests—European Union")).

Trust

The security interests governed by French law are stated to be granted in favour of Barclays Bank PLC as trustee and security agent on behalf of the specified secured parties. There is no established concept of "trust" or "trustee" under the present French legal system. A concept of "trust" has been recognized for tax purposes by article 792-0 bis of the *Code Général des Impôts* and the French Supreme Court (*Cour de cassation*) has held, in a decision dated September 13, 2011 rendered in the context of safeguard proceedings in France, that a trustee validly appointed under a trust governed by the laws of the State of New York could validly be regarded as a creditor in safeguard proceedings opening in France. However, France has not ratified the 1985 The Hague Convention on the law applicable to trusts and on their recognition, so that the concept of "trust" has not been generally recognized under French law and the precise nature, effect and enforceability of the duties, rights and powers of a security agent as agent or trustee for noteholders in respect of security interests such as pledges are unclear under French law.

Parallel Debt

Under French law, certain "accessory" security interests such as pledges require that the pledgee and the creditor be the same person. Such security interests cannot be held on behalf of the creditors by third parties who do not hold the secured claim, unless they act as trustees (*fiduciaires*) under Article 2011 of the French Civil Code or as security agents (*agent des sûretés*) under Article 2488-6 of the French Civil Code, which is not the case here for the security documents governed by French law. The holders of interests in the Notes from time to time will not be parties to the security documents. In order to permit the holders of the Notes to benefit indirectly from a secured claim, the Indenture will provide for the creation of a "parallel debt" governed by New York law in favor of the security trustee. Pursuant to such parallel debt, the security trustee becomes the holder of a claim equal to each amount payable by a relevant obligor under the Indenture. The pledges governed by French law will directly secure the parallel debt, and will not directly secure the obligations under the Notes and the other indebtedness secured by the Collateral.

Although the concept of parallel debt was held to be not incompatible with the French law concept of international public policy in a French Supreme Court (*Cour de cassation*) decision dated September 13, 2011 in the context of safeguard proceedings opened in France, this decision cannot be considered as a general recognition of the enforceability in France of the rights of a security trustee benefiting from a parallel debt obligation and no assurance can be given that such a structure will in all circumstances be upheld by the French courts. Indeed, it should be noted that the legal issue addressed by this decision is limited to the proof of claims. The French court was not asked to generally uphold French security interests securing a parallel debt. Case law on this matter is scarce and based on a case-by-case analysis.

There is no certainty that the parallel debt construct will eliminate or mitigate the risk of unenforceability under French law. To the extent that the security interests in the Collateral created under the parallel debt construct are successfully challenged by other parties, holders of the Notes will not receive any proceeds from an enforcement of the security interests in the Collateral, which in turn could materially adversely affect the recovery under the Collateral. In addition, the holders of the Notes will bear the risks associated with the possible insolvency or bankruptcy of the security trustee.

Assumptions as to the enforceability of eighth ranking financial securities account pledges over the shares of INEOS Technologies France SAS and ninth ranking financial securities account pledges over the shares of INEOS France SAS

Each of the pledges over the shares of INEOS Technologies France SAS and INEOS France SAS, governed by French law, is a pledge over the relevant securities account (*nantissement de compte de titres financiers*) in which the shares of INEOS Technologies France SAS and INEOS France SAS are respectively registered. In France, no lien searches are available for security interests which are not registered, such as pledges over securities accounts (*nantissements de comptes de titres financiers*). As a result, no assurance can be given on the priority of the pledges over the relevant securities account in which the shares of INEOS Technologies France SAS and INEOS France SAS are respectively registered.

Moreover, a pledge over securities accounts is deemed, under French law, to remove the securities accounts from the possession of the grantor, thereby preventing such grantor from granting lower ranking pledges thereon. The eighth ranking financial securities account pledge over the shares of INEOS Technologies France SAS and ninth ranking financial securities account pledge over the shares of INEOS France SAS will therefore provide that the possession of the securities accounts is transferred to the custody of an agreed third party as "*tiers convenus*" (*entiercement*), that the first, second, third, fourth, fifth, sixth and seventh ranking secured parties and (with respect to the ninth ranking financial securities account pledge over the shares of INEOS France SAS) the eighth ranking secured party have consented to the creation of, respectively, the eighth ranking financial securities account pledge over the shares of INEOS Technologies France SAS and ninth ranking financial securities account pledge over the shares of INEOS France SAS and that the first ranking secured parties have accepted their appointment as *tiers convenus* and hold the pledged securities as custodian for the benefit of the first, second, third, fourth, fifth, sixth and seventh ranking secured parties and (with respect to the ninth ranking financial securities account pledge over the shares of INEOS France SAS) the eighth ranking secured parties. This structure has not been tested before the French courts and no assurances can be given that such eighth and ninth ranking pledges would be upheld if tested. Therefore, there is a risk that the eighth ranking financial securities account pledge over the securities account in which the shares of INEOS Technologies France SAS are registered and the ninth ranking financial securities account pledge over the securities account in which the shares of INEOS France SAS are registered may be held void or unenforceable by a French court, which in turn could materially adversely affect the recovery under the Notes in case of an event of default.

Germany

Insolvency

Certain Guarantors of the Notes are organized under the laws of Germany ("German Guarantors"). Consequently, in the event of an insolvency of any such Guarantor, subject to the information presented in "—European Union," insolvency proceedings may be initiated in Germany. Such proceedings would then be governed by German law. However, pursuant to the Recast EU Insolvency Regulation, where a German company conducts business in more than one member state of the European Union, the jurisdiction of the German courts may be limited if the company's "centre of main interests" is found to be in a member state other than Germany (please see "—European Union"). There are a number of factors that are taken into account to ascertain the "centre of main interests," which should correspond to the place where the company conducts the administration of its interests on a regular basis and is therefore ascertainable by third parties. The point at which this issue falls to be determined is at the time that the relevant insolvency proceedings are opened. The insolvency laws of Germany and, in particular, the provisions of the German Insolvency Act (*Insolvenzordnung*) may be less favorable to your interests as creditors than the insolvency law of other jurisdictions including in respect of the priority of creditors, the ability to obtain post-petition interest and the duration of the insolvency proceedings.

Under German law, insolvency proceedings can be initiated either by the debtor or by a creditor in the event of over-indebtedness (*Überschuldung*) or illiquidity (*Zahlungsunfähigkeit*) of the debtor. The debtor is over-indebted if its liabilities exceed the value of its assets (based on their liquidation value) unless its continuation as a going concern is predominantly likely (*überwiegend wahrscheinlich*). The debtor is illiquid if it is unable to pay its debts as and when they fall due. In addition, the debtor can file for insolvency proceedings if it is imminently at risk to be unable to pay its debts as and when they fall due (*drohende Zahlungsunfähigkeit*). The insolvency proceedings are court controlled, and upon receipt of the insolvency petition, the insolvency court may take preliminary protective measures to secure the property of the debtor during the preliminary proceedings. The insolvency court may prohibit or suspend any measures taken to enforce individual claims against the debtor's assets during these preliminary proceedings and may appoint a preliminary insolvency administrator (*vorläufiger Insolvenzverwalter*) who, depending on the court decision, may have the right to manage and dispose of the business and assets of the debtor. During preliminary insolvency proceedings, the insolvency court generally must set up a "preliminary creditors' committee" (*vorläufiger Gläubigerausschuss*) if the debtor has satisfied at least two of the following three requirements in its previous financial year: a balance sheet total in excess of €6,000,000 (after deducting an equity shortfall if the debtor is over indebted), revenues of at least €12,000,000 and/or fifty or more employees on average. The requirements apply to the respective entity without taking into account the assets of other group companies. If these requirements are not met, a preliminary creditors' committee can be established at the request of the preliminary insolvency administrator (*vorläufiger Insolvenzverwalter*) or a creditor. The preliminary creditors' committee will be able to participate in certain important insolvency court decisions. It will have, for example, the power to influence the following: the selection of a preliminary insolvency administrator or an insolvency administrator (*vorläufiger Insolvenzverwalter* and *Insolvenzverwalter*), orders for "debtor-in-possession" proceedings (*Anordnung der Eigenverwaltung*), and appointments of preliminary trustees (*Sachwalter*). The court opens the insolvency proceedings (*Insolvenzeröffnung*) if certain formal requirements are met and if there are sufficient assets to cover at least the costs of the proceedings. If the assets of the debtor are not expected to be sufficient, the insolvency court will only open main insolvency proceedings if third parties, for instance creditors, advance the costs themselves. In the absence of such advancement, the petition for opening of insolvency proceedings will usually be refused for insufficiency of assets (*Abweisung mangels Masse*). If insolvency proceedings are opened, the court appoints an insolvency administrator (*Insolvenzverwalter*) unless debtor-in-possession (*Eigenverwaltung*) is ordered. In the absence of debtor-in-possession proceedings, the right to administer the debtor's business affairs and to dispose of the assets of the debtor passes to the insolvency administrator. The insolvency administrator has full power to manage the business and dispose of the debtor's assets, whereas the debtor is no longer entitled to manage the business or dispose of its assets. The insolvency administrator may raise new financial indebtedness and incur other liabilities to continue the debtor's operations or may deem it necessary to wind down the company, and satisfaction of these liabilities as preferential debts of the estate (*Masseschulden*) will be preferred to any insolvency liabilities created by the debtor (including secured debt).

For the holders of the Notes, the most important consequences of such opening of formal insolvency proceedings that are subject to the German insolvency regime (against a German Guarantor or against any other Guarantor having its center of main interest in Germany and where the German insolvency courts have jurisdiction in accordance with the Recast EU Insolvency Regulation or the German Insolvency Act) would be the following:

- the right to administer and dispose of assets of the relevant insolvent debtor would generally pass to the insolvency administrator (*Insolvenzverwalter*) as sole representative of the insolvency estate, unless debtor-in-possession proceedings (*Eigenverwaltung*) are ordered;

- if the court does not order debtor-in-possession proceedings (*Eigenverwaltung*), disposals effected by management of the insolvent debtor after the opening of formal insolvency proceedings are null and void by operation of law;
- if, during the final month preceding the date of filing for insolvency proceedings, a creditor in the insolvency proceedings acquires through execution (*e.g.*, attachment) a security interest in part of the insolvent debtor's property that would normally form part of the insolvency estate, such security becomes null and void by operation of law upon the opening of formal insolvency proceedings; and
- claims against the insolvent debtor may generally only be pursued in accordance with the rules set forth in the German Insolvency Code (*Insolvenzordnung*).

Under German insolvency law, termination rights, automatic termination events or "escape clauses" entitling one party to terminate an agreement, or resulting in an automatic termination of an agreement, upon the opening of insolvency proceedings in respect of the other party, the filing for insolvency or the occurrence of reasons justifying the opening of insolvency proceedings (*insolvenzbezogene Kündigungsrechte or Lösungsklauseln*) may be invalid if they frustrate the election right of the insolvency administrator whether or not to perform the contract unless they reflect termination rights applicable under statutory law. This may also relate to agreements that are not governed by German law in the event insolvency proceedings are opened in Germany against the counterparty. All creditors, whether secured or unsecured, unless they have a right to segregate an asset from the insolvency estate (*Aussonderungsrecht*)—as opposed to a right of preferential satisfaction from realisation proceeds (*Absonderungsrecht*)—who wish to assert claims against the debtor need to participate in the insolvency proceedings. Any individual enforcement action (*Zwangsvollstreckung*) brought against the debtor by any of its creditors other than creditors with preferred claims (*Absonderung der Masseverbindlichkeiten*) is subject to an automatic stay once insolvency proceedings have been opened. Secured creditors are generally not entitled to enforce their security interests outside the insolvency proceedings. However, secured creditors have certain preferential rights. The enforcement proceeds minus certain contributory charges for (i) assessing the value of the secured assets and (ii) realizing the secured assets are paid to the creditor holding a security interest in the relevant collateral up to an amount equal to its secured claims. Remaining amounts are distributed among the unsecured creditors. If the German Guarantors grant security over their assets to other creditors than the holders of the Notes, such security may result in a preferred treatment of creditors secured by such security. The proceeds resulting from such collateral may not be sufficient to satisfy the holders of the Notes under the guarantees granted by the German Guarantors after such secured creditors have been satisfied. A different distribution of enforcement proceeds can be proposed in an insolvency plan (*Insolvenzplan*) that can be submitted by the debtor or the insolvency administrator and requires the consent of the debtor as well as the consent of each class of creditors in accordance with specific majority rules. Under German insolvency laws, it is possible to implement a debt-to-equity-swap through an insolvency plan. However, it will not be possible to force a creditor into a debt-to-equity conversion if it does not consent to such debt-to-equity-swap.

If a company faces imminent illiquidity and/or over-indebtedness it may also file for preliminary "debtor-in-possession" proceedings. In such a case and upon request of the debtor, the court will prohibit enforcement measures (other than with respect to immoveable assets) and may implement other preliminary measures to protect the debtor from creditor enforcement actions for up to three months. During such period, the debtor shall, together with its creditors and a preliminary trustee (*vorläufiger Sachwalter*), prepare an insolvency plan which ideally will be implemented in formal "debtor-in-possession" proceedings (*Eigenverwaltung*) after formal insolvency proceedings have been opened.

Under German insolvency law, there is no consolidation of the assets and liabilities of a group of companies in the event of insolvency. In case of a group of companies, each entity, from an insolvency law point of view, has to be dealt with separately (*i.e.*, there is generally no group insolvency concept under German insolvency law). As a consequence, there is, in particular, no pooling of claims among the respective entities of a group, but rather claims of and vis-à-vis each entity have to be dealt with separately. On April 21, 2018, the Bill to Facilitate the Handling of Group Insolvencies (*Gesetz zur Erleichterung der Bewältigung von Konzerninsolvenzen*) entered into force. While the bill does not abolish the principle of separate insolvency proceedings in relation to each group entity, it provides for the following four key amendments of the German Insolvency Code in order to facilitate an efficient administration of group insolvencies: (i) a single court may be competent for each group entity's insolvency proceeding; (ii) the appointment of a single person as insolvency administrator for all group companies is facilitated; (iii) certain coordination obligations are imposed on insolvency courts, insolvency administrators and creditors' committees; and (iv) certain parties may apply for "coordination proceedings" (*Koordinationsverfahren*) and the appointment of a "coordination insolvency administrator" (*Koordinationsverwalter*) with the ability to propose a "coordination plan" (*Koordinationsplan*).

Limitation on Enforcement

The Guarantors of the Notes that are organized under German law are incorporated or established in the form of a GmbH (*Gesellschaft mit beschränkter Haftung*, Limited Liability Company), or (in the case of one of the Guarantors) as a GmbH & Co. KG, a limited partnership with a GmbH (Limited Liability Company) as its sole general partner. Consequently, the grant of Collateral by these Guarantors is subject to certain provisions of the German Limited Liability Company Act (*Gesetz betreffend die Gesellschaften mit beschränkter Haftung*, the "*GmbHG*").

Sections 30 and 31 of the GmbHG ("Sections 30 and 31") prohibit a GmbH from disbursing its assets to its shareholders to the extent that the amount of the GmbH's net assets determined in accordance with the provisions of the German Commercial Code (*Handelsgesetzbuch, the HGB*) (*i.e.*, assets minus liabilities and liability reserves) is or would fall below the amount of its stated share capital (*Begründung einer Unterbilanz*) or would increase any already existing capital impairment (*Vertiefung einer Unterbilanz*). Guarantees, share pledges and any other collateral granted by a GmbH in order to guarantee or secure liabilities of a direct or indirect parent or sister company are considered disbursements under Sections 30 and 31. Therefore, in order to enable German subsidiaries to grant guarantees and collateral to secure liabilities of a direct or indirect parent or sister company without the risk of violating Sections 30 and 31, it is standard market practice for credit agreements, indentures, guarantees and security documents to contain so-called "limitation language" in relation to subsidiaries in the legal form of a GmbH or a limited partnership with a GmbH as its sole general partner incorporated or established in Germany. Pursuant to such limitation language, the secured parties agree to enforce the collateral (or retain the proceeds of an enforcement of the collateral) and the beneficiaries of the guarantees agree to enforce the guarantees against the German subsidiary only to the extent that such enforcement does not result in the subsidiary's net assets falling below its stated share capital. Accordingly, the documentation in relation to the guarantees and the security interests, to the extent they concern the German Guarantors, contains such limitation language and such guarantees and security interests are limited in the manner described. This could lead to a situation in which the respective guarantee or security granted by a GmbH cannot be enforced at all. Details of the application of Sections 30 and 31 (or capital maintenance rules) are subject to evolving case law. Future court rulings may further limit the access of a shareholder to assets of its subsidiaries constituted in the form of a GmbH or a limited partnership with a GmbH as its sole general partner incorporated or established in Germany, which can negatively affect the ability of the German Guarantors to make payments under the guarantees, of the beneficiaries of the guarantees to enforce the guarantees or of the secured parties to enforce the collateral. Furthermore, it cannot be ruled out that the case law of the German Federal Supreme Court (*Bundesgerichtshof*) regarding so-called destructive interference (*existenzvernichtender Eingriff*) (*i.e.*, a situation where a shareholder deprives a German limited liability company of the liquidity necessary for it to meet its own payment obligations) may be applied by courts with respect to the enforcement of a guarantee or security interest granted by a German (direct or indirect) subsidiary or sister company of the Issuer. In such case, the amount of proceeds to be realized in an enforcement process may be reduced, even to zero.

German capital maintenance rules are subject to ongoing court decisions. We cannot assure you that future court rulings may not further limit the access of shareholders to assets of its subsidiaries constituted in the form of a limited liability company or of a limited partnership, the general partner or general partners of which is or are a limited liability company, which can negatively affect the ability of the Issuer to make payment on the Notes, of the German Subsidiaries to make payments on the guarantees, of the secured parties to enforce the collateral (or retain the proceeds of an enforcement of the collateral) or of the beneficiaries of the guarantees to enforce the guarantees.

In addition to the limitations resulting from the capital maintenance rules, the guarantees and the security documents entered into by the German Guarantors will contain additional provisions which may limit the enforcement in the event the enforcement would result in an illiquidity of the relevant German Guarantors.

Parallel Debt

Under German law, certain "accessory" security interests such as pledges (*Pfandrechte*) require that the pledgee and the creditor be the same person. Such security interests cannot be held for the benefit of a third party by a pledgee who does not itself hold the secured claim. The holders of interests in the Notes from time to time will not be party to the security documents. In order to permit the holders of the Notes from time to time to have a secured claim the Intercreditor Deed provides for an abstract acknowledgment of indebtedness in favour of the Security Trustee ("parallel debt"). Pursuant to the parallel debt, the Security Trustee becomes the holder of a claim equal to each amount payable by an obligor under the Notes. The pledges governed by German law will directly secure the parallel debt. The parallel debt concept is widely used in the German market, but has not been tested under German law, and there is no certainty that it will eliminate or mitigate the risk of unenforceability posed by German law.

Ranking of Security Interests

Under German law, the ranking of several security interests over the same assets is determined, as a matter of law, by the timing of the perfection of the several security interests, and security interests perfected at an earlier point in time will have a higher rank than security interests granted at a later point in time over the same assets (*Prioritätsgrundsatz*). The German law security interests granted to secure the Notes are expressed to cover the same assets as the security interests already granted to secure the obligations under the 2025 Senior Secured Notes, the Senior Secured Term Loans, the Schuldschein Loan, certain hedging liabilities and certain cash management liabilities. Whereas the German law "non-accessory" security interests granted to secure the obligations under the Notes will be granted by way of amendments to the security purpose under the existing security interests granted originally to secure the obligations under the 2025 Senior Secured Notes, the Senior Secured Term Loans, the Schuldschein Loan, certain hedging liabilities and certain cash management liabilities, with the effect that the obligations under the Notes will be included in the security purpose and accordingly also be secured, the German law "accessory" security interests to secure the obligations under the Notes will have to be granted as junior ranking security interests, which, as a matter of law will rank below the corresponding accessory security interests granted to secure the obligations under the 2025 Senior Secured Notes, the Senior Secured Term Loans, the Schuldschein Loan, certain hedging liabilities and certain cash management liabilities. Although the Intercreditor Deed provides that, as amongst the parties, security interests to secure obligations under the Notes, 2025 Senior Secured Notes, the Senior Secured Term Loans, the Schuldschein Loan, certain hedging liabilities and certain cash management liabilities shall rank *pari passu*, these provisions under the Intercreditor Deed are only of an obligatory nature and cannot enhance the junior rank of the accessory security interests (*i.e.*, the pledges over accounts, shares and partnership interests) granted to secure the obligations under the Notes. In the event of insolvency proceedings opened under German law against a security grantor of such junior ranking accessory security interests, the preferential rights of the secured parties under such junior ranking security interests would be satisfied after the preferential rights of the secured parties under the senior ranking accessory security interests over the same assets, regardless of the provisions of the Intercreditor Deed.

Under German law, it is unclear whether all of the security interests in the Collateral give the Security Trustee a right to prevent other creditors of the German Guarantors from foreclosing into and realizing the Collateral. Some courts have held that certain types of security interests only give their holders priority (according to their rank) in the distribution of any proceeds of such realization. Accordingly, the Security Trustee and the noteholders may not be able to avoid foreclosure by unsecured creditors into the Collateral, even if they consider such foreclosure untimely.

Hardening Periods and Fraudulent Transfer

In the event that insolvency proceedings with respect to a German Guarantor, which would most likely be based on and governed by the insolvency laws of Germany, the security interests granted as well as the guarantee provided by that entity could be subject to potential challenges by an insolvency administrator (*Insolvenzverwalter*) under the rules of avoidance as set out in the German Insolvency Code (*Insolvenzordnung*).

Based on these rules, an insolvency administrator may challenge transactions that are deemed detrimental to insolvency creditors and were effected prior to the commencement of insolvency proceedings. Such transactions can include the payment of any amounts to the holders of the Notes as well as granting them any security interest. The administrator's right to challenge transactions can, depending on the circumstances, extend to transactions during the 10-year period prior to the filing of the petition for commencement of insolvency proceedings. In the event such a transaction is successfully avoided, the holders of the Notes would be under an obligation to repay the amounts received or to waive the guarantee or security interest.

In particular, an act (*Rechtshandlung*) or a transaction (*Rechtsgeschäft*) (which term includes the provision of security or the repayment of debt) may be avoided in the following cases:

- any act granting an insolvency creditor, or enabling an insolvency creditor to obtain, security or satisfaction (i) if such act was performed during the last three months prior to the filing of the petition for the commencement of the insolvency proceedings and the debtor was illiquid (*zahlungsunfähig*) at the time when such act was taken and the creditor had knowledge of such illiquidity (or of the circumstances that unmistakably suggest that the debtor was illiquid) at such time, or (ii) if such act was performed after the filing of the petition for the commencement of the insolvency proceedings and the creditor had knowledge of the illiquidity of the debtor or the filing of such petition (or of circumstances unmistakably suggesting such illiquidity or filing);
- any act granting an insolvency creditor, or enabling an insolvency creditor to obtain, security or satisfaction to which such creditor was not entitled or which was granted or obtained in a form or at a time to which or at which such creditor was not entitled to such security or satisfaction if (i) such act was performed during the last month prior to the filing of the petition for the commencement of the insolvency proceedings or after such filing, (ii) such act was performed during the second or third month prior to the filing of the petition and

the debtor was illiquid at such time, or (iii) such act was performed during the second or third month prior to the filing of the petition for the commencement of the insolvency proceedings and the creditor knew at the time such act was taken that such act was detrimental to the other insolvency creditors (or had knowledge of circumstances that unmistakably suggest such detrimental effects);

- any transaction by the debtor that is directly detrimental to the insolvency creditors or by which the debtor loses a right or the ability to enforce a right or by which a proprietary claim against a debtor is obtained or becomes enforceable, if (i) it was entered into during the three months prior to the filing of the petition of the commencement of the insolvency proceedings, the debtor was illiquid at the time of such transaction and the counterparty to such transaction had knowledge of the illiquidity at such time or (ii) it was entered into after such filing and the counterparty to such transaction had knowledge of either the debtor's illiquidity or such filing at the time of the transaction;
- any act by the debtor without (adequate) consideration (for example, whereby a debtor grants security for a third-party debt), which might be regarded as having been granted gratuitously (*unentgeltlich*), if it was effected in the four years prior to the filing of a petition for the commencement of insolvency proceedings against the debtor;
- any act performed by the debtor in the 10 years prior to the filing of the petition for the commencement of insolvency proceedings with the intent (known to the other party at the time) to prejudice its creditors; if the relevant act consisted of a settlement of an obligation or the grant of the security to the counterparty, the relevant period is four years instead of 10 years;
- any contract entered into by the debtor in the last two years prior to the filing of the petition for the opening of insolvency proceedings with a closely related party (which term includes in particular the management, board members and significant shareholders of the debtor, certain persons with comparable access to information about the debtor, and certain of their or its affiliates, management and relatives) and which is directly detrimental to the insolvency creditors, unless the closely related party was unaware of the debtor's intent to prejudice its creditors;
- any act that provides security or satisfaction for a shareholder loan made to the debtor or a similar claim if (i) in the case of the provision of security, the act occurred during the 10 years prior to the filing of the petition for the commencement of the insolvency proceedings or after the filing of such petition, or (ii) in the case of satisfaction, the act occurred during the last year prior to the filing of the petition for the commencement of the insolvency proceedings or after the filing of such petition; and
- any act whereby the debtor grants satisfaction for a loan claim or an economically equivalent claim to a third party if (i) the transaction was effected in the last year prior to the filing of a petition for commencement of insolvency proceedings or thereafter and (ii) a shareholder of the debtor had granted security or was liable as a guarantor (*Bürge*) (in which case the shareholder has to compensate the debtor for the amounts paid (subject to further conditions)).

In this context, "knowledge" is generally deemed to exist if the other party is aware of the facts from which the conclusion must be drawn that the debtor was unable to pay its debts generally as they fell due, that a petition for the opening of insolvency proceedings had been filed, or that the act was detrimental to, or intended to prejudice, the insolvency creditors, as the case may be. A person is deemed to have knowledge of the debtor's intention to prejudice the insolvency creditors if it was aware of the debtor's actual illiquidity (*Zahlungsunfähigkeit*) or impending illiquidity (*drohende*

Zahlungsunfähigkeit) and that the transaction prejudiced the debtor's creditors, *provided* that, if the relevant act by the debtor consisted of a settlement of an obligation or the grant of a security which was due to be paid or granted, as the case may be, then the knowledge of the debtor's intention to prejudice the insolvency creditors is only presumed if the other party was aware of the actual illiquidity (*Zahlungsunfähigkeit*) of the debtor and of the fact that the transaction prejudiced the debtor's creditors. With respect to a "related party," there is a general statutory presumption that such party had "knowledge."

If any of the guarantees given or any security interest granted by any of the German Guarantors were avoided or held unenforceable for any reason, you would cease to have any claim in respect thereof. Any amounts received from a transaction that has been avoided would have to be repaid to the insolvent estate and you would have a claim solely under the Notes and the remaining security, if any.

Furthermore, even in the absence of an insolvency proceeding, a third-party creditor who has obtained an enforcement order (*Vollstreckungstitel*) but has failed to obtain satisfaction on its enforceable claims by a levy of execution, under certain circumstances, has the right to avoid certain transactions, such as the payment of debt and the granting of security pursuant to the German Code on Avoidance (*Anfechtungsgesetz*). The conditions for avoidance under the German Code on Avoidance differ to a certain extent from the above-described rules under the German Insolvency Act and the avoidance periods are calculated from the date when a creditor exercises its rights of avoidance in the courts. In addition, under German law, a creditor who provided additional, or extended existing, funding to a debtor or obtained security from a debtor may be liable in tort if such creditor was aware of the debtor's (impending) insolvency or of circumstances indicating such debtor's (impending) insolvency at the time such funding was provided or extended or such security was granted. The German Federal Supreme Court (*Bundesgerichtshof*) held that this could be the case if, for example, the creditor was to act with the intention of detrimentally influencing the position of the other creditors of the debtor in violation of the legal principle of bonos mores (*Sittenwidrigkeit*). Such intention could be present if the beneficiary of the transaction was aware of any circumstances indicating that the debtor as the grantor of the guarantee or security was close to collapse (*Zusammenbruch*), or had reason to enquire further with respect thereto.

Jersey

Insolvency

There are two principal regimes for corporate insolvency in Jersey: *désastre* and winding-up. The principal type of insolvency procedure available to creditors under Jersey law is the application for an Act of the Royal Court of Jersey under the Bankruptcy (*Désastre*) (Jersey) Law 1990, as amended (the "Jersey Bankruptcy Law") declaring the property of a debtor to be "*en désastre*" (a "declaration"). On a declaration of *désastre*, title and possession of the property of the debtor vest automatically in the Viscount, an official of the Royal Court (the "Viscount"). With effect from the date of declaration, a creditor has no other remedy against the property or person of the debtor, and may not commence or continue any legal proceedings to recover the debt.

Additionally, the shareholders of a Jersey company (but not its creditors) can instigate a winding-up of an insolvent company, which is known as a "creditors' winding up" pursuant to Chapter 4 of Part 21 of the Companies (Jersey) Law 1991, as amended (the "Jersey Companies Law"). On a creditors' winding up, a liquidator is appointed, usually by the creditors. The liquidator will stand in the shoes of the directors and administer the winding up, gather assets, settle claims and distribute assets as appropriate. After the commencement of the winding up, no action can be taken or continued against the company except with the leave of court. The corporate state and capacity of the company continues until the end of the winding up procedure, when the company is dissolved. The Jersey

Companies Law requires a creditor of a company (subject to appeal) to be bound by an arrangement entered into by the company and its creditors immediately before or in the course of its winding up if (*inter alia*) three quarters in number and value of the creditors acceded to the arrangement.

Transactions at an Undervalue

Under Article 17 of the Jersey Bankruptcy Law and Article 176 of the Jersey Companies Law, the court may, on the application of the Jersey Viscount (in the case of a company whose property has been declared "en désastre") or liquidator (in the case of a creditors' winding up), a procedure which is instigated by shareholders not creditors, set aside a transaction (including any guarantee or security interest) entered into by a company with any person (the "other party") at an undervalue. There is a five-year look-back period from the date of commencement of the winding up or declaration of "désastre" during which transactions are susceptible to examination pursuant to this rule (the "relevant time"). The Jersey Bankruptcy Law and Jersey Companies Law contain detailed provisions, including (without limitation) those that define what constitutes a transaction at an undervalue, the operation of the relevant time and the effect of entering into such a transaction with a person connected with the company or with an associate of the company.

Preference

Under Article 17A of the Jersey Bankruptcy Law and Article 176A of the Jersey Companies Law, the court may, on the application of the Viscount (in the case of a company whose property has been declared "*en désastre*") or liquidator (in the case of a creditors' winding up), set aside a preference (including any guarantee or security interest) given by the company to any person (the "other party"). There is a 12-month look-back period from the date of commencement of the winding up or declaration of "*désastre*" during which transactions are susceptible to examination pursuant to this rule (the "relevant time"). The Jersey Bankruptcy Law and Jersey Companies Law contain detailed provisions, including (without limitation) those that define what constitutes a preference, the operation of the relevant time and the effect of entering into a preference with a person connected with the company or with an associate of the company.

Extortionate Credit Transactions

Under Article 17C of the Jersey Bankruptcy Law and Article 179 of the Jersey Companies Law, the court may, on the application of the Viscount (in the case of a company whose property has been declared "en désastre") or liquidator (in the case of a creditors' winding up), set aside a transaction providing credit to the debtor company which is or was extortionate. There is a three-year look-back period from the date of commencement of the winding up or declaration of "désastre" during which transactions are susceptible to examination pursuant to this rule (the "relevant time"). The Jersey Bankruptcy Law and Jersey Companies Law contain detailed provisions, including (without limitation) those that define what constitutes a transaction which is extortionate.

Disclaimer of Onerous Property

Under Article 15 of the Jersey Bankruptcy Law, the Viscount may within six months following the date of the declaration of désastre and under Article 171 of the Jersey Companies Law, a liquidator may within six months following the commencement of a creditors' winding up, disclaim any onerous property of the company. "Onerous property" is defined to include any moveable property, a contract lease or other immoveable property if it is situated outside of Jersey that is unsaleable or not readily saleable or is such that it might give rise to a liability to pay money or perform any other onerous act, and includes an unprofitable contract.

A disclaimer operates to determine, as of the date it is made, the "rights, interests and liabilities of the company in or in respect of the property disclaimed" but "does not, except so far as is necessary for the purpose of releasing the company from liability, affect the rights or liabilities of any other person." A person sustaining loss or damage as a result of a disclaimer is deemed to be a creditor of the company to the extent of the loss or damage and shall have standing as a creditor in the désastre or creditors' winding up. The Jersey Bankruptcy Law and Jersey Companies Law contain detailed provisions, including (without limitation) in relation to the power to disclaim onerous property.

Fraudulent Dispositions

In addition to the Jersey statutory provisions referred to above, there are certain principles of Jersey customary law (for example, a Pauline action) under which dispositions of assets with the intention of defeating creditors' claims may be set aside.

Fixed and Floating Charges

Under the laws of Jersey, a company incorporated in Jersey is deemed to have capacity to grant security governed by foreign law over property situated outside the Island of Jersey, however:

- to the extent that any fixed charge, floating charge or other security interest governed by non-Jersey law (a "Foreign Law Security") is expressed to apply as regards any Jersey situated intangible moveable property, such Foreign Law Security should not be relied upon to create valid and enforceable security in such Jersey situated intangible moveable property; and
- to the extent that any Foreign Law Security is expressed to apply as regards Jersey situated immovable property or Jersey situated tangible property, such Foreign Law Security would not be valid and enforceable as regards such Jersey situated immovable property or Jersey situated tangible property.

Administrators, Receivers and Statutory and Non-statutory Requests for Assistance

The Insolvency Act 1986 (either as originally enacted or as amended, including by the provisions of the Enterprise Act 2002) does not apply in Jersey and receivers, administrative receivers and administrators are not part of the laws of Jersey. Accordingly, the Courts of Jersey may not recognize the powers of an administrator, administrative receiver or other receiver appointed in respect of Jersey situs assets.

However, under Article 49(1) of the Jersey Bankruptcy Law, the Jersey court may assist the courts of prescribed countries and territories in all matters relating to the insolvency of any person to the extent that the Jersey court thinks fit. These prescribed jurisdictions include the United Kingdom. Further, in doing so, the Royal Court may have regard to the UNCITRAL model law, even though the model law has not been (and is unlikely to be) implemented as a separate law in Jersey.

If the request comes from a non-prescribed country, then common law and principles of comity will be considered by the Royal Court by virtue of its inherent jurisdiction. If insolvency proceedings are afoot in another jurisdiction in relation to the company, the nature and extent of the cooperation from Jersey is likely to depend on the nature of the requesting country's insolvency regime. If the requesting country adheres to principles of territoriality, as opposed to universality, and, for instance, ring-fences assets for local creditors, full cooperation is highly unlikely. If, however, the jurisdiction applies similar fundamental principles to those applied in Jersey, the Royal Court's approach is more likely to be similar to the position where prescribed countries are involved.

In the case of both statutory and non-statutory requests for assistance, it should not be assumed that the UNCITRAL provisions will automatically be followed. That is a matter for the discretion of the Royal Court. It would also be wrong to assume for European countries that the position will be in accordance with Recast EU Insolvency Regulation. Jersey does not form part of the European Community for the purposes of implementation of its directions. Accordingly, the Recast EU Insolvency Regulation does not apply as a matter of Jersey domestic law and the automatic test of centre of main interests does not apply as a result.

Luxembourg

Insolvency

Under Luxembourg law, the following types of proceedings (altogether referred to as insolvency proceedings) may be opened against an entity having its center of main interests in Luxembourg or an establishment within the meaning of Recast EU Insolvency Regulation:

- bankruptcy proceedings ("*faillite*"), the opening of which may be requested by the company or by any of its creditors. Following such a request, the courts having jurisdiction may open bankruptcy proceedings if the Luxembourg company: (i) is in a state of cessation of payments ("*cessation des paiements*") and (ii) has lost its commercial creditworthiness ("*ébranlement de crédit*"). If a court finds that these conditions are satisfied, it may also open bankruptcy proceedings, ex officio (absent a request made by the company or a creditor). The main effect of such proceedings is the suspension of all measures of enforcement against the company, except, subject to certain limited exceptions, for enforcement by secured creditors and the payment of the secured creditors in accordance with their rank upon realization of the assets;
- controlled management proceedings ("*gestion contrôlée*"), the opening of which may only be requested by the company and not by its creditors and under which a court may order provisional suspension of payments, including a stay of enforcement of claims by secured creditors; and
- composition proceedings ("*concordat préventif de la faillite*"), which may be requested only by the company (subject to obtaining the consent of the majority of its creditors) and not by its creditors themselves. The court's decision to admit a company to the composition proceedings triggers a provisional stay on enforcement of claims by creditors.

In addition, your ability to receive payment on the relevant Notes may be affected by a decision of a court to grant a stay on payments ("*sursis de paiement*") or to put the relevant Luxembourg company into judicial liquidation ("*liquidation judiciaire*"). Judicial liquidation proceedings may be opened at the request of the public prosecutor against companies pursuing an activity violating criminal laws or that are in serious breach or violation of the commercial code or of the laws governing commercial companies. The management of such liquidation proceedings will generally follow the rules of bankruptcy proceedings.

Preferential debts

Liability of a Luxembourg Guarantor in respect of the Notes will, in the event of a liquidation of the entity following bankruptcy or judicial liquidation proceedings, only rank after the cost of liquidation (including any debt incurred for the purpose of such liquidation) and those debts of the relevant entity that are entitled to priority under Luxembourg law. Preferential debts under Luxembourg law include, among others:

- certain amounts owed to the Luxembourg Revenue;
- value-added tax and other taxes and duties owed to the Luxembourg Customs and Excise;
- social security contributions; and

- remuneration owed to employees.

General limitations on enforcement resulting from insolvency proceedings

During such insolvency proceedings, all enforcement measures by unsecured creditors are suspended. The ability of certain secured creditors to enforce their security interest may also be limited, in particular in the event of controlled management proceedings providing expressly that the rights of secured creditors are frozen until a final decision has been taken by the court as to the petition for controlled management, and may be affected thereafter by a reorganization order given by the court. A reorganization order requires the prior approval by more than 50% of the creditors representing more than 50% of the relevant Luxembourg company's liabilities in order to take effect. Furthermore, you should note that declarations of default and subsequent acceleration (such as acceleration upon the occurrence of an event of default) may not be enforceable during controlled management proceedings.

Luxembourg insolvency laws may also affect transactions entered into or payments made by the relevant Luxembourg company during the period before bankruptcy, the so-called "suspect period" (période suspecte) which is a maximum of six months (and 10 days, depending on the transaction in question) preceding the judgment declaring bankruptcy, except that in certain specific situations the court may set the start of the suspect period at an earlier date; if the bankruptcy judgment was preceded by another insolvency bankruptcy judgment under Luxembourg law, the court may set the maximum up to six months prior to the filing for such controlled management. In particular:

- pursuant to article 445 of the Luxembourg Code of Commerce (*code de commerce*), specified transactions (such as, in particular, the granting of a security interest for antecedent debts; the payment of debts which have not fallen due, whether payment is made in cash or by way of assignment, sale, set-off or by any other means; the payment of debts which have fallen due by any means other than in cash or by bill of exchange; the sale of assets without consideration or with substantially inadequate consideration) entered into during the suspect period (or the 10 days preceding it) must be set aside or declared null and void, if so requested by the insolvency receiver;

- pursuant to article 21 (2) of the Luxembourg Act dated August 5, 2005 concerning financial collateral arrangements (the "Luxembourg Collateral Law"), notwithstanding the suspect period as referred to in articles 445 and 446 of the Luxembourg Code of Commerce, where a financial collateral arrangement has been entered into after the opening of liquidation proceedings or the coming into force of reorganization measures or the entry into force of such measures, such arrangement is valid and binding against third parties, administrators, insolvency receivers, liquidators and other similar organs if the collateral taker proves that it was unaware of the fact that such proceedings had been opened or that such measures had been taken or that it could not reasonably be aware of it;

- pursuant to article 446 of the Luxembourg Code of Commerce, payments made for matured debts as well as other transactions concluded for consideration during the suspect period are subject to cancellation by the court upon proceedings instituted by the insolvency receiver if they were concluded with the knowledge of the bankrupt party's cessation of payments; and

- in the case of bankruptcy, article 448 of the Luxembourg Code of Commerce and article 1167 of the Civil Code (*action paulienne*) gives the insolvency receiver (acting on behalf of the creditors) the right to challenge any fraudulent payments and transactions, including the granting of security with an intent to defraud, made prior to the bankruptcy, without any time limit.

In principle, a bankruptcy order rendered by a Luxembourg court does not result in automatic termination of contracts except for intuitu personae contracts, that is, contracts for which the identity of the company or its solvency were crucial. The contracts, therefore, subsist after the bankruptcy order. However, the insolvency receiver may choose to terminate certain contracts. As of the date of adjudication of bankruptcy, no interest on any unsecured claim will accrue vis-à-vis the bankruptcy estate.

Insolvency proceedings may hence have a material adverse effect on the relevant Luxembourg company's business and assets and the Luxembourg company's respective obligations under the Notes (as Luxembourg Guarantor).

Finally, international aspects of Luxembourg bankruptcy, controlled management or composition proceedings may be subject to Recast EU Insolvency Regulation.

Enforceability of financial collateral arrangements

According to the Luxembourg Collateral Law, with the exception of the provisions of the law of 8 January 2013 on the over-extension of debt, the provisions of Book III, Title XVII of the Luxembourg Civil Code, of Book I, Title VIII and of Book III of the Luxembourg Commercial Code and national or foreign provisions governing reorganization measures, winding-up proceedings or other similar proceedings and attachments are not applicable to financial collateral arrangements and netting agreements and shall not constitute an obstacle to the enforcement and to the performance by the parties of their obligations.

Pursuant to article 20 of the Luxembourg Collateral Law, Luxembourg law governed financial collateral arrangements, as well as the enforcement events, netting agreements and the valuation and enforcement measures agreed upon by the parties in accordance with this law, remain valid and enforceable even if entered into during the hardening period against third parties, commissioners, receivers, liquidators and other similar persons notwithstanding reorganisation measures, winding up proceedings or any other similar national or foreign proceedings (save in the case of fraud).

In accordance with article 24 of the Luxembourg Collateral Law, the rules of Luxembourg insolvency proceedings are inapplicable where the collateral provider of financial collateral arrangement or similar security interest governed by a foreign law other than Luxembourg law, is established or resides in Luxembourg.

Limitations on Enforcement of guarantees

There is no published Luxembourg case law and only limited Luxembourg legal literature in connection with enforcement of guarantees granted by a Luxembourg guarantor for a company of the group (whether downstream, cross-stream or upstream guarantees).

It is generally admitted that the grant of a guarantee by a Luxembourg company for the obligations of another group company shall be subject to the following conditions: (i) it must be within the corporate purpose of the guarantor as set out in its articles of association; (ii) it shall correspond to a demonstrable and commensurate corporate benefit received by the guarantor company and (iii) the financial obligations assumed by the guarantor must not be disproportionate to the financial capacity of the guarantor.

The question of corporate benefit is determined on a case-by-case basis.

For the purpose of condition (iii) above, it is standard market practice that cross-stream and upstream guarantees granted by Luxembourg guarantors must be limited in their amount (as is the case pursuant to the Indenture), as opposed to downstream guarantees.

According to the limited Luxembourg doctrine on this matter, in the event the above conditions are not met, the directors of the company may be held liable and it is only in exceptional cases in which it is demonstrated that the beneficiary was aware of the ultra vires nature of the guarantee or that the guarantee was given with the intent to defraud creditors of the guarantor that a court may void the guarantee itself.

In accordance with the principle *fraus omnia corrumpit*, a first demand guarantee would not be enforceable under Luxembourg law if it is called upon in a manifestly abusive way by the beneficiary of the guarantee.

Security Interests Considerations

The Notes are secured, among other things, by several security interests governed by Luxembourg law. According to Luxembourg conflict of law rules, the courts in Luxembourg will generally apply the *lex rei sitae* or *lex situs* (the law of the place where the assets or subject matter of the pledge or security interest is situated) in relation to the creation, perfection and enforcement of security interests over such assets. As a consequence, Luxembourg law will apply in relation to the creation, perfection and enforcement of security interests over assets located or deemed to be located in Luxembourg, such as registered shares in Luxembourg companies, bank accounts held with a Luxembourg bank, receivables or claims governed by Luxembourg law or having debtors located in Luxembourg, tangible assets located in Luxembourg, securities which are held through an account located in Luxembourg, bearer securities physically located in Luxembourg, etc.

If there are assets located or deemed to be located in Luxembourg, the security interests over such assets will be governed by Luxembourg law and must be created, perfected and enforced in accordance with Luxembourg law. The Luxembourg Collateral Law governs the creation, validity, perfection and enforcement of pledges over shares, bank account and receivables located in Luxembourg.

Under the Luxembourg Collateral Law, the perfection of security interests depends on certain registration, notification and acceptance requirements. A receivables pledge agreement needs to be acknowledged by the debtor in order to be enforceable against it.

Article 11 of the Luxembourg Collateral Law sets forth the following enforcement remedies available upon the occurrence of an enforcement event:

- the direct appropriation, or appropriation by third parties, of the pledged assets at (i) a value determined in accordance with a valuation method agreed upon by the parties or (ii) the listing price of the pledged assets;
- a sale of the pledged assets (i) in a private transaction on commercially reasonable terms (*conditions commerciales normales*), (ii) by a public sale at the stock exchange or (iii) by way of a public auction;
- a court allocation of the pledged assets to the pledgee in discharge of the secured obligations following a valuation made by a court-appointed expert; or
- set-off between the secured obligations and the pledged assets.

As the Luxembourg Collateral Law does not provide any specific time periods and depending on (i) the method chosen, (ii) the valuation of the pledged assets, (iii) any possible recourse and (iv) the possible need to involve third parties, such as, *e.g.*, courts, stock exchanges and appraisers, the enforcement of the security interests might be substantially delayed.

Foreign law governed security interests and the powers of any receivers or administrators may not be enforceable in respect of assets located or deemed to be located in Luxembourg. Security interests or arrangements, which are not expressly recognized under Luxembourg law and the powers of any receivers or administrators might not be recognized or enforced by the Luxembourg courts, in particular where the Luxembourg security grantor becomes subject to Luxembourg insolvency proceedings or where the Luxembourg courts otherwise have jurisdiction because of the actual or deemed location of the relevant rights or assets, except if "main insolvency proceedings" (as defined in the Recast EU Insolvency Regulation) are opened under Luxembourg law and such security interest or arrangements constitute rights in rem over assets located in another Member State in which the Recast EU Insolvency Regulation applies.

The perfection of the security interests created pursuant to the pledge agreements does not prevent any third party creditor from seeking attachment or execution against the assets, which are subject to the security interests created under the pledge agreements, to satisfy their unpaid claims against the pledgor. Such creditor may seek the forced sale of the assets of the pledgors through court proceedings, although the beneficiaries of the pledges will in principle remain entitled to priority over the proceeds of such sale (subject to preferred rights by operation of law).

Under the Luxembourg Collateral Law, the enforcement of a pledge is permitted in case of an event of default as agreed between the parties, including an event of default which would not be a default of payment when due (*e.g.*, breach of covenants or representations and warranties).

Certain preferences

Under Luxembourg law, certain creditors of an insolvent party have rights to preferred payments arising by operation of law, some of which may, under certain circumstances, supersede the rights to payment of secured or unsecured creditors, and most of which are undisclosed preferences (*privilèges occultes*). This includes in particular the rights relating to fees and costs of the insolvency official as well as any legal costs, the rights of employees to certain amounts of salary, and the rights of the Treasury and certain assimilated parties (namely social security bodies), which preferences may extend to all or part of the assets of the insolvent party. This general privilege takes in principle precedence over the privilege of a pledgee in respect of pledged assets.

Translation of Documents

The Luxembourg courts, or the official Luxembourg authority, may require that the Notes, the Security Documents, the Indenture (and any other document in connection therewith), and any judgment obtained in a foreign court, be translated into French or German.

Norway

Insolvency

Norwegian insolvency legislation is regulated by the Norwegian Bankruptcy Act of June 8, 1984 No. 58 (the "Bankruptcy Act"), which sets out the various procedures to be followed both in case of court administered debt negotiations and bankruptcy proceedings, and the Norwegian Creditors Recovery Act of June 8, 1984 No. 59 (the "Recovery Act") containing provisions on, among other things, the priority of claims.

The key features of the Norwegian bankruptcy proceedings are (i) the seizure and subsequent disposal of the debtor's assets, (ii) the assessment and ranking of claims, (iii) the testing and revocation of transactions (including security over existing claims) made prior to the bankruptcy proceedings being initiated, (iv) the handling of the debtor's contractual relationships and (v) the distribution of funds (if any) in accordance with the priority rules. If the business operations of the bankrupt company are continued, they are in practice continued at the risk of, and only to the extent guaranteed by, the creditors.

Bankruptcy proceedings may be opened provided that the debtor is insolvent. Both the debtor and the creditors (holding or pretending to hold a claim) can petition for bankruptcy.

There are two requirements for a debtor to be deemed to be insolvent. The debtor must (i) be unable to service its debt as it becomes due (the "cash flow test"), and (ii) be in "deficit" (the company's debts must exceed the sum of its assets and revenues) (the "balance sheet test").

During bankruptcy proceedings the debtor's assets are controlled by the court appointed liquidator (generally a lawyer), on behalf of the bankruptcy estate. The main task of the liquidator is to turn all the debtor's assets into cash in the manner assumed to be most profitable for the bankruptcy estate (the creditors), and then to distribute the available cash to the rightful creditors.

All the debtor's assets will in practice be seized by the bankruptcy estate, and the debtor may not dispose of the seized assets in any way while the bankruptcy proceedings are ongoing. The bankruptcy estate may also seize assets held by third parties, if these assets are acquired from the debtor in an unlawful manner, if the acquisition lacks legal protection, or if the transaction can be reversed according to the Recovery Act. The bankruptcy estate is a separate legal entity, which is authorized to exercise all ownership interests/rights with respect to the seized assets, including but not limited to the realization of assets.

Secured creditors are, in principle, not deemed to be part of the bankruptcy proceedings to the extent the value of the security is sufficient to cover the underlying obligations of the debtor. The secured creditors may, in principle, realize the security and cover their claims, however, keeping in mind that the realization of a number of categories of security the first six months after the opening of a bankruptcy will be subject to the approval of the bankruptcy estate (the same principles apply to official debt negotiations). The bankruptcy estate may, subject to certain conditions being fulfilled, also decide to realize the security and divide the proceeds between the secured creditors and others holding legal rights in the assets.

Any undersecured amount (any amount exceeding the value of the secured assets) will be deemed as an ordinary (unsecured) trade claim.

In a Norwegian bankruptcy, the creditors will be paid according to the following priority:

- Secured claims (valid and perfected security covered up to the value of the secured asset—either after the realization by the secured creditor itself or after realization undertaken by the bankruptcy estate).
- Super priority claims (claims which arise during the bankruptcy proceedings, liquidator's costs, obligations of the bankruptcy estate).
- Salary claims (within certain limitations).
- Tax claims (such as withholding tax and value-added tax within certain limitations).
- Ordinary unsecured claims (all other claims unless subordinated, including unsecured debt, trade creditors and indemnity claims).
- Subordinated claims (including interest incurred after the opening of bankruptcy proceedings, claims subordinated by agreement, liquidated damages and penalty claims).

Pursuant to the Recovery Act, the bankruptcy estate may be entitled to set aside or reverse transactions carried out in the three- up to 12-month period (and in respect of transactions in favor of related parties up to two years) before the opening of the bankruptcy, such as extraordinary payments of certain creditors, security established for old debt and transaction at under-value. The bankruptcy estate may also, under certain circumstances, be entitled to set aside or reverse transactions made in bad faith or negligently which in an improper manner increase the debtor's debt, favor one creditor at the expense of others or deprive the debtor of assets which may otherwise have served to cover the creditors' claims, in which case the time limit for challenges by the estate is increased to 10 years.

It should also be noted that the bankruptcy estate has a statutory first lien of up to five percent of the respective asset's estimated value or sales value over assets mortgaged/pledged by the debtor or mortgaged/pledged by a third party for the debtor's indebtedness (limited however, to the Norwegian Court Fee (presently being in the amount of 1,150 Norwegian kroner) multiplied by 700 for assets registered in an asset register ("*realregister*")). Such statutory lien is not applicable to financial security pursuant to the Norwegian Financial Security Act of March 26, 2004 No. 17 (cash deposits and financial instruments), cf., the Norwegian Liens Act of February 8, 1980 No. 2 section 6-4 (9).

Limitations on guarantees and securities provided by Guarantors incorporated in Norway

Section 8-7 of the Norwegian Private Limited Companies Act of June 13, 1997 No. 44 and the Norwegian Public Limited Companies Act of June 13, 1997 No. 45 (together the "Norwegian Companies Act") restricts a Norwegian private and public limited liability company from granting credit to, guaranteeing or providing security for the obligations of, its shareholders (or any related party) beyond its distributable reserves (free equity) and then, further provided that satisfactory security for repayment/recovery has been established in favour of the relevant Norwegian limited liability company.

The above restriction does not, however, apply to credit or security/guarantee for the obligations of a parent company or another company within the same "group." This exemption must be read in conjunction with the group definition in Section 1-3 of the Norwegian Companies Act which, broadly speaking, includes Norwegian limited liability companies. A Norwegian limited liability company may also grant credit or provide security and guarantees for the obligations of a foreign parent or sister company, *provided* that such credit, security or guarantee financially benefits the group, is in the interest of the grantor and the purpose of the transaction is not to benefit the beneficial owners of the group, for example by financing distributions to the owners.

In addition to the restrictions with regard to, among others, upstream and cross-stream guarantees and security as outlined above, Section 8-10 of the Norwegian Companies Act restricts the ability of a Norwegian private or public limited liability company to provide financial assistance (including to put funds at disposal, grant loans or provide security or guarantees) in connection with the acquisition of its shares or the shares in the parent company (and any intermediate parent company). The restrictions against financial assistance apply irrespective of whether the company whose shares are acquired is a Norwegian or a foreign company. In order for a guarantee, loan or security provided by a Norwegian Guarantor in favour of a purchaser of shares in the Norwegian Guarantor or its parent company to be valid and binding, the financial exposure of the Norwegian Guarantor must not exceed the amounts that the Norwegian Guarantor has available for distribution of dividends to its shareholders, and adequate security must be deposited for the repayment or recovery claim. In addition, Section 8-10 of the Norwegian Companies Act requires that the credit worthiness of the purchaser is evaluated by the board of directors and that the assistance is approved by both the board of directors and the general meeting of the Norwegian Guarantor according to a special procedure. The restrictions applies not only to the granting of loans, guarantees and securities, but also to asset distributions and other transfers which are not deemed lawful distributions under the Norwegian Companies Act. The assistance is restricted if made "in connection with" the acquisition of the shares, which may also cover financial assistance after completion of the acquisition, for instance by way of a refinancing of acquisition debt.

A loan, guarantee or security interest infringing the limitations set out in Section 8-7 and Section 8-10 of the Norwegian Companies Act is void and any funds paid out pursuant to such guarantee or security interest will have to be repaid. In addition, loans, securities and guarantees of Guarantors incorporated in Norway may be deemed void for failing to comply with the provisions in Chapter 3 of the Norwegian Companies Act regulating transactions between the company and its shareholders and transactions within the "group."

The principle of corporate benefit also exists in Norway and may in some situations impose a restriction on a Norwegian company's ability to offer credits or a guarantee and provide security to shareholders (or close associates of the shareholders) in addition to the restrictions on financial assistance and upstream/cross-stream guarantees, loans and security described above.

Accordingly, any guarantees and security for the Notes provided by Guarantors incorporated in Norway may be void under Norwegian law as infringing one or more of the above limitations.

The limitations set forth in these sections will apply mutatis mutandis to any security created by a Guarantor incorporated in Norway under the Collateral and to any guarantee, indemnity and similar obligations resulting in a payment obligation and payment pursuant to the Collateral made by a Guarantor incorporated in Norway.

The liability of each Guarantor incorporated in Norway for the Issuer's and the other Guarantors' obligations under the Notes will be limited to €924,000,000 plus interest, default interest, fees, costs, enforcement costs and expenses under the Notes (or its equivalent in other currencies).

Foreclosure of Security Interest

Enforcement of the Norwegian law share pledges will be subject to the mandatory provisions of the Norwegian Financial Securities Act of March 26, 2004 No. 17, which stipulates that enforcement must be implemented on commercially reasonable terms. Enforcement of the other Norwegian law security in Norway will be subject to the mandatory provisions of the Norwegian Enforcement Act of June 26, 1992 No. 86.

Under the Norwegian Companies Act, Section 5-2, a shareholder may at any time revoke a power of attorney to exercise voting rights. Accordingly, provisions in the Share Pledges giving the holder of the security power of attorney to vote for the relevant shares may therefore be rendered ineffective against the relevant company whose shares are pledged in the event the pledgor of the relevant shares were to revoke the power of attorney while he remains the registered owner of the shares.

A pledge in future shares is only to be read as an obligation to pledge future shares and not a pledge in itself, consequently a share declaration by the pledgor must be issued and notified to the issuer of the shares, upon issuance of the shares, in order to receive a perfected security interest.

Only creditors of a claim may have active judicial standing in a Norwegian court; therefore, a security agent may seek enforcement of a claim but such claim may have to be supported by the actual creditors of such claim. A security agent has standing to be sued in Norway and it is believed that a security agent may enforce any security being subject to the Norwegian Financial Securities Act of March 26, 2004 No. 17 implementing the EU Financial Collateral Directive.

Scotland

Some of the assets granted relate to Scots law security interests under the laws of Scotland and are being granted by a non-Scottish entity (the "Scottish Security Grantor"). Any insolvency proceedings by or against the Scottish Security Grantor may be based on Scottish insolvency laws. Pursuant to s51(1) of the Insolvency Act 1986 as amended by the Insolvency Act 1986 Amendment (Appointment of Receivers) (Scotland) Regulations 2011, it is competent for a holder of a floating charge to appoint a receiver over the property which the floating charge purports to create security, *provided* that the Court of Session has jurisdiction to initiate insolvency proceedings to wind up the grantor of the floating charge. Furthermore, where the Court of Session in Scotland does not have jurisdiction to initiate insolvency proceedings to wind up the grantor of the floating charge, but another EU court does, a receiver can be appointed. Whether another EU court has jurisdiction will depend on the location of the company's "centre of main interests" and this being found to be in a member state other than the United Kingdom. There are a number of factors that are taken into account to ascertain the centre of main interests. The centre of main interests should correspond to the place where the company conducts the administration of its interests on a regular basis and is therefore ascertainable by third parties. The place of the registered office of the company is presumed to be the centre of main interests in the absence of proof to the contrary. The point at which this issue falls to be determined is at the time that the relevant insolvency proceedings are opened.

To the extent that security interests or guarantees are being granted by non-Scottish entities, the country of incorporation of the relevant non-Scottish entity or its COMI may affect which country's insolvency laws apply.

As noted under "England and Wales", it remains to be seen what impact the vote by the United Kingdom on June 23, 2016 to leave the EU will have on the regulatory environment in the EU and the United Kingdom, and on the applicability of EU law in the United Kingdom. Following the United Kingdom's withdrawal from the European Union, absent alternative arrangements, the United Kingdom would cease to benefit from the reciprocal framework set out in the Recast EU Insolvency Regulation. In a "no deal" Brexit scenario, the Insolvency (Amendment) (EU Exit) Regulations 2018 are expected to come into force, and would make significant amendments to the Recast EU Insolvency Regulation (as would from that point be applicable in the United Kingdom), intended to address this lack of reciprocity by removing provisions that grant automatic recognition to proceedings started elsewhere in the EU and amending the circumstances in which the Scottish courts have jurisdiction to open proceedings (including providing, broadly, that the Scottish courts may have jurisdiction to open proceedings if a company's COMI is in the United Kingdom, or if the company's COMI is in a member state of the EU and it has an establishment in the United Kingdom).

Cross-Border Insolvency Regulations 2006, which implement the UNCITRAL Model Law on Cross-Border Insolvency in the United Kingdom, provide that a foreign (*i.e.*, non-European) court may have jurisdiction where any company granting security in Scotland, has a centre of its main interests in such foreign jurisdiction, or where it has an "establishment" (being a place of operations in such foreign jurisdiction, where it carries out non- transitory economic activities with human means and assets or services).

However, where a company or its centre of main interests is located in a non-EU country, such as Switzerland, it may not be clear whether the Court of Session has jurisdiction to initiate insolvency proceedings to wind up the grantor of the floating charge in that jurisdiction. Scottish law does not currently provide specific tests to determine whether the Court of Session has such jurisdiction. Case law does provide guidance on how to make such a determination and a number of specific tests, but a judge may not be bound to follow such tests.

Fixed and Floating Charges

There are a number of ways in which fixed charge security has an advantage over floating charge security: (a) an administrator appointed to a charging company can convert floating charge assets to cash and use such cash, or use cash subject to a floating charge, to meet administration expenses (which can include the costs of continuing to operate the charging company's business) while in administration in priority to the claims of the floating charge holder; (b) a fixed charge, even if created after the date of a floating charge, may have priority as against the floating charge over the charged assets; (c) general costs and expenses (including the liquidator's remuneration) properly incurred in a winding-up are payable out of the company's assets (including the assets the subject of the floating charge) in priority to floating charge claims; (d) until the floating charge security crystallizes, a company is entitled to deal with assets that are subject to floating charge security in the ordinary course of business, meaning that such assets can be effectively disposed of by the charging company so as to give a third party good title to the assets free of the floating charge and so as to give rise to the risk of security being granted over such assets in priority to the floating charge security; (e) there are particular challenge risks in relation to floating charge security (please see "—Grant of Floating Charge"); and (f) floating charge security is subject to the claims of preferential creditors (such as occupational pension scheme contributions and salaries owed to employees) and to ring-fencing (please see "—Administration and Floating Charges").

In Scotland, forms of security are closely tied to specific types of property. Since Scots law does not recognize the English law concept of "equity" there is more focus on the legal formalities rather than the intention of the parties with respect to the creation of security interests. If the strict legal requirements under Scots law are not met, there will be no security over the subject notwithstanding the intention of the parties.

In respect of movable property, it is essential that the security holder has some form of possession (which may take different forms) over the subject in order to create a valid fixed security interest. Scots law does not differentiate between legal and equitable ownership of property so, for instance, in order to create a security interest over shares in companies incorporated in Scotland, the security holder (or its nominee) must be registered as the shareholder. Furthermore, as there is no Scottish equivalent of an English law of equitable assignment, a Scottish interest in incorporeal property will only be created when the assignation is notified to the relevant parties.

Fixed charges over land and buildings situated in Scotland may only be created using a standard security (which is the English law equivalent of a legal mortgage over an interest of land) and is governed by statute.

Administration and Floating Charges

The relevant Scottish insolvency statutes empower Scottish courts to make an administration order in respect of a Scottish company in certain circumstances. An administrator can also be appointed out of court by the company, its directors or the holder of a qualifying floating charge and different procedures apply according to the identity of the appointor. During the administration, in general, no proceedings or other legal process may be commenced or continued against the debtor, or security enforced over the company's property, except with leave of the court or the consent of the administrator. Certain creditors of a company in administration may be able to realize their security over that company's property notwithstanding the statutory moratorium. This is by virtue of the disapplication of the moratorium in relation to a "security financial collateral agreement" (generally, cash or financial instruments such as shares, bonds or tradable capital market debt instruments) under the Financial Collateral Arrangements (No. 2) Regulations 2003. If the Scottish Security Grantor were to enter administration, it is possible that the security granted by it or the guarantee granted by it may not be enforced while it is in administration. In addition, other than in limited circumstances, no administrative receiver can be appointed by a secured creditor in preference to an administrator, and any already appointed must resign if requested to do so by the administrator. Where the company is already in administration no other receiver may be appointed.

In order to empower the Security Trustee to appoint an administrative receiver or an administrator to the company, the floating charge granted by the relevant Scottish Security Grantor must constitute a "qualifying floating charge" for purposes of Scottish insolvency law and, in the case of the ability to appoint an administrative receiver, the qualifying floating charge must, unless the security document predates September 15, 2003, fall within one of the exceptions in the Enterprise Act 2002 to the prohibition on the appointment of administrative receivers. In order to constitute a qualifying floating charge, the floating charge must be created by an instrument which (a) states that the relevant statutory provision applies to it; (b) purports to empower the holder to appoint an administrator of the company; (c) purports to empower the holder to appoint an administrative receiver; or (d) purports to empower the holder of a floating charge in Scotland to appoint a receiver who on appointment would be an administrative receiver (although this is only permitted under limited circumstances). The Security Trustee will be the holder of a qualifying floating charge if such floating charge security, together (if necessary) with the fixed charge security interests, relates to the whole or substantially the whole of the Scottish Security Grantor's property and at least one such security interest is a qualifying floating charge. The most relevant exception to the prohibition on the appointment of an administrative receiver is the exception relating to "capital market arrangements" (as defined in the U.K. Insolvency Act 1986, as amended), which will apply if the issue of the notes creates a debt of at least £50,000,000 for the relevant company during the life of the arrangement and the arrangement involves the issue of a "capital markets investment" (which is defined in the U.K. Insolvency Act 1986, but is generally a rated, listed or traded debt instrument). An administrator, receiver or liquidator of the company will be required to ring-fence a certain percentage of the proceeds of enforcement of floating charge security for the benefit of unsecured creditors. Under current law, this applies to 50% of the first £10,000 of net floating charge realizations and 20% of the remainder over £10,000, with a maximum aggregate cap of £600,000. Whether the assets that are subject to the floating charges and other security will constitute substantially the whole of the Scottish Security Grantor's assets at the time that the floating charges are enforced will be a question of fact at that time.

In addition, under Scottish insolvency law any debt payable in a currency other than pounds sterling (such as euro or U.S. dollars in the case of the notes) must be converted into pounds sterling at the rate of exchange for that currency at the mean of the buying and selling spot rates prevailing in the London market at close of business on the date of commencement of winding up. Accordingly, in the event that the Scottish Security Grantor goes into liquidation or administration, holders of the notes may be subject to exchange rate risk between the date that the Scottish Security Grantor went into liquidation or administration and receipt of any amounts to which such holders of the notes may become entitled.

There are circumstances under Scottish insolvency law in which the granting by a Scottish company of security and guarantees can be challenged. In most cases this will only arise if the company is placed into administration or liquidation within a specified period of the granting of the guarantee or security. Therefore, if during the specified period an administrator or liquidator is appointed to a Scottish company, he may challenge the validity of the guarantee or security given by such company.

The following potential grounds for challenge may apply to guarantees and security interests in Scotland:

Gratuitous Alienations

Under Scottish insolvency law, a liquidator, administrator or creditor of a Scottish company could apply to the court for an order to set aside the creation of a security interest or a guarantee if such liquidator, administrator or creditor believes that the creation of such security interest or guarantee constituted a gratuitous alienation. It will only be a gratuitous alienation if at the time of the transaction or as a result of the transaction, the Scottish company is insolvent (as defined in the U.K. Insolvency Act 1986, as amended). The transaction can be challenged if the Scottish company enters into liquidation or administration proceedings within a period of two years from the date the Scottish company grants the security interest or the guarantee or five years in the case of an "associate" of the Scottish company. A transaction might be subject to being set aside as a gratuitous alienation if the company makes a gift to a person (except in certain specified circumstances), if the company receives no consideration or if the company receives consideration of significantly less value, in money or money's worth, than the consideration given by such company. However, a court generally will not intervene if the person seeking to uphold the alienation establishes (i) that immediately or at any other time or after the alienation the company's assets were greater than its liabilities, (ii) the alienation was made for adequate consideration, or (iii) the alienation was a birthday, Christmas or other gift for a charitable purpose to a person not an associate of the company, which in all circumstances it was reasonable for the company (without prejudice to any right or interest acquired in good faith and for value from the recipient of the alienation) to make. If the court determines that the transaction was a gratuitous alienation the court can grant a reduction or for restoration of the property or assets or such other redress as may be appropriate. In any proceedings, it is for the administrator or liquidator to demonstrate that the Scottish company was insolvent (the test for which is set out in (i) above).

A transaction made at a time when a company is insolvent may also constitute a gratuitous alienation at common law. In these circumstances, no time limits apply in relation to challenging it. A gratuitous alienation may constitute wrongful (or indeed fraudulent) trading, or a breach of duty, and lead to action being raised against directors personally.

Unfair Preferences

Under Scottish insolvency law, a liquidator, administrator or creditor of a Scottish company could apply to the court for an order to set aside the creation of a security interest or a guarantee if such liquidator, administrator or creditor believed that the creation of such security interest or such guarantee constituted an unfair preference. It will only be an unfair preference if at the time of the transaction or as a result of the transaction the Scottish company is insolvent. The transaction can be challenged if the Scottish company enters into liquidation or administration proceedings within a period of six months from the date the Scottish company grants the security interest or the guarantee. A transaction may constitute an unfair preference if it has the effect of putting a creditor of the Scottish company (or a surety or Guarantor for any of the company's debts or liabilities) in a better position (in the event of the company going into insolvent liquidation) than such creditor, Guarantor or surety would otherwise have been in had that transaction not been entered into. If the court determines that the transaction was an unfair preference, the court may grant a reduction or restoration of the property or assets or such other redress as may be appropriate (although there is protection for a third party who enters into one of the transactions in good faith and without notice). An unfair preference may also constitute wrongful (or indeed fraudulent) trading or a breach of duty and lead to actions being raised against directors personally.

A transaction made at a time the company is insolvent may constitute an unfair preference at law. In these circumstances, no time limits apply in relation to challenging it. It may also constitute a fraudulent preference at common law.

Grant of Floating Charge

Under Scottish insolvency law, if the Scottish Security Grantor is insolvent at the time of (or as a result of) granting the floating charge then such floating charge is invalid except to the extent of the value of the money paid to, or goods or services supplied to, or any discharge or reduction of any debt of, the Scottish Security Grantor at the same time as or after the creation of the floating charge. The requirement for the Scottish Security Grantor to be insolvent at the time of (or as a result of) granting the floating charge does not apply where the floating charge is granted to a connected person. If the floating charge is granted to a connected person then the floating charge is invalid except to the extent of the value of the money paid to, or goods or services supplied to, or any discharge or reduction of any debt of, the Scottish Security Grantor at the same time as or after the creation of the floating charge, whether the Scottish Security Grantor is solvent or insolvent. The transaction can be challenged if the Scottish Security Grantor enters into liquidation or administration proceedings within a period of one year (if the beneficiary is not a connected person) or two years (if the beneficiary is a connected person) from the date the Scottish Security Grantor grants the floating charge.

Singapore

The main legislation applicable to corporate insolvencies and reorganisations in Singapore, at the date of this preliminary offering memorandum, is the Companies Act (Chapter 50) of Singapore (the "**Singapore Companies Act**"), read with its subsidiary legislation.

On 1 October 2018, the Insolvency, Restructuring and Dissolution Act (the "**IRD Act**") was passed in the Singapore Parliament. With the passing of the IRD Act, the provisions in the Companies Act (Chapter 50) pertaining to corporate insolvency and restructuring will be repealed upon the coming into force of the IRD Act, which has yet to be gazetted.

In this section, a summary of Singapore insolvency law for corporate insolvencies and reorganisations based on the existing law at the date of this preliminary offering memorandum (the "**Existing Singapore Insolvency Law**") would be made, together with references to the IRD Act.

Difference in Insolvency Law

One of the Guarantors is incorporated under the laws of Singapore ("**Singapore Guarantor**"). Any insolvency proceedings applicable to it will be likely to be governed by Singapore insolvency laws. Singapore insolvency laws differ from the insolvency laws of the United States and may make it more difficult for holders of the Notes to recover the amount in respect of the Singapore Guarantor's guarantee of the Notes and/or the Collateral securing the same than they would have recovered in a liquidation or bankruptcy proceeding in the United States.

Priority of Secured Creditors

Singapore insolvency laws generally recognize the priority of secured creditors over unsecured creditors. The lenders under the Senior Secured Term Loans have security interests on certain of the assets of the Singapore Guarantor.

Security over Book Debts

Where security is taken over the book debt of a Singapore company by way of an assignment, the Civil Law Act (Cap 43) of Singapore prescribes that a statutory assignment must be by way of an absolute assignment in writing under hand of the assignor and express notice in writing thereof must be given to the debtor, trustee or other person from whom the assignor would have been entitled to receive or claim such book debt. Where such notice is not given, the assignment is only effective as an equitable assignment and a subsequent assignee of the book debt who gives notice might have priority.

Fixed and Floating Charges

Fixed charges are superior to floating charges in a number of aspects. Until the floating charge security crystallizes, a company is entitled to deal with assets that are subject to floating charge security in the ordinary course of business, meaning that such assets can be effectively disposed of by the charging company so as to give a third party good title to the assets free of the floating charge and so as to give rise to the risk of security being granted over such assets in priority to the floating charge security. In addition, a floating charge security created within six months of the commencement of winding up of the chargor company may be invalid, unless it is proved that the chargor company was solvent immediately after the creation of the charge. Where the assets of the chargor company are insufficient to pay certain preferential debts (these include winding up costs, wages and salaries and retrenchment benefits), those preferential debts would have priority over assets secured by a floating charge.

Amounts received in a winding-up or receivership from the realization of assets subject to a floating charge must first be used to pay the holders of any fixed charge over such assets and then certain preferential creditors if applicable (explained above) before any distribution is made to the holders of a floating charge.

It is open to a court to find that assignments and charges described as fixed charges constitute floating charges rather than fixed charges, the description given to them as fixed charges not being determinative. One of the three characteristics of a floating charge is the ability of the chargor to carry on business in the ordinary course so far as concerns the particular class of assets in question until some further step is taken by or on behalf of the chargee. Where the chargor, without the consent of the chargee, is free to deal with the assets or the proceeds of such assets that form the subject matter of the charge, the court would be likely to hold that the charge in question constitutes a floating charge, notwithstanding that it may be described as a fixed charge. In addition, to the extent that any of the assets secured by the Collateral are not specifically identified, an insolvency official may hold that such assets, which are expressed to be subject to a fixed charge, may in fact be subject to a floating charge.

Preferential Creditors

Under the Existing Singapore Insolvency Law and the IRD Act, in a winding-up of a Singapore company preferential debts are required to be paid in priority to all other debts other than those secured by a fixed charge. Certain preferential debts therefore have priority over debts secured by a floating charge (those listed in paragraphs (a) to (c) and (e) to (f) below) if the assets of the chargor company are insufficient to satisfy such preferential debts. The preferential debts covered by the relevant sections of the Singapore Companies and the IRD Act are described briefly below:-

(a) costs and expenses of the winding up;

(b) employees' wages and salaries;

(c) retrenchment benefits under employment contracts;

(d) work injury compensation under the Work Injury Compensation Act (Cap 354) of Singapore;

(e) certain amounts due under employee's superannuation or provident funds or under any scheme of superannuation which is an approved scheme under the Income Tax Act (Cap 134) of Singapore;

(f) other remuneration payable to employees such as vacation leave and death benefits; (g) taxes assessed and goods and services tax; and

(h) gratuity or other sum of money due and owing to an employee on his retirement or on termination of his services pursuant to a collective agreement or an award.

Transactions at Undervalue or Unfair Preference

Under the Existing Singapore Insolvency Law, if a Singapore company goes into liquidation, and has entered into certain transactions at an undervalue within a period of five years before commencement of winding up, or has entered into a transaction by way of unfair preference within a period of six months (a 2-year period applies in the case of a transaction with a connected party) before the commencement of winding up, those transactions may be liable to be made void or voidable.

Under the IRD Act, the look-back period for transactions at an undervalue would be three years before commencement of winding up, and for transactions entered into by way of unfair preference, it would be one year before commencing of winding up (a 2-year period applies in the case of a transaction with a connected party).

Disclaimer of Onerous Contracts

Section 332 of the Singapore Companies Act provides that where any property of a company consists of either an estate or interest in land that is burdened with onerous covenants, shares in corporations, unprofitable contracts or any other property that is unsaleable by reason of its binding the company to any onerous act or payment ("**Onerous Property**"), the liquidator may apply to disclaim such property within 12 months of (i) commencement of winding-up or (ii) such time as the liquidator becomes aware of such property or such extended period as is allowed by the court.

The IRD Act provides that a liquidator may disclaim Onerous Property, and empower the Singapore court to make certain orders where a liquidator has disclaimed Onerous Property, such as setting aside the disclaimer or make such order as the court thinks just where the injury caused by the disclaimer outweighs any advantage likely to be gained by a liquidator.

Certain Contractual Rights Limited

The IRD Act limits the exercise of certain contractual rights, such as claiming an accelerated payment or forfeiture of term under any agreement (including a security agreement) with the company, by reason only that certain restructuring proceedings in respect of a company have commenced or that the company is insolvent.

Enforcement Process

Receivership

Receivership arises principally by way of enforcement of the right of the holders of security under mortgage or charges, as set out in the security document. The receiver is, in effect, an agent of the chargor company. Its rights and obligations are usually set out in the security document itself.

The IRD Act expressly provides that a receiver is personally liable on any contract he or she entered into in the performance of his or her functions (except insofar as the contract otherwise provides) and, to the extent of any qualifying liability, on any contract of employment adopted by him or her in the performance of those functions. A receiver is however entitled to an indemnity out of the property of the company or corporation.

Appointment

Receivers can be appointed on the basis of the powers set out in the security document. A person appointed on the basis of a fixed charge over specific assets will act as receiver in respect of those assets. However, mortgages containing a floating charge over all of the assets and undertaking typically provide for enforcement by means of the appointment of a receiver having full powers as a receiver and manager over all of the secured assets (*i.e.*, all of the assets and undertaking of a chargor), including the power of sale of the assets.

Switzerland

Limitations on guarantees and securities provided by Guarantors incorporated in Switzerland

Swiss rules regarding capital maintenance, including but not limited to Articles 671(1) to (4), 675(2) and 680(2) of the Swiss Code of Obligations, prohibit the direct or indirect repayment of a Swiss stock corporation's share capital and legal reserves to its shareholders and restrict the distribution of a Swiss stock corporation's accrued earnings to its shareholders. guarantees, share pledges, assignments for security purposes and any other collateral granted by a Swiss stock corporation in order to guarantee or secure liabilities of a direct or indirect parent or sister company as well as any other undertaking contained in any agreement having the same or a similar effect, such as, but not limited to, the waiver of set off or subrogation rights or the subordination of intra-group claims may be considered as an indirect distribution of assets which are subject to the limitation provided by Swiss law to protect the share capital and legal reserves of Swiss stock corporation. Similar rules apply in case the guarantee or collateral is granted by a Swiss limited liability company (*GmbH*). Therefore, it is standard market practice for indenture agreements, credit agreements, guarantees and security documents to contain so-called "limitation language" in relation to Swiss subsidiaries. Pursuant to such limitation language, the enforcement of the guarantee and collateral granted by each of the Swiss Guarantors will be limited reflecting the requirement that payments under the guarantee or, as the case may be, the use of proceeds from the enforcement of collateral may not cause the Swiss Guarantors to incur a liability which would exceed its freely distributable equity at the time of the enforcement of the guarantee or, as the case may be, any collateral. Accordingly, the documentation in relation to the guarantees, to the extent they concern the Swiss Guarantors, contains such limitation language and such guarantees and related security interests are limited in the manner described.

Insolvency

In the event of a Swiss entity's insolvency, the respective insolvency proceedings would be governed by Swiss law as a result of such Swiss entity's offices being registered in the competent commercial register in Switzerland. In addition, Swiss debt enforcement and insolvency laws may be applicable in case of an enforcement of security interests over assets of a foreign entity located in Switzerland. The enforcement of claims and questions relating to insolvency and bankruptcy in general are dealt with by the Swiss Federal Act on Debt Enforcement and Bankruptcy. Under these rules, claims that are pursued against a Swiss entity can lead to the opening of bankruptcy (*Konkurs*) and, hence, a general liquidation of all assets, even if located outside Switzerland, and liabilities of the debtor. However, with regard to assets located outside Switzerland, a Swiss bankruptcy decree is enforceable only if it is recognized at the place where such assets are located. Creditors secured by a pledge must generally initiate enforcement proceedings pursuant to the Swiss Federal Act on Debt Enforcement and Bankruptcy except in the event that (i) the parties have agreed on a private liquidation; or (ii) the security provider has been adjudicated bankrupt. If the security provider has been adjudicated bankrupt, secured creditors participate in the bankruptcy proceedings with the other creditors and a private liquidation is no longer permitted. Certain particular rules apply to security interests created over intermediated securities pursuant to the Swiss Federal Intermediated Securities Act.

As a rule, the opening of bankruptcy by the competent court needs to be preceded by a prior debt enforcement procedure which involves, *inter alia*, the issuance of a payment summons by local debt enforcement authorities (*Betreibungsamt*). However, the competent court may also declare a debtor bankrupt without such prior proceedings if the following requirements are met: (i) at the request of the debtor, if the debtor's board of directors or the auditors of the company (in case of failure of the board of directors) declare that the debtor is overindebted (*überschuldet*) within the meaning of art. 725 (2) of the Swiss Code of Obligations (or the corresponding provision of the Swiss Code of Obligations in case of a limited liability company (*GmbH*)) or if it declares to be insolvent (*zahlungsunfähig*), and (ii) at the request of a creditor, if the debtor commits certain acts to the detriment of its creditors or ceases to make payments (*Zahlungseinstellung*) or if certain events happen during composition proceedings. The bankruptcy proceedings are carried out and the bankrupt estate is managed by the receiver in bankruptcy (*Konkursverwaltung*).

All assets at the time of the declaration of bankruptcy and all assets acquired or received subsequently form the bankrupt estate which, after deduction of costs and certain other expenses, is used to satisfy the creditors. Assets of the bankrupt estate over which a pledge was created in favor of a creditor before the declaration of bankruptcy are included in the bankrupt estate. The pledgee is under an obligation to remit the pledged assets to the bankrupt estate. The assets are liquidated by the receiver in bankruptcy in the same manner as the other assets of the bankrupt estate, but the creditor secured by the pledge retains its privilege to be satisfied from the proceeds of the liquidation of the assets pledged to it with priority over the unsecured creditors. Final distribution of non-secured claims is based on a ranking of creditors in three classes. The first and the second class, which are privileged, comprise claims under employment contracts, accident insurance, pension plans, VAT and family law. Certain privileges can also be claimed by the government and its subdivisions based on specific provisions of Federal law. All other creditors are treated equally in the third class. A secured party participates in the third class to the extent its claim is not covered by its collateral.

The notification to the debtors of the claims assignment is not a legal requirement for the validity thereof. However, until such time as any debtor of the receivables has been notified of the claims assignment, such debtor may validly discharge its debt in the hands of the assignor, thereby voiding the security interest. The foregoing is of particular relevance in the context of assignment of trade receivables where such assignment is generally not notified to the debtors until the occurrence of an event of default.

Claims assigned for security purposes by a Swiss entity that come into existence prior to the opening of bankruptcy can be enforced by the assignee outside Swiss bankruptcy proceedings. Assigned claims that come into existence after the opening of bankruptcy over a Swiss entity may fall within the bankrupt estate, and the assignee may not be entitled to such claim proceeds.

Swiss insolvency laws also provide for reorganization procedures by composition with the debtor's creditors. Reorganization is initiated by a request with the competent court for a stay (*Nachlassstundung*) pending negotiation of the composition agreement with the creditors and confirmation of such agreement by the competent court. A distinction is made between a composition agreement providing for the assignment of assets (*Nachlassvertrag mit Vermögensabtretung*) which leads to a private liquidation and in many instances has analogous effects as a bankruptcy, and a dividend composition (*Dividenden-Vergleich*) providing for the payment of a certain percentage on the creditors' claims and the continuation of the debtor. Further, there is the possibility of a composition in the form of a mere payment term extension (*Stundungsvergleich*). During a moratorium, debt collection proceedings cannot be initiated and pending proceedings are stayed. Furthermore, the debtor's power to dispose of its assets and to manage its affairs is restricted. In case of a pledge, the secured party is not entitled to proceed with a private liquidation until the confirmation of the settlement by the competent court. A secured creditor participates in the settlement only for the amount of its claim not covered by the collateral. The moratorium does not affect the agreed due dates of debts (contrary to bankruptcy, in which case all debts become immediately due upon adjudication). The moratorium aims at facilitating the conclusion of one of the above composition agreements. Any composition agreement needs to be approved by the creditors and confirmed by the competent court. With the judicial confirmation, the composition agreement becomes binding on all creditors, whereby secured claims are only subject to the composition agreement to the extent that the collateral proves to be insufficient to cover the secured claims.

Foreign bankruptcy decrees issued in the country of a debtor's domicile may be recognized in Switzerland only, *provided* that (i) the bankruptcy decree is enforceable in the country where it was issued, (ii) its recognition is, *inter alia*, not against Swiss public policy, and (iii) the country which issued the bankruptcy decree grants reciprocity to Switzerland.

Avoidance

Certain arrangements or dispositions that are made during a certain period (the "suspect period") preceding the declaration of bankruptcy or the confirmation of a composition agreement with assignment of assets (*Nachlassvertrag mit Vermögensabtretung*) may be challenged by the receiver in bankruptcy (*Konkursverwaltung*) and certain creditors under the applicable rules of avoidance. The avoidance may relate to (i) gifts, gratuitous transactions and transactions pursuant to which the debtor received consideration which was disproportionate to its own performance made in the suspect period of 12 months prior to being declared bankrupt or the confirmation of a composition agreement with assignment of assets (*Nachlassvertrag mit Vermögensabtretung*), (ii) certain acts of a debtor in the suspect period of 12 months prior to being declared bankrupt or the confirmation of a composition agreement with assignment of assets (*Nachlassvertrag mit Vermögensabtretung*) if the debtor at that time was overindebted, and (iii) dispositions made by the debtor within a suspect period of five years prior to being declared bankrupt or the confirmation of a composition agreement with assignment of assets (*Nachlassvertrag mit Vermögensabtretung*) with the intent to disadvantage its creditors or to prefer certain of its creditors to the detriment of other creditors. The transactions potentially subject to avoidance also include those contemplated by a Swiss entity's guarantee of the Notes or the granting of security interests under the Security Documents by a Swiss entity. If they are challenged successfully, the rights granted by a Swiss entity under the guarantee of the Notes or in connection with security interests under the Security Documents may become unenforceable and any amounts received must be refunded to the bankrupt estate.

Parallel Debt

Under Swiss law, certain "accessory" security interests such as pledges (*Pfandrechte*) require that the pledgee and the creditor be the same person. In order to permit the holders of the Notes from time to time to have a secured claim the security documents provide for the creation of an independent right of performance of the Security Agent by way of a joint and several creditor concert and an abstract acknowledgement of debt. Pursuant to the parallel debt, the Security Trustee becomes the holder of a claim equal to each amount payable by an obligor under the Notes. The pledges governed by Swiss law will directly secure the parallel debt. There is no assurance that such a structure will be effective before the Swiss courts as there is no judicial or other guidance as to its efficacy, and therefore the ability of the Security Agent to enforce the collateral may be restricted.

United States

Fraudulent Transfer

Under the U.S. Bankruptcy Code or comparable provisions of state fraudulent transfer or fraudulent conveyance laws, the incurrence of the obligations under the Notes, the issuance of the guarantees and the grant of security, whether now or in the future, by the Issuer and the Guarantors (together, the "Obligors") could be avoided, if, among other things, at the time the Obligors incurred the obligations, issued the related guarantee or gave the security, the Obligors intended to hinder, delay or defraud any present or future creditor; or received less than reasonably equivalent value or fair consideration for the incurrence of such indebtedness or the grant of such security and either:

- were insolvent or rendered insolvent by reason of such incurrence or grant of security;
- were engaged in a business or transaction for which the Obligors' remaining assets constituted unreasonably small capital; or
- intended to incur, or believed that they would incur, debts beyond their ability to pay such debts as they mature.

Preference

Any future grant of security interest with regard to the Collateral in favor of the Notes, including pursuant to security documents delivered after the date of the Indenture, might be avoidable in a U.S. bankruptcy case by the grantor (as debtor-in-possession) or by its bankruptcy trustee as a preference if certain events or circumstances exist or occur, including, among others, if the grantor is insolvent at the time of the grant, the security interest permits the holders of the Notes to receive a greater recovery than if the bankruptcy case were a case under Chapter 7 of the Bankruptcy Code and the security had not been given and a bankruptcy case in respect of the grantor is commenced within 90 days following the grant, or in certain circumstances, a longer period.

The Automatic Stay

The right of a holder of the Notes to enforce its security interests against the Obligors upon the occurrence of an event of default under the Indenture governing the Notes is likely to be significantly impaired by applicable U.S. bankruptcy law if one or more of the Obligors became a debtor in a case under the U.S. Bankruptcy Code before such security interest was enforced. Upon the commencement of a case under the U.S. Bankruptcy Code, a secured creditor such as a holder of Notes is prohibited by the automatic stay imposed by the U.S. Bankruptcy Code from taking any act to obtain possession of or exercise control over, property of the bankruptcy estate. The automatic stay in a bankruptcy case of one or more of the Obligors could therefore prevent the holders of the Notes from obtaining possession or exercising control over the Collateral or commencing any action in an attempt to obtain possession or exercise control over the Collateral the automatic stay could be lifted or modified with bankruptcy court approval in certain circumstances, but parties may object to any creditor request to lift or modify the automatic stay, and the bankruptcy court deny such a request.

Right of Debtor-In-Possession to Remain In Control of Collateral and the Bankruptcy Process

An entity that becomes a debtor under chapter 11 of the U.S. Bankruptcy Code remains in possession of its property and is authorized to operate and manage its business as a "debtor-in-possession," subject to certain limitations. This remains the case unless a chapter 11 trustee is appointed or the chapter 11 case is converted to a chapter 7 liquidation under the U.S. Bankruptcy Code.

Moreover, the U.S. Bankruptcy Code permits the debtor to continue to retain and use collateral even though the debtor is in default under the applicable debt instruments, *provided* that the secured creditor is given "adequate protection" of its interest in the debtor's property. The term "adequate protection" is not defined in the U.S. Bankruptcy Code, but it may include making periodic cash payments, providing an additional or replacement lien or granting other relief, in each case to the extent that the collateral decreases in value during the pendency of the bankruptcy case as a result of, among other things, the use, sale or lease of such collateral or the imposition of the automatic stay.

The type of adequate protection provided to a secured creditor may vary according to circumstances. A U.S. bankruptcy court may determine that a secured creditor is not entitled to additional adequate protection for a diminution in the value of its collateral if the value of the collateral exceeds the amount of the debt that it secures.

Only the debtor in a chapter 11 bankruptcy case may propose a chapter 11 plan unless the debtor fails to file a plan within the first 120 days of the case or fails to solicit sufficient acceptances of its plan within the first 180 days of the case. The bankruptcy court may reduce or enlarge these periods. The 120-day period could be extended for up to 18 months after a chapter 11 filing, while the 180-day period could be extended for up to 20 months after a chapter 11 filing. During these "exclusive periods," other parties such as secured creditors would be precluded from proposing or soliciting acceptances of their own chapter 11 plans.

In view of the automatic stay, the lack of a precise definition of the term "adequate protection," the exclusive periods, and the broad discretionary power of a U.S. bankruptcy court, it is impossible to predict:

- whether or when a holder of the Notes could enforce its security interests;

- the value of the collateral at the time of the bankruptcy petition or at the time a chapter 11 plan is proposed or confirmed; or
- whether or to what extent holders of the Notes would be compensated for any delay in payment or loss of value of the collateral through the requirement of "adequate protection."

A Debtor-In-Possession May Obtain New Credit Secured By a Lien That is Senior or Equal to Existing Liens

The U.S. Bankruptcy Code permits a debtor-in-possession or trustee in a chapter 11 case to obtain an extension of new credit from an existing lender or from a new lender. The bankruptcy court may, depending on the facts and circumstances, authorize the debtor-in-possession or trustee to obtain new credit or incur new debt that is secured by a lien that is senior or equal to existing liens. In other words, it is possible that in connection with a chapter 11 case of one or more of the Obligors, such Obligor or Obligors would be permitted to incur new debt that is secured by a lien that is senior or equal to the liens that exist at the time of the chapter 11 filing.

Ability to Confirm a Chapter 11 Plan Notwithstanding the Dissenting Votes of Creditors

Under the U.S. Bankruptcy Code, a chapter 11 plan can be imposed on a creditor or equityholder (or class of creditors or equityholders) that does not accept the plan. A chapter 11 plan provides for the comprehensive treatment of all claims asserted against the debtor and its property, and may provide for the readjustment or extinguishment of equity interests. Claims and interests may be classified by type. Only those classes of claims and interests impaired by the plan may vote to accept or reject such plan. Classes of claims and interests that are unimpaired are not entitled to vote on the plan, and are deemed to accept it. Classes of claims and interest that receive no distributions under the plan are not entitled to vote on the plan, and are deemed to reject it.

A class of claims is deemed to accept the plan if more than one-half in number of claims holders and two-thirds in claims amount in that class vote in favor of the plan. A plan can be confirmed by the bankruptcy court over the dissenting votes of members of a class that accepts the plan overall. Furthermore, even if one or more impaired classes reject the plan, it may still be confirmed, subject to specific statutory requirements, in accordance with the "cram-down" provisions of the U.S. Bankruptcy Code, so long as the plan does not discriminate unfairly, and is fair and equitable, with respect to each class of claims or interests that is impaired under, and has not accepted, the plan. This could allow the debtor or other plan proponent to confirm its plan over the objection of one or more dissenting classes.

BOOK-ENTRY; DELIVERY AND FORM

General

Notes sold to qualified institutional buyers in reliance on Rule 144A under the U.S. Securities Act will initially be represented by one or more global notes in registered form without interest coupons attached (the "Rule 144A Global Note"). Notes sold to non-U.S. persons outside the United States in reliance on Regulation S under the U.S. Securities Act will initially be represented by one or more global notes in registered form without interest coupons attached (the "Regulation S Global Note" and, together with the Rule 144A Global Note, the "Global Notes"). The Global Notes will be deposited, on the closing date, with a common depositary and registered in the name of the nominee of the common depositary for the accounts of Euroclear and Clearstream.

Ownership of interests in the 144A Global Notes ("144A Book-Entry Interests") and ownership of interests in the Regulation S Global Notes (the "Regulation S Book-Entry Interest" and, together with the 144A Book-Entry Interests, the "Book-Entry Interests") will be limited to persons that have accounts with Euroclear and/or Clearstream or persons that may hold interests through such participants. Book-Entry Interests will be shown on, and transfers thereof will be effected only through, records maintained in book-entry form by Euroclear and/or Clearstream and their participants. The Book-Entry Interests in the Global Notes will be issued only in denominations of €100,000 and in integral multiples of €1,000 in excess thereof.

The Book-Entry Interests will not be held in definitive form. Instead, Euroclear or Clearstream, as applicable, will credit on their respective book-entry registration and transfer systems a participant's account with the interest beneficially owned by such participant. The laws of some jurisdictions, including certain states of the United States, may require that certain purchasers of securities take physical delivery of such securities in definitive form. The foregoing limitations may impair the ability to own, transfer or pledge Book-Entry Interests. In addition, while the Notes are in global form, owners of interest in the Global Notes will not have the Notes registered in their names, will not receive physical delivery of the Notes in certificated form and will not be considered the registered owners or "holder" of the Notes under the Indenture for any purpose.

So long as the Notes are held in global form, the common depositary for Euroclear or Clearstream, as applicable (or their respective nominees), will be considered the holders of Global Notes for all purposes under the Indenture. As such, participants must rely on the procedures of Euroclear or Clearstream, as applicable, and indirect participants must rely on the procedures of Euroclear or Clearstream, as applicable, and the participants through which they own Book-Entry Interests in order to exercise any rights of holders under the Indenture.

Neither the Issuer, the Registrar, the common depositary, the nominee of the common despository for Euroclear and Clearstream, nor the Trustee under the Indenture nor any of the Issuer's respective agents will have any responsibility or be liable for any aspect of the records relating to the Book-Entry Interests.

Issuance of Definitive Registered Notes

Under the terms of the Indenture, owners of Book-Entry Interests will receive definitive notes in registered form (the "Definitive Registered Notes"):

(1) if Euroclear or Clearstream notifies the Issuer that it is unwilling or unable to continue to act as depositary and a successor depositary is not appointed by the Issuer within 120 days; or

(2) if the owner of a Book-Entry Interest requests such exchange in writing delivered through Euroclear or Clearstream following an event of default under the Indenture.

Euroclear and Clearstream have advised the Issuer that upon request by an owner of a Book-Entry Interest described in the immediately preceding clause (2), their current procedure is to request that the Issuer issues or causes to be issued Notes in definitive registered form to all owners of Book-Entry Interests and not only to the owner who made the initial request.

In such an event described in clauses (1) and (2), the Registrar will issue Definitive Registered Notes, registered in the name or names and issued in any approved denominations, requested by or on behalf of Euroclear, Clearstream or the Issuer, as applicable (in accordance with their respective customary procedures and based upon directions received from participants reflecting the beneficial ownership of Book-Entry Interests), and such Definitive Registered Notes will bear the restrictive legend as provided in the Indenture, unless that legend is not required by the Indenture or applicable law.

Redemption of the Global Notes

In the event any Global Note, or any portion thereof, is redeemed, Euroclear or Clearstream, as applicable, will distribute the amount received by it in respect of the Global Note so redeemed to the holders of the Book- Entry Interests in such Global Note from the amount received by it in respect of the redemption of such Global Note. The redemption price payable in connection with the redemption of such Book-Entry Interests will be equal to the amount received by Euroclear or Clearstream, as applicable, in connection with the redemption of such Global Note (or any portion thereof). The Issuer understands that under existing practices of Euroclear and Clearstream if fewer than all of the Notes are to be redeemed at any time, Euroclear and Clearstream will credit their respective participants' accounts on a proportionate basis (with adjustments to prevent fractions) or by lot or on such other basis as they deem fair and appropriate; *provided*, *however*, that no Book-Entry Interest of less than €100,000, principal amount at maturity, or less, may be redeemed in part.

Payments on Global Notes

Payments of amounts owing in respect of the Global Notes (including principal, premium, interest, additional interest and additional amounts) will be made by the Issuer to the Principal Paying Agent. The Principal Paying Agent will, in turn, make such payments to the common depositary for Euroclear and Clearstream, which will distribute such payments to participants in accordance with their respective procedures.

Under the terms of the Indenture governing the Notes, the Issuer and the Trustee will treat the registered holder of the Global Notes (for example, Euroclear or Clearstream (or their respective nominees)) as the owner thereof for the purpose of receiving payments and for all other purposes. Consequently, neither the Issuer, the Trustee, the Registrar nor any Paying Agent or any of their respective agents has or will have any responsibility or liability for:

- any aspects of the records of Euroclear, Clearstream or any participant or indirect participant relating to or payments made on account of a Book-Entry Interest, for any such payments made by Euroclear, Clearstream or any participant or indirect participant, or for maintaining, supervising or reviewing the records of Euroclear, Clearstream or any participant or indirect participant relating to, or payments made on account of, a Book-Entry Interest; or
- payments made by Euroclear, Clearstream or any participant or indirect participant, or for maintaining, supervising or reviewing the records of Euroclear, Clearstream or any participant or indirect participant relating to or payments made on account of a Book-Entry Interest; or
- Euroclear, Clearstream or any participant or indirect participant.

Payments by participants to owners of Book-Entry Interests held through participants are the responsibility of such participants, as is now the case with securities held for the accounts of subscribers registered in "street name."

Currency of Payment for the Global Notes

The principal of, premium, if any, and interest on, and all other amounts payable in respect of, the Global Notes will be paid to holders of interests to such Notes through Euroclear and/or Clearstream in euro.

The principal of, premium, if any, and interest on, and all other amounts payable in respect of, the Global Notes will be paid to holders of interest in such notes (the "Euroclear/Clearstream Holders") through Euroclear or Clearstream, as applicable, in euro.

Action by Owners of Book-Entry Interests

Euroclear and Clearstream have advised the Issuer that they will take any action permitted to be taken by a holder of Notes (including the presentation of Notes for exchange as described above) only at the direction of one or more participants to whose account the Book-Entry Interests in the Global Notes are credited and only in respect of such portion of the aggregate principal amount of Notes as to which such participant or participants has or have given such direction. Euroclear and Clearstream will not exercise any discretion in the granting of consents or waivers or the taking of any other action in respect of the Global Notes. However, if there is an event of default under the Notes, each of Euroclear and Clearstream, at the request of the holders of the Notes, reserve the right to exchange the Global Notes for Definitive Registered Notes, and to distribute such Definitive Registered Notes to their participants.

Transfers

Transfers between participants in Euroclear and/or Clearstream will be effected in accordance with Euroclear and Clearstream's rules and will be settled in immediately available funds. If a holder of Notes requires physical delivery of Definitive Registered Notes for any reason, including to sell Notes to persons in states which require physical delivery of such securities or to pledge such securities, such holder of Notes must transfer its interests in the Global Notes in accordance with the normal procedures of Euroclear and Clearstream and in accordance with the procedures set forth in the Indenture.

The Global Notes will bear a legend to the effect set forth in "Notice to Investors." Book-Entry Interests in the Global Notes will be subject to the restrictions on transfer discussed in "Notice to Investors."

Through and including the 40th day after the later of the commencement of the Offering of the Notes and the closing of the Offering (the "40-day Period"), beneficial interests in a Regulation S Global Note may be transferred to a person who takes delivery in the form of an interest in the Rule 144A Global Note denominated in the same currency only if such transfer is made pursuant to Rule 144A and the transferor first delivers to the Trustee a certificate (in the form provided in the Indenture) to the effect that such transfer is being made to a person who the transferor reasonably believes is a "qualified institutional buyer" within the meaning of Rule 144A in a transaction meeting the requirements of Rule 144A or otherwise in accordance with the transfer restrictions described under "Notice to Investors" and in accordance with all applicable securities laws of the states of the United States and other jurisdictions.

After the expiration of the 40-day Period, beneficial interests in a Regulation S Global Note may be transferred to a person who takes delivery in the form of a beneficial interest in the Rule 144A

Global Note denominated in the same currency without compliance with these certification requirements.

Beneficial interests in a Rule 144A Global Note may be transferred to a person who takes delivery in the form of a beneficial interest in the Regulation S Global Note only upon receipt by the Trustee of a written certification (in the form provided in the Indenture) from the transferor to the effect that such transfer is being made in accordance with Regulation S or Rule 144 under the Securities Act (if available).

Subject to the foregoing, and as set forth in "Notice to Investors," Book-Entry Interests may be transferred and exchanged as described under "Description of the Notes—Transfer and Exchange." Any Book-Entry Interest in one of the Global Notes that is transferred to a person who takes delivery in the form of a Book-Entry Interest in the other Global Note of the same denomination will, upon transfer, cease to be a Book-Entry Interest in the first mentioned Global Note and become a Book-Entry Interest in the other Global Note, and accordingly, will thereafter be subject to all transfer restrictions, if any, and other procedures applicable to Book-Entry Interests in such other Global Note for as long as it retains such a Book-Entry Interest.

Definitive Registered Notes may be transferred and exchanged for Book- Entry Interests in a Global Note only as described under "Description of the Notes—Transfer and Exchange" and, if required, only if the transferor first delivers to the Trustee a written certificate (in the form provided in the Indenture) to the effect that such transfer will comply with the appropriate transfer restrictions applicable to such Notes. See "Notice to Investors."

Information Concerning Euroclear and Clearstream

All Book-Entry Interests will be subject to the operations and procedures of Euroclear and Clearstream, as applicable. The Issuer provides the following summaries of those operations and procedures solely for the convenience of investors. The operations and procedures of each settlement system are controlled by that settlement system and may be changed at any time. Neither the Issuer nor the initial purchasers are responsible for those operations or procedures.

The Issuer understands as follows with respect to Euroclear and Clearstream: Euroclear and Clearstream hold securities for participating organizations. They facilitate the clearance and settlement of securities transactions between their participants through electronic book-entry changes in the accounts of such participants. Euroclear and Clearstream provide various services to their participants, including the safekeeping, administration, clearance, settlement, lending and borrowing of internationally traded securities. Euroclear and Clearstream interface with domestic securities markets.

Euroclear and Clearstream participants are financial institutions such as underwriters, securities brokers and dealers, banks, trust companies and certain other organizations. Indirect access to Euroclear and Clearstream is also available to others such as banks, brokers, dealers and trust companies that clear through or maintain a custodial relationship with a Euroclear and Clearstream participant, either directly or indirectly.

Because Euroclear and Clearstream can only act on behalf of participants, who in turn act on behalf of indirect participants and certain banks, the ability of an owner of a beneficial interest to pledge such interest to persons or entities that do not participate in the Euroclear and/or Clearstream system, or otherwise take actions in respect of such interest, may be limited by the lack of a definitive certificate for that interest. The laws of some jurisdictions require that certain persons take physical delivery of securities in definitive form. Consequently, the ability to transfer beneficial interests to such persons may be limited. In addition, owners of beneficial interests through the Euroclear or Clearstream systems will receive distributions attributable to the Rule 144A Global Notes only through Euroclear or Clearstream participants.

Global Clearance and Settlement Under the Book-Entry System

The Notes represented by the Global Notes are expected to be admitted to trading on the Euro MTF and listed on the official list of the Luxembourg Stock Exchange. The Notes have been accepted for clearance through the facilities of Euroclear and Clearstream. The international securities identification numbers and common code numbers for the Notes are set out under "Listing and General Information—Clearing Information." Transfers of interests in the Global Notes between participants in Euroclear or Clearstream will be effected in the ordinary way in accordance with their respective system's rules and operating procedures.

Although Euroclear or Clearstream currently follow the foregoing procedures in order to facilitate transfers of interests in the Global Notes among participants in Euroclear or Clearstream, as the case may be, they are under no obligation to perform or continue to perform such procedures, and such procedures may be discontinued or modified at any time. None of the Issuer, any Guarantor, the Trustee, the Registrar or the Principal Paying Agent will have any responsibility for the performance by Euroclear or Clearstream or their respective participants or indirect participants, of their respective obligations under the rules and procedures governing their operations.

Initial Settlement

Initial settlement for the Notes will be made in euros. Book-Entry Interests owned through Euroclear or Clearstream accounts will follow the settlement procedures applicable to conventional Eurobonds in registered form. Book-Entry Interests will be credited to the securities custody accounts of Euroclear and Clearstream holders on the business day following the settlement date against payment for value on the settlement date.

Secondary Market Trading

The Book-Entry Interests will trade through participants of Euroclear or Clearstream will settle in same-day funds. Since the purchase determines the place of delivery, it is important to establish at the time of trading of any Book-Entry Interests where both the purchaser's and the seller's accounts are located to ensure that settlement can be made on the desired value date.

Special Timing Considerations

You should be aware that investors will only be able to make and receive deliveries, payments and other communications involving the Notes through Euroclear or Clearstream on days when those systems are open for business.

Trustee's Powers

In considering the interests of the holders of the Notes, while title to the Notes is registered in the name of a nominee of a clearing system, the Trustee may have regard to, and rely on, any information provided to it by that clearing system as to the identity (either individually or by category) of its accountholders with entitlements to Notes and may consider such interests as if such accountholders were the holders of the Notes.

Enforcement

For the purposes of enforcement of the provisions of the Indenture by the Trustee, the persons named in a certificate of the holder of the Notes in respect of which a Global Note is issued shall be recognized as the beneficiaries of the trusts set out in the Indenture to the extent of the principal amounts of their interests in the Notes set out in the certificate of the holder, as if they were themselves the holders of the Notes in such principal amounts.

CERTAIN TAX CONSIDERATIONS

The following is a description of certain tax considerations relating to a holding of the Notes. It does not purport to be a complete analysis of all tax considerations relating to the Notes. Prospective purchasers of the Notes should consult their tax advisers as to the consequences under the tax laws of the country of which they are resident for tax purposes and the tax laws of any other jurisdiction of acquiring, holding, redeeming and disposing of the Notes receiving payments and/or other amounts thereunder. This summary is based upon the law as in effect on the date hereof and is subject to any change in law that may take effect after such date, and may be retroactively applicable.

United Kingdom Tax Considerations

The following is a general description of certain U.K. tax consequences of acquiring, holding and disposing of the Notes and is based on the Issuer's understanding of current U.K. law and HM Revenue & Customs ("HMRC") practice as at the date hereof, both of which are subject to change, possibly with retrospective effect. This description is not exhaustive and relates only to the position of persons who are the absolute beneficial owners of the Notes and may not apply to certain classes of persons, such as brokers, dealers in securities, individuals holding the Notes through an ISA, persons connected with the Issuer or certain professional investors, to whom special rules may apply. Further, these comments do not deal with holders of the Notes who are individuals treated as non-domiciled in the United Kingdom for U.K. tax purposes. This description does not purport to constitute legal or tax advice and any holders who are in any doubt as to their tax position should consult their independent professional advisors. Any holders of the Notes who are subject to tax in a jurisdiction other than the United Kingdom should consult their independent professional advisors.

Interest on the Notes

The Notes will constitute "quoted Eurobonds" within the meaning of Section 987 of the Income Tax Act 2007 ("ITA") while they are and remain listed on a "recognised stock exchange" within the meaning of Section 1005 ITA. While the Notes are, and continue to be, quoted Eurobonds, payments of interest on the Notes may be made without deduction or withholding for or on account of U.K. income tax. Securities that have been admitted to the Official List of the Luxembourg Stock Exchange and are admitted to trading on the Euro MTF Market will meet the requirement to be listed on a recognised stock exchange. So long as this remains the case with respect to the Notes, they will therefore constitute quoted Eurobonds.

If the Notes do not constitute "quoted Eurobonds," an amount may, subject to any relief available under any applicable double taxation treaty and to the availability of any other relief, have to be withheld on account of U.K. income tax from payments of interest on the Notes at the "basic rate" of U.K. income tax (currently 20%).

If interest were to be paid under deduction of U.K. income tax, holders of the Notes who are not resident in the United Kingdom may be able to recover all or part of the tax deducted if there is an appropriate provision in an applicable double taxation treaty.

Tax by Direct Assessment

Interest on the Notes may constitute United Kingdom source income for United Kingdom tax purposes and accordingly may be chargeable to U.K. income or corporation tax by direct assessment even where paid without deduction or withholding. However, where the interest is paid without deduction or withholding, the interest will not be assessed to U.K. tax in the hands of holders of the Notes who are not resident for tax purposes in the United Kingdom, except where the holder carries on a trade, profession or vocation through a branch or agency (or, in the case of a corporate holder, a permanent establishment) in the United Kingdom in connection with which the interest is received or to which the Notes are attributable, in which case (subject to exemptions for interest received by certain categories of agent) U.K. corporation or income tax may be levied on the U.K. branch, agency or permanent establishment.

Holders of the Notes may wish to note that the provisions referred to in "Description of the Notes—Payment of Additional Amounts" would not apply if HMRC sought to assess directly the person entitled to the relevant interest to U.K. tax. However, exemption from, or reduction of, such U.K. tax liability might be available under an applicable double taxation treaty.

Payments by a Guarantor

If a Guarantor makes any payments in respect of interest on the Notes (or other amounts due under the Notes other than the repayment of amounts subscribed for the Notes), it is possible that such payments may be subject to U.K. withholding tax, subject to any claim which could be made under an applicable double taxation treaty. Such payments by a Guarantor may not be eligible for the quoted Eurobond relief described above.

HMRC Information Powers

Holders of the Notes who are individuals may wish to note that HMRC has power to obtain information (including the name and address of the recipient or beneficial owner of the relevant payment) from any person in the United Kingdom who either pays interest to, or receives interest for the benefit of, an individual. Any information obtained may, in certain circumstances, be provided by HMRC to the tax authorities of other jurisdictions.

United Kingdom Holders Subject to Corporation Tax

In general, holders of the Notes who are within the charge to U.K. corporation tax will be charged to tax on income in respect of all profits, gains and losses on, and fluctuations in value of, the Notes (whether attributable to currency fluctuations or otherwise) measured and recognized in each accounting period broadly in accordance with their statutory accounting treatment, calculated in accordance with generally accepted accounting practice, under the "loan relationships" rules in Part 5 of the Corporation Tax Act 2009.

United Kingdom Holders not Subject to Corporation Tax

Assuming that the Notes do not constitute "deeply discounted securities" for the purposes of Chapter 8 of Part 4 of the Income Tax (Trading and Other Income) Act 2005, the disposal of the Notes by an individual holder who is resident for tax purposes in the United Kingdom or who carries on a trade, profession or vocation in the United Kingdom through a branch or agency to which the Notes are attributable may give rise to a chargeable gain or allowable loss for the purposes of U.K. tax on chargeable gains, depending on individual circumstances. In calculating any gain or allowable loss on the disposal of the Notes, sterling values are compared at acquisition and disposal. Accordingly, a taxable gain can arise even where the euro amount received on a disposal is less than or the same as the euro amount paid for the Notes.

Special rules may apply to individuals who have ceased to be resident for tax purposes in the United Kingdom and who dispose of their Notes before becoming once again resident in the United Kingdom. Noteholders are advised to consult their own professional advisors if they require any advice or further information relating to residency.

On the disposal of Notes by a holder (assuming they do not constitute deeply discounted securities), any interest which has accrued since the last interest payment date may be chargeable to tax on income under the rules relating to accrued income profits as set out in Chapter 2 of Part 12 of ITA if that holder is resident for tax purposes in the United Kingdom or carries on a trade, profession or vocation in the United Kingdom through a branch or agency to which the Notes are attributable.

Stamp Duty and Stamp Duty Reserve Tax

No U.K. stamp duty or stamp duty reserve tax is payable on the issue of, or on a transfer of, the Notes.

Material U.S. Federal Income Tax Considerations

The following discussion is a summary based on present law of the material U.S. federal income tax considerations relevant to the purchase, ownership and disposition of the Notes. This discussion addresses only U.S. Holders (as defined below) who purchase the Notes in the original issuance at their respective issue price (generally, the first price at which a substantial amount of such Notes is sold to the public for cash), hold the Notes as capital assets and use the U.S. dollar as their functional currency. This summary does not address the tax consequences to subsequent purchasers of the Notes.

This discussion is not a complete description of all U.S. federal income tax considerations relating to the Notes. It does not address the tax treatment of prospective purchasers subject to special rules, such as banks, dealers, traders that elect to mark to market, insurance companies, real estate investment trusts, regulated investment companies, grantor trusts, investors liable for the alternative minimum tax, U.S. expatriates, accrual method taxpayers who are required to recognize income for U.S. federal income tax purposes no later than when such income is taken into account for financial accounting purposes, tax-exempt entities or persons holding the Notes as part of a hedge, straddle, conversion or other integrated financial transaction. This summary does not discuss any tax consequences arising under the U.S. federal estate and gift tax laws or the laws of any state, local, non-U.S. or other taxing jurisdiction.

YOU ARE URGED TO CONSULT YOUR OWN TAX ADVISOR ABOUT THE PARTICULAR U.S. FEDERAL INCOME TAX CONSEQUENCES TO YOU OF PURCHASING, HOLDING AND DISPOSING OF THE NOTES, AS WELL AS THE CONSEQUENCES TO YOU ARISING UNDER THE LAWS OF ANY OTHER TAXING JURISDICTION OR DUE TO CHANGES IN TAX LAW.

For purposes of this discussion, a "U.S. Holder" is a beneficial owner that is, for purposes of U.S. federal income taxation, (i) a citizen or resident alien of the United States, (ii) a corporation, or other entity treated as a corporation, created or organized in or under the laws of the United States or its political subdivisions, (iii) a trust that (a) is subject to the control of a U.S. person and the primary supervision of a U.S. court or (b) has a valid election in effect under applicable U.S. Treasury Regulations to be treated as a U.S. person or (iv) an estate, the income of which is subject to U.S. federal income taxation regardless of its source.

If a partnership (or an entity or arrangement treated as a partnership for U.S. federal income tax purposes) acquires or holds the Notes, the tax treatment of a partner generally will depend upon the status of the partner and the activities of the partnership. A partner or partnership considering acquiring or holding the Notes should consult its own tax advisor.

This summary is based on the Internal Revenue Code of 1986, as amended (the "Code"), the Treasury regulations promulgated thereunder, rulings and judicial decisions all as of the date hereof, which are subject to change (possibly with retroactive effect), so as to result in U.S. federal income tax consequences different from those summarized below. No rulings from the Internal Revenue Service (the "IRS") have been or will be sought with respect to the matters discussed below. There can be no assurance that the IRS will not take a different position concerning the tax consequences of the purchase, ownership or disposition of the Notes and that any such position would not be sustained.

Effect of Certain Contingencies

In certain circumstances, we may be required to pay amounts on the Notes in addition to stated principal and interest (*e.g.*, in the circumstances described under "Description of the Notes—Payment of Additional Amounts," "Description of the Notes—Optional Redemption" and "Description of the Notes—Purchase of Notes upon a Change of Control"). These potential payments may implicate the provisions of the Treasury regulations relating to "contingent payment debt instruments." One or more contingencies will not cause the Notes to be treated as contingent payment debt instruments if, as of the Issue Date, such contingencies, in the aggregate, are considered remote or incidental. Although the issue is not free from doubt, we intend to take the position that the possibility of such additional payments does not result in the Notes being treated as contingent payment debt instruments under applicable Treasury regulations. This position will be based on our determination that, as of the Issue Date, the possibility that additional payments will be made is, in the aggregate, a remote or incidental contingency within the meaning of applicable Treasury regulations. Assuming such position is respected, you would be required to include in income the amount of any such additional payments at the time such payments are received or accrued in accordance with your regular method of accounting for U.S. federal income tax purposes.

Our determination that these contingencies are remote or incidental is binding on a holder, unless such holder explicitly discloses to the IRS on its tax return for the year during which it acquires the Notes that it is taking a different position. However, our position is not binding on the IRS. If the IRS takes a contrary position to that described above, then the Notes may be treated as contingent payment debt instruments. In that case, regardless of a holder's regular method of accounting for U.S. federal income tax purposes, a holder subject to U.S. federal income taxation may be required to accrue ordinary interest income on the Notes at a rate in excess of the stated interest, and to treat any gain realized on the sale, redemption or other taxable disposition of the Notes as ordinary income rather than capital gain. You are urged to consult your own tax advisors regarding the tax consequences of the Notes being treated as contingent payment debt instruments. The remainder of this discussion assumes that the Notes will not be treated as contingent payment debt instruments for U.S. federal income tax purposes.

Stated Interest

Generally, stated interest on the Notes will be taxable to you as ordinary income at the time it accrues or is received, in accordance with your regular method of accounting for U.S. federal income tax purposes. Stated interest will be income from sources outside the United States and, for purposes of the U.S. foreign tax credit, will generally be considered passive category income.

If you use the cash basis method of accounting, you will be required to include in income the U.S. dollar value of the amount received, determined by translating the euros received at the "spot rate" in effect on the date of receipt, regardless of whether the payment is in fact converted into U.S. dollars. You will not recognize exchange gain or loss with respect to the receipt of such payment of stated interest.

If you use the accrual method of accounting, you may determine the amount of income recognized with respect to such interest in accordance with either of two methods. Under the first method, you will be required to include in income for each taxable year the U.S. dollar value of the stated interest that has accrued during such year, determined by translating such interest at the average rate of exchange for the period during which such interest accrued, or, in the case of an accrual period that spans two taxable years, the part of the period within the taxable year. Under the second method, you may elect to translate stated interest income at the spot rate on (i) the last day of the accrual period, (ii) the last day of the taxable year if the accrual period straddles your taxable year or (iii) the date the stated interest payment is received if such date is within five days of the end of the accrual period. Such election must be applied consistently to all debt instruments from year to year and cannot be changed without the consent of the IRS. In addition, upon receipt of a stated interest payment in euros (including amounts received upon the sale, redemption or other taxable disposition of a Note attributable to accrued interest previously included in income), you will recognize exchange gain or loss, generally treated as U.S. source ordinary income or loss (and not as an adjustment to interest income or expense), in an amount equal to the difference, if any, between the U.S. dollar value of such payment (determined by translating the euros received at the spot rate in effect on the date of receipt) and the U.S. dollar value of the stated interest income that you previously included in income with respect to such payment, regardless of whether the payment is actually converted into U.S. dollars.

Sale, Redemption or Other Taxable Disposition

You generally will recognize gain or loss on a sale, redemption or other taxable disposition of a Note in an amount equal to the difference between the amount realized (less any accrued but unpaid stated interest, which if not previously included in income is taxed as interest income) and your adjusted tax basis in the Note. Your adjusted tax basis in a Note generally will be the U.S. dollar cost for the Note, decreased by any payments on the Note other than stated interest previously received. If you purchased a Note with euros, your cost generally will be the U.S. dollar value of the euros paid for such Note determined at the spot rate on the date of such purchase (or, in the case of a cash basis or electing accrual basis taxpayer, the settlement date of the purchase, if the Note is traded on an established securities market). If your Note is sold, redeemed or otherwise disposed of in a taxable transaction for euros, then your amount realized generally will be the U.S. dollar value of any euros received based on the spot rate in effect on the date of such sale, redemption or other taxable disposition (or, in the case of a cash basis or electing accrual basis taxpayer, the settlement date of the sale or other taxable disposition, if the Note is traded on an established securities market). If you use the accrual method of accounting and have not elected to translate euro amounts at the spot rate of exchange on the settlement date, upon receipt of a payment in euros, you may recognize exchange gain or loss (taxable as ordinary income or loss) equal to the difference (if any) between the U.S. dollar value of the amount received based on the spot rates in effect on the date of sale, redemption or other taxable disposition and the settlement date.

Subject to the foreign currency rules discussed below, your gain or loss on disposition of a Note generally will be U.S. source capital gain or loss and will be long-term capital gain or loss if you have held the Note for more than one year at the time of disposition. A non-corporate U.S. Holder generally will be eligible for reduced rates of taxation on any long-term capital gain recognized. Deductions for capital losses are subject to limitations.

A portion of your gain or loss may be treated as exchange gain or loss. Such exchange gain or loss will be treated as ordinary income or loss and generally will be U.S. source gain or loss. For these purposes, the principal amount of the Notes is your purchase price for the Note calculated in euros on the date of purchase, and the amount of exchange gain or loss recognized is equal to the difference between the (i) U.S. dollar value of the principal amount determined on the date of the sale, redemption or other taxable disposition of the Note (or on the settlement date, if you are a cash basis taxpayer or an electing accrual basis taxpayer and the Note is traded on an established securities market) and (ii) U.S. dollar value of the principal amount determined on the date you purchased the Note. The amount of exchange gain or loss with respect to the principal and with respect to accrued and unpaid stated interest will be limited to the amount of overall gain or loss realized on the disposition of the Note. In certain circumstances, U.S. Treasury Regulations require foreign exchange losses in excess of a threshold amount to be reported to the IRS. If you hold a Note, you should consult your tax advisors to determine the tax return obligations, if any, with respect to an investment in the Note, including any requirement to file IRS Form 8886.

Exchange of Foreign Currency

On a sale, redemption or other taxable disposition of foreign currency, you generally will recognize gain or loss in an amount equal to the difference between (i) the amount of U.S. dollars, or the fair market value in U.S. dollars of other property, received by you in the disposition and (ii) your tax basis in the foreign currency. Any such gain or loss will be ordinary income or loss and will not be treated as interest income or expense, except to the extent provided by administrative pronouncements of the IRS. Foreign currency received as interest on a Note or on the sale, redemption or other taxable disposition of a Note will have a tax basis equal to its U.S. dollar value at the time the foreign currency is received (including foreign currency received from the sale, redemption or other taxable disposition of a Note that is traded on established securities market in the case of an accrual basis taxpayer that does not make the election described above, once exchange gain or loss, if any, has been realized for the period between the trade date and the settlement date, as described above). Foreign currency that is purchased will generally have a tax basis equal to the U.S. dollar value of the foreign currency on the date of purchase.

Information Reporting and Backup Withholding

Payments of interest and proceeds from the sale, redemption or other taxable disposition of a Note may be reported to the IRS unless you establish a basis for exemption. Backup withholding may apply to amounts subject to reporting if you fail to provide an accurate taxpayer identification number or, in the case of interest payments including OID, if any, fail either to report in full dividend and interest income or, in either case, fail to make certain certifications. Backup withholding is not an additional tax. You generally can claim a credit against your U.S. federal income tax liability for the amount of any backup withholding and a refund of any excess, *provided* that the required information is timely furnished to the IRS.

Information with Respect to Foreign Financial Assets

Individuals that own "specified foreign financial assets" with an aggregate value in excess of $50,000 on the last day of the tax year or $75,000 at any time during the tax year are generally required to file information reports with respect to such assets with their U.S. federal income tax returns. Depending on the individual's circumstances, higher threshold amounts may apply. "Specified foreign financial assets" include any financial accounts maintained by foreign financial institutions, as well as any of the following, but only if they are not held in accounts maintained by financial institutions: (i) stocks and securities issued by non-U.S. persons, (ii) financial instruments and contracts held for investment that have non-U.S. issuers or counterparties and (iii) interests in non-U.S. entities. The Notes may be treated as specified foreign financial assets. You may be subject to this information reporting regime and required to file IRS Form 8938 listing these assets with your U.S. federal income tax return. Failure to file information reports may subject you to penalties. You are urged to consult your own tax advisor regarding your obligations to file information reports with respect to the Notes.

Additional Tax on Net Investment Income

The "net investment income" (or undistributed "net investment income," in the case of a trust or estate) of certain U.S. Holders that are individuals, trusts or estates and that have modified adjusted gross income (or adjusted gross income, in the case of a trust or estate) above a certain threshold (which in the case of an individual is between $125,000 and $250,000, depending on the individual's circumstances) is subject to a 3.8% tax, in addition to otherwise applicable U.S. federal income tax. A U.S. Holder's "net investment income" generally includes, among other things, interest income on and capital gain from the disposition of securities like the Notes, subject to certain exceptions. If you are a U.S. Holder that is an individual, estate or trust, you are urged to consult your own tax advisor regarding the applicability of this tax to your investment in the Notes.

NOTICE TO INVESTORS

You are advised to consult legal counsel prior to making any offer, resale, pledge or other transfer of any of the Notes offered hereby.

The Notes and the guarantees have not been and will not be registered under the Securities Act, or the securities laws of any other jurisdiction, and, unless so registered, may not be offered or sold except pursuant to an exemption from, or in a transaction not subject to, the registration requirements of the Securities Act or the securities laws of any other jurisdiction. Accordingly, the Notes offered hereby are being offered and sold only to qualified institutional buyers (as defined in Rule 144A under the Securities Act) in reliance on Rule 144A under the Securities Act and to non-U.S. persons in offshore transactions in reliance on Regulation S under the Securities Act.

We have not registered and will not register the Notes or the guarantees under the Securities Act and, therefore, the Notes may not be offered or sold within the United States or to, or for the account or benefit of, U.S. persons except pursuant to an exemption from, or in a transaction not subject to, the registration requirements of the Securities Act. Accordingly, the Issuer is offering and selling the Notes to the initial purchasers for re-offer and resale only:

- in the United States to "qualified institutional buyers," commonly referred to as "QIBs," as defined in Rule 144A in compliance with Rule 144A; and
- outside the United States to non-U.S. persons in accordance with Regulation S.

We use the terms "offshore transaction," "U.S. person" and "United States" with the meanings given to them in Regulation S.

Each purchaser of the Notes, by its acceptance thereof, will be deemed to have acknowledged, represented to and agreed with the Issuer and the initial purchasers as follows:

(1) You understand and acknowledge that the Notes and the guarantees have not been registered under the Securities Act or any other applicable securities laws and that the Notes are being offered for resale in transactions not requiring registration under the Securities Act or any other securities laws, including sales pursuant to Rule 144A under the Securities Act, and, unless so registered, may not be offered, sold or otherwise transferred except in compliance with the registration requirements of the Securities Act or any other applicable securities laws, pursuant to an exemption therefrom or in any transaction not subject thereto and in each case in compliance with the conditions for transfer set forth in paragraphs (4) and (5) below.

(2) You are not our "affiliate" (as defined in Rule 144 under the Securities Act) or acting on our behalf and you are either:

(a) a QIB, within the meaning of Rule 144A under the Securities Act and are aware that any sale of these Notes to you will be made in reliance on Rule 144A under the Securities Act, and such acquisition will be for your own account or for the account of another QIB; or

(b) a non-U.S. person and you are purchasing the Notes in an offshore transaction in accordance with Regulation S under the Securities Act.

(3) You acknowledge that none of the Issuer, the Guarantors, or the initial purchasers, nor any person representing any of them, has made any representation to you with respect to us or the offer or sale of any of the Notes, other than the information contained in this offering memorandum, which offering memorandum has been delivered to you and upon which you are relying in making your investment decision with respect to the Notes. You acknowledge that neither the initial purchasers nor any person representing

the initial purchasers make any representation or warranty as to the accuracy or completeness of this offering memorandum. You have had access to such financial and other information concerning us and the Notes as you have deemed necessary in connection with your decision to purchase any of the Notes, including an opportunity to ask questions of, and request information from, us and the initial purchasers.

(4) You are purchasing the Notes for your own account, or for one or more investor accounts for which you are acting as a fiduciary or agent, in each case for investment, and not with a view to, or for offer or sale in connection with, any distribution thereof in violation of the Securities Act or the securities laws of any other jurisdiction, subject to any requirement of law that the disposition of your property or the property of such investor account or accounts be at all times within its or their control and subject to your or their ability to resell such Notes pursuant to Rule 144A, Regulation S or any other exemption from registration available under the Securities Act.

(5) You agree on your own behalf and on behalf of any investor account for which you are purchasing the Notes, and each subsequent holder of the Notes by its acceptance thereof will be deemed to agree, to offer, sell or otherwise transfer such Notes prior to the date (the "Resale Restriction Termination Date") that is one year (in the case of Rule 144A Notes) or 40 days (in the case of Regulation S Notes) after the later of the date of the original issue and the last date on which the Issuer or any of its affiliates was the owner of such Notes (or any predecessor thereto) only (i) to the Issuer, (ii) pursuant to a registration statement that has been declared effective under the Securities Act, (iii) for so long as the Notes are eligible pursuant to Rule 144A under the Securities Act, to a person you reasonably believe is a QIB that purchases for its own account or for the account of a QIB to whom notice is given that the transfer is being made in reliance on Rule 144A under the Securities Act, (iv) to non-U.S. persons pursuant to offers and sales that occur outside the United States in compliance with Regulation S under the Securities Act or (v) pursuant to any other available exemption from the registration requirements of the Securities Act, subject in each of the foregoing cases to any requirement of law that the disposition of its property or the property of such investor account or accounts be at all times within its or their control and to compliance with any applicable state securities laws, and any applicable local laws and regulations, and further subject to the Issuer's and the Trustee's rights prior to any such offer, sale or transfer (I) pursuant to clauses (iv) and (v) to require the delivery of an opinion of counsel, certification or other information satisfactory to each of them and (II) in each of the foregoing cases, to require that a certificate of transfer in the form appearing on the reverse of the security is completed and delivered by the transferor to the Trustee. The foregoing restrictions on resale will not apply subsequent to the Resale Restriction Termination Date.

Each purchaser acknowledges that each Note will contain a legend substantially to the following effect:

> THIS SECURITY HAS NOT BEEN AND WILL NOT BE REGISTERED UNDER THE U.S. SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT") OR THE SECURITIES LAWS OF ANY STATE OR OTHER JURISDICTION. NEITHER THIS SECURITY NOR ANY INTEREST OR PARTICIPATION HEREIN MAY BE OFFERED, SOLD, ASSIGNED, TRANSFERRED, PLEDGED, ENCUMBERED OR OTHERWISE DISPOSED OF IN THE ABSENCE OF SUCH REGISTRATION OR UNLESS SUCH TRANSACTION IS EXEMPT

FROM, OR NOT SUBJECT TO, THE REGISTRATION REQUIREMENTS OF THE U.S. SECURITIES ACT.

THE HOLDER OF THIS SECURITY BY ITS ACCEPTANCE HEREOF AGREES TO OFFER, SELL OR OTHERWISE TRANSFER SUCH SECURITY, PRIOR TO THE DATE (THE "RESALE RESTRICTION TERMINATION DATE") WHICH IS [IN THE CASE OF RULE 144A NOTES: ONE YEAR] [IN THE CASE OF REGULATION S NOTES: 40 DAYS] AFTER THE LATER OF THE ORIGINAL ISSUE DATE HEREOF AND THE LAST DATE ON WHICH THE ISSUER OR ANY AFFILIATE OF THE ISSUER WAS THE OWNER OF THIS SECURITY (OR ANY PREDECESSOR OF THIS SECURITY) ONLY (A) TO THE ISSUER, THE GUARANTORS OR ANY SUBSIDIARY THEREOF, (B) PURSUANT TO A REGISTRATION STATEMENT WHICH HAS BEEN DECLARED EFFECTIVE UNDER THE U.S. SECURITIES ACT, (C) FOR SO LONG AS THE SECURITIES ARE ELIGIBLE FOR RESALE PURSUANT TO RULE 144A UNDER THE U.S. SECURITIES ACT ("RULE 144A"), TO A PERSON IT REASONABLY BELIEVES IS A "QUALIFIED INSTITUTIONAL BUYER" AS DEFINED IN RULE 144A THAT PURCHASES FOR ITS OWN ACCOUNT OR FOR THE ACCOUNT OF A QUALIFIED INSTITUTIONAL BUYER TO WHOM NOTICE IS GIVEN THAT THE TRANSFER IS BEING MADE IN RELIANCE ON RULE 144A, (D) TO NON-U.S. PERSONS PURSUANT TO OFFERS AND SALES THAT OCCUR OUTSIDE THE UNITED STATES IN COMPLIANCE WITH REGULATION S UNDER THE U.S. SECURITIES ACT OR (E) PURSUANT TO ANY OTHER AVAILABLE EXEMPTION FROM THE REGISTRATION REQUIREMENTS OF THE U.S. SECURITIES ACT, SUBJECT IN EACH OF THE FOREGOING CASES TO ANY REQUIREMENT OF LAW THAT THE DISPOSITION OF ITS PROPERTY OR THE PROPERTY OF SUCH INVESTOR ACCOUNT OR ACCOUNTS BE AT ALL TIMES WITHIN ITS OR THEIR CONTROL AND IN COMPLIANCE WITH ANY APPLICABLE STATE SECURITIES LAWS, AND ANY APPLICABLE LOCAL LAWS AND REGULATIONS AND FURTHER SUBJECT TO THE ISSUER'S AND THE TRUSTEE'S RIGHTS PRIOR TO ANY SUCH OFFER, SALE OR TRANSFER (I) PURSUANT TO CLAUSE (E) TO REQUIRE THE DELIVERY OF AN OPINION OF COUNSEL, CERTIFICATION OR OTHER INFORMATION SATISFACTORY TO EACH OF THEM, (II) IN EACH OF THE FOREGOING CASES, TO REQUIRE THAT A CERTIFICATE OF TRANSFER IN THE FORM APPEARING ON THE OTHER SIDE OF THIS SECURITY IS COMPLETED AND DELIVERED BY THE TRANSFEROR TO THE TRUSTEE AND (III) AGREES THAT IT WILL GIVE TO EACH PERSON TO WHOM THIS SECURITY IS TRANSFERRED A NOTICE SUBSTANTIALLY TO THE EFFECT OF THIS LEGEND.

If you purchase Notes, you will also be deemed to acknowledge that the foregoing restrictions apply to holders of beneficial interests in these Notes as well as to holders of these Notes.

(6) You agree that you will give to each person to whom you transfer the Notes notice of any restrictions on the transfer of such Notes.

(7) You acknowledge that until 40 days after the commencement of the Offering, any offer or sale of the Notes within the United States by a dealer (whether or not participating in the Offering) may violate the registration requirements of the Securities Act if such offer or sale is made otherwise than in accordance with Rule 144A under the Securities Act.

(8) You acknowledge that the Trustee will not be required to accept for registration or transfer any Notes acquired by you except upon presentation of evidence satisfactory to us and the Trustee that the restrictions set forth therein have been complied with.

(9) You acknowledge that we, the initial purchasers and others will rely upon the truth and accuracy of your acknowledgements, representations, warranties and agreements and agree that if any of the acknowledgements, representations, warranties and agreements deemed to have been made by your purchase of the Notes are no longer accurate, it shall promptly notify the initial purchasers. If you are acquiring any Notes as a fiduciary or agent for one or more investor accounts, you represent that you have sole investment discretion with respect to each such investor account and that you have full power to make the foregoing acknowledgements, representations and agreements on behalf of each such investor account.

(10) You represent that you are not a "retail investor". For the purposes of this paragraph, the expression "retail investor" means a person who is one (or more) of the following:

(a) a "retail client" as defined in point (11) of Article 4(1) of MiFID II;

(b) a customer within the meaning of the Insurance Mediation Directive, where that customer would not qualify as a professional client as defined in point (10) of Article 4(1) of MiFID II; or

(c) not a "qualified investor" as defined in the Prospectus Directive.

(11) You understand that no action has been taken in any jurisdiction (including the United States) by the Issuer or the initial purchasers that would result in a public offering of the Notes or the possession, circulation or distribution of this offering memorandum or any other material relating to the Issuer or the Notes in any jurisdiction where action for such purpose is required. Consequently, any transfer of the Notes will be subject to the selling restrictions set forth under "Plan of Distribution."

ERISA Considerations

Any purchaser, including, without limitation, any fiduciary purchasing on behalf of (i) an employee benefit plan (as defined in Section 3(3) of the Employee Retirement Income Security Act of 1974, as amended ("ERISA")) subject to the provisions of Part 4 of Subtitle B of Title I of ERISA or a plan, individual retirement account or other arrangement to which Section 4975 of the Code applies (each, a "Plan"), (ii) an entity whose underlying assets include "plan assets" with respect to a Plan by reason of a Plan's investment in such entity or otherwise (each, a "Benefit Plan Investor") or (iii) a governmental, church or non-U.S. plan or other arrangement that is subject to any Federal, state, local, non-U.S. or other laws or regulations that are substantially similar to the fiduciary responsibility or prohibited transaction provisions of ERISA or the provisions of Section 4975 of the Code ("Similar Laws"), transferee or holder of the Notes will be deemed to have represented, agreed and acknowledged (as applicable) in its corporate and fiduciary capacity, that:

(a) With respect to the acquisition, holding and disposition of the Notes, or any interest therein, (1) either (A) it is not, and it is not acting directly or indirectly on behalf of (and for so long as it holds such Notes or any interest therein will not be, and will not be acting directly or indirectly on behalf of), a Plan, a Benefit Plan Investor, or a governmental, church or non-U.S. plan or other arrangement that is subject to Similar Laws, and no part of the assets used or to be used by it to acquire or hold such Notes or any interest therein constitutes the assets of any such Plan, Benefit Plan Investor or governmental, church or non-U.S. plan or other arrangement that is subject to Similar Laws, or (B) (i) its acquisition, holding and disposition of such Notes or any interest therein does not and will not constitute or otherwise result in a non-exempt prohibited transaction under Part 4 of Subtitle B of Title I of ERISA or Section 4975 of the Code, as applicable (or, in the case of a governmental, church or non-U.S. plan or other arrangement, a violation of any applicable Similar Laws); and (ii) none of the Issuer, the guarantors, the initial purchasers, Trustee or any of their respective affiliates, is a sponsor of, or a fiduciary (within the meaning of Section 3(21) of ERISA or, with respect to a governmental, church or non-U.S. plan or other arrangement, any definition of "fiduciary," or any substantially similar concept, under any applicable Similar Laws) with respect to the purchaser, transferee or holder in connection with any acquisition, holding or disposition of such Notes, or as a result of any exercise by the Issuer or any of its affiliates of any rights in connection with such Notes, and no advice provided by the Issuer or any of their affiliates has formed a primary basis for any investment or other decision by or on behalf of the purchaser, transferee or holder in connection with such Notes and the transactions contemplated with respect to such Notes; and (2) it will not sell or otherwise transfer such Notes or any interest therein other than to a purchaser or transferee that is deemed (or if required by the applicable indenture, certified) to make these same representations, warranties and agreements with respect to its acquisition, holding and disposition of such Notes or any interest therein.

(b) The acquirer and any fiduciary causing it to acquire an interest in any Notes agrees to indemnify and hold harmless the Issuer, the guarantors, the initial purchasers, the Trustee and their respective affiliates, from and against any cost, damage or loss incurred by any of them as a result of any of the foregoing representations and agreements being or becoming false.

(c) Any purported acquisition or transfer of any Note or beneficial interest therein to a purchaser or transferee that does not comply with the requirements of the above provisions shall be void ab initio.

PLAN OF DISTRIBUTION

Subject to the terms and conditions set forth in the purchase agreement dated , 2019 among us and the initial purchasers (the "Purchase Agreement"), we have agreed to sell to the initial purchasers, and each of the initial purchasers has agreed, severally and not jointly, to purchase from us the respective principal amount of the Notes set forth opposite its name in the tables below.

Initial Purchasers[(1)]	Principal Amount of Notes
J.P. Morgan Securities plc	€231,000,000
Barclays Bank PLC	€231,000,000
Banco Santander, S.A.	€ 44,000,000
BNP Paribas	€ 44,000,000
Citigroup Global Markets Limited	€ 44,000,000
Goldman Sachs International	€ 44,000,000
ING Bank N.V., London Branch	€ 44,000,000
Merrill Lynch International	€ 44,000,000
NatWest Markets Plc	€ 44,000,000
	€770,000,000

(1) Sales may be made through affiliates of the initial purchasers listed above.

Subject to the terms and conditions set forth in the Purchase Agreement, the initial purchasers have agreed, severally and not jointly, to purchase all of the Notes sold under the Purchase Agreement if any of the Notes are purchased. If an initial purchaser defaults, the Purchase Agreement provides that the purchase commitments of the non-defaulting initial purchasers may be increased or the Purchase Agreement may be terminated. The initial purchasers may make offers and sales into the United States through U.S. broker-dealers.

We have agreed to indemnify the initial purchasers against certain liabilities, including liabilities under the Securities Act, or to contribute to payments the initial purchasers may be required to make in respect of those liabilities.

The initial purchasers are offering the Notes, subject to prior sale, when, as and if issued to and accepted by them, subject to approval of legal matters by their counsel, including the validity of the Notes and other conditions contained in the Purchase Agreement, such as the receipt by the initial purchasers of officer's certificates and legal opinions. The initial purchasers reserve the right to withdraw, cancel or modify offers to investors and to reject orders in whole or in part.

Offer Price

The initial purchasers propose initially to offer the Notes at the offering price set forth on the cover page of this offering memorandum. After the initial offering of the Notes, the offering price and other selling terms of the Notes may from time to time be varied by the initial purchasers without notice. To the extent that any initial purchasers that are not U.S. registered broker dealers intend to effect any sales of the Notes in the United States, they will only do so through one or more U.S. registered broker dealers affiliates as permitted by Financial Industry Regulatory Authority guidelines.

Notes Are Not Being Registered

The Notes and the guarantees have not been and will not be registered under the Securities Act and may not be offered or sold within the United States except to qualified institutional buyers in reliance on Rule 144A under the Securities Act and to persons who are not U.S. persons (as defined in Regulation S under the Securities Act) in offshore transactions in reliance on Regulation S under the

Securities Act. In addition, until 40 days following the later of (i) the commencement of this Offering and (ii) the issue date of the Notes, an offer or sale of the Notes initially sold in reliance on Regulation S within the United States by a dealer (whether or not participating in the Offering) may violate the registration requirements of the Securities Act unless the dealer makes the offer or sale in compliance with Rule 144A or another exemption from registration under the Securities Act. Terms used in this paragraph have the meanings given to them by Regulation S under the Securities Act. Each purchaser of the Notes will be deemed to have made acknowledgments, representations and agreements as described under "Notice to Investors."

No action has been taken in any jurisdiction, including the United States and the United Kingdom, by us or the initial purchasers that would permit a public offering of the Notes or the possession, circulation or distribution of this offering memorandum or any other material relating to us or the Notes in any jurisdiction where action for this purpose is required. Accordingly, the Notes may not be offered or sold, directly or indirectly, and neither this offering memorandum nor any other offering material or advertisements in connection with the Notes may be distributed or published, in or from any country or jurisdiction, except in compliance with any applicable rules and regulations of any such country or jurisdiction. This offering memorandum does not constitute an offer to sell or a solicitation of an offer to purchase in any jurisdiction where such offer or solicitation would be unlawful. Persons into whose possession this offering memorandum comes are advised to inform themselves about and to observe any restrictions relating to the Offering, the distribution of this offering memorandum and resale of the Notes. See "Notice to Investors."

The Issuer and the Guarantors have agreed that they will not at any time offer, sell, contract to sell, pledge or otherwise dispose of, directly or indirectly, any securities under circumstances in which such offer, sale, pledge, contract or disposition would cause the exemption afforded by Section 4(a)(2) of the Securities Act or the safe harbor of Rule 144A and Regulation S under the Securities Act to cease to be applicable to the offer and sale of the Notes.

United Kingdom

Each Initial Purchaser has represented, warranted and agreed that it:

- has only communicated or caused to be communicated and will only communicate or cause to be communicated any invitation or inducement to engage in investment activity (within the meaning of section 21 of the FSMA) received by it in connection with the issue or sale of any Notes in circumstances in which section 21(1) of the FSMA does not apply to the Issuer; and
- has complied and will comply with all applicable provisions of the FSMA in respect of anything done by it in relation to any Notes in, from or otherwise involving the United Kingdom.

Each Initial Purchaser has represented and agreed that it has not offered, sold or otherwise made available and will not offer, sell or otherwise make available any Notes to any retail investor in the EEA. For the purposes of this provision:

- the expression "retail investor" means a person who is one (or more) of the following: (i) a "retail client" as defined in point (11) of Article 4(1) of Directive 2014/65/EU (as amended, "MiFID II"); (ii) a customer within the meaning of Directive 2016/97/EU (as amended, the "Insurance Distribution Directive"), where that customer would not qualify as a professional client as defined in point (10) of Article 4(1) of MiFID II; or (iii) not a "qualified investor" as defined in the Prospectus Directive; and

• the expression "offer" includes the communication in any form and by any means of sufficient information on the terms of the offer and the Notes to be offered so as to enable an investor to decide to purchase or subscribe for the Notes.

New Issue of Securities

The Notes are a new issue of securities with no established trading market. We do not intend to apply for listing of the Notes on any U.S. securities exchange or for inclusion of the Notes on any automated dealer quotation system. We have been advised by the initial purchasers that they presently intend to make a market in the Notes after completion of the Offering. However, they are under no obligation to do so and may discontinue any market making activities at any time without any notice. We cannot assure the liquidity of the trading market for the Notes. If an active trading market for the Notes does not develop, the market price and liquidity of the Notes may be adversely affected. If the Notes are traded, they may trade at a discount from their initial offering price, depending on prevailing interest rates, the market for similar securities, our operating performance and financial condition, general economic conditions and other factors. See "Risk Factors—Risks Relating to the Notes and Our Capital Structure—Lack of public market—There may not be an active trading market for the Notes, in which case your ability to sell your Notes may be limited."

We will apply, through our listing agent, to list the Notes on the Official List of the Luxembourg Stock Exchange and trade the Notes on the Euro MTF market, however, we cannot assure you that the Notes will be approved for listing or that such listing will be maintained.

Settlement

We expect that delivery of the Notes will be made to investors on or about the date specified in the last paragraph of the cover page of this offering memorandum, which will be U.S. business days (as such term is used for purposes of Rule 15(c)6-1 of the U.S. Securities Exchange Act of 1934, as amended (the "Exchange Act")) following the date of this offering memorandum (such settlement being referred to as "T+ "). Under Rule 15(c)6-1 under the Exchange Act, trades in the secondary market are required to settle in two business days, unless the parties to any such trade expressly agree otherwise. Accordingly, purchasers who wish to trade the Notes on the date of pricing or the next succeeding U.S. business days will be required, by virtue of the fact that the Notes initially settle in T+ , to specify an alternate settlement arrangement at the time of any such trade to prevent a failed settlement. Purchasers of the Notes who wish to make such trades should consult their own advisors.

No Sales of Similar Securities

We have agreed that we will not, for a period of 60 days after the date of this offering memorandum, without the prior written consent of the Representatives, directly or indirectly, pledge, issue, sell, offer to sell, grant any option for the sale of, or otherwise dispose of any of our other debt securities having a maturity of more than one year from the date of issue, except for debt securities (A) issued or guaranteed in accordance with, or as permitted under, the Senior Secured Term Loans Agreement, (B) issued or guaranteed in connection with the sales of receivables pursuant to securitization or factoring arrangements or issuances of debt securities pursuant to sales of such receivables, or the implementation of any receivables securitization or factoring facility or (C) issued or guaranteed in immaterial amounts in the ordinary course of business.

Price Stabilization and Short Positions

In connection with the Offering, the initial purchasers (or persons acting on their behalf) may engage in transactions that stabilize the market price of the Notes. Such transactions consist of bids or purchases to peg, fix or maintain the price of the Notes. Purchases of a security to stabilize the price or to reduce a short position may cause the price of the security to be higher than it might be in the absence of such purchases.

In connection with the Offering, the initial purchasers may purchase and sell the Notes in the open market. These transactions may include short sales and purchases on the open market to cover positions created by short sales. Short sales involve the sale by the initial purchasers of a greater principal amount of the Notes than they are required to purchase in the Offering. The initial purchasers must close out any short position by purchasing the Notes in the open market. A short position is more likely to be created if the initial purchasers are concerned that there may be downward pressure on the price of the Notes in the open market after pricing that could adversely affect investors who purchase in the Offering.

Similar to other purchase transactions, the initial purchasers' purchases to cover the syndicate short sales may have the effect of raising or maintaining the market price of the Notes or preventing or retarding a decline in the market price of the Notes. As a result, the price of the Notes may be higher than the price that might otherwise exist in the open market.

Neither we nor any of the initial purchasers make any representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of the Notes. In addition, neither we nor any of the initial purchasers make any representation that the representatives will engage in these transactions or that these transactions, once commenced, will not be discontinued without notice.

Any stabilizing action, if commenced, must end no later than the earlier of 30 days after the Issue Date and 60 days after the date of the allotment of the Notes. See "Risk Factors—Risks Relating to the Notes and Our Capital Structure—Lack of public market—There may not be an active trading market for the Notes, in which case your ability to sell your Notes may be limited."

Other Relationships

The initial purchasers and their affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial investment banking, financial advising, investment management, principal investment, hedging, financing and brokerage activities. The initial purchasers or their respective affiliates have engaged in, and may in the future engage in, investment banking, financial advisory, consulting, commercial banking and other commercial dealings in the ordinary course of business with us, our principal shareholders or our affiliates. They have received, and expect to receive, customary fees, commissions and expense reimbursements for these transactions. In addition, in the ordinary course of their business activities, the initial purchasers and their affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers. Such investments and trading activities may involve securities and/or instruments of the Group or the Group's affiliates. Certain of the initial purchasers or their affiliates that have a lending relationship with the Group routinely hedge their credit exposure to the Group consistent with their customary risk management policies. Typically, such initial purchasers and their affiliates would hedge such exposure by entering into transactions which consist of either the purchase of credit default swaps or the creation of short positions in securities, including potentially the Notes. Any such short positions could adversely affect future trading prices of Notes. The initial purchasers and their affiliates may also publish or express independent research views in respect of such securities or financial instruments and may hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments.

J.P. Morgan Securities plc, Barclays Bank PLC, Citigroup Global Markets Limited, Goldman Sachs International and ING Bank N.V., London Branch, or certain of their respective affiliates, have in the past acted as joint global coordinator, joint lead arranger and/or joint bookrunner under the Senior Secured Term Loans Agreement. Barclays Bank PLC also acts as an administrative agent and security agent under the same agreement and receives customary fees for its services in such capacities. Barclays Bank PLC acts as the issuing bank under the LC Facility, and Barclays Bank PLC and ING Bank N.V., London Branch, or certain of their affiliates, act as lenders under the Noretyl Facility and as agents under facilities of certain affiliates of the Group. Barclays Bank PLC is also the Security Trustee for the Notes. Banco Santander, S.A., BNP Paribas, Citigroup Global Markets Limited, Goldman Sachs International, ING Bank N.V., London Branch, Merrill Lynch International and NatWest Markets Plc, or certain of their respective affiliates, provide loans to certain affiliates of the Group, and Citigroup Global Markets Limited, ING Bank N.V., London Branch and NatWest Markets Plc, or certain of their respective affiliates, act as arrangers, bookrunners, technical bank and/or agents under loan facilities of certain affiliates of the Group. Affiliates of Barclays Bank PLC and Citigroup Global Markets Limited are lenders under the Securitization Program. Certain of the initial purchasers and/or their affiliates may also provide hedging services to the Group or affiliates of the Group. In addition, certain of the initial purchasers and/or their affiliates may hold positions which will be repaid with the proceeds of the Notes offered hereby.

Affiliates of INEOS Limited will purchase Notes issued on the Issue Date.

LEGAL MATTERS

Certain legal matters in connection with the Offering will be passed upon for us by Cravath, Swaine & Moore LLP, as to matters of U.S. Federal and New York state law and by Slaughter and May, as to matters of English law. Certain legal matters in connection with the Offering will be passed upon for the initial purchasers by Latham & Watkins (London) LLP, as to matters of U.S. Federal, New York state and English law.

INDEPENDENT AUDITORS

The consolidated financial statements of INEOS Group Holdings S.A. as of and for each of the years ended December 31, 2018, 2017 and 2016, included elsewhere in this offering memorandum, have been audited by PricewaterhouseCoopers, *Société coopérative*, independent auditors (*réviseur d'entreprises agréé*). PricewaterhouseCoopers, *Société coopérative* are members of the Luxembourg *Institut des Réviseurs d'Entreprises*.

WHERE YOU CAN FIND MORE INFORMATION

We are not currently subject to the periodic reporting and other information requirements of the Exchange Act.

Each purchaser of the Notes from the initial purchasers will be furnished with a copy of this offering memorandum and, to the extent provided to the initial purchasers by us for such purpose, any related amendment or supplement to this offering memorandum. Each person receiving this offering memorandum acknowledges that: (1) such person has been afforded an opportunity to request from us and to review, and has received, all additional information considered by it to be necessary to verify the accuracy and completeness of the information herein; (2) such person has not relied on any of the initial purchasers or any person affiliated with any initial purchaser in connection with its investigation of the accuracy of such information or its investment decision; and (3) except as provided pursuant to (1) above, no person has been authorized to give any information or to make any representation concerning the Notes or the guarantees offered hereby other than those contained herein and, if given or made, such other information or representation should not be relied upon as having been authorized by us or any initial purchaser. We have agreed in the Indenture governing these Notes that, for so long as the Notes remain outstanding and are "restricted securities" within the meaning of Rule 144(a)(3) under the Securities Act, we will, during any period in which we are neither subject to Section 13 or 15(d) of the Exchange Act, nor exempt from reporting pursuant to Rule 12g3-2(b) of the Exchange Act, upon written request of a holder or beneficial owner of the Notes, furnish to such holder or beneficial owner or to the Trustee or any relevant paying agent for delivery to such holder or beneficial owner or prospective purchaser of the Notes, as the case may be, the information required to be delivered pursuant to Rule 144A(d)(4) under the Securities Act, to permit compliance with Rule 144A thereunder in connection with resales of the Notes. Any such request should be directed to the Issuer at INEOS Finance plc, Hawkslease, Chapel Lane, Lyndhurst, Hampshire SO43 7FG, United Kingdom, Attention: Finance Director (telephone number +44 (0)2380 287067).

So long as the Notes are admitted to listing on the Official List of the Luxembourg Stock Exchange and to trading on the Euro MTF market, and the rules and regulations of such stock exchange so require, copies of such information will also be available for review during the normal business hours on any business day at the specified office of the paying agent in Luxembourg.

SERVICE OF PROCESS AND ENFORCEMENT OF JUDGMENTS

The Issuer and certain of the Guarantors are companies incorporated in England and Wales. Other Guarantors are organized under the laws of Belgium, Canada, Germany, Jersey, Luxembourg, Norway, Singapore, Switzerland and the United States, and future Guarantors may also be organized under the laws of non-U.S. jurisdictions. All of our directors and executive officers and many of the directors and officers of the Guarantors are non-residents of the United States. Although we and each of the Guarantors have submitted to the jurisdiction of certain New York courts in connection with any action under U.S. securities laws, you may be unable to effect service of process within the United States on our directors and executive officers and the directors and executive officers of the Guarantors or security providers. In addition, as many of our and the Guarantors' assets and the assets of our and their directors and executive officers are located outside of the United States, you may be unable to enforce against them or us judgments obtained in the U.S. courts predicated on civil liability provisions of the Federal securities laws of the United States.

If a judgment is obtained in a U.S. court against us or a Guarantor, investors will need to enforce such judgment in jurisdictions where the relevant company has assets. Even though the enforceability of U.S. court judgments outside the United States is described below for the countries in which our Guarantors are located, you should consult with your own advisors in any pertinent jurisdictions as needed to enforce a judgment in those countries or elsewhere outside the United States.

Belgium

The U.S. and Belgium do not have a treaty providing for the reciprocal recognition and enforcement of court judgments in civil and commercial matters. Therefore, the enforcement in Belgium of a judgment obtained in any U.S. Federal or State court will be subject to Belgian rules of civil procedure and will only be granted following formal 'exequatur' proceedings before a Belgian court in accordance with Articles 23 and 24 of the Belgian Code of Private International Law (*Wetboek van Internationaal Privaatrecht/Code de droit international privé*).

Pursuant to Article 24 of the Belgian Code of Private International Law, the following documents must be produced in court by the claimant seeking enforcement:

- an official copy of the judgment (*uitgifte van de beslissing/expédition de la décision*) fulfilling all conditions required for its authentication under the applicable foreign law;
- if obtained by default, an original or legalized copy of the document demonstrating that the originating process has been served on the defendant in accordance with the applicable foreign law; and
- any document demonstrating that, under the applicable foreign law, the judgment is enforceable and has been notified to the defendant.

However, the court will refuse enforcement in the circumstances described in Article 25 of the Belgian Code of International Private Law and notably, if, among other things:

- the consequences of the enforcement of the judgment would be manifestly contrary to Belgian public policy;
- the rights of defense were not respected;
- the jurisdiction of the foreign judge was based solely on the presence of the defendant or assets in such state without any further connection with the litigation in such state;

- without prejudice to Article 23.4 of the Belgian Code of Private International Law, the judgment is not final or does not meet the requirements of authenticity pursuant to the laws of the State where the judgment was rendered or the applicable federal rules;
- if in relation to matters for which parties cannot freely dispose of their rights, the decision has been sought with the sole purpose of escaping from the application of the laws applicable in accordance with Belgian conflict of law rules;
- the decision is in conflict with either a decision rendered in Belgium or a decision previously rendered in another state that can be recognized in Belgium;
- the claim was introduced before the courts of such state after a claim, which is still pending and relating to the same matter and between the same parties, was introduced in a Belgian court;
- the Belgian courts have exclusive jurisdiction in relation to the claim; or
- the decision is in conflict with the rules on the recognition and enforcement of court decisions in relation to insolvency proceedings.

With regard to the enforcement by legal proceedings of any claim (including the exequatur of foreign court decisions in Belgium), a registration tax of 3% (to be calculated on the total amount, which a debtor is ordered to pay) is due, if the sum of money which the debtor is ordered to pay by a Belgian court judgment, or by a foreign court judgment that is either (i) automatically enforceable and registered in Belgium or (ii) rendered enforceable by a Belgian court, exceeds EUR 12,500. The debtor and the creditor are jointly liable for the payment of the registration tax; however, the liability of the creditor is limited up to a maximum amount of half of the amount it recovers from the debtor.

Canada

The following summary with respect to the enforceability of certain U.S. court judgments in the Canadian provinces of Alberta, Nova Scotia and Ontario (individually a "Canadian Province" and collectively the "Canadian Provinces") is based upon advice provided to us by U.S. and Canadian legal advisors. None of the Canadian Provinces currently have a treaty with the United States of America or any state thereof providing for the reciprocal recognition and enforcement of judgments (as opposed to arbitration awards) in civil and commercial matters. Consequently, a final judgment for payment rendered by any Federal or state court in the United States based on civil liability, whether or not predicated solely upon U.S. Federal securities laws, would not automatically be recognized or enforceable in the Canadian Provinces. In order to enforce any such U.S. judgment in any Canadian Province, proceedings must first be initiated before a court of competent jurisdiction in such Canadian Province (a "Canadian Court"). In such an action, the Canadian Court would not generally reinvestigate the merits of the original matter decided by the U.S. court (subject to what is said below) and it would usually be possible to obtain summary judgment on such a claim (assuming that there is no good defense to it). Recognition and enforcement of a U.S. judgment by a Canadian Court in such an action is conditional upon (among other things) the following:

- the U.S. court having had jurisdiction over the original proceedings according to conflicts of laws principles of the relevant Canadian Province;
- the U.S. judgment being final and conclusive on the merits in the sense of being final and unalterable in the court which pronounced it and being for a definite sum of money;
- the U.S. judgment not contravening public policy of such Canadian Province;
- the U.S. judgment not being for a sum payable in respect of taxes, or other charges of a like nature, or in respect of a penalty or fine;

- the judgment not being contrary to an order made by the Attorney General of Canada under the *Foreign Extraterritorial Measures Act* (Canada), or the Competition Tribunal under the *Competition Act* (Canada) in respect of certain judgments referred to in these statutes or the Governor in Council under the *United Nations Act* (Canada) or the *Special Economic Measures Act* (Canada);
- the U.S. judgment not having been obtained by fraud or in breach of principles of natural justice as understood under the laws of such Canadian Province;
- there not having been a prior inconsistent decision of a Canadian Court of such Canadian Province in respect of the same matter; and
- the enforcement proceedings being commenced within the applicable limitation period in the Canadian Province in which the proceeding is brought.

Subject to the foregoing, among other things, investors may be able to enforce in the Canadian Provinces judgments in civil and commercial matters that have been obtained from U.S. Federal or state courts. However, we cannot assure you that those judgments will be recognized or enforceable in any of the Canadian Provinces. In addition, it is questionable whether a Canadian Court would accept jurisdiction and impose civil liability if the original action was commenced in any of the Canadian Provinces, instead of the United States, and predicated solely upon U.S. Federal securities laws.

England

The following summary with respect to the enforceability of certain U.S. court judgments in England is based upon advice provided to us by U.S. and English legal advisors. The United States and England currently do not have a treaty providing for the reciprocal recognition and enforcement of judgments (as opposed to arbitration awards) in civil and commercial matters. Consequently, a final judgment for payment rendered by any federal or state court in the United States based on civil liability, whether or not predicated solely upon U.S. federal securities laws, would not automatically be recognized or enforceable in England. In order to enforce any such U.S. judgment in England, proceedings must first be initiated before a court of competent jurisdiction in England. In such an action, an English court would not generally reinvestigate the merits of the original matter decided by the U.S. court (subject to the following) and it would usually be possible to obtain summary judgment on such a claim (assuming that there is no good defense to it). Recognition and enforcement of a U.S. judgment by an English court in such an action is conditional upon (among other things) the following:

- the U.S. court having had jurisdiction over the original proceedings according to English conflicts of laws principles and rules of English private international law;
- the U.S. judgment having not been given contrary to an applicable jurisdiction or arbitration clause or other agreement for the settlement of disputes under which the dispute in question was to be settled otherwise than by proceedings in a U.S. court (to whose jurisdiction the judgment debtor did not submit);
- the U.S. judgment being final and conclusive on the merits in the sense of being final and unalterable in the court which pronounced it and being for a definite sum of money;
- the U.S. judgment not contravening English public policy or statute (including the Human Rights Act 1998);
- the U.S. judgment not being for a sum payable in respect of taxes, or other charges of a like nature, or in respect of a penalty or fine;
- the U.S. judgment not having been arrived at by doubling, trebling or otherwise multiplying a sum assessed as compensation for the loss or damages sustained and not being otherwise in breach of Section 5 of the Protection of Trading Interests Act 1980;

- the U.S. judgment not having been obtained by fraud or in breach of English principles of natural or substantial justice;
- there not having been a prior inconsistent decision of an English court, or another court whose judgment is entitled to recognition in England and Wales, in respect of the same matter; and
- the English enforcement proceedings being commenced within six years from the date of the U.S. judgment.

Subject to the foregoing, investors may be able to enforce in England judgments in civil and commercial matters that have been obtained from U.S. federal or state courts. However, we cannot assure you that those judgments will be recognized or enforceable in England. In addition, it is questionable whether an English court would accept jurisdiction and impose civil liability if the original action was commenced in England, instead of the United States, and predicated solely upon U.S. federal securities laws.

France

The United States and France are not parties to a treaty providing for reciprocal recognition and enforcement of judgments, other than arbitral awards, rendered in civil and commercial matters. Accordingly, a judgment rendered by any U.S. Federal or state court based on civil liability, whether or not predicated solely upon U.S. Federal or state securities laws, enforceable in the United States, would not directly be recognized or enforceable in France. A party in whose favor such judgment was rendered could initiate enforcement proceedings (*exequatur*) in France before the relevant civil court (*Tribunal de Grande Instance*). Enforcement in France of such U.S. judgment could be obtained following proper (*i.e.*, *non-ex parte*) proceedings if the civil court is satisfied that the following conditions have been met (which conditions, under prevailing French case law, do not include a review by the French court of the merits of the foreign judgment):

- such U.S. judgment was rendered by a court having jurisdiction over the matter in accordance with French rules of international conflicts of jurisdiction (*i.e.*, the dispute is clearly connected to the United States and the French courts did not have exclusive jurisdiction over the matter);
- such U.S. judgment does not contravene French international public policy rules, both pertaining to the merits and to the procedure of the case;
- such U.S. judgment is not tainted with fraud; and
- such U.S. judgment does not conflict with a French judgment or a foreign judgment which has become effective in France and there are no proceedings pending before French courts at the time enforcement of the judgment is sought and having the same or similar subject matter as such U.S. judgment.

If the French court is satisfied that such conditions are met, the U.S. judgment would have res judicata and be enforceable in France. Both the period to lodge an appeal against the civil first instance Court decision and potential appeal proceedings may suspend the enforceability of the U.S. judgment, unless provisional enforcement has been ordered by the first instance civil court.

In addition, the discovery process under actions filed in the United States could be adversely affected under certain circumstances by French criminal law No. 68-678 of July 26, 1968, as modified by French law No. 80-538 of July 16, 1980 and French Ordinance No. 2000-916 of September 19, 2000 (relating to communication of documents and information of an economic, commercial, industrial, financial or technical nature to foreign authorities or persons), which could prohibit or restrict obtaining evidence in France or from French persons in connection with a judicial or administrative

U.S. action. Similarly, French data protection rules (law No. 78-17 of January 6, 1978 on data processing, data files and individual liberties, as modified by laws No. 2004-801 of August 6, 2004 and No. 2017-55 of January 20, 2017) can limit under certain circumstances the possibility of obtaining information in France or from French persons in connection with a judicial or administrative U.S. action in a discovery context.

If an original action is brought in France, French courts may refuse to apply the designated law (or part of it) if its application contravenes French public policy. In an action brought in France on the basis of U.S. Federal or state securities laws, French courts may not have the requisite power to grant all the remedies sought.

Pursuant to articles 14 and 15 of the French Civil Code, a French national (either a company or an individual) can sue a foreign defendant before French courts (article 14) and can be sued by a foreign claimant before French courts (article 15). For a long time, case law has interpreted these provisions as meaning that a French national, either claimant or defendant, could not be forced against its will to appear before a jurisdiction other than French courts. However, according to currently established case law, the French courts jurisdiction towards French nationals is no longer mandatory to the extent an action has been commenced before a court in a jurisdiction which has sufficient contacts with the dispute and the choice of jurisdiction is not fraudulent. In addition, the French and foreign nationals may respectively waive their rights to benefit from the provisions of articles 14 and 15 of the French Civil Code, including implicitly, by way of conduct by voluntarily appearing before the foreign court.

Germany

The following discussion with respect to the enforceability of certain U.S. court judgments in Germany is based upon advice provided to us by our German legal advisors.

The United States and Germany currently do not have a treaty providing for the reciprocal recognition and enforcement of judgments in civil and commercial matters. Consequently, a final judgment for a payment rendered by any court in the United States would not automatically be enforceable in Germany.

Notwithstanding the preceding, a final judgment for payment rendered by any federal or state court in the United States based on civil liability, whether or not predicated solely upon U.S. federal securities laws, would generally be recognized and enforced in Germany in an action before a German court, and such German court generally will not investigate the merits of the original matter decided by a U.S. court. The recognition and enforcement of the U.S. judgment by a German court would be conditional upon a number of factors, including all of the following:

- the ability of the U.S. court to take jurisdiction of the case in accordance with the principles of jurisdictional competence under German law;
- the document introducing the proceedings having been duly made known to the defendant in a timely manner that allowed for adequate defense;
- the judgment not being contrary to (i) any prior judgment which became res judicata rendered by a German court or (ii) any prior judgment which became res judicata rendered by a foreign court which is recognized in Germany, and the procedure leading to the U.S. judgment is not in contradiction to any such prior judgment;
- the effects of its recognition not being in conflict with material principles of German law, including, without limitation, fundamental rights under the constitution of Germany (*Grundrechte*). In this context, it should be noted that any component of a U.S. federal or state court civil judgment awarding punitive damages or any other damages which do not

serve a compensatory purpose, such as treble damages, will not be enforced in Germany, as they are regarded to be in conflict with material principles of German law;

- the reciprocity of enforcement of judgments being guaranteed; and
- the judgment having become res judicata in accordance with the law of the place where it was pronounced.

Enforcement and foreclosure based on U.S. judgments may be sought against German defendants after having received an enforcement decision from a competent German court in accordance with the above principles. Subject to the foregoing, investors may be able to enforce judgments in Germany in civil and commercial matters obtained from U.S. federal or state courts. However, we cannot assure you that those judgments will be enforceable. In addition, it is doubtful whether a German court would accept jurisdiction and impose civil liability in an original action predicated solely upon U.S. federal securities laws.

Jersey

The following summary with respect to the enforceability of certain U.S. court judgments in Jersey is based upon advice provided to us by Jersey legal advisors. The United States and Jersey currently do not have a treaty providing for the reciprocal recognition and enforcement of judgments (as opposed to arbitration awards) in civil and commercial matters. Consequently, a final judgment for payment rendered by any Federal or state court in the United States based on civil liability, whether or not predicated solely upon U.S. Federal securities laws, would not automatically be recognized or enforceable in Jersey. In order to enforce any such U.S. judgment in Jersey, proceedings must first be initiated before a court of competent jurisdiction in Jersey. In such an action, a Jersey court would not generally reinvestigate the merits of the original matter decided by the U.S. court (subject to what is said below) and it would usually be possible to obtain summary judgment on such a claim (assuming that there is no good defense to it). Recognition and enforcement of a U.S. judgment by a Jersey court in such an action is conditional upon (among other things) the following:

- the U.S. court having had jurisdiction over the original proceedings according to Jersey conflict of laws principles;
- the U.S. judgment being final and conclusive on the merits in the sense of being final and unalterable in the court which pronounced it and being for a definite sum of money (although there are circumstances where non-money judgments can also be enforced);
- the U.S. judgment not contravening Jersey public policy;
- the U.S. judgment not being for a sum payable in respect of taxes, or other charges of a like nature, or in respect of a penalty or fine;
- the U.S. judgment not having been arrived at by doubling, trebling or otherwise multiplying a sum assessed as compensation for the loss or damages sustained and not being otherwise in breach of Section 5 of the United Kingdom Protection of Trading Interests Act 1980 (as extended to Jersey by the Protection of Trading Interests Act 1980 (Jersey) Order 1983);
- the U.S. judgment not having been obtained by fraud or in breach of Jersey principles of natural justice; and
- there not having been a prior inconsistent decision of a Jersey court in respect of the same matter.

Subject to the foregoing, investors may be able to enforce in Jersey judgments in civil and commercial matters that have been obtained from U.S. Federal or state courts. However, we cannot assure you that those judgments will be recognized or enforceable in Jersey. In addition, it is questionable whether a Jersey court would accept jurisdiction and impose civil liability if the original action was commenced in Jersey, instead of the United States, and predicated solely upon U.S. Federal securities laws.

Luxembourg

The Issuer has been advised by Luxembourg counsel that the United States and Luxembourg are not currently bound by a treaty providing for reciprocal recognition and enforcement of judgments, except for arbitral awards rendered in civil and commercial matters. According to such counsel, an enforceable judgment for the payment of monies rendered by any U.S. Federal or state court based on civil liability, whether or not predicated solely upon the U.S. securities laws, would not directly be enforceable in Luxembourg. However, a party who received such favorable judgment in a U.S. court may initiate enforcement proceedings in Luxembourg (*exequatur*) by requesting enforcement of the U.S. judgment by the District Court (*Tribunal d'Arrondissement*) pursuant to the New Luxembourg Code of Civil Procedure. The District Court will authorize the enforcement in Luxembourg of the U.S. judgment if it is satisfied that all of the following conditions are met:

- the U.S. judgment is enforceable (*exécutoire*) in the United States;
- the U.S. court awarding the judgment has jurisdiction, both according to its own national jurisdiction rules and to the Luxembourg principles of conflicts of jurisdiction and in particular, Luxembourg courts had no exclusive jurisdiction over the case at hand, to adjudicate the respective matter under applicable U.S. Federal or state jurisdictions rules;
- the U.S. court has applied to the dispute the substantive law which would have been applied by Luxembourg courts in accordance with Luxembourg conflict of laws rules;
- the U.S. judgment does not contravene Luxembourg international public policy or overriding mandatory provisions of Luxembourg law;
- the U.S. court has acted in accordance with its own procedural laws;
- the principles of natural justice have been complied with and the U.S. judgment was granted following proceedings where the defendant had the opportunity to appear and, if it appeared, to present a defense; and
- the U.S. judgment was not granted pursuant to an evasion of Luxembourg law (*fraude à la loi luxembourgeoise*).

Luxembourg courts do currently not review the merits of New York judgments even though there is no statutory prohibition of such review.

Under Luxembourg law, contractual provisions allowing the service of process against a party to a service agent could be overridden by Luxembourg statutory provisions allowing the valid serving of process against a party in accordance with applicable laws at the domicile of the party.

Subject to the foregoing, investors may be able to enforce in Luxembourg judgments in civil and commercial matters that have been obtained from U.S. Federal or state courts. However, we cannot assure you that those judgments will be recognized or enforceable in Luxembourg. In addition, it is questionable whether a Luxembourg court would accept jurisdiction and impose civil liability if the original action was commenced in Luxembourg instead of the United States, and predicated solely upon U.S. Federal securities laws.

Norway

A judgment against the Issuer or any Guarantor in the courts of a state which is not, under the terms of the Lugano Convention on the Recognition of Judgments in Civil and Commercial Matters, a

Contracting State (as defined in the Lugano Convention) or a state with which Norway has entered into a convention on the mutual recognition and enforcement of judgments, would not be recognized or enforceable in Norway as a matter of right unless the jurisdiction of such court has been specifically agreed between the parties in a civil matter in accordance with the Norwegian Civil Procedure Act of June 17, 2005 No. 90 section 19-16 cfr. section 4-6 or the recognition and enforcement of such judgments are otherwise accepted under Norwegian law. However, such judgments may be admissible as evidence in the courts of law, executive or other public authorities of Norway and may in such capacity carry persuasive authority depending on the merits of the judgment without a retrial on its merits. The foregoing could imply, *inter alia*, that judgments by U.S. courts would not be recognized or enforceable in Norway as a matter of right. A judgment against an Issuer or any Guarantor in the courts of a state which is, under the terms of the Lugano Convention on the Recognition of Judgments in Civil and Commercial Matters, a Contracting State (as defined in the Lugano Convention) or a state with which Norway has entered into a convention on the mutual recognition and enforcement of judgments, and judgments rendered by a court whose jurisdiction have been expressly agreed to and accepted by the party, in writing and in a particular civil matter, in accordance with the Norwegian Civil Procedure Act of June 17, 2005 No. 90, and such judgments for which the recognition and enforcement is otherwise accepted under Norwegian law, would be recognized and enforceable in Norway, but only insofar as such recognition and enforcement would not be in breach of mandatory law or contrary to public policy in Norway. Only creditors of a claim may have active judicial standing in a Norwegian court; therefore, a security agent or other representative of the creditors may seek enforcement of a claim but such claim may have to be supported by the actual creditors of such claim.

Scotland

The following summary with respect to the enforceability of certain U.S. court judgments in Scotland is based upon advice provided to us by U.S. and Scottish legal advisors. The United States and Scotland currently do not have a treaty providing for the reciprocal recognition and enforcement of judgments (as opposed to arbitration awards) in civil and commercial matters. Consequently, a final judgment for payment rendered by any Federal or state court in the United States based on civil liability, whether or not predicated solely upon U.S. Federal securities laws, would not automatically be recognized or enforceable in Scotland. In order to enforce any such U.S. judgment in Scotland, proceedings must first be initiated before a court of competent jurisdiction in Scotland. In such an action, a Scottish court would not generally reinvestigate the merits of the original matter decided by the U.S. court (subject to what is said below) and it would usually be possible to obtain summary judgment on such a claim (assuming that there is no good defense to it). Recognition and enforcement of a U.S. judgment by a Scottish court in such an action is conditional upon (among other things) the following:

- the U.S. court having had jurisdiction over the original proceedings according to Scottish conflicts of laws principles;
- the U.S. judgment being final and conclusive on the merits in the sense of being final and unalterable in the court which pronounced it and being for a definite sum of money;
- the U.S. judgment not contravening Scottish public policy;
- the U.S. judgment not being for a sum payable in respect of taxes, or other charges of a like nature, or in respect of a penalty or fine;
- the U.S. judgment not having been arrived at by doubling, trebling or otherwise multiplying a sum assessed as compensation for the loss or damages sustained and not being otherwise in breach of Section 5 of the Protection of Trading Interests Act 1980;
- the U.S. judgment not having been obtained by fraud;

- the U.S. judgment resulted from proceedings which displayed a substantial degree of unfairness or irregularity against the parties to the action;
- there not having been a prior inconsistent decision of a Scottish court between the same parties; and
- the U.S. judgment is affected by Section 32 of the Civil Jurisdiction and Judgments Act 1982 where (1) the bringing of the proceedings was contrary to an agreement under which the dispute in question was to be settled otherwise than by proceedings in the courts of that country, (2) those proceedings were not brought in that court by or with the agreement of the person against whom the judgment was given and (3) that person did not counterclaim in the proceedings or otherwise submit to the jurisdiction of the court.

Subject to the foregoing, investors may be able to enforce in Scottish judgments in civil and commercial matters that have been obtained from U.S. Federal or state courts. However, we cannot assure you that those judgments will be recognized or enforceable in Scotland. In addition, it is questionable whether a Scottish court would accept jurisdiction and impose civil liability if the original action was commenced in Scotland, instead of the United States, and predicated solely upon U.S. Federal securities laws.

Singapore

Judgments by courts in the United States of America are not directly enforceable in Singapore as if they were judgments of the Singapore courts. However, a final and conclusive judgment on the merits properly obtained against (as the case may be) us or a Guarantor in any competent court of the United States of America for a fixed sum of money in respect of any legal suit or proceeding and which could be enforced by execution against (as the case may be) us or a Guarantor in the jurisdiction of the relevant court and has not been stayed or satisfied in whole may be sued on in Singapore as a debt due from (as the case may be) us or a Guarantor if:

- the relevant court had jurisdiction over (as the case may be) us or a Guarantor in that (as the case may be) us or a Guarantor was, at the time such proceeding was instituted, resident in the jurisdiction in which such proceeding had been commenced or had submitted to the jurisdiction of the relevant court;
- that judgment was not obtained by fraud;
- the enforcement of that judgment would not be contrary to public policy of Singapore;
- that the judgment had not been obtained in contravention of the principles of natural justice; and
- that the judgment of the relevant court does not include the payment of taxes, a fine or penalty.

Switzerland

We have been advised by our Swiss counsel that there is doubt as to the enforceability of U.S. judgments in Switzerland, or the applicability of U.S. Federal or state securities laws in an action brought before a Swiss court. The United States and Switzerland currently do not have a treaty providing for the reciprocal recognition and enforcement of judgments, other than arbitration awards, in civil and commercial matters. Consequently, a final judgment by any U.S. Federal or state court for payment, whether or not predicated solely upon U.S. Federal or state securities laws, would not automatically be enforceable in Switzerland. A final judgment by a U.S. Federal or state court, however, may be recognized in Switzerland in an action before a court of competent jurisdiction in accordance with the proceeding set forth by the Swiss Federal Act on International Private Law

(*Bundesgesetz über das internationale Privatrecht*) and the Swiss Federal Act on Civil Procedure (*Schweizerische Zivilprozessordnung*) and the Swiss Debt Enforcement and Bankruptcy Act (*Bundesgesetz über Schuldbetreibung und Konkurs*). In such an action, a Swiss court generally would not reinvestigate the merits of the original matter decided by a U.S. court. The recognition and enforcement of a U.S. judgment by a Swiss court would be conditional upon a number of conditions including those set out in articles 25 et seqq. of the Swiss Federal Act on International Private Law (*Bundesgesetz über das international Privatrecht*), which include amongst others:

- the U.S. court having had jurisdiction over the original proceedings from a Swiss perspective as defined in the Swiss Federal Act on International Private Law (*Bundesgesetz über das internationale Privatrecht*);
- the judgment being final under U.S. Federal or state law, and no ordinary legal remedy being available against such judgment;
- the parties having been duly summoned, under the law of their place of residence or under the law of their habitual residence, or they having proceeded to the merits without any reserves;
- the original proceeding not having been conducted under a violation of material principles of Swiss civil procedure law, in particular, the right to be heard;
- the matter (*Verfahren*) resulting in the judgment of the U.S. court not being consistent with a matter (*Verfahren*) pending before a Swiss court, *provided* such Swiss matter was pending before a Swiss court prior to the U.S. court entered its proceedings; and
- the enforcement of the judgment by the U.S. court not being manifestly incompatible with Swiss public policy (*schweizerischer Ordre public*).

Subject to the foregoing, purchasers of the Notes may be able to enforce judgments in civil and commercial matters obtained from U.S. Federal or state courts in Switzerland. We cannot, however, assure you that any attempts to enforce judgments in Switzerland will be successful; in particular, it is uncertain whether a Swiss court would recognize U.S. jurisdiction if the defendant did not enter an appearance before a U.S. court during the substantive proceedings in the sense of article 6 of the Swiss Federal Act on International Private Law (*Bundesgesetz über das internationale Privatrecht*). Furthermore, it is probable that a Swiss court, if substantive proceedings were commenced in Switzerland, would not apply U.S. Federal or state securities laws. In addition, the recognition and enforcement of punitive damages awards might be denied by Swiss courts as incompatible with Swiss public policy (*schweizerischer Ordre public*). Alternatively, a Swiss court may reduce the amount of damages granted by a U.S. court and recognize damages only to the extent that they are necessary to compensate actual losses or damages. Swiss civil procedure differs substantially from U.S. civil procedure in a number of respects. With respect to the production of evidence, for example, U.S. Federal and state law and the laws of several other jurisdictions based on common law provide for pre-trial discovery, a process by which parties to the proceedings may, prior to trial, compel the production of documents by adverse or third parties and the depositions of witnesses. Evidence obtained in this manner may be decisive in the outcome of any proceeding. In Switzerland, in principle, no such pre-trial discovery process exists. A Swiss court would generally decide on the basis of evidence provided by the parties and in accordance with the applicable rules on the burden of proof.

LISTING AND GENERAL INFORMATION

1. The Issuer was incorporated in England and Wales on November 23, 2009. It is registered at Companies House with Company Number 07084307. The address of the Issuer's registered office is Hawkslease, Chapel Lane, Lyndhurst, Hampshire SO43 7FG, United Kingdom.

2. Application will be made for the Notes to be listed on the Official List of the Luxembourg Stock Exchange and to be traded on the Euro MTF Market.

3. So long as the Notes are listed on the Official List of the Luxembourg Stock Exchange and are traded on the Euro MTF Market, copies of the Issuer's Articles of Association and those of the Guarantors and the Indenture (including the guarantees granted thereunder) will be available free of charge at the specified office of the Paying Agent in Luxembourg referred to in paragraph 9 below. So long as the Notes are listed on the Official List of the Luxembourg Stock Exchange and are traded on the Euro MTF Market, copies of IGH's audited annual financial statements and the consolidated audited annual financial statements, consolidated quarterly financial information and all subsequent fiscal years will be available free of charge during normal business hours on any weekday at the offices of such Paying Agent in Luxembourg referred to in paragraph 9 below. So long as the Notes are listed on the Official List of the Luxembourg Stock Exchange and are traded on the Euro MTF Market, copies of the security documents will be available free of charge during normal business hours on any weekday at the offices of the Paying Agent in Luxembourg referred to in paragraph 9 below.

4. We accept responsibility for the information contained in this offering memorandum. To the best of our knowledge, except as otherwise noted, the information contained in this offering memorandum is in accordance with the facts and does not omit anything likely to affect the import of this offering memorandum.

5. The proceeds of the Notes will be used outside Switzerland at all times while any Notes are outstanding unless (i) use in Switzerland is permitted under the Swiss taxation laws in force from time to time or (ii) it is confirmed in a tax ruling by the Swiss Federal Tax Administration that such use of proceeds is permitted without payments in respect of the Notes becoming subject to withholding or deduction for Swiss withholding tax as a consequence of such use of proceeds in Switzerland.

6. Except as disclosed herein, there has been no material adverse change in IGH's consolidated financial position since December 31, 2018.

7. Neither we nor any of our subsidiaries is a party to any litigation that, in our judgment, is material in the context of the issue of the Notes, except as disclosed herein.

8. The Trustee for the Notes is The Bank of New York Mellon, London Branch and its address is One Canada Square, London E14 5AL. The Trustee will be acting in its capacity as trustee for the holders of the Notes and will provide such services to the holders of the Notes as described in the Indenture.

9. We have appointed The Bank of New York Mellon SA/NV, Luxembourg Branch as our Luxembourg Listing Agent, Paying Agent and Transfer Agent. We reserve the right to vary such appointment and shall publish notice of such change of appointment in a newspaper having general circulation in Luxembourg (which is expected to be the *Luxemburger Wort*) or on the Luxembourg Stock Exchange's website, *www.bourse.lu*. The Paying Agent in Luxembourg will act as intermediary between the holders of the Notes and us and so long as the Notes are listed on the Euro MTF Market we will maintain a paying agent and a transfer agent in Luxembourg.

10. The issue of the Notes was authorized by resolutions of the Issuer's board of directors passed at meetings held on April 3, 2019.

11. The Global Notes sold pursuant to Regulation S and Rule 144A under the Securities Act have been accepted for clearance through the facilities of Clearstream and Euroclear under common codes and , respectively. The ISIN number for the Global Notes sold pursuant to Regulation S is and the ISIN number for the Global Notes sold pursuant to Rule 144A is .

12. Set forth below is certain information with respect to the Guarantors. For more information, see "Description of the Collateral and the Guarantees."

INEOS Manufacturing Belgium NV is a limited liability company organized under the laws of Belgium. It is registered with the RPR of Antwerpen under Company Number 0869.926.088 and the address of its registered office is Scheldelaan 482, 2040 Antwerpen (Belgium).

INEOS NV is a limited liability company organized under the laws of Belgium. It is registered with the RPR of Antwerpen under Company Number 0454.443.614 and the address of its registered office is Haven 1053—Nieuwe Weg 1, 2070 Zwijndrecht (Belgium).

INEOS Phenol Belgium NV is a limited liability company organized under the laws of Belgium. It is registered with the RPR of Dendermonde under Company Number 0888.947.788 and the address of its registered office is Haven 1930—Geslecht 1, 9130 Beveren (Belgium).

INEOS Group Holdings S.A. is a "société anonyme" incorporated under the laws of Luxembourg having its registered office at 58, rue Charles Martel L-2134 Luxembourg, Grand Duchy of Luxembourg and registered with the Luxembourg Trade and Companies Register under number 157810.

INEOS Group Holdings Limited (formerly INEOS Group Holdings plc) is a limited company organized under the laws of England and Wales incorporated on May 14, 2001. It is registered at Companies House with Company Number 04215862 and the address of its registered office is Hawkslease, Chapel Lane, Lyndhurst, Hampshire SO43 7FG, United Kingdom.

INEOS Holdings Limited is a limited company organized under the laws of England and Wales incorporated on May 14, 2001. It is registered at Companies House with Company Number 04215887 and the address of its registered office is Hawkslease, Chapel Lane, Lyndhurst, Hampshire SO43 7FG, United Kingdom.

INEOS Tenderco Limited is a limited company organized under the laws of England and Wales incorporated on March 10, 2010. It is registered at Companies House with Company Number 07185465 and the address of its registered office is Hawkslease, Chapel Lane, Lyndhurst, Hampshire SO43 7FG, United Kingdom.

INEOS Group Limited is a limited company organized under the laws of England and Wales incorporated on March 19, 1998. It is registered at Companies House with Company Number 03534631 and the address of its registered office is Hawkslease, Chapel Lane, Lyndhurst, Hampshire SO43 7FG, United Kingdom.

INEOS Holdings (Investments) Limited is a limited company organized under the laws of England and Wales incorporated on January 18, 2011. It is registered at Companies House with Company Number 07497205 and the address of its registered office is Hawkslease, Chapel Lane, Lyndhurst, Hampshire SO43 7FG, United Kingdom.

INEOS Investments International Limited is a limited company organized under the laws of England and Wales incorporated on March 2, 2000. It is registered at Companies House with

Company Number 03938607 and the address of its registered office is Hawkslease, Chapel Lane, Lyndhurst, Hampshire SO43 7FG, United Kingdom.

INEOS Sales (UK) Limited is a limited company organized under the laws of England and Wales incorporated on November 19, 2010. It is registered at Companies House with Company Number 07445505 and the address of its registered office is Hawkslease, Chapel Lane, Lyndhurst, Hampshire SO43 7FG, United Kingdom.

INEOS Finance Company 3 Limited is a limited company organized under the laws of England and Wales incorporated on December 2, 2014. It is registered at Companies House with Company Number 09337435 and the address of its registered office is Hawkslease, Chapel Lane, Lyndhurst, Hampshire SO43 7FG, United Kingdom.

INEOS 2010 Limited is a limited company organized under the laws of England and Wales incorporated on April 25, 2008. It is registered at Companies House with Company Number 06576859 and the address of its registered office is Hawkslease, Chapel Lane, Lyndhurst, Hampshire SO43 7FG, United Kingdom.

INEOS Manufacturing Deutschland GmbH is a limited liability company (*Gesellschaft mit beschränkter Haftung*) organized under the laws of Germany registered for the first time on July 5, 2002. It is presently registered with the Commercial Register of local court of Köln Number HRB 57260 and the address of its registered office is Alte Straße 201, 50769 Köln.

INEOS Phenol GmbH is a limited liability company (*Gesellschaft mit beschränkter Haftung*) organized under the laws of Germany registered for the first time on April 23, 1997, originally in the legal form of a limited partnership under the name of *Phenolchemie GmbH & Co. Kommanditgesellschaft*. It is presently registered with the Commercial Register of local court of Gelsenkirchen Number HRB 9687 and the address of its registered office is Dechenstraße 3, 45966 Gladbeck.

INEOS Deutschland GmbH is a limited liability company (*Gesellschaft mit beschränkter Haftung*) organized under the laws of Germany registered for the first time on May 9, 2005. It is presently registered with the Commercial Register of local court of Köln Number HRB 61258 and the address of its registered office is Alte Straße 201, 50769 Köln.

INEOS Deutschland Holding GmbH is a limited liability company (*Gesellschaft mit beschränkter Haftung*) organized under the laws of Germany registered for the first time on June 6, 2008. It is presently registered with the Commercial Register of local court of Köln Number HRB 64857 and the address of its registered office is Alte Straße 201, 50769 Köln.

INEOS Köln Beteiligungs GmbH & Co. KG is a limited partnership (*Kommanditgesellschaft*) organized under the laws of Germany registered for the first time on February 1, 2007. It is registered with the Commercial Register of local court of Köln Number HRA 24630 and the address of its office is Alte Straße 201, 50769 Köln.

INEOS Köln GmbH is a limited liability company (*Gesellschaft mit beschränkter Haftung*) organized under the laws of Germany registered for the first time on December 1, 1998, originally under the name of "CAROLINE" *Siebzehnte Vermögensverwaltungsgesellschaft mbH*. It is presently registered with the Commercial Register of local court of Köln Number HRB 37428 and the address of its registered office is Alte Straße 201, 50769 Köln.

INEOS Köln Verwaltungs GmbH is a limited liability company (*Gesellschaft mit beschränkter Haftung*) organized under the laws of Germany registered for the first time on November 16, 2006. It is presently registered with the Commercial Register of local court of Köln Number HRB 59517 and the address of its registered office is Alte Straße 201, 50769 Köln.

INEOS Phenol Verwaltungsgesellschaft mbH is a limited liability company (*Gesellschaft mit beschränkter Haftung*) organized under the laws of Germany registered for the first time on December 13, 1996, originally under the name of Phenolchemie Verwaltungsgesellschaft mit beschränkter Haftung. It is presently registered with the Commercial Register of local court of Gelsenkirchen Number HRB 4099 and the address of its registered office is Dechenstraße 3, 45966 Gladbeck.

INEOS Americas LLC is a limited liability company formed under the laws of Alabama. Its registered office is at CT Corporation System, 2 North Jackson Street, Suite 605, Montgomery, AL 36104.

INEOS Technologies USA LLC is a limited liability company formed under the laws of Delaware. Its registered office is at Corporation Trust Center, 1209 Orange Street, Wilmington, DE 19801, United States.

INEOS US Finance LLC is a limited liability company formed under the laws of Delaware. Its registered office is at Corporation Trust Center, 1209 Orange Street, Wilmington, DE 19801, United States.

INEOS USA LLC is a limited liability company formed under the laws of Delaware. Its registered office is at Corporation Trust Center, 1209 Orange Street, Wilmington, DE 19801, United States.

INEOS US I Inc. is a corporation incorporated under the laws of Delaware. Its registered office is at Corporation Trust Center, 1209 Orange Street, Wilmington, DE 19801, United States.

INEOS USA Manufacturing LLC is a limited liability company formed under the laws of Delaware. Its registered office is at Corporation Trust Center, 1209 Orange Street, Wilmington, DE 19801, United States.

INEOS Nitriles USA LLC is a limited liability company formed under the laws of Delaware. Its registered office is at Corporation Trust Center, 1209 Orange Street, Wilmington, DE 19801, United States.

INEOS Oligomers USA LLC is a limited liability company formed under the laws of Delaware. Its registered office is at Corporation Trust Center, 1209 Orange Street, Wilmington, DE 19801, United States.

INEOS Chocolate Bayou Pipeline LLC is a limited liability company formed under the laws of Delaware. Its registered office is at Corporation Trust Center, 1209 Orange Street, Wilmington, DE 19801, United States.

INEOS Technologies Americas LLC is a limited liability company formed under the laws of Delaware. Its registered office is at Corporation Trust Center, 1209 Orange Street, Wilmington, DE 19801, United States.

INEOS Luxembourg I S.A. is a public limited liability company ("*société anonyme*") incorporated under the laws of Luxembourg having its registered office at 58, rue Charles Martel L-2134 Luxembourg, Grand Duchy of Luxembourg and registered with the Luxembourg Trade and Companies Register under number B158195.

INEOS Luxembourg II S.A. is a public limited liability company ("*société anonyme*") incorporated under the laws of Luxembourg having its registered office at 58, rue Charles Martel L-2134 Luxembourg, Grand Duchy of Luxembourg and registered with the Luxembourg Trade and Companies Register under number B158194.

INEOS Europe AG is a corporation (*Aktiengesellschaft*) incorporated and existing under the laws of Switzerland, with its registered office at 3 avenue des Uttins, 1180 Rolle Switzerland, registered under number CHE- 490.118.020, formerly CH-550-1083017-1.

INEOS Group AG is a corporation (*Aktiengesellschaft*) incorporated and existing under the laws of Switzerland, with its registered office at 3 avenue des Uttins, 1180 Rolle Switzerland, registered under number CHE- 406.440.724, formerly CH-550-1083014-7.

INEOS Belgium Holdco NV is a limited liability company organized under the laws of Belgium. It is registered with the RPR of Brussels under Company Number 0871.523.521 and the address of its registered office is Ransbeekstraat 310, 1120 Neder-over-Heembeek (Belgium).

INEOS Belgium NV is a limited liability company organized under the laws of Belgium. It is registered with the RPR of Antwerpen under Company Number 0463.251.511 and the address of its registered office is Haven 1053—Nieuwe Weg 1, 2070 Zwijndrecht (Belgium).

INEOS Feluy SPRL is a private limited company organized under the laws of Belgium. It is registered with the RPR of Charleroi under Company Number 0862.492.029 and the address of its registered office is Parc de Feluy Nord-Zone C, 7181 FELUY (Belgium).

INEOS Canada Company is an unlimited company organized under the laws of Nova Scotia, Canada registered on June 1, 2005. It is registered under the Companies Act (Nova Scotia) under Corporation Number 3101804 and the address of its registered office is 1100-1959 Upper Water Street, Halifax, Nova Scotia B3J 3N2.

INEOS Canada Investment Company is an unlimited company organized under the laws of Nova Scotia, Canada registered on November 29, 2005. It is registered under the Companies Act (Nova Scotia) under Corporation Number 3119614 and the address of its registered office is 1100-1959 Upper Water Street, Halifax, Nova Scotia B3J 3N2.

INEOS Canada Partnership is a partnership organized under the laws of the Province of Alberta, Canada registered on January 29, 2004. It is registered under the Partnership Act (Alberta) under registration number PT10888030 and the address of the registered office of its partners is 1100-1959 Upper Water Street, Halifax, Nova Scotia B3J 3N2.

INEOS Canada Preferred Holdings Limited is a limited company organized under the laws of Nova Scotia, Canada and formed by the amalgamation of INEOS Canada Holdings Company and INEOS Canada Preferred Holdings Limited on August 13, 2012. It is registered under the Companies Act (Nova Scotia) under Corporation Number 3265615 and the address of its registered office is 1100-1959 Upper Water Street, Halifax, Nova Scotia B3J 3N2.

INEOS European Holdings Limited is a limited company organized under the laws of England and Wales incorporated on December 10, 2004. It is registered at Companies House with Company Number 05310700 and the address of its registered office is Hawkslease, Chapel Lane, Lyndhurst, Hampshire SO43 7FG, United Kingdom.

INEOS Fluor Holdings Limited is a limited company organized under the laws of England and Wales incorporated on August 9, 2000. It is registered at Companies House with Company Number 04049690 and the address of its registered office is P.O. Box 9, Runcorn Site HQ, South Parade, Runcorn, Cheshire WA7 4JE, United Kingdom.

INEOS Fluor Limited is a limited company organized under the laws of England and Wales incorporated on July 26, 2000. It is registered at Companies House with Company Number 04041123 and the address of its registered office is P.O. Box 9, Runcorn Site HQ, South Parade, Runcorn, Cheshire WA7 4JE, United Kingdom.

INEOS Holdings International Limited (formerly INEOS Investment Holdings (Fluor & Silicas) Limited) is a limited company organized under the laws of England and Wales incorporated on April 27, 2000. It is registered at Companies House with Company Number 03982231 and the address of its registered office is Hawkslease, Chapel Lane, Lyndhurst, Hampshire SO43 7FG, United Kingdom.

INEOS (Malta) Company is an unlimited company organized under the laws of England and Wales incorporated on June 26, 2008. It is registered at Companies House with Company Number 06631578 and the address of its registered office is Hawkslease, Chapel Lane, Lyndhurst, Hampshire SO43 7FG, United Kingdom.

INEOS Manufacturing (Hull) Limited is a limited company organized under the laws of England and Wales incorporated on January 22, 2008. It is registered at Companies House with Company Number 06480046 and the address of its registered office is Hawkslease, Chapel Lane, Lyndhurst, Hampshire SO43 7FG, United Kingdom.

INEOS Nitriles (UK) Limited is a limited company organized under the laws of England and Wales incorporated on May 4, 2007. It is registered at Companies House with Company Number 06238238 and the address of its registered office is PO BOX 62, Seal Sands, Middlesbrough TS2 1TX, United Kingdom.

INEOS Overseas Company I Limited is a limited company organized under the laws of England and Wales incorporated on October 13, 2000. It is registered at Companies House with Company Number 04092648 and the address of its registered office is Hawkslease, Chapel Lane, Lyndhurst, Hampshire SO43 7FG, United Kingdom.

INEOS Overseas Company II Limited is a limited company organized under the laws of England and Wales incorporated on October 13, 2000. It is registered at Companies House with Company Number 04092597 and the address of its registered office is Hawkslease, Chapel Lane, Lyndhurst, Hampshire SO43 7FG, United Kingdom.

INEOS Oxide Limited is a limited company organized under the laws of England and Wales incorporated on April 6, 1998. It is registered at Companies House with Company Number 03545207 and the address of its registered office is Hawkslease, Chapel Lane, Lyndhurst, Hampshire SO43 7FG, United Kingdom.

INEOS Investment Holdings (Germany) Limited (formerly INEOS Phenol Limited) is a limited company organized under the laws of England and Wales incorporated on December 11, 2000. It is registered at Companies House with Company Number 04122347 and the address of its registered office is Hawkslease, Chapel Lane, Lyndhurst, Hampshire SO43 7FG, United Kingdom.

INEOS Silicas Holdings Limited is a limited company organized under the laws of England and Wales incorporated on June 12, 2000. It is registered at Companies House with Company Number 04012355 and the address of its registered office is Hawkslease, Chapel Lane, Lyndhurst, Hampshire SO43 7FG, United Kingdom.

INEOS Silicas Limited is a limited company organized under the laws of England and Wales incorporated on July 11, 1896. It is registered at Companies House with Company Number 00048745 and the address of its registered office is Hawkslease, Chapel Lane, Lyndhurst, Hampshire SO43 7FG, United Kingdom.

INEOS Jersey Limited is a private limited liability company incorporated under the laws of Jersey on November 8, 2005. It is registered at the JFSC Companies Registry with Company Number 91677 and the address of its registered office is 44 Esplanade, St. Helier, Jersey, JE4 9WG, Channel Islands.

INEOS Holdings Norge AS is a private limited liability company incorporated under the laws of Norway on April 16, 2007 and registered on April 28, 2007. It is registered with the Norwegian Register of Business Enterprises (Foretaksregisteret) with Company Number 991192328 and the address of its registered office is Asdalstrand 291, NO-3960 Stathelle, Norway.

INEOS Singapore Pte. Ltd. is a private limited liability company organized under the laws of Singapore incorporated on 20th January 2005. It is incorporated in Singapore with Registration Number 200501012G and the address of its registered office is 111 Somerset Road, #14-16/21 TripleOne Somerset, Singapore 238164.

INEOS LLC is a limited liability company formed under the laws of Delaware. Its registered office is at Corporation Trust Center, 1209 Orange Street, Wilmington, DE 19801, United States.

INEOS Polypropylene LLC is a limited liability company formed under the laws of Delaware. Its registered office is at Corporation Trust Center, 1209 Orange Street, Wilmington, DE 19801, United States.

13. As of the date of this offering memorandum, the Guarantors represent approximately 89.8% of the IGH's consolidated EBITDA for the year ended December 31, 2018, and hold approximately 88.4% of IGH's consolidated total assets as of December 31, 2018.

14. So long as the Notes are listed on the Official List of the Luxembourg Stock Exchange and are traded on the Luxembourg Stock Exchange's Euro MTF Market, all notices concerning the Issuer and intended for the bondholders will be published in a newspaper having general circulation in Luxembourg (which is expected to be the *Luxemburger Wort*) or on the Luxembourg Stock Exchange's website, *www.bourse.lu*.

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AUDITORS' REPORT ON THE CONSOLIDATED FINANCIAL STATEMENTS

Audit report
To the Shareholders of
Ineos Group Holdings S.A.

Report on the audit of the consolidated financial statements

Our opinion

In our opinion, the accompanying consolidated financial statements give a true and fair view of the consolidated financial position of Ineos Group Holdings S.A. (the "Company") and its subsidiaries (the "Group") as at 31 December 2018, and of its consolidated financial performance and its consolidated cash flows for the year then ended in accordance with International Financial Reporting Standards (IFRSs) as adopted by the European Union.

What we have audited

The Group's consolidated financial statements comprise:

- the consolidated balance sheet as at 31 December 2018;
- the consolidated income statement and consolidated statement of comprehensive income for the year then ended;
- the consolidated statement of changes in equity for the year then ended;
- the consolidated statement of cash flows for the year then ended; and
- the notes to the consolidated financial statements, which include a summary of significant accounting policies.

Basis for opinion

We conducted our audit in accordance with the Law of 23 July 2016 on the audit profession (Law of 23 July 2016) and with International Standards on Auditing (ISAs) as adopted for Luxembourg by the "Commission de Surveillance du Secteur Financier" (CSSF). Our responsibilities under the Law of 23 July 2016 and ISAs as adopted for Luxembourg by the CSSF are further described in the "Responsibilities of the "Réviseur d'entreprises agréé" for the audit of the consolidated financial statements" section of our report.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

We are independent of the Group in accordance with the International Ethics Standards Board for Accountants' Code of Ethics for Professional Accountants (IESBA Code) as adopted for Luxembourg by the CSSF together with the ethical requirements that are relevant to our audit of the consolidated financial statements. We have fulfilled our other ethical responsibilities under those ethical requirements.

AUDITORS' REPORT ON THE CONSOLIDATED FINANCIAL STATEMENTS (continued)

Other information

The Board of Directors is responsible for the other information. The other information comprises the information stated in the management report but does not include the consolidated financial statements and our audit report thereon.

Our opinion on the consolidated financial statements does not cover the other information and we do not express any form of assurance conclusion thereon.

In connection with our audit of the consolidated financial statements, our responsibility is to read the other information identified above and, in doing so, consider whether the other information is materially inconsistent with the consolidated financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Responsibilities of the Board of Directors and those charged with governance for the consolidated financial statements

The Board of Directors is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with IFRSs as adopted by the European Union, and for such internal control as the Board of Directors determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, the Board of Directors is responsible for assessing the Group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the Board of Directors either intends to liquidate the Group or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Group's financial reporting process.

Responsibilities of the "Réviseur d'entreprises agréé" for the audit of the consolidated financial statements

The objectives of our audit are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an audit report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with the Law of 23 July 2016 and with ISAs as adopted for Luxembourg by the CSSF will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

As part of an audit in accordance with the Law of 23 July 2016 and with ISAs as adopted for Luxembourg by the CSSF, we exercise professional judgment and maintain professional scepticism throughout the audit. We also:

- identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control;

- obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's internal control;
- evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the Board of Directors;
- conclude on the appropriateness of the Board of Directors' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our audit report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our audit report. However, future events or conditions may cause the Group to cease to continue as a going concern;
- evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation;
- obtain sufficient appropriate audit evidence regarding the financial information of the entities and business activities within the Group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the Group audit. We remain solely responsible for our audit opinion.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

Report on other legal and regulatory requirements

The management report is consistent with the consolidated financial statements and has been prepared in accordance with applicable legal requirements.

PricewaterhouseCoopers, Société coopérative   Luxembourg, 21 March 2019
Represented by

Julien Ghata

INEOS Group Holdings S.A.

CONSOLIDATED INCOME STATEMENT FOR THE YEAR ENDED DECEMBER 31, 2018

	Note	2018	2017	2016
			€m	
Revenue	2	**16,091.5**	**15,210.4**	**12,609.9**
Total cost of sales		(13,665.8)	(12,524.2)	(10,141.1)
Gross profit		**2,425.7**	**2,686.2**	**2,468.8**
Distribution costs		(215.0)	(206.5)	(195.3)
Administrative expenses before exceptional items		(392.1)	(418.6)	(385.6)
Exceptional administrative expenses	4	—	—	(21.3)
Total administrative expenses		(392.1)	(418.6)	(406.9)
Total expenses		(607.1)	(625.1)	(602.2)
Operating profit	5	**1,818.6**	**2,061.1**	**1,866.6**
Share of (loss)/profit of associates and jointly controlled entities using the equity accounting method	12a	(66.6)	143.5	29.3
Profit on disposal of fixed assets		—	2.6	3.7
Profit before net finance costs		**1,752.0**	**2,207.2**	**1,899.6**
Total finance income	8	117.3	491.9	200.0
Finance costs before exceptional item	8	(395.1)	(355.2)	(505.3)
Exceptional finance cost	4	—	(44.1)	(20.7)
Total finance costs		(395.1)	(399.3)	(526.0)
Net finance (costs)/income		(277.8)	92.6	(326.0)
Profit before tax from continuing operations		**1,474.2**	**2,299.8**	**1,573.6**
Tax charge	9	(278.9)	(301.5)	(340.2)
Profit for the year from continuing operations		**1,195.3**	**1,998.3**	**1,233.4**

The notes on pages F-11 to F-96 are an integral part of these consolidated financial statements.

INEOS Group Holdings S.A.

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

FOR THE YEAR ENDED DECEMBER 31, 2018

	Note	2018	2017	2016
			€m	
Profit for the year		1,195.3	1,998.3	1,233.4
Other comprehensive income/(loss):				
Items that will not be recycled to profit or loss:				
Remeasurements of post employment benefit obligations net of tax		(22.7)	82.3	(61.9)
		(22.7)	**82.3**	**(61.9)**
Items that may subsequently be recycled to profit or loss:				
Foreign exchange translation differences		(23.3)	84.5	(40.6)
Net gain/(loss) on hedge of net investment in foreign operations net of tax	25.e	271.3	(637.5)	104.7
		248.0	**(553.0)**	**64.1**
Other comprehensive income/(loss) for the year net of tax		**225.3**	**(470.7)**	**2.2**
Total comprehensive income for the year		**1,420.6**	**1,527.6**	**1,235.6**

The notes on pages F-11 to F-96 are an integral part of these consolidated financial statements.

INEOS Group Holdings S.A.

CONSOLIDATED BALANCE SHEET AS AT DECEMBER 31, 2018

	Note	2018	2017	2016
			€m	
Non-current assets				
Property, plant and equipment	10	5,046.3	4,255.4	4,007.4
Intangible assets	11	744.8	731.6	763.9
Investments in equity-accounted investees	12.a	302.0	351.1	161.7
Financial assets at fair value through profit or loss	13	251.2	—	—
Other investments	13	—	238.5	262.2
Financial assets at fair value through other comprehensive income	14	28.3	—	—
Other financial assets	14	—	28.3	29.2
Employee benefits	21	45.3	—	—
Trade and other receivables	18	729.7	957.4	1,146.8
Deferred tax assets	16	201.6	160.2	205.1
		7,349.2	6,722.5	6,576.3
Current assets				
Inventories	17	1,407.7	1,246.5	1,068.1
Trade and other receivables	18	1,748.2	1,712.9	1,501.8
Derivative financial instruments	15	10.1	—	8.2
Cash and cash equivalents	28	2,071.3	1,366.3	2,204.1
		5,237.3	4,325.7	4,782.2
Total assets		**12,586.5**	**11,048.2**	**11,358.5**
Equity attributable to owners of the parent				
Share capital	23	0.9	0.9	0.9
Share premium		779.4	779.4	779.4
Other reserves		(1,957.9)	(2,183.2)	(1,712.5)
Retained earnings		4,095.1	3,099.7	1,362.3
Total equity		**2,917.5**	**1,696.8**	**430.1**
Non-current liabilities				
Interest-bearing loans and borrowings	19	6,241.5	6,094.9	7,947.5
Trade and other payables	20	112.1	120.1	107.2
Employee benefits	21	789.8	701.0	789.5
Provisions	22	27.6	28.8	28.5
Deferred tax liabilities	16	206.4	202.3	275.6
Derivative financial instruments	15	0.4	2.3	0.9
		7,377.8	7,149.4	9,149.2
Current liabilities				
Interest-bearing loans and borrowings	19	61.1	63.0	72.6
Trade and other payables	20	1,841.6	1,877.9	1,563.4
Tax payable		377.6	248.4	124.0
Derivative financial instruments	15	—	0.2	—
Provisions	22	10.9	12.5	19.2
		2,291.2	2,202.0	1,779.2
Total liabilities		**9,669.0**	**9,351.4**	**10,928.4**
Total equity and liabilities		**12,586.5**	**11,048.2**	**11,358.5**

These financial statements were approved by the board of directors on March 21, 2019 and were signed on its behalf by:

Natalina Arena — *Director*

Florence Bardot — *Director*

The notes on pages F-11 to F-96 are an integral part of these consolidated financial statements.

INEOS Group Holdings S.A.

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

FOR THE YEAR ENDED DECEMBER 31, 2018

	Share capital	Share premium	Other reserves	Retained earnings	Total equity
			€m		
Balance at January 1, 2016	**0.9**	**779.4**	**(1,714.7)**	**370.2**	**(564.2)**
Profit for the year	—	—	—	1,233.4	1,233.4
Other comprehensive income/(loss):					
Foreign exchange translation differences	—	—	(40.6)	—	(40.6)
Net gain on hedge of net investment in foreign operations	—	—	104.7	—	104.7
Remeasurements of post employment benefit obligations	—	—	(61.9)	—	(61.9)
Transactions with owners, recorded directly in equity:					
Dividend	—	—	—	(241.3)	(241.3)
Balance at December 31, 2016	**0.9**	**779.4**	**(1,712.5)**	**1,362.3**	**430.1**
Profit for the year	—	—	—	1,998.3	1,998.3
Other comprehensive income/(loss):					
Foreign exchange translation differences	—	—	84.5	—	84.5
Net loss on hedge of net investment in foreign operations	—	—	(637.5)	—	(637.5)
Remeasurements of post employment benefit obligations	—	—	82.3	—	82.3
Transactions with owners, recorded directly in equity:					
Dividend	—	—	—	(260.9)	(260.9)
Balance at December 31, 2017	0.9	779.4	(2,183.2)	3,099.7	1,696.8
Impact of new accounting standards (see Note 1)	—	—	—	(6.1)	(6.1)
Restated total equity at the beginning of the financial year	0.9	779.4	(2,183.2)	3,093.6	1,690.7
Profit for the year	—	—	—	1,195.3	1,195.3
Other comprehensive income/(loss):					
Foreign exchange translation differences	—	—	(23.3)	—	(23.3)
Net gain on hedge of net investment in foreign operations	—	—	271.3	—	271.3
Remeasurements of post employment benefit obligations	—	—	(22.7)	—	(22.7)
Transactions with owners, recorded directly in equity:					
Dividend	—	—	—	(193.8)	(193.8)
Balance at December 31, 2018	**0.9**	**779.4**	**(1,957.9)**	**4,095.1**	**2,917.5**

The notes on pages F-11 to F-96 are an integral part of these consolidated financial statements.

INEOS Group Holdings S.A.

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

FOR THE YEAR ENDED DECEMBER 31, 2018 (Continued)

Analysis of other reserves

	Translation reserve	Employee benefits	Merger reserve	Total other reserves
		€m		
Balance at January 1, 2016	**(353.9)**	**(560.1)**	**(800.7)**	**(1,714.7)**
Foreign exchange translation differences	(40.6)	—	—	(40.6)
Net gain on hedge of net investment in foreign operations	104.7	—	—	104.7
Remeasurements of post employment benefit obligations	—	(61.9)	—	(61.9)
Balance at December 31, 2016	**(289.8)**	**(622.0)**	**(800.7)**	**(1,712.5)**
Foreign exchange translation differences	84.5	—	—	84.5
Net loss on hedge of net investment in foreign operations	(637.5)	—	—	(637.5)
Remeasurements of post employment benefit obligations	—	82.3	—	82.3
Balance at December 31, 2017	(842.8)	(539.7)	(800.7)	(2,183.2)
Foreign exchange translation differences	(23.3)	—	—	(23.3)
Net gain on hedge of net investment in foreign operations	271.3	—	—	271.3
Remeasurements of post employment benefit obligations	—	(22.7)	—	(22.7)
Balance at December 31, 2018	**(594.8)**	**(562.4)**	**(800.7)**	**(1,957.9)**

The notes on pages F-11 to F-96 are an integral part of these consolidated financial statements.

INEOS Group Holdings S.A.

CONSOLIDATED STATEMENT OF CASH FLOWS FOR THE YEAR ENDED DECEMBER 31, 2018

	Note	2018	2017	2016
			€m	
Cash flows from operating activities				
Profit before tax		1,474.2	2,299.8	1,573.6
Adjustments for:				
Depreciation and impairment	10	456.0	454.4	398.7
Amortisation	11	13.2	13.9	44.2
Net finance costs/(income)	4,8	277.8	(92.6)	326.0
Share of loss/(profit) of equity-accounted investees		66.6	(143.5)	(29.3)
Profit on sale of property, plant and equipment		—	(2.6)	(3.7)
Decrease/(increase) in trade and other receivables		155.8	(268.1)	289.3
Increase in inventories		(138.3)	(239.0)	(74.7)
(Decrease)/increase in trade and other payables		(45.3)	314.8	(35.4)
(Decrease)/increase in provisions and employee benefits		(7.5)	(6.5)	11.3
Tax paid		(202.1)	(143.1)	(221.8)
Net cash generated from operating activities		**2,050.4**	**2,187.5**	**2,278.2**
Cash flows from investing activities				
Proceeds from sale of property, plant and equipment		—	8.3	3.9
Proceeds from sales of investments		0.6	1.3	1.3
Interest and other finance income received		62.5	50.9	65.1
Dividends received		5.0	5.3	7.0
Acquisition of businesses, net of cash acquired	3	(7.4)	(2.5)	(125.3)
Loans granted to related parties		—	(315.7)	(289.9)
Loan repayments from related parties		105.4	497.7	343.3
Acquisition of intangible assets		(20.2)	(18.4)	(9.0)
Acquisition of property, plant and equipment		(1,173.5)	(914.6)	(691.9)
Acquisition of other investments		(12.9)	(57.8)	(28.3)
Net cash used in investing activities		**(1,040.5)**	**(745.5)**	**(723.8)**
Cash flows from financing activities				
Securitisation Facility		(1.2)	(0.1)	(130.5)
Proceeds from new Senior Notes		—	—	1,101.1
Proceeds from new Senior Secured Notes		—	550.0	—
Refinancing of Senior Secured Term Loans		—	(883.1)	—
Redemption of Senior Notes		—	(1,151.9)	(1,111.7)
Issue costs paid		(0.4)	(21.7)	(10.5)
Interest paid		(227.8)	(310.6)	(404.0)
Proceeds from other loans		120.0	—	13.1
Repayment of loans		(64.6)	(64.6)	(303.5)
Dividends paid	24	(193.8)	(260.9)	(241.3)
Capital element of finance lease payment		(0.1)	(0.1)	(0.2)
Net cash used in financing activities		**(367.9)**	**(2,143.0)**	**(1,087.5)**
Net increase/(decrease) in cash and cash equivalents	28	642.0	(701.0)	466.9
Cash and cash equivalents at January 1	28	1,366.3	2,204.1	1,648.0
Effect of exchange rate fluctuations on cash held		63.0	(136.8)	89.2
Cash and cash equivalents at December 31	**28**	**2,071.3**	**1,366.3**	**2,204.1**

The notes on pages F-11 to F-96 are an integral part of these consolidated financial statements.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
FOR THE YEAR ENDED DECEMBER 31, 2018
(forming part of the financial statements)

1. ACCOUNTING POLICIES

Overview

Ineos Group Holdings S.A. (the "Company") is a company incorporated and domiciled in the form of a société anonyme under the laws of the Grand-Duchy of Luxembourg, having its registered office at 58, rue Charles Martel, L-2134 Luxembourg, Grand-Duchy of Luxembourg. The nature of the operations and principal activities of the Company and its subsidiaries are the manufacture and sale of a range of chemicals and refined products used in a variety of applications.

Basis of accounting

The Group financial statements consolidate those of the Company and its subsidiaries (together referred to as the "Group") and equity account the Group's interest in associates and jointly controlled entities.

The Group financial statements have been prepared on a going concern basis and approved by the directors in accordance with International Financial Reporting Standards (IFRSs) as adopted by the European Union in response to the IAS regulation (EC 1606/2002) effective as of December 31, 2018 and have been approved on March 21, 2019.

The accounting policies set out below have, unless otherwise stated, been applied consistently to all periods presented in these Group financial statements.

Measurement convention

The financial statements are prepared on the historical cost basis except for derivative financial instruments, financial instruments and financial assets classified as fair value through the profit or loss or fair value through other comprehensive income which are stated at their fair value.

Functional and presentation currency

These Group financial statements are presented in euro, which is the functional currency of the majority of operations. The Group's primary products are sold in an international commodities market which is priced and invoiced primarily in euros.

All financial information presented in euro has been rounded to the nearest €0.1 million.

Changes in accounting policies

From January 1, 2018 the Group has applied IFRS 9 and IFRS 15 for the first time along with a number of other new standards, although none have had a material effect on the Group's financial statements.

- ***IFRS 15 Revenue from Contracts with Customers***

IFRS 15 establishes a comprehensive framework for determining whether, how much and when revenue is recognised. It replaced IAS 18 Revenue, IAS 11 Construction Contracts and related interpretations. Under IFRS 15, revenue is recognised when a customer obtains control of the goods or

1. ACCOUNTING POLICIES (continued)

services. Determining the timing of the transfer of control- at a point in time or over time- requires judgement.

The Group has adopted IFRS 15 using the retrospective method with the effect of initially applying the standard recognised at the date of the earliest comparative period (i.e. January 1, 2016). The Group has elected for the following practical expedients available under the retrospective transition method:

1. The Group does not restate completed contracts that begin and end within the same annual reporting period or restate contracts that are completed contracts at the beginning of the earliest comparative period presented.
2. The Group uses the transaction price at the date on which the contract was completed, rather than estimating the variable consideration amounts in each comparative reporting period.
3. The Group does not separately evaluate the effects of contract modifications before the beginning of the earliest reporting period presented using the contract modifications requirements in the new standard. Instead, the Group has reflected the aggregate effect of all of the modifications that occur before the beginning of the earliest period presented in:
   (i) identifying the satisfied and unsatisfied performance obligations;
   (ii) determining the transaction price; and
   (iii) allocating the transaction price to the satisfied and unsatisfied performance obligations.
4. The Group does not disclose for reporting periods presented before the date of initial application (i.e. January 1, 2018):
   (i) the amount of the transaction price allocated to the remaining performance obligations; nor
   (ii) an explanation of when the entity expects to recognise that amount as revenue.

The details and quantitative impact of the changes in accounting policies are disclosed below.

Shipping and handling activities recognised as separate performance obligation

The Group previously did not assess shipping and handling activities as separate performance obligations and recognised revenue on transfer of goods to the customer. Under IFRS 15, when shipping and handling activities are performed after the customer obtains control of the goods, they are treated as a separate performance obligation, and therefore a portion of the transaction price is allocated to shipping and handling and revenue is recognised as the shipping and handling performance obligation is satisfied.

1. ACCOUNTING POLICIES (continued)

Volume discounts and early payment discounts

The Group previously recognised revenue for contracts with volume discounts and early payment discounts when a reasonable estimate of the discount could be made, and provided that all other criteria for revenue recognition were met. Under IFRS 15, revenue will only be recognised for these contracts to the extent that it is highly probable that a significant reversal to cumulative revenue will not occur when the uncertainty associated with the variable consideration is subsequently resolved.

Impact on the financial statements

The Group concluded that there is no material impact on the timing and amount of revenue recognised.

- ***IFRS 9 Financial Instruments***

IFRS 9 sets out requirements for recognising and measuring financial assets, financial liabilities and some contracts to buy or sell non-financial items. This standard replaces IAS 39 Financial Instruments: Recognition and Measurement.

As a result of the adoption of IFRS 9, the Group adopted consequential amendments to IAS 1 Presentation of Financial Statements, which requires impairment of financial assets to be presented in a separate line item in the income statement and OCI.

Additionally, the Group has adopted consequential amendments to IFRS 7 Financial Instruments: Disclosures that are applied to disclosures about 2018, but have not been generally applied to comparative information.

(i) Classification and measurement of financial assets and financial liabilities

IFRS 9 contains three principal classification categories for financial assets: measured at amortised cost, fair value through other comprehensive income (FVOCI) and fair value through profit or loss (FVTPL). The classification of financial assets under IFRS 9 is generally based on the business model in which a financial asset is managed and its contractual cash flow characteristics. IFRS 9 eliminates the previous IAS 39 categories of held to maturity, loans and receivables and available for sale. Under IFRS 9, derivatives embedded in contracts where the host is a financial asset in the scope of the standard are never separated. Instead, the hybrid financial instrument as a whole is assessed for classification. IFRS 9 largely retains the existing requirements in IAS 39 for the classification and measurement of financial liabilities.

The Group's non-voting preferred partnership interest in Ineos Investments Partnership, an entity held under common control by the Group's ultimate shareholders was previously held at amortised cost under IAS 39; however under IFRS 9 it has been designated as a financial asset at fair value through profit or loss. The remeasurement of this investment under IFRS 9 has resulted in an adjustment to opening equity of €6.1 million as at January 1, 2018. The carrying value of this financial asset measured at fair value through the profit or loss was €251.2 million as at December 31, 2018 (see Note 13).

1. ACCOUNTING POLICIES (continued)

The Group's equity investments which are held for long-term strategic purposes were previously classified as available-for-sale and held at amortised cost under IAS 39; however under IFRS 9 the Group has designated these investments as financial assets at fair value through other comprehensive income. The carrying value of these financial assets measured at fair value through other comprehensive income was €28.3 million as at December 31, 2018 (see Note 14).

All other financial assets previously classified as loans and receivables under IAS 39 have been reclassified to amortised cost under IFRS 9.

(ii) Impairment of financial assets

IFRS 9 replaces the 'incurred loss' model in IAS 39 with an 'expected credit loss' (ECL) model. This will require considerable judgement about how changes in economic factors affect ECLs, which will be determined on a probability-weighted basis.

The new impairment model will apply to financial assets measured at amortised cost or FVOCI, except for investments in equity instruments, and to contract assets. Under IFRS 9, credit losses are recognised earlier than under IAS 39.

Under IFRS 9, loss allowances will be measured on either of the following bases:

- 12-month ECLs: these are ECLs that result from possible default events within the 12 months after the reporting date; and
- lifetime ECLs: these are ECLs that result from all possible default events over the expected life of a financial instrument.

For assets in the scope of the IFRS 9 impairment model, impairment losses are generally expected to increase and become more volatile; however due to the quality of the Group's trade receivables and its low history of bad debts the application of IFRS 9 has not resulted in a material change to the allowance for impairment in respect of trade receivables (see Note 18).

(iii) Transition

Changes in accounting policies resulting from the adoption of IFRS 9 have been applied retrospectively, except as described below.

- The Group has used an exemption not to restate comparative information for prior periods with respect to classification and measurement (including impairment) changes. Differences in the carrying amounts of financial assets and financial liabilities resulting from the adoption of IFRS 9 are recognised in retained earnings and reserves as at January 1, 2018. Accordingly, the information presented for 2017 and 2016 does not reflect the requirements of IFRS 9, but rather those of IAS 39.
- The new hedge accounting requirements have been applied prospectively.
- The following assessments have been made on the basis of the facts and circumstances that existed at the date of initial application.
    - The determination of the business model within which a financial asset is held.

1. ACCOUNTING POLICIES (continued)

- The designation and revocation of previous designations of certain financial assets and financial liabilities as measured at FVTPL.
- The designation of certain investments in equity instruments not held for trading as FVOCI.

• ***New amendments for 2018***

The Group has applied the following amendments to accounting standards for the first time in 2018 with effect from January 1, 2018:

- IFRIC 22 Foreign Currency Transactions and Advance Consideration mandatory for year commencing on or after January 1, 2018.
- IFRIC 22 clarifies the transaction date used to determine the exchange rate for foreign currency transactions involving an advance payment or receipt.

Other amendments to be applied by companies in 2018 that are not applicable for the Group are the amendments to IFRS 2—Classification and Measurement of Share-based Payment Transactions; amendments to IFRS 4—Applying IFRS 9 Financial Instruments with IFRS 4 Insurance Contracts; and the amendments to IAS 40—Transfers of Investment Property.

Basis of consolidation

Subsidiaries

Subsidiaries are all entities (including structured entities) over which the Group has control. The Group controls an entity when the Group is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity.

Subsidiaries are fully consolidated from the date on which control is transferred to the Group. They are deconsolidated from the date that control ceases.

The Group applies the acquisition method to account for business combinations, except acquisitions under common control which are outside the scope of IFRS 3. The consideration transferred for the acquisition of a subsidiary is the fair values of the assets transferred, the liabilities incurred to the former owners of the acquiree and the equity interests issued by the Group. The consideration transferred includes the fair value of any asset or liability resulting from a contingent consideration arrangement. Identifiable assets acquired and liabilities and contingent liabilities assumed in a business combination are measured initially at their fair values at the acquisition date. The Group recognises any non-controlling interest in the acquiree on an acquisition-by-acquisition basis, either at fair value or at the non-controlling interest's proportionate share of the recognised amounts of acquiree's identifiable net assets. Acquisition-related costs are expensed as incurred.

If the business combination is achieved in stages, the acquisition date carrying value of the acquirer's previously held equity interest in the acquiree is re-measured to fair value at the acquisition date; any gains or losses arising from such re-measurement are recognised in profit or loss.

1. ACCOUNTING POLICIES (continued)

Any contingent consideration to be transferred by the Group is recognised at fair value at the acquisition date. Subsequent changes to the fair value of the contingent consideration that is deemed to be an asset or liability is recognised in accordance with IFRS 9 either in profit or loss or as a change to other comprehensive income. Contingent consideration that is classified as equity is not re-measured, and its subsequent settlement is accounted for within equity.

Inter-company transactions, balances and unrealised gains on transactions between Group companies are eliminated. Unrealised losses are also eliminated. When necessary, amounts reported by subsidiaries have been adjusted to conform with the Group's accounting policies.

Transactions with non-controlling interests that do not result in loss of control are accounted for as equity transactions—that is, as transactions with the owners in their capacity as owners. The difference between fair value of any consideration paid and the relevant share acquired of the carrying value of net assets of the subsidiary is recorded in equity. Gains or losses on disposals to non-controlling interests are also recorded in equity.

When the Group ceases to have control any retained interest in the entity is remeasured to its fair value at the date when control is lost, with the change in carrying amount recognised in profit or loss. The fair value is the initial carrying amount for the purposes of subsequently accounting for the retained interest as an associate, joint venture or financial asset. In addition, any amounts previously recognised in other comprehensive income in respect of that entity are accounted for as if the Group had directly disposed of the related assets or liabilities. This may mean that amounts previously recognised in other comprehensive income are reclassified to profit or loss.

Special purpose entities ("SPE")

An SPE is consolidated if, based on an evaluation of the substance of its relationship with the Group and the SPE's risks and rewards, the Group concludes that it controls the SPE. The Group has established an SPE, Ineos Finance Ireland Limited, for a debt securitisation programme. The Group does not have any direct or indirect shareholdings in this SPE. Ineos Finance Ireland Limited is controlled by the Group as it was established under terms that impose strict limitations on the decision-making powers of the SPE's management that result in the Group receiving the majority of the benefits related to the SPE's operations and net assets, being exposed to the majority of risks arising from the SPE's activities, and retaining the majority of the residual or ownership risks related to the SPE and its assets. Ineos Finance Ireland Limited is therefore regarded as an SPE and has been consolidated in these financial statements.

Associates

Associates are all entities over which the Group has significant influence but not control, generally accompanying a shareholding of between 20% and 50% of the voting rights. Investments in associates are accounted for using the equity method of accounting. Under the equity method, the investment is initially recognised at cost, and the carrying amount is increased or decreased to recognise the investor's share of the profit or loss of the investee after the date of acquisition. The Group's investment in associates includes goodwill identified on acquisition. If the ownership interest in

1. ACCOUNTING POLICIES (continued)

an associate is reduced but significant influence is retained, only a proportionate share of the amounts previously recognised in other comprehensive income is reclassified to profit or loss where appropriate.

The Group's share of post-acquisition profit or loss is recognised in the income statement, and its share of post-acquisition movements in other comprehensive income is recognised in other comprehensive income with a corresponding adjustment to the carrying amount of the investment. When the Group's share of losses in an associate equals or exceeds its interest in the associate, including any other unsecured receivables, the Group does not recognise further losses, unless it has incurred legal or constructive obligations or made payments on behalf of the associate.

The Group determines at each reporting date whether there is any objective evidence that the investment in the associate is impaired. If this is the case, the Group calculates the amount of impairment as the difference between the recoverable amount of the associate and its carrying value and recognises the amount adjacent to 'share of profit/(loss) of associates' in the income statement.

Profits and losses resulting from upstream and downstream transactions between the Group and its associate are recognised in the Group's financial statements only to the extent of unrelated investor's interests in the associates. Unrealised losses are eliminated unless the transaction provides evidence of an impairment of the asset transferred. Accounting policies of associates have been changed where necessary to ensure consistency with the policies adopted by the Group.

Dilution gains and losses arising in investments in associates are recognised in the income statement.

Joint arrangements

The Group applies IFRS 11 to all joint arrangements. Under IFRS 11 investments in joint arrangements are classified as either joint operations or joint ventures depending on the contractual rights and obligations of each investor. The Group has assessed the nature of its joint arrangements and determined them to be joint ventures. Joint ventures are accounted for using the equity method.

Under the equity method of accounting, interests in joint ventures are initially recognised at cost and adjusted thereafter to recognise the Group's share of the post-acquisition profits or losses and movements in other comprehensive income. When the Group's share of losses in a joint venture equals or exceeds its interests in the joint ventures (which includes any long-term interests that, in substance, form part of the Group's net investment in the joint ventures), the Group does not recognise further losses, unless it has incurred obligations or made payments on behalf of the joint ventures.

Unrealised gains on transactions between the Group and its joint ventures are eliminated to the extent of the Group's interest in the joint ventures. Unrealised losses are also eliminated unless the transaction provides evidence of an impairment of the asset transferred. Accounting policies of the joint ventures have been changed where necessary to ensure consistency with the policies adopted by the Group.

Foreign exchange

Transactions in foreign currencies are translated to the respective functional currencies of Group entities at the foreign exchange rate ruling at the date of the transaction. Monetary assets and

1. ACCOUNTING POLICIES (continued)

liabilities denominated in foreign currencies at the reporting date are retranslated to the functional currency at the foreign exchange rate ruling at that date. Foreign exchange differences arising on translation are recognised in the consolidated income statement except for differences arising on the retranslation of a financial liability designated as a hedge of the net investment in a foreign operation, or qualifying cash flow hedges, which are recognised in other comprehensive income. Non-monetary assets and liabilities that are measured in terms of historical cost in a foreign exchange are translated using the exchange rate at the date of the transaction. Non-monetary assets and liabilities denominated in foreign currencies that are stated at fair value are retranslated to the functional currency at foreign exchange rates ruling at the dates the fair value was determined.

The assets and liabilities of foreign operations, including goodwill and fair value adjustments arising on consolidation, are translated to the Group's presentational currency, euros, at foreign exchange rates ruling at the reporting date. The revenues and expenses of foreign operations are translated at exchange rates prevailing at the dates of the transactions. The Group applies an average rate for the year where this rate approximates to the foreign exchange rates ruling at the dates of the transactions. Exchange differences arising from this translation of foreign operations are taken directly to the translation reserve. They are recycled into the consolidated income statement upon disposal.

Exchange differences arising from a monetary item receivable from or payable to a foreign operation, the settlement of which is neither planned nor likely in the foreseeable future, are considered to form part of a net investment in a foreign operation and are recognised directly in equity in the translation reserve. Foreign exchange differences arising on the retranslation of a borrowing designated as a hedge of a net investment in a foreign operation are recognised directly in equity, in the translation reserve, to the extent that the hedge is effective. When the hedged part of a net investment is disposed of, the associated cumulative amount in equity is transferred to profit or loss as an adjustment to the profit or loss on disposal.

Classification of financial instruments issued by the Group

Financial instruments issued by the Group are treated as equity only to the extent that they meet the following two conditions:

(a) They include no contractual obligation upon the Group to deliver cash or other financial assets or to exchange financial assets or financial liabilities with another party under conditions that are potentially unfavourable to the Group; and

(b) Where the instrument will or may be settled in the Company's own equity instruments, it is either a non-derivative that includes no obligation to deliver a variable number of the Company's own equity instruments or is a derivative that will be settled by the Company's exchanging a fixed amount of cash or other financial assets for a fixed number of its own equity instruments.

To the extent that this definition is not met, the proceeds of issue are classified as a financial liability. Where the instrument so classified takes the legal form of the Company's own shares, the amounts presented in these financial statements for called up share capital and share premium account exclude amounts in relation to those shares.

1. ACCOUNTING POLICIES (continued)

Non-derivative financial instruments

Non-derivative financial instruments comprise investments in equity and debt securities, trade and other receivables, cash and cash equivalents, loans and borrowings, and trade and other payables.

Trade and other receivables

Trade and other receivables are recognised initially at fair value plus transaction costs that are directly attributable to the acquisition or issue. Subsequent to initial recognition they are tested for classification as per IFRS 9. If the trade receivables satisfy the criteria for cash flow characteristics test and business model test as per IFRS 9, then they are recognised at amortised cost. If they do not qualify for being recognised at amortised cost they are recognised at fair value through profit or loss.

Trade and other payables

Trade and other payables are recognised initially at fair value less transaction costs that are directly attributable to the acquisition or issue. Subsequent to initial recognition, they are measured at amortised cost using the effective interest method.

Investments in debt and equity securities

Investments in debt securities are measured at amortised cost if they meet both of the following conditions and are not designated as a fair value through profit and loss:

- The asset is held within a business model whose objective is to hold assets to collect contractual cash flows; and
- The contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

A financial asset is measured at fair value through other comprehensive income only if it meets both of the following conditions and is not designated as a fair value through profit and loss:

- The asset is held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets; and
- The contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

For investment in equity securities that are not held for trading, the Group may irrevocably elect to present subsequent changes to fair value in other comprehensive income. The Group makes this election on an investment-by-investment basis.

1. ACCOUNTING POLICIES (continued)

All other financial assets, including derivatives, are classified as measured at fair value through profit and loss. When these investments are derecognised, the cumulative gain or loss previously recognised directly in equity is recognised in the income statement. Where these investments are interest-bearing, interest calculated using the effective interest method is recognised in the income statement. Where no reliable measurement of fair value is available, investments are stated at historic acquisition cost.

Cash and cash equivalents

Cash and cash equivalents comprise of cash balances and call deposits. Bank overdrafts that are repayable on demand and form an integral part of the Groups cash management are included as a component of cash and cash equivalents for the purpose of only the statement of cash flows.

Interest-bearing borrowings

Interest-bearing borrowings are recognised initially at fair value less attributable transaction costs. Subsequent to initial recognition, interest-bearing borrowings are stated at amortised cost using the effective interest method.

Debt restructuring

The Group derecognises financial liabilities in accordance with the provisions in IFRS 9. When debt is modified, the Group analyses the modifications from both a quantitative and qualitative perspective to determine if the modifications are substantial and meet the IFRS requirements for de-recognition, in which case the debt is treated as extinguished. All fees paid in connection with a debt extinguishment are expensed immediately. When a modification is accounted for as a non-substantial modification, associated fees incurred are deferred as an adjustment to the carrying value of the liability and amortised using the effective interest method.

Derivative financial instruments and hedging

Derivative financial instruments

Derivative financial instruments are initially recognised at fair value. The gain or loss on subsequent re-measurement to fair value is recognised immediately in the consolidated income statement as finance income or expense. Where derivatives qualify for hedge accounting, recognition of any resultant gain or loss depends on the nature of the item being hedged.

Cash flow hedges

Where a derivative financial instrument is designated as a hedge of the variability in cash flows of a recognised asset or liability or a highly probable forecast transaction, the effective part of any gain or loss on the derivative financial instrument is recognised directly in the hedging reserve. The effective portion of changes in the fair value of the derivative that is recognised in hedging reserve is limited to the cumulative change in fair value of the hedged item, determined on a present value basis, from inception of the hedge. Any ineffective portion of the hedge is recognised immediately in the consolidated income statement as finance income or expense.

1. ACCOUNTING POLICIES (continued)

Where the forecast transaction subsequently results in the recognition of a non-financial asset or non-financial liability, the associated cumulative gain or loss is removed from the hedging reserve and is included in the initial carrying amount of the non-financial asset or liability.

If a hedge of a forecast transaction subsequently results in the recognition of a financial asset or a financial liability, the associated gains and losses that were recognised directly in equity are reclassified into profit or loss in the same period or periods during which the hedged expected future cash flows affect profit or loss, e.g. when interest income or expense is recognised.

For cash flow hedges, other than those covered by the preceding two policy statements, the associated cumulative gain or loss is removed from equity and included in the consolidated income statement as an adjustment to revenue and cost of sales in the same period or periods during which the hedged forecast transaction affects revenue and cost of sales in the consolidated income statement.

When a hedging instrument expires, is sold, terminated, exercised, or the hedge no longer meets the criteria for hedge accounting, hedge accounting is discontinued prospectively. The cumulative gain or loss at that point remains in equity and is recognised in accordance with the above policy when the transaction occurs. If the hedged transaction is no longer expected to take place, the cumulative unrealised gain or loss recognised in equity is recognised in the consolidated income statement immediately.

Hedge of net investment of foreign operation

The Group applied hedge accounting to foreign exchange differences arising on the retranslation of a foreign currency loan where the loan is designated as a hedge of a net investment in a foreign operation in accordance with IAS 21 and IFRS 9.

Most commonly this means that exchange differences arising on retranslation of foreign currency loans designated as a net investment hedge are taken directly to equity via the consolidated statement of comprehensive income. Gains and losses accumulated in the translation reserve will be recycled to the statement of comprehensive income when the foreign operation is sold.

When a derivative instrument or a non-derivative financial liability is designated as the hedging instrument in a hedge of a net investment in a foreign operation, the effective portion of, for a derivative changes in the fair value of the hedging instrument or, for a non-derivative, foreign exchange gains and losses is recognised in OCI and presented in the translation reserve within equity. Any ineffective portion of the changes in the fair value of the derivative or foreign exchange gains and losses on the non-derivative is recognised immediately in the income statement. The amount recognised in OCI is reclassified to the income statement as a reclassification adjustment on disposal of the foreign operation.

Property, plant and equipment

Property, plant and equipment are stated at cost less accumulated depreciation and accumulated impairment losses.

Cost includes expenditure that is directly attributable to the acquisition of the asset. Cost may include the cost of materials, labour and other costs directly attributable to bringing the assets to a

1. ACCOUNTING POLICIES (continued)

working condition for their intended use. Cost may also include the cost of dismantling and removing items and restoring the site on which they are located.

Where parts of an item of property, plant and equipment have different useful lives, they are accounted for as separate items of property, plant and equipment.

Leases in which the Group assumes substantially all the risks and rewards of ownership of the leased asset are classified as finance leases. Where land and buildings are held under leases the accounting treatment of the land is considered separately from that of the buildings. Leased assets acquired by way of finance lease are stated at an amount equal to the lower of their fair value and the present value of the minimum lease payments at inception of the lease, less accumulated depreciation and less accumulated impairment losses. The assets are depreciated over the shorter of their useful life or asset lease term. Lease payments are accounted for as described below.

Depreciation is charged to the consolidated income statement on a straight-line basis over the estimated useful lives of each part of an item of property, plant and equipment. Depreciation commences from the date an asset is brought into service. Land and assets in the course of construction are not depreciated. The estimated useful lives are as follows:

- Buildings . . . . 10 - 40 years
- Plant and equipment and fixtures and fittings . . . . 3 - 40 years

Depreciation methods, useful lives and residual values are reviewed at each reporting date.

The carrying values of property, plant and equipment are reviewed for impairment when events or changes in circumstances indicate that the carrying value may not be recoverable. Where an indicator of impairment exists, the Group makes an estimate of the recoverable amount, which is the higher of the asset's fair value less cost to sell and value in use. Where the carrying amount of an asset exceeds its recoverable amount, the asset is considered impaired and is written down to its recoverable amount.

Assets are derecognised upon disposal or when no future economic benefits are expected to arise from the continued use of the asset. Any gain or loss arising on de-recognition of the asset (calculated as the difference between the net disposal proceeds and the carrying value of the asset) is included in the consolidated income statement in the period in which the item is derecognised.

Business combinations, goodwill and intangible assets

All business combinations are accounted for by applying the purchase method, except acquisitions under common control which are outside the scope of IFRS 3. Goodwill represents amounts arising on acquisition of subsidiaries, associates and jointly controlled entities. In respect of business acquisitions that have occurred since January 1, 2007, goodwill represents the difference between the cost of the acquisition and the net fair value of the identifiable assets, liabilities and contingent liabilities acquired. For any acquisitions occurring on or after January 1, 2009, all transaction costs are expensed as incurred.

Acquisitions under common control are accounted for at book value. The difference in the book value of the assets acquired and consideration paid is recognised in retained earnings.

1. ACCOUNTING POLICIES (continued)

Goodwill is stated at cost less any accumulated impairment losses. Goodwill is allocated to groups of cash-generating units and is not amortised but is tested annually for impairment. At Ineos, cash generating units are predominately business units. In respect of equity accounted investees, the carrying amount of goodwill is included in the carrying amount of the investment in the investee.

Negative goodwill arising on an acquisition is recognised immediately in the consolidated income statement.

Intangible assets

Intangible assets that are acquired by the Group are stated at cost less accumulated amortisation and accumulated impairment losses. These intangible assets principally comprise intellectual property rights, customer relationships, non-compete agreements and license fees.

Intangible assets acquired separately from a business are carried initially at cost. The initial cost is the aggregate amount paid and the fair value of other consideration given to acquire the assets. An intangible asset acquired as part of a business combination is recognised separately from goodwill if the asset is separable or arises from contractual or other legal rights and its fair value can be measured reliably.

Amortisation

Amortisation is charged to the consolidated income statement on a straight-line basis over the estimated useful lives of intangible assets unless such lives are indefinite. Intangible assets with an indefinite useful life and goodwill are systematically tested for impairment at each reporting date. Other intangible assets are amortised from the date they are available for use. The estimated useful lives are as follows:

- Customer relationships .... 3 - 12 years
- Intellectual property rights .... 10 - 15 years
- Non-compete agreements .... life of the agreement
- Licenses.. up to 15 years

These intangible assets are tested for impairment at the end of the reporting period if events or changes in circumstances indicate that the carrying value may not be recoverable. Useful lives are examined on an annual basis and adjustments, where applicable, are made on a prospective basis.

Research and development

Expenditure on research activities is recognised in the consolidated income statement as an expense as incurred.

Expenditure on development activities is capitalised if the product or process is technically and commercially feasible and the Group intends to and has the technical ability and sufficient resources to complete development, future economic benefits are probable and if the Group can measure reliably the expenditure attributable to the intangible asset during its development. Development activities involve a plan or design for the production of new or substantially improved products or processes. The

1. ACCOUNTING POLICIES (continued)

expenditure capitalised includes the cost of materials, direct labour and an appropriate proportion of overheads. Where regulatory and other uncertainties are such that the criteria are not met, the expenditure is recognised in the income statement. Other development expenditure is recognised in the income statement as an expense as incurred. Capitalised development expenditure is stated at cost less accumulated amortisation and less accumulated impairment losses.

Impairment of financial assets

Trade and other receivables

The Group applies the simplified approach when providing for expected credit losses prescribed by IFRS 9 for its trade receivables and contract assets. This approach requires the Group to recognise the lifetime expected loss provision for all trade receivables taking in consideration historical as well as forward-looking information.

Financial assets which are considered low risk are not provided for impairment by the Group.

An impairment loss in respect of a receivable carried at amortised cost is reversed if the subsequent increase in recoverable amount can be related objectively to an event occurring after the impairment loss was recognised.

Investments in debt and equity securities

Impairment of equity securities classified as FVOCI are not tested for impairment under IFRS 9. If the fair value of a debt instrument classified as FVOCI increases and the increase can be objectively related to an event occurring after the impairment loss was recognised in the income statement, the impairment loss is reversed through profit or loss.

Impairment of non-financial assets excluding inventories and deferred tax assets

The carrying amounts of the Group's non-financial assets, other than inventories and deferred tax assets are assessed at the end of the reporting period to determine whether there is any indication of impairment.

For goodwill and other intangible assets that have an indefinite useful life and intangible assets that are not yet available for use, the recoverable amount is estimated at the end of the reporting period.

An impairment loss is recognised whenever the carrying amount of an asset or its cash-generating unit exceeds its recoverable amount. Impairment losses are recognised in the consolidated income statement.

Impairment losses recognised in respect of cash-generating units are allocated first to reduce the carrying amount of any goodwill allocated to cash-generating units and then to reduce the carrying amount of the other assets in the unit on a pro rata basis. A cash generating unit is the smallest identifiable group of assets that generates cash inflows that are largely independent of the cash inflows from other assets or groups of assets.

1. ACCOUNTING POLICIES (continued)

Calculation of recoverable amount

The recoverable amount is the greater of fair value less cost to sell and value in use. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset.

For an asset that does not generate largely independent cash inflows, the recoverable amount is determined for the cash-generating unit to which the asset belongs.

Reversals of impairment

An impairment loss in respect of goodwill is not reversed.

In respect of other assets, an impairment loss is reversed when there is an indication that the impairment loss may no longer exist and there has been a change in the estimates used to determine the recoverable amount.

An impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortisation, if no impairment loss had been recognised.

Inventories

Inventories are stated at the lower of cost, using the first-in first-out or average cost method, and net realisable value. Cost includes expenditure incurred in acquiring the inventories, production or conversion costs and other costs in bringing them to their existing location and condition. In the case of manufactured inventories and work in progress, cost includes an appropriate share of overheads based on normal operating capacity. Provision is made for obsolete, slow-moving or defective items where appropriate.

Items owned by the Group that are held on consignment at another entity's premises are included as part of the Group's inventory.

Commodities

Contracts that are entered into and continue to be held for the purpose of receipt or delivery of non-financial items in accordance with the Group's expected purchase, sale or usage requirements (own-use contracts) are not accounted for as derivative financial instruments, but rather as executory contracts.

Employee benefits

The Group operates a number of defined contribution plans and funded and unfunded defined benefit pension schemes. The Group also provides unfunded early retirement benefits, long service awards and an incentive plan for certain employees.

The Group provides health care insurance to eligible retired employees and their dependants, primarily in the United States.

1. ACCOUNTING POLICIES (continued)

Defined contribution plans

A defined contribution plan is a post-employment benefit plan under which the Group pays fixed contributions into a separate entity and will have no legal or constructive obligation to pay further amounts. Obligations for contributions to defined contribution pension plans are recognised as an expense in the consolidated income statement as incurred.

Defined benefit plans

A defined benefit plan is a post-employment benefit plan other than a defined contribution plan. The Group's net obligation in respect of defined benefit pension plans and other post employment benefits is calculated separately for each plan by estimating the amount of future benefit that employees have earned in return for their service in the current and prior periods; that benefit is discounted to determine its present value, and the fair value of any plan assets (at bid price) are deducted. The liability discount rate is the yield at the reporting date on AA credit rated bonds denominated in the currency of, and that have maturity dates approximating to the terms of, the Group's obligations. The calculation is performed by a qualified actuary using the projected unit credit method.

When the benefits of a plan are amended or curtailed, the portion of the increased or decreased benefit relating to past service by employees is recognised as an expense immediately in the consolidated income statement.

All actuarial gains and losses as at January 1, 2007, the date of transition to IFRSs, were recognised. In respect of actuarial gains and losses that arise subsequent to January 1, 2007, the Group recognises them in the period they occur directly in equity through the statement of comprehensive income.

Where the calculation results in a benefit to the Group, the asset recognised is limited to the present value of any future refunds from the plan or reductions in future contributions to the plan.

The pension scheme surplus (to the extent that it is recoverable) or deficit is recognised in full.

The movement in the scheme surplus/deficit is split between:

- cost of sales and administrative expenses;
- net finance costs; and
- in net expense recognised directly in equity, the remeasurements of post employment benefit obligations.

Short-term benefits

Short-term employee benefit obligations are measured on an undiscounted basis and are expensed as the related service is provided. A liability is recognised for the amount expected to be paid under short-term cash bonus or profit-sharing plans if the Group has a present legal or constructive obligation to pay this amount as a result of past service provided by the employee and the obligation can be estimated reliably.

1. ACCOUNTING POLICIES (continued)

Provisions

A provision is recognised in the consolidated balance sheet when the Group has a present legal or constructive obligation as a result of a past event, that can be reliably measured and it is probable that an outflow of economic benefits will be required to settle the obligation. Provisions are determined by discounting the expected future cash flows at a pre-tax rate that reflects risks specific to the liability.

Share capital

Ordinary shares are classified as equity. Incremental costs directly attributable to the issue of new shares are shown in equity as a deduction, net of tax, from the proceeds.

Revenue

Revenue represents the invoiced value of products and services sold or services provided to third parties net of sales discounts, value added taxes and duties. Contracts for goods and services are analysed to determine the distinct performance obligations against which revenue should be recognised. The amount to be recognised is determined from the standalone selling prices for goods and services, allocated to the performance obligations. Revenue is recognised when (or as) the performance obligations are satisfied by transferring a promised good or service to a customer.

The pricing for products sold is determined by market prices (market contracts and arrangements) or is linked by a formula to published raw material prices plus an agreed additional amount (formula contracts). Revenue arising from the sale of goods is recognised when the goods are dispatched or delivered depending on the relevant delivery terms and point at which the control of the good or service is transferred to the customer.

Services provided to third parties include administrative and operational services provided to other chemical companies with facilities on our sites and services under tolling arrangements. Under tolling arrangements, customers pay for or provide raw materials to be converted into certain specified products, for which the Group charges a toll fee. The Group only recognises toll fee as revenue earned under such arrangements upon shipment of the converted product to the customer as this is the point at which the control of the service is transferred to the buyer. For all other services, revenue is recognised at a point in time or over-time depending on whether the over-time revenue recognition criteria is met.

Government grants

Government grants are shown in the consolidated balance sheet as deferred income. This income is amortised on a straight line basis over the same period as the tangible fixed asset to which it relates or the life of the related project.

1. ACCOUNTING POLICIES (continued)

Expenses

Operating lease payments

Payments made under operating leases are recognised in the consolidated income statement on a straight-line basis over the term of the lease. Lease incentives received are recognised in the consolidated income statement as an integral part of the total lease expense.

Finance lease payments

Minimum lease payments are apportioned between the finance charge and the reduction of the outstanding liability. The finance charge is allocated to each period during the lease term so as to produce a constant periodic rate of interest on the remaining balance of the liability.

Finance income and expenses

Interest income and interest expense are recognised in the consolidated income statement as it accrues, using the effective interest method. Dividend income is recognised in the consolidated income statement on the date the entity's right to receive payments is established. Foreign exchange gains and losses are reported on a gross basis.

Finance costs comprise interest payable, finance charges on finance leases, unwinding of the discount on provisions, net fair value losses on derivatives, net interest on employee benefit liabilities and foreign exchange losses that are recognised in the consolidated income statement (see foreign exchange accounting policy).

Finance income comprises interest receivable on funds invested and from related party loans, net fair value gains on derivatives and foreign exchange gains.

Taxation

Tax on the profit or loss for the year comprises current and deferred tax. Tax is recognised in the consolidated income statement except to the extent that it relates to items recognised directly in equity, in which case it is recognised in equity.

Current tax is the expected tax payable on the taxable income for the year, using tax rates enacted or substantively enacted at the end of the reporting period, and any adjustment to tax payable in respect of previous years.

Deferred tax is provided on temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes. The following temporary differences are not provided for: the initial recognition of goodwill; the initial recognition of assets or liabilities that affect neither accounting nor taxable profit other than in a business combination; and differences relating to investments in subsidiaries to the extent that they will probably not reverse in the foreseeable future. The amount of deferred tax provided is based on the expected manner of realisation or settlement of the carrying amount of assets and liabilities, using tax rates enacted or substantively enacted at the end of the reporting period. Deferred tax assets and liabilities are offset if it is possible that there is a legally enforceable right to offset current tax liabilities and

1. ACCOUNTING POLICIES (continued)

assets because they relate to taxes levied by the same tax authority on the same taxable entity, or on different tax entities, but they intend to settle current tax liabilities and assets on a net basis or their tax assets and liabilities will be realised simultaneously.

A deferred tax asset is recognised only to the extent that it is probable that future taxable profits will be available against which the temporary difference can be utilised.

Segmental analysis

The Group determines its operating segments in a manner consistent with the internal reporting provided to the chief operating decision-makers. The chief operating decision-makers are responsible for allocating resources and assessing performance of the operating segments. The chief operating decision-makers are the members of the Executive Committee of the ultimate parent undertaking, Ineos Limited. The members of this committee are the previous company board members and the information presented is unchanged from prior year and therefore there is no change to the segment information presented.

An operating segment is a component of the Group that engages in business activities from which it may earn revenues and incur expenses, including revenues and expenses that relate to transactions with any of the Group's other components and for which discrete financial information is available. An operating segment's operating results are reviewed regularly by the chief operating decision-makers to make decisions about resources to be allocated to the segment and assess its performance.

The Group's primary format for segment reporting is based on business segments. The business segments are determined based on the Group's management and internal reporting structure and the aggregation criteria set out in IFRS 8.

Segment results that are reported to the chief operating decision-makers include items directly attributable to a segment as well as those that can be allocated on a reasonable basis.

Segment capital expenditure is the total payments made during the period to acquire property, plant and equipment and intangible assets other than as acquired through business combinations.

Emission trading scheme

The Group participates in the EU Emissions Trading Scheme. The Scheme encourages companies to reduce carbon emissions by offering financial incentives if they achieve their annual reduction targets. If a company reduces emissions beyond their target then the surplus may be traded in the form of emissions permits.

The incentive money due from the EU Emissions Trading Scheme is recognised in the consolidated income statement once the reduction targets have been met. The emissions permits allocated under the Scheme are at nil cost. The Group recognises the revenue from such permits upon their sale to third parties.

1. ACCOUNTING POLICIES (continued)

The Group recognises a provision for emissions produced. The provision is measured at the carrying amount of the emission rights held (nil if granted, otherwise at cost) or, in the case of a shortfall, at the current fair value of the emission rights needed.

Exceptional items

The presentation of the Group's results separately identifies the effect of profits and losses on the disposal of businesses, the impairment of non-current assets, the cost of restructuring acquired businesses, the impact of one off events such as legal settlements or finance costs relating to call premia and write-off of unamortised debt issue costs following substantial modification or redemption of debt as exceptional items. Results excluding disposals, impairments, restructuring costs and one off items are used by management and are presented in order to provide readers with a clear and consistent presentation of the underlying operating performance of the Group's ongoing business.

Accounting standards not applied

A number of new accounting standards are effective for annual periods beginning after January 1, 2019 and earlier application is permitted. However, the Group has not early adopted the new or amended standards in preparing these consolidated financial statements.

The impact of their adoption is being assessed and is not expected to have a material impact on the Group's financial statements in the period of initial application unless otherwise indicated.

IFRS 16 Leases

The Group is required to adopt IFRS 16 Leases from January 1, 2019. The Group has assessed the estimated impact that initial application of IFRS 16 will have on its consolidated financial statements, as described below. The actual impacts of adopting the standard on January 1, 2019 may change because:

- The new accounting policies are subject to change until the Group presents its first financial statements that include the date of initial application.
- The Group's borrowing rate is subject to change until the Group presents its first financial statements that include the date of initial application.
- The Group's latest assessment of whether it will exercise any lease renewal options is subject to change until the Group presents its first financial statements that include the date of initial application.

IFRS 16 introduces a single, on-balance sheet lease accounting model for lessees. A lessee recognises a right-of-use asset representing its right to use the underlying asset and a lease liability representing its obligation to make lease payments. There are recognition exemptions for short-term leases and leases of low-value items. Lessor accounting remains similar to the current standard—i.e. lessors continue to classify leases as finance or operating leases.

1. ACCOUNTING POLICIES (continued)

IFRS 16 replaces existing leasing guidance, including IAS 17 Leases, IFRIC 4 Determining whether an Arrangement contains a Lease, SIC-15 Operating Leases—Incentives and SIC-27 Evaluating the Substance of Transactions Involving the Legal Form of a Lease.

i. Leases in which the Group is a lessee

The Group will recognise new assets and liabilities for its operating leases, which include vessels, storage and transportation infrastructure. The nature of expenses related to those leases will now change because the Group will recognise a depreciation charge for right-of-use assets and interest expense on lease liabilities.

Previously, the Group recognised operating lease expense on a straight-line basis over the term of the lease, and recognised assets and liabilities only to the extent that there was a timing difference between actual lease payments and the expense recognised.

In addition, the Group will no longer recognise provisions for operating leases that it assesses to be onerous. Instead, the Group will include the payments due under the lease in its lease liability.

No significant impact is expected for the Group's finance leases.

Based on the information currently available, the Group estimates that it will recognise additional lease liabilities and right-of-use assets of approximately €900 million as at January 1, 2019. The impact on EBITDA which is the main measure of profit, is expected to be approximately €160 million for the year ended December 31, 2019.

ii. Leases in which the Group is a lessor

The Group will reassess the classification of sub-leases in which the Group is a lessor. No significant impact is expected for leases in which the Group is a lessor.

iii. Transition

The Group plans to apply IFRS 16 initially on January 1, 2019, using the modified retrospective approach and measuring the right of use asset equal to the lease liability. Therefore, the cumulative effect of adopting IFRS 16 will be recognised as an adjustment to the opening balance of retained earnings at January 1, 2019, with no restatement of comparative information.

The Group has a number of arrangements that are not in the legal form of a lease, for which it concluded that the arrangement contains a lease of equipment under IFRIC 4. On transition to IFRS 16, the Group does not plan to apply the practical expedient to grandfather the definition of a lease on transition. This means that the new definition of a lease under IFRS 16 will be applied to all of the contracts in place on transition.

When applying the modified retrospective approach to leases previously classified as operating leases under IAS 17, the Group has elected to apply the following practical expedients:

- Measure the right-of-use asset as if it had applied IFRS 16 since the commencement date using its incremental borrowing rate at the date of initial application;

1. ACCOUNTING POLICIES (continued)

- Apply the practical expedient to exclude initial direct costs from the right-of-use asset;
- Apply the practical expedient to apply a single discount rate to a portfolio of leases with similar characteristics; and
- Apply the practical expedient to rely on its assessment that the lease was onerous under IAS 37 Provisions, Contingent Liabilities and Contingent Assets and therefore adjust the right-of-use asset at the date of initial application by the onerous lease provision rather than conduct an impairment test.

Other forthcoming standards and amendments

The following new or amended standards and interpretations are not expected to have a significant impact on the Group's consolidated financial statements.

- IFRIC 23 Uncertainty over Income Tax Treatments;
- Prepayment Features with Negative Compensation (Amendments to IFRS 9);
- Long-term Interests in Associates and Joint Ventures (Amendments to IAS 28);
- Plan Amendment, Curtailment or Settlement (Amendments to IAS 19);
- Annual Improvements to IFRs Standards 2015-17 Cycle- various standards;
- Amendments to References to Conceptual Framework in IFRS Standards;
- IFRS 17 Insurance Contracts;
- Sale or Contribution of Assets between an Investor and its Associate or Joint Venture (Amendments to IFRS 10 and IAS 28).

2. OPERATING SEGMENTS

The determination of the Group's operating segments is based on the business units for which information is reported to the Group's Chief Operating Decision Maker. The Group has three reportable segments, as described below.

The Group's Olefins and Polymers business units produce olefins and related products and a broad range of polymers. The Group's olefins businesses are focused on ethylene and propylene, which are the two largest volume olefins globally and are key building blocks for polymers. These olefins are primarily used as feedstock for the Group's polymers business. In addition, the Group sells olefins to third party customers for a variety of industrial and consumer applications, including plastics, rubber and fibre.

- O&P North America segment—In North America, the group's Olefins and Polymers business comprises five sites including major facilities in Chocolate Bayou, Texas, and Battleground, Texas.

2. OPERATING SEGMENTS (continued)

- O&P Europe segment—In Europe, the Group owns and operates two major cracker complexes, in Köln, Germany and Rafnes, Norway. This includes polymers and derivatives units.
- Chemical Intermediates—This reportable segment is the aggregation, in compliance with IFRS 8, of a number of different business units with similar economic and other characteristics. Chemical Intermediates are high-value added chemical products used as key components in a variety of consumer and industrial products. The Group's chemical intermediates businesses are exposed to similar key commodities, namely oil and gas. They produce a range of products including phenol, alpha olefins, solvents, industrial chemicals and nitriles. The Chemical Intermediates processes are similar in that they are all capital intensive and based upon processing and mixing chemical raw materials to produce chemical products for the next stage along the value chain. The Chemical Intermediates products are distributed on a business-to-business basis across the world. This is performed using similar conventional methods of pipeline, truck, rail or ship container depending on the customer location and size of the order. The Chemical Intermediates customer base is similar in that the customers are generally manufacturers of consumer and industrial products in developed markets and mature industrial economies.

The accounting policies of all of the reportable segments are as described in Note 1.

Information regarding the operations of each reportable segment is included in the following tables. Performance is measured based on earnings before interest, tax, depreciation and amortisation and exceptional items, measured under IFRS ("Segment EBITDA"). Segment EBITDA is used to measure performance as management believes that such information is the most relevant in evaluating the results of certain segments relative to other entities that operate within these industries. Inter-segment pricing is determined on an arm's length basis. Information regarding segments reviewed by management includes management accounts comprising the profit or loss, cash flows and other financial and non-financial information used to manage the business.

Adjustments in the following tables comprise the following items:

- Elimination of inter-segmental transactions and balances; and
- The Group's share of (loss)/profit in respect of the Refining joint venture.

2. OPERATING SEGMENTS (continued)

Segment information—2018

	Reportable segments					
	O&P North America	O&P Europe	Chemical Intermediates	Total of reportable segments	Adjustments	Amounts in financial statements
				€m		
Reportable segment revenue	4,044.1	6,388.8	7,855.0	18,287.9	(2,196.4)	16,091.5
Reportable segment EBITDA	798.0	671.7	818.1	2,287.8	—	2,287.8
Depreciation of property, plant and equipment and amortisation of intangible assets	(143.6)	(139.6)	(185.3)	(468.5)	(0.7)	(469.2)
Share of loss of associates and jointly controlled entities	(9.7)	—	—	(9.7)	(56.9)	(66.6)
Net finance expense						(277.8)
Profit before tax from continuing operations						1,474.2
Payments for capital expenditure	389.0	210.9	573.6	1,173.5	—	1,173.5

Major items in the adjustments column include:

- Reportable segment revenues: the elimination of inter-segmental revenues: 2018: €2,196.4 million (2017: €1,849.6 million, 2016: €1,416.8 million).
- Share of (loss)/profit of associates and jointly control entities: Refining joint venture: 2018: €(56.9) million (2017: €146.1 million, 2016: €29.5 million).

Segment information—2017

	Reportable segments					
	O&P North America	O&P Europe	Chemical Intermediates	Total of reportable segments	Adjustments	Amounts in financial statements
				€m		
Reportable segment revenue	3,573.9	5,896.7	7,589.4	17,060.0	(1,849.6)	15,210.4
Reportable segment EBITDA	896.0	814.0	819.4	2,529.4	—	2,529.4
Depreciation of property, plant and equipment and amortisation of intangible assets	(149.5)	(136.1)	(181.7)	(467.3)	(1.0)	(468.3)
Share of profit/(loss) of associates and jointly controlled entities	(2.6)	—	—	(2.6)	146.1	143.5
Profit on disposal of fixed assets	0.1	—	2.5	2.6	—	2.6
Net finance income						92.6
Profit before tax from continuing operations						2,299.8
Payments for capital expenditure	279.7	236.1	398.8	914.6	—	914.6

2. OPERATING SEGMENTS (continued)

Segment information—2016

	Reportable segments					
	O&P North America	O&P Europe	Chemical Intermediates	Total of reportable segments	Adjustments	Amounts in financial statements
				€m		
Reportable segment revenue	2,855.9	4,966.5	6,204.3	14,026.7	(1,416.8)	12,609.9
Reportable segment EBITDA	956.4	708.7	665.7	2,330.8	—	2,330.8
Depreciation of property, plant and equipment and amortisation of intangible assets	(119.2)	(109.1)	(212.5)	(440.8)	(2.1)	(442.9)
Exceptional items (excluding items relating to impairment and financing)	—	—	(21.3)	(21.3)	—	(21.3)
Share of profit/(loss) of associates and jointly controlled entities	(1.9)	—	1.7	(0.2)	29.5	29.3
Profit on disposal of fixed assets	—	—	3.7	3.7	—	3.7
Net finance costs						(326.0)
Profit before tax from continuing operations						1,573.6
Payments for capital expenditure	273.2	142.2	276.5	691.9	—	691.9

Geographic segments

	Revenues		
	2018	2017	2016
		€m	
Geographical information by location of customers:			
Europe	9,129.3	8,720.3	7,903.3
Americas	5,236.2	4,724.3	3,916.2
Rest of World	1,726.0	1,765.8	790.4
Total	**16,091.5**	**15,210.4**	**12,609.9**
Geographical information by location from which the Group derives revenue:			
Europe	10,718.4	10,034.6	8,240.9
Americas	5,106.5	4,923.3	4,120.3
Rest of World	266.6	252.5	248.7
Total	**16,091.5**	**15,210.4**	**12,609.9**

In presenting information on the basis of geographic analysis of segments, segment revenue is based on the geographical location of customers and geographical locations from which the Group derives revenues.

2. OPERATING SEGMENTS (continued)

Revenues from external customers for each product and service or each group of similar products and services and a geographic analysis of segment assets are not presented as the necessary information is not available and the Directors are of the opinion that the cost to develop it would be excessive.

The timing of revenue recognition for the vast majority of the Group's sale transactions is at a point in time. Revenues for goods or services transferred over time are immaterial.

No contract assets and liabilities have been recognised in the Balance Sheet of the Group. Its impact, if any, was deemed immaterial. The performed analysis has concluded that the right of payment of the goods and services sold by the Group is unconditional, except for the passage of time. Therefore, all rights of payment have been booked as trade receivable.

No assets related to costs to obtain or fulfil a contract have been recognised. Its impact, if any, was deemed immaterial.

3. ACQUISITIONS

Acquisition of subsidiary in 2016

WL Plastics

On November 1, 2016 the Group acquired 100% of the shares of WLP Holding Corporation, one of the largest high density polyethylene (HDPE) pipe manufacturers in North America for an initial consideration of €162.1 million. The business is headquartered in Fort Worth, Texas with production facilities in Kentucky, South Dakota, Utah, Texas, and Wyoming. A facility in Georgia is currently under construction. WL Plastics has over 500 million pounds of annual production capacity and provides HDPE pipe for use in oil, gas, industrial, mining, conduit, and municipal water and sewer applications. This acquisition forms part of the O&P North America segment.

During the year ended December 31, 2018 the Group paid a further €7.4 million (2017: €2.5 million) which was the second instalment of the contingent consideration which will be paid out over a three year period, subject to the acquired business achieving certain targets. During the year ended December 31 , 2017 the Group updated its deferred consideration assessment.

3. ACQUISITIONS (continued)

Effect of the acquisition on individual assets and liabilities

Acquiree's net assets at acquisition:	Provisional values recognised on acquisition	2017 revaluation updates	Final values recognised on acquisition
	€m	€m	€m
Property, plant and equipment	84.6	—	84.6
Intangible assets	22.6	—	22.6
Inventories	20.0	—	20.0
Trade and other receivables	22.6	—	22.6
Cash and cash equivalents	10.1	—	10.1
Trade and other payables	(33.9)	—	(33.9)
Deferred tax liabilities	(25.0)	—	(25.0)
Net identifiable assets and liabilities	101.0	—	101.0
Consideration paid:			
Cash	135.4	2.5	137.9
Deferred consideration	26.7	9.4	36.1
Total consideration paid	162.1	11.9	174.0
Differences between consideration and provisional net assets acquired	61.1	11.9	73.0

The difference between consideration and net assets acquired has been recognised as goodwill within intangible assets in Note 11.

Acquisition related costs

During the year ended December 31, 2016 the Group incurred acquisition related costs of €2.0 million mainly related to legal and professional fees. These costs have been included in administrative expenses in the Group's consolidated income statement.

Acquired receivables

The fair value of acquired trade and other receivables was €22.6 million and includes trade receivables with a fair value of €22.0 million. The gross contractual amounts receivable are €22.5 million and, at the acquisition date, €0.5 million of contractual cash flows were not expected to be received.

4. EXCEPTIONAL ITEMS

	2018	2017	2016
		€m	
Exceptional administrative expenses	—	—	(21.3)
Exceptional finance costs	—	(44.1)	(20.7)

4. EXCEPTIONAL ITEMS (continued)

Exceptional administrative expenses

In 2016 following a strategic review of the Technologies business the Group took a decision to cease marketing its polyolefins licensing technology externally and to transfer the remaining parts of the Technologies business to existing businesses within the Group to provide a clearer focus on individual product lines. This resulted in an exceptional administrative charge of €21.3 million being incurred during 2016 due to the cessation of new licensing activities and other restructuring within the Technologies business primarily relating to severance and early retirement costs.

Exceptional finance costs

In February 2017, the Group completed a refinancing of the Senior Secured Term Loans and the redemption of the Senior Notes due 2019. The Group has assessed that the refinancing of the Senior Secured Term Loans represented a substantial modification and resulted in the extinguishment of the existing debt. As a result the existing debt has been derecognised and the modified debt recognised at fair value. Due to the substantial modification of the Senior Secured Term Loans, the unamortised issue costs of €23.6 million at this date were written off as exceptional finance costs. Following the early redemption of the Senior Notes due 2019, an exceptional finance cost of €20.5 million has been recognised, which includes an early prepayment premium of €16.7 million and the write-off of deferred issue costs associated with the redeemed Notes of €3.8 million.

In August 2016, the Group issued €650 million and $500 million of Senior Notes due 2024. The proceeds of the Notes together with cash in hand were used to redeem in full the Senior Notes due 2018. As a result of the early redemption of the Senior Notes due 2018 an exceptional finance cost of €20.7 million has been recognised, which includes an early prepayment premium of €17.5 million and the write-off of deferred issue costs associated with the redeemed Notes of €3.2 million.

5. OPERATING PROFIT

Included in operating profit are the following:

	2018	2017	2016
		€m	
Exceptional costs—included in administrative expenses	—	—	21.3
Research and development expensed as incurred	29.8	31.6	15.4
Amortisation of other intangible assets	13.2	13.9	44.2
Profit on disposal of property, plant and equipment	—	(2.6)	(3.7)
Amortisation of government grants	(2.9)	(4.4)	(5.0)
Depreciation and impairment of property, plant and equipment:			
Owned assets	455.9	454.2	397.6
Finance leased assets	0.1	0.2	1.1
Operating lease rental charges:			
Plant, machinery and equipment	61.2	59.6	62.5
Other	87.0	78.1	64.4

5. OPERATING PROFIT (continued)

Auditors' remuneration:

	2018	2017	2016
		€m	
Audit of these financial statements	0.7	0.7	0.7
Amounts receivable by auditors and their associates in respect of:			
Audit of financial statements of subsidiaries pursuant to legislation	2.5	2.4	2.4
Other services relating to taxation	2.2	1.7	2.0
Services relating to corporate finance transactions	0.1	0.1	0.4
All other services	0.7	0.2	0.3
	6.2	**5.1**	**5.8**

6. STAFF NUMBERS AND COSTS

The monthly average number of persons employed by the Group (including any divestitures up to the date of disposal and any acquisitions from the date of acquisition) during the year, analysed by category, was as follows:

	Number of employees		
	2018	2017	2016
Operations	5,477	5,228	5,214
Administration	1,372	1,394	1,265
Research and development	360	280	305
	7,209	**6,902**	**6,784**

The aggregate payroll costs of these persons were as follows:

	2018	2017	2016
		€m	
Wages and salaries	699.4	681.1	641.5
Social security costs	90.8	93.1	88.9
Expenses related to defined contribution pension plans	23.3	16.9	9.9
Expenses related to defined benefit pension plans	42.8	47.8	43.2
	856.3	**838.9**	**783.5**

7. DIRECTORS' REMUNERATION

	2018	2017	2016
		€m	
Salaries and other short term benefits	**1.5**	**1.3**	**1.3**

8. FINANCE INCOME AND COSTS

Recognised in income statement

	2018	2017	2016
		€m	
Finance income			
Interest income on bank balances	17.4	6.7	3.7
Other interest receivable	66.8	71.8	87.5
Total interest income on financial assets not at fair value through profit or loss	84.2	78.5	91.2
Exchange movements	15.3	408.1	84.5
Net fair value gain on derivatives	12.8	—	17.3
Dividend income	5.0	5.3	7.0
Total finance income	**117.3**	**491.9**	**200.0**
Finance costs			
Interest payable on senior notes	101.2	103.9	166.1
Interest payable on bank loans and overdrafts	111.6	159.5	191.5
Interest payable on securitisation	8.9	8.2	8.5
Amortisation of issue costs	6.2	6.0	10.7
Other finance charges	6.5	7.7	19.9
Exchange movements	148.3	45.2	92.6
Net fair value loss on derivatives	—	9.0	—
Interest on employee benefit liabilities	13.4	15.7	16.0
Borrowing costs capitalised in property, plant and equipment	(1.0)	—	—
Total finance costs before exceptional items	395.1	355.2	505.3
Exceptional finance cost (see Note 4)	—	44.1	20.7
Total finance costs	**395.1**	**399.3**	**526.0**
Net finance costs/(income)	**277.8**	**(92.6)**	**326.0**

Net gains and losses on financial instruments are included in Note 25.b.

9. TAX CHARGE

Taxation recognised in the consolidated income statement

	2018	2017	2016
		€m	
Current tax expense			
Current year	268.1	362.5	252.1
Adjustments in respect of prior years	38.1	(13.0)	17.7
Current tax expense	306.2	349.5	269.8
Deferred tax expense			
Origination and reversal of temporary differences	(23.9)	43.8	52.2
Effect of rate change	—	(69.0)	—
Adjustments in respect of prior years	(3.4)	(22.8)	18.2
Deferred tax (credit)/charge (see Note 16)	(27.3)	(48.0)	70.4
Total tax charge	**278.9**	**301.5**	**340.2**

9. TAX CHARGE (continued)

Reconciliation of effective tax rate

	2018	2017	2016
		€m	
Profit before taxation	1,474.2	2,299.8	1,573.6
Tax on above using the Luxembourg corporation tax rate of 26.01% (2017: 27.08%, 2016: 29.22%)	383.4	622.8	459.8
Non-deductible expenses/tax exempt revenue	19.3	(25.5)	(2.2)
Effect of tax rates in foreign jurisdictions	(158.0)	(189.3)	(150.5)
Utilisation of tax losses brought forward	(0.5)	(1.7)	(2.8)
Effect of rate change	—	(69.0)	—
Adjustments in respect of prior years	34.7	(35.8)	35.9
Total tax charge	**278.9**	**301.5**	**340.2**

The 2017 credit of €69.0 million from the effect of a rate change mainly results from the remeasurement of deferred tax liabilities following US tax reform in December 2017, which included a substantial reduction in US corporate tax rate from 35% to 21%.

Taxation recognised in other comprehensive income/(expense)

	2018			2017			2016		
	Gross	Tax	Net	Gross	Tax	Net	Gross	Tax	Net
					€m				
Foreign exchange translation differences	(23.3)	—	(23.3)	84.5	—	84.5	(40.6)	—	(40.6)
Net gain/(loss) on hedge of net investment in foreign operations	297.7	(26.4)	271.3	(731.4)	93.9	(637.5)	104.7	—	104.7
Remeasurement of post employment benefit obligations	(32.7)	10.0	(22.7)	101.9	(19.6)	82.3	(84.0)	22.1	(61.9)
Total	**241.7**	**(16.4)**	**225.3**	**(545.0)**	**74.3**	**(470.7)**	**(19.9)**	**22.1**	**2.2**

10. PROPERTY, PLANT AND EQUIPMENT

	Land and buildings	Plant & equipment Fixtures and fittings	Under construction	Total
		€m		
Cost				
Balance at January 1, 2016	568.1	7,388.1	401.2	8,357.4
Business acquisitions	22.4	56.4	5.8	84.6
Additions	15.9	447.0	269.0	731.9
Disposals	(0.1)	(12.8)	—	(12.9)
Transfers	12.6	227.2	(239.8)	—
Effect of movements in foreign exchange	13.9	151.4	25.5	190.8
Balance at December 31, 2016	632.8	8,257.3	461.7	9,351.8
Additions	24.7	337.2	611.0	972.9
Disposals	(3.9)	(58.6)	(0.2)	(62.7)
Transfers	32.9	184.8	(217.7)	—
Effect of movements in foreign exchange	(42.8)	(486.7)	(74.8)	(604.3)
Balance at December 31, 2017	**643.7**	**8,234.0**	**780.0**	**9,657.7**
Additions	20.6	400.6	734.7	1,155.9
Disposals	(2.1)	(52.2)	—	(54.3)
Transfers	32.7	160.1	(192.8)	—
Effect of movements in foreign exchange	6.7	115.5	48.6	170.8
Balance at December 31, 2018	**701.6**	**8,858.0**	**1,370.5**	**10,930.1**
Accumulated depreciation and impairment				
Balance at January 1, 2016	237.7	4,610.9	—	4,848.6
Depreciation charge for the year	15.2	383.5	—	398.7
Disposals	(0.1)	(12.6)	—	(12.7)
Effect of movements in foreign exchange	5.9	103.9	—	109.8
Balance at December 31, 2016	258.7	5,085.7	—	5,344.4
Depreciation charge for the year	17.0	437.4	—	454.4
Disposals	(0.2)	(56.8)	—	(57.0)
Effect of movements in foreign exchange	(15.7)	(323.8)	—	(339.5)
Balance at December 31, 2017	259.8	5,142.5	—	5,402.3
Depreciation charge for the year	18.3	437.7	—	456.0
Disposals	(2.1)	(52.2)	—	(54.3)
Effect of movements in foreign exchange	2.2	77.6	—	79.8
Balance at December 31, 2018	**278.2**	**5,605.6**	**—**	**5,883.8**
Net book value				
At December 31, 2016	374.1	3,171.6	461.7	4,007.4
At December 31, 2017	383.9	3,091.5	780.0	4,255.4
At December 31, 2018	**423.4**	**3,252.4**	**1,370.5**	**5,046.3**

10. PROPERTY, PLANT AND EQUIPMENT (continued)

Leased plant and machinery

Included in the above are assets held under hire purchase and finance leases with a net book value of €3.6 million (2017: €3.8 million, 2016: €4.0 million). See Note 19 for the secured leased obligations on leased assets.

Property, plant and equipment under construction

During 2018, expenditure in the USA on cogeneration equipment and a turnaround on an olefin unit along with expenditure on an EO storage project in Antwerp, Belgium was transferred to other classes of property, plant and equipment.

Additions to assets under construction during 2018 included further expenditure in the USA on the Linear Alpha Olefins (LAO) and High Viscosity Poly Alpha Olefins (PAO) projects as well as additional expenditure at Chocolate Bayou, USA on a cogeneration project, furnace replacement project and cracker debottleneck. There was also further expenditure at the Köln, Germany site on a cogeneration project, new office buildings and a lifecycle project. There was also expenditure at the Antwerp, Belgium site in respect of a new alkox unit.

During 2017 infrastructure relating to the Gemini HDPE project were all transferred to other classes of property, plant and equipment after the new plant became fully operational in the fourth quarter of 2017.

Additions to assets under construction during 2017 included further expenditure in the USA on the Linear Alpha Olefins (LAO) and High Viscosity Poly Alpha Olefins (PAO) projects as well as additional expenditure on a cogeneration project at Chocolate Bayou, USA and a cracker turnaround in Köln, Germany. There was also significant expenditure at the Köln, Germany site on a cogeneration project, new office buildings and a lifecycle project.

During 2016, expenditure on a debottlenecking project and replacement of cracker furnace coils at the Köln site in Germany and turnarounds on olefin units in the USA were all transferred to other classes of property, plant and equipment.

Additions to assets under construction during 2016 included further expenditure in the USA on Linear Alpha Olefins (LAO) and High Viscosity Poly Alpha Olefins (PAO) projects and infrastructure projects relating to the Gemini HDPE project. In addition there was expenditure on a cogeneration project at Chocolate Bayou, USA and a cracker turnaround in Köln, Germany.

11. INTANGIBLE ASSETS

	Intellectual property rights	Customer relationships	Other	Goodwill	Total
			€m		
Cost					
Balance at January 1, 2016	149.6	38.7	28.9	625.7	842.9
Additions	—	1.9	7.0	—	8.9
Disposals	—	—	(3.9)	—	(3.9)
Business acquisition	—	22.6	—	61.1	83.7
Effect of movements in foreign exchange	2.7	1.8	1.0	10.2	15.7
Balance at December 31, 2016	152.3	65.0	33.0	697.0	947.3
Additions	—	0.1	17.8	—	17.9
Disposals	—	—	(7.0)	—	(7.0)
Business acquisition	—	—	—	11.9	11.9
Effect of movements in foreign exchange	(8.6)	(7.7)	0.8	(37.2)	(52.7)
Balance at December 31, 2017	143.7	57.4	44.6	671.7	917.4
Additions	—	—	18.5	—	18.5
Disposals	(51.1)	—	(6.0)	—	(57.1)
Effect of movements in foreign exchange	0.5	2.5	1.8	12.3	17.1
Balance at 31 December 2018	**93.1**	**59.9**	**58.9**	**684.0**	**895.9**
Accumulated amortisation and impairment					
Balance at January 1, 2016	117.6	—	10.8	8.1	136.5
Amortisation for the year	9.5	11.7	0.4	—	21.6
Exceptional amortisation charge	22.6	—	—	—	22.6
Effect of movements in foreign exchange	2.1	0.6	—	—	2.7
Balance at December 31, 2016	151.8	12.3	11.2	8.1	183.4
Amortisation for the year	0.1	13.4	0.4	—	13.9
Effect of movements in foreign exchange	(8.6)	(2.3)	(0.6)	—	(11.5)
Balance at December 31, 2017	143.3	23.4	11.0	8.1	185.8
Amortisation for the year	0.1	12.7	0.4	—	13.2
Disposals	(51.1)	—	—	—	(51.1)
Effect of movements in foreign exchange	0.5	1.5	1.2	—	3.2
Balance at 31 December 2018	**92.8**	**37.6**	**12.6**	**8.1**	**151.1**
Net book value					
At December 31, 2016	0.5	52.7	21.8	688.9	763.9
At December 31, 2017	0.4	34.0	33.6	663.6	731.6
At December 31, 2018	**0.3**	**22.3**	**46.3**	**675.9**	**744.8**

Other intangible assets include non-compete agreements, licence fees and environmental certificates.

11. INTANGIBLE ASSETS (continued)

Amortisation charge

The amortisation charge is recognised in administrative expenses in the consolidated income statement. The exceptional amortisation charge of €22.6 million for the year ended December 31, 2016 reflects the write-off of the intellectual property rights following the restructuring of the Technologies business.

Impairment

Goodwill has been allocated to cash generating units (CGU) or groups of cash generating units as follows:

	2018	2017	2016
		€m	
O&P Europe	246.2	246.2	246.2
O&P North America	349.2	336.9	362.2
Chemical Intermediates	80.5	80.5	80.5
Total	**675.9**	**663.6**	**688.9**

The recoverable amount is based on the value in use of each operating segment before aggregation based on the latest board approved five year plan. The forecasts are based on current performance and management's assumptions regarding the future development of individual parameters including raw material prices and profit margins, utilising available market pricing forecasts. Future assumptions regarding market demand are based on external macroeconomic sources and specific data relevant to the petrochemical industry and management's knowledge of the local markets in which it operates.

The cash flows after the plan period are based on an average of each of the years in the five year plan to take account of the cyclical nature of the industry extrapolated using long term growth rates as set out in the table below.

No impairment charge has been recorded in these financial statements as a result of the annual impairment test.

The key assumptions underlying the value in use calculation are shown below:

	2018	2017	2016
Period on which management approved forecasts are based	5 years	5 years	5 years
Discount rate	8.5%	9.0%	9.0%
Growth rate	3.0%	3.0%	3.0%

A terminal value is calculated based on the average cash flows over the five year forecasting period assuming compound growth of 3% and is discounted over the expected lives of the assets.

The discount rate is based upon the pre-tax weighted average cost of capital of the Group as at each respective period end.

11. INTANGIBLE ASSETS (continued)

The growth rate used includes inflationary growth across our various markets.

Sensitivity of recoverable amounts

The following table presents, for each CGU the change in the discount rate for the tests as of December 31, 2018 that would be required in order for the recoverable amount to equal carrying value.

	Applied discount rate	Change in discount rate in order for the recoverable amount to be equal to carrying value	Required discount rate
		%	
O&P Europe	8.5	6.5	15.0
O&P North America	8.5	11.9	20.4
Chemical Intermediates:			
Nitriles	8.5	0.7	9.2
Oxide	8.5	13.1	21.6
Phenol	8.5	17.8	26.3
Oligomers	8.5	3.3	11.8
Enterprises	8.5	13.4	21.9
Technologies	8.5	37.4	45.9

The following table presents, for each CGU the change in the growth rate for the tests as of December 31, 2018 that would be required in order for the recoverable amount to equal carrying value. For the Phenol and Technologies segment growth sensitivity is not relevant as a €nil terminal value would not result in impairment. For all other operating segments except for Nitriles there would need to be negative growth in order for an impairment to be recognised.

	Applied growth rate	Change in growth rate in order for the recoverable amount to be equal to carrying value	Required growth rate
		%	
O&P Europe	3.0	(14.5)	(11.5)
O&P North America	3.0	(35.4)	(32.4)
Chemical Intermediates:			
Nitriles	3.0	(1.3)	1.7
Oxide	3.0	(42.9)	(39.9)
Phenol	3.0	n/a	n/a
Oligomers	3.0	(6.5)	(3.5)
Enterprises	3.0	(50.5)	(47.5)
Technologies	3.0	n/a	n/a

12. INVESTMENTS

12a Investments In Equity—Accounted Investees

	Joint ventures
At January 1, 2016	101.4
Additions	28.3
Share of profits retained	29.3
Exchange adjustments	2.7
At December 31, 2016	161.7
Additions	57.8
Share of profits retained	143.5
Exchange adjustments	(11.9)
At December 31, 2017	351.1
Additions	12.9
Share of losses retained	(66.6)
Exchange adjustments	4.6
At December 31, 2018	**302.0**

Joint ventures

On July 1, 2011 the group disposed of the Refining business to a new joint venture between PetroChina and INEOS Investments (Jersey) Limited ('IIJL'), a related party. IIJL is held under common control by our controlling shareholders. The consideration received by the Group for the disposal consisted of cash consideration of $1.015 billion received from PetroChina for a 50% interest in the business and an investment in non-voting ordinary shares in IIJL for the other 50% interest in the business. The non-voting ordinary shares in IIJL were fair valued at €420 million. This reflects the net present value of the future cash flows expected to be realised by the group for the ownership of these non-voting shares and takes into account the loss in control of the refining trade and assets.

The Group effectively retains an economic interest in the Refining business by virtue of its investment in IIJL. The results of the Refining business are reported against the share of profit/(loss) of associates and jointly controlled entities using the equity accounting method by virtue of this interest.

In July 2014 the Group set up a joint venture with Sasol to build and operate an HDPE plant at the Battleground site in Texas, USA. The plant became fully operational in the fourth quarter of 2017. During 2014 the Group transferred €20.0 million from assets under construction and invested a further €9.4 million into the joint venture. During 2018 a further €12.9 million (2017: €57.8 million, 2016: €28.3 million) was invested into the joint venture.

12. INVESTMENTS (continued)

Details of investments in joint ventures are set out below:

Company	Class of shares held	Place of business and country of incorporation	Percentage held	Principal activities
Petroineos Refining Limited	Ordinary	Lavéra, France Grangemouth, Scotland	50.1%	Refining
Petroineos Trading Limited	Ordinary	Lavéra, France Grangemouth, Scotland	49.9%	Refining
Ineos Infrastructure (Grangemouth) Limited	Ordinary	Grangemouth, Scotland	75%	Refining
Ineos Gemini HDPE Co LLC	Ordinary	Texas, USA	50%	Chemicals

Summary aggregated financial information for equity accounted joint ventures are as follows:

Refining joint ventures	2018	2017	2016
		€m	
Current assets	2,615.0	2,672.2	2,840.6
Long-term assets	2,660.2	2,116.4	2,685.1
Current liabilities	(3,889.1)	(3,501.6)	(4,200.1)
Long-term liabilities	(198.5)	(219.4)	(293.5)
Cash (outflow)/inflow	(1,287.9)	968.1	19.7
Revenue	26,871.4	23,570.4	17,228.5
Expenses	(26,981.4)	(23,257.9)	(17,145.0)

Gemini HDPE joint venture	2018	2017	2016
		€m	
Current assets	13.4	9.9	37.7
Long-term assets	564.8	544.7	501.6
Current liabilities	(29.6)	(24.6)	(31.0)
Long-term liabilities	(323.9)	(322.5)	(380.8)
Cash outflow	—	(22.9)	(161.5)
Revenue	49.4	4.4	—
Expenses	(52.2)	(9.8)	(3.7)

12.b Investments in Subsidiary Undertakings

The directors consider that to give full particulars of all subsidiary undertakings would lead to a statement of excessive length.

12. INVESTMENTS (continued)

The directors believe the carrying value of the investments is supported by the underlying net assets of the subsidiaries.

The following information relates to the principal subsidiary undertakings of the Company.

Company	Country of incorporation and operation	Percentage holding	Principal activity
INEOS Luxembourg I S.A.*	Luxembourg	100%	Holding Company
INEOS Luxembourg II S.A.	Luxembourg	100%	Holding Company
INEOS Group AG	Switzerland	100%	Holding Company
INEOS Holdings Limited	England and Wales	100%	Holding Company
INEOS European Holdings Limited	England and Wales	100%	Holding Company
INEOS US Finance LLC	USA	100%	Finance
INEOS Finance Plc	England and Wales	100%	Finance
INEOS Treasury (UK) Limited	England and Wales	100%	Finance
INEOS Europe AG	Switzerland	100%	Chemicals
INEOS Oxide Limited	England and Wales	100%	Chemicals
INEOS NV	Belgium	100%	Chemicals
INEOS Belgium NV	Belgium	100%	Chemicals
INEOS Phenol Belgium NV	Belgium	100%	Chemicals
INEOS Italia Srl	Italy	100%	Chemicals
INEOS Phenol GmbH	Germany	100%	Chemicals
INEOS Fluor Americas LLC	USA	100%	Chemicals
INEOS Americas LLC	USA	100%	Chemicals
INEOS Manufacturing Deutschland GmbH	Germany	100%	Chemicals
INEOS Köln GmbH	Germany	100%	Chemicals
INEOS France SAS	France	100%	Chemicals
INEOS Sales (UK) Limited	England and Wales	100%	Chemicals
INEOS Manufacturing Belgium NV	Belgium	100%	Chemicals
INEOS Feluy SPRL	Belgium	100%	Chemicals
INEOS Sales Belgium NV	Belgium	100%	Chemicals
INEOS Sales Italia s.r.l.	Italy	100%	Chemicals
INEOS Singapore Pte Limited	Singapore	100%	Chemicals
INEOS USA LLC	USA	100%	Chemicals
INEOS Polymers Inc	USA	100%	Chemicals
INEOS Canada Company	Canada	100%	Chemicals
INEOS Canada Partnership	Canada	100%	Chemicals
INEOS Bamble AS	Norway	100%	Chemicals
INEOS Nitriles (UK) Limited	England and Wales	100%	Chemicals
INEOS Manufacturing (Hull) Limited	England and Wales	100%	Chemicals
INEOS Technologies (Vinyls) Limited	England and Wales	100%	Chemicals
INEOS Technologies France SAS	France	100%	Chemicals
INEOS US Sales Company	USA	100%	Chemicals
INEOS Nitriles USA LLC	USA	100%	Chemicals
INEOS Oligomers USA LLC	USA	100%	Chemicals
INEOS Technologies USA LLC	USA	100%	Chemicals
INEOS Technologies Italia S.r.l	Italy	100%	Chemicals
Noretyl AS	Norway	100%	Chemicals
WLP Holding Corporation	USA	100%	Manufacturer

* Held directly by the Company

13. FINANCIAL ASSETS AT FAIR VALUE THROUGH PROFIT OR LOSS (PREVIOUSLY: OTHER INVESTMENTS)

	2018	2017	2016
		€m	
Balance brought forward	238.5	262.2	243.2
Amount restated in opening retained earnings due to impact of new IFRS 9 accounting standard	(6.1)	—	—
At January 1	232.4	262.2	243.2
Interest receivable	8.6	8.1	9.2
Exchange adjustments	10.2	(31.8)	9.8
At December 31	**251.2**	**238.5**	**262.2**

The Group has a non-voting preferred partnership interest in Ineos Investments Partnership, an entity held under common control by the Group's ultimate shareholders, which owns 24% of the share capital of the PQ Corporation, a silicas business incorporated in the USA and listed on the New York stock exchange. The Group previously held this investment at amortised cost under IAS 39; however under IFRS 9 (see Note 1) it has been designated as a financial asset at fair value through profit or loss. The remeasurement of this investment under IFRS 9 has resulted in an adjustment to opening equity of €6.1 million as at January 1, 2018.

14. FINANCIAL ASSETS AT FAIR VALUE THROUGH OTHER COMPREHENSIVE INCOME (PREVIOUSLY: OTHER FINANCIAL ASSETS)

	2018	2017	2016
		€m	
Non-current			
Financial assets at fair value though comprehensive income (see below and Note 25.a)	28.3	—	—
Available for sale financial assets (see below and Note 25.a)	—	28.3	29.2

Financial assets at fair value through comprehensive income (previously available for sale financial assets)

Financial assets at fair value through comprehensive income include a 20.0% investment in Aethylen Rohrleitungs Gesellschaft ('ARG') mbH and Co. KG, a company registered in Germany whose principal activity is the transportation of ethylene via pipelines in Northern Europe and other investments.

The investment in ARG mbH and Co. KG and other investments were previously classified as available for sale financial assets and recorded at amortised cost; however under IFRS 9 (see Note 1) the Group has designated these investments as financial assets at fair value through comprehensive income. These investments comprise of shares in private limited companies. The carrying value of these financial assets at fair value through comprehensive income was €28.3 million at December 31, 2018. In these circumstances, in the absence of reliable information, the Group considers that a reliable determination of fair value is not practicable and recording them at fair value instead of their

14. FINANCIAL ASSETS AT FAIR VALUE THROUGH OTHER COMPREHENSIVE INCOME (PREVIOUSLY: OTHER FINANCIAL ASSETS) (continued)

acquisition cost will not materially change the value of the investment so no separate fair valuation is performed on these investments, although this is reviewed annually. A disposal of these investments is not currently anticipated.

15. DERIVATIVE FINANCIAL INSTRUMENTS

	2018	2017	2016
		€m	
Current asset			
Derivative commodity contracts designated as fair value through profit or loss (see Note 25.a)	10.1	—	8.2

	2018	2017	2016
		€m	
Non-current liabilities			
Derivative commodity contracts designated as fair value through profit or loss (see Note 25.a)	0.4	2.3	0.9
Current liabilities			
Derivative commodity contracts designated as fair value through profit or loss (see Note 25.a)	—	0.2	—

16. DEFERRED TAX ASSETS AND LIABILITIES

Recognised deferred tax assets and liabilities

Deferred tax assets and liabilities are attributable to the following:

	2018		
	Assets	Liabilities	Total
		€m	
Property, plant and equipment	—	249.6	249.6
Employee benefits	(206.6)	—	(206.6)
Tax value of loss carry-forwards	(51.1)	—	(51.1)
Other	—	12.9	12.9
Tax (assets)/liabilities	(257.7)	262.5	4.8
Set off of tax	56.1	(56.1)	—
Net tax (assets)/liabilities	(201.6)	206.4	4.8

16. DEFERRED TAX ASSETS AND LIABILITIES (continued)

	2017		
	Assets	Liabilities	Total
		€m	
Property, plant and equipment	—	254.8	254.8
Employee benefits	(189.8)	—	(189.8)
Tax value of loss carry-forwards	(50.6)	—	(50.6)
Other	—	27.7	27.7
Tax (assets)/liabilities	(240.4)	282.5	42.1
Set off of tax	80.2	(80.2)	—
Net tax (assets)/liabilities	(160.2)	202.3	42.1

	2016		
	Assets	Liabilities	Total
		€m	
Property, plant and equipment	—	371.8	371.8
Employee benefits	(225.6)	—	(225.6)
Tax value of loss carry-forwards	(49.7)	—	(49.7)
Other	(26.0)	—	(26.0)
Tax (assets)/liabilities	(301.3)	371.8	70.5
Set off of tax	96.2	(96.2)	—
Net tax (assets)/liabilities	(205.1)	275.6	70.5

Movement in deferred tax

	Property, plant and equipment	Employee benefits	Tax value of loss carry-forward utilised	Other	Total
			€m		
At January 1, 2016	364.3	(195.4)	(84.9)	(86.8)	(2.8)
Recognised in profit or loss	7.5	(8.1)	35.2	35.8	70.4
Recognised in other comprehensive income	—	(22.1)	—	—	(22.1)
Business acquisition	—	—	—	25.0	25.0
At December 31, 2016	371.8	(225.6)	(49.7)	(26.0)	70.5
Recognised in profit or loss	(117.0)	16.2	(0.9)	53.7	(48.0)
Recognised in other comprehensive income	—	19.6	—	—	19.6
At December 31, 2017	254.8	(189.8)	(50.6)	27.7	42.1
Recognised in profit or loss	(5.2)	(6.8)	(0.5)	(14.8)	(27.3)
Recognised in other comprehensive income	—	(10.0)	—	—	(10.0)
At December 31, 2018	249.6	(206.6)	(51.1)	12.9	4.8

Deferred tax assets are recognised to the extent that the realisation of the related tax benefit through future taxable profits is probable based on an assessment of expected future profits modelled

16. DEFERRED TAX ASSETS AND LIABILITIES (continued)

against the gross tax losses. The Group did not recognise gross deductible temporary differences of €12.0 million (2017: €71.7 million, 2016: €153.0 million).

The Group has not provided deferred tax in relation to temporary differences on its overseas subsidiaries or joint ventures as the Group can control the timing and realisation of these temporary differences, and it is probable that no material unprovided tax liability would arise.

17. INVENTORIES

	2018	2017	2016
		€m	
Raw materials and consumables	444.4	439.7	403.8
Work in progress	22.1	22.8	19.3
Finished goods	941.2	784.0	645.0
	1,407.7	1,246.5	1,068.1

Raw materials, consumables and changes in finished goods and work in progress recognised as cost of sales in the year amounted to €8,605.6 million (2017: €8,634.3 million, 2016: €8,380.0 million). The net write-down of inventories to net realisable value amounted to €2.6 million (2017: €5.9 million, 2016: €2.5 million) after the reversal of previous write downs of €nil (2017: €0.1 million, 2016: €0.3 million).

18. TRADE AND OTHER RECEIVABLES

	2018	2017	2016
		€m	
Current			
Trade receivables	1,177.5	1,236.3	1,039.8
Amounts due from related parties	309.5	283.3	242.4
Other receivables	143.8	124.1	105.6
Prepayments	117.4	69.2	114.0
	1,748.2	1,712.9	1,501.8
Non-current			
Amounts due from related parties	702.2	927.9	1,134.5
Other receivables	1.0	1.1	1.1
Prepayments	26.5	28.4	11.2
	729.7	957.4	1,146.8

18. TRADE AND OTHER RECEIVABLES (continued)

Credit quality of financial assets and impairment losses

The ageing of trade and other receivables at the end of the reporting period and the expected credit loss rate (ECLR) was:

	Trade receivables			Amounts due from related parties			Other receivables		
	Gross	Impairment	ECLR	Gross	Impairment	ECLR	Gross	Impairment	ECLR
	2018	2018	2018	2018	2018	2018	2018	2018	2018
	€m	€m	%	€m	€m	%	€m	€m	%
Not past due	1,055.6	(4.7)	0.4	1,011.7	—	0.0	139.5	—	0.0
Past due 0-30 days	87.1	(0.6)	0.7	—	—	—	2.6	—	0.0
Past due 31-90 days	39.7	(0.2)	0.5	—	—	—	0.3	—	0.0
More than 90 days	12.0	(11.4)	95.0	—	—	—	2.4	—	0.0
	1,194.4	(16.9)	1.4	1,011.7	—	0.0	144.8	—	0.0

	Trade receivables			Amounts due from related parties			Other receivables		
	Gross	Impairment	ECLR	Gross	Impairment	ECLR	Gross	Impairment	ECLR
	2017	2017	2017	2017	2017	2017	2017	2017	2017
	€m	€m	%	€m	€m	%	€m	€m	%
Not past due	1,129.4	(14.5)	1.3	1,211.2	—	0.0	122.5	—	0.0
Past due 0-30 days	96.2	(2.4)	2.5	—	—	—	0.6	—	0.0
Past due 31-90 days	16.6	(0.3)	1.8	—	—	—	0.9	—	0.0
More than 90 days	32.0	(20.7)	64.7	—	—	—	1.2	—	0.0
	1,274.2	(37.9)	3.0	1,211.2	—	0.0	125.2	—	0.0

	Trade receivables			Amounts due from related parties			Other receivables		
	Gross	Impairment	ECLR	Gross	Impairment	ECLR	Gross	Impairment	ECLR
	2016	2016	2016	2016	2016	2016	2016	2016	2016
	€m	€m	%	€m	€m	%	€m	€m	%
Not past due	927.9	(4.2)	0.5	1,376.9	—	0.0	104.8	—	0.0
Past due 0-30 days	112.6	(0.4)	0.4	—	—	—	0.9	—	0.0
Past due 31-90 days	8.9	(5.0)	56.2	—	—	—	0.8	—	0.0
More than 90 days	11.7	(11.7)	100.0	—	—	—	0.2	—	0.0
	1,061.1	(21.3)	2.0	1,376.9	—	0.0	106.7	—	0.0

The accounts receivable not yet due after impairment losses as of the end of the reporting period are deemed to be collectible on the basis of established credit management processes such as regular analyses of the credit worthiness of our customers and external credit checks where appropriate for new customers (see Note 25.c). At December 31, 2016, 2017 and 2018 there were no significant trade, related party or other receivable balances not past due that were subsequently impaired.

18. TRADE AND OTHER RECEIVABLES (continued)

Due to the global activities and diversified customer structure of the Group, there is no significant concentration of credit risk (2017: nil, 2016: nil).

During 2016, 2017 and 2018 there were no significant trade, related party or other receivable balances that were subject to renegotiation of terms. Credit enhancements are held in respect of trade and other receivables in the form of €9.0 million (2017: €17.7 million, 2016: €19.0 million) of assets pledged as security against amounts owed to the Group of which €9.9 million (2017: €2.0 million, 2016: €6.6 million) is in respect of amounts falling overdue.

Trade receivable balances totalling €921.2 million (2017: €999.8 million, 2016: €852.3 million) have been pledged as security against amounts drawn down under the Receivables Securitisation Facility, described in Note 19, totalling €287.8 million (2017: €284.2 million, 2016: €300.4 million). In accordance with IFRS 9 'Financial Instruments' the trade receivable balances pledged as security do not qualify for derecognition and are included within the trade receivable balances above.

The movement in the allowance for impairment in respect of trade receivables during the year was as follows:

	2018	2017	2016
		€m	
Balance at January 1	37.9	21.3	19.3
Additions/(released)	(21.5)	24.6	3.1
Utilised	—	(6.7)	(1.8)
Exchange	0.5	(1.3)	(0.7)
Balance at December 31	**16.9**	**37.9**	**21.3**

The allowance account for trade receivables is used to record any impairment losses unless the Group is satisfied that no recovery of the amount owing is probable; at that point the amounts considered irrecoverable are written off against the trade receivables directly. As of January 1, 2018, IFRS 9 replaced the 'incurred loss' model in IAS 39 with a forward-looking 'expected credit loss' (ECL) model in assessing the recoverability of trade receivables. Due to the quality of the Group's trade receivables and its low history of bad debts the application of IFRS 9 did not result in a material change to the allowance for impairment in respect of trade receivables. The impact was calculated considering past experience and management's estimate of future developments. Management expects no considerable change in the future market situation. Consequently, the future credit losses in the ECL model are in the same range as the credit losses experienced in the past years. This is regarded as the future expectation of the inherent credit risk of the not impaired trade and other receivables outstanding. The Group will review the assumptions of the ECL model on a yearly basis.

18. TRADE AND OTHER RECEIVABLES (continued)

Credit risk of trade receivables

	2018
	€m
Low	1,110.8
Medium	75.4
High	8.2
Impairment allowance	(16.9)
	1,177.5

During the year the Group has not experienced a significant deterioration in the quality of receivable balances due to the current economic conditions.

There were no allowances made against amounts due from other receivables during the year (2017: €nil, 2016: €nil).

There were no allowances made against amounts due from related parties during the year (2017: €nil, 2016: €nil).

19. INTEREST-BEARING LOANS AND BORROWINGS

This note provides information about the contractual terms of the Group's interest-bearing loans and borrowings, which are measured at amortised cost. For more information about the Group's exposure to interest rate and foreign currency risk, see Note 25.f.

	2018	2017	2016
		€m	
Non-current liabilities			
Senior Secured Term Loans	3,432.6	3,404.4	4,538.6
Senior Secured Notes due 2023	765.8	764.8	763.8
Senior Secured Notes due 2025	544.9	544.2	—
Senior Notes due 2019	—	—	1,158.5
Senior Notes due 2024	1,080.2	1,060.4	1,116.9
Securitisation Facility	286.6	282.5	299.4
Koln CoGen Facility	120.0	—	—
Noretyl Facility	—	27.0	54.9
Finance lease liabilities	1.1	1.2	1.2
Other loans	10.3	10.4	14.2
	6,241.5	**6,094.9**	**7,947.5**

19. INTEREST-BEARING LOANS AND BORROWINGS (continued)

	2018	2017	2016
		€m	
Current liabilities			
Current portion of borrowings under Senior Secured Term Loans	33.0	33.2	41.9
Noretyl Facility	26.9	26.9	25.7
Other loans	1.1	2.8	4.8
Current portion of finance lease liabilities	0.1	0.1	0.2
	61.1	**63.0**	**72.6**

	Gross loans and borrowings 2018	Issue costs 2018	Net loans and borrowings 2018
		€m	
Gross debt and issue costs			
Senior Secured Term Loans	3,476.7	(11.1)	3,465.6
Senior Secured Notes due 2023	770.0	(4.2)	765.8
Senior Secured Notes due 2025	550.0	(5.1)	544.9
Senior Notes due 2024	1,087.3	(7.1)	1,080.2
Securitisation Facility	287.8	(1.2)	286.6
Koln CoGen Facility	120.0	—	120.0
Noretyl Facility	27.5	(0.6)	26.9
Other	12.6	—	12.6
Total	**6,331.9**	**(29.3)**	**6,302.6**

	Gross loans and borrowings 2017	Issue costs 2017	Net loans and borrowings 2017
		€m	
Senior Secured Term Loans	3,450.5	(12.9)	3,437.6
Senior Secured Notes due 2023	770.0	(5.2)	764.8
Senior Notes due 2019	550.0	(5.8)	544.2
Senior Notes due 2024	1,068.8	(8.4)	1,060.4
Securitisation Facility	284.2	(1.7)	282.5
Noretyl Facility	55.0	(1.1)	53.9
Other	14.5	—	14.5
Total	**6,193.0**	**(35.1)**	**6,157.9**

19. INTEREST-BEARING LOANS AND BORROWINGS (continued)

	Gross loans and borrowings 2016	Issue costs 2016	Net loans and borrowings 2016
		€m	
Senior Secured Term Loans	4,604.6	(24.1)	4,580.5
Senior Secured Notes due 2023	770.0	(6.2)	763.8
Senior Notes due 2018	1,162.4	(3.9)	1,158.5
Senior Notes due 2019	1,126.6	(9.7)	1,116.9
Securitisation Facility	300.4	(1.0)	299.4
Noretyl Facility	82.5	(1.9)	80.6
Other	20.4	—	20.4
Total	**8,066.9**	**(46.8)**	**8,020.1**

Terms and debt repayment schedule

	Currency	Nominal interest rate	Year of maturity
Senior Secured Term Loans	$/€	LIBOR/ EURIBOR plus 2.00%	2024
Senior Secured Notes	€	2.125%/4.0%	2023-2025
Senior Notes	$/€	5.375%-5.875%	2024
Securitisation Facility	$/€/£	Variable	2020
Koln CoGen Facility	€	2.85%	2024
Noretyl Facility	€	EURIBOR plus 2.75%	2019
Other	€/$	3.75-9.0%	2019-2025

Senior Secured Term Loans

The Group has outstanding borrowings under a senior credit facilities agreement (the 'Senior Secured Term Loans' or 'Term Loans') dated April 27, 2012 (as amended and restated). The term Loans are denominated in both Euros and US dollars and mature on March 31, 2024.

In February 2017, the Group completed a refinancing of the Senior Secured Term Loans. The Term Loans due 2018 were repaid in full, the Term Loans due 2020 were extended to March 2022 and a new tranche of €1.4 billion Term Loans due 2024 were issued. The entire facility was repriced and the Applicable Margin on the Euro denominated Term Loans was reduced to 2.50% and on the US dollar denominated Term Loans was reduced to 2.75%. The LIBOR floor was also reduced to 0.75% on the Euro denominated Term Loans and was removed for the US dollar denominated Term Loans.

As a result of the substantial modification of the Senior Secured Term Loans in February 2017, the unamortised issue costs at this date of €23.6 million were written off (see Note 4).

In November 2017 the Group issued €550 million of Senior Secured Notes due 2025. The proceeds from the new Notes, along with the proceeds from the full repayment of the Styrolution Term Loan (see Note 29), were used to partially repay the Senior Secured Term Loans. The remaining Term Loans were refinanced with a lower interest margin and a new maturity date of March 31, 2024.

19. INTEREST-BEARING LOANS AND BORROWINGS (continued)

The Senior Secured Term Loans outstanding at December 31, 2018 before issue costs were €3,476.7 million (2017: €3,450.5 million, 2016: €4,604.6 million) of which €35.1 million (2017: €34.5 million, 2016: €47.1 million) is due within one year. The total amounts outstanding on the Euro denominated Term Loans were €2,039.4 million and the US dollar denominated Term Loans were €1,437.3 million.

As at December 31, 2016 the total amounts outstanding on the Term Loans due 2018 were €1,251.9 million, the Term Loans due 2020 were €1,932.8 million and the Term Loans due 2022 were €1,419.9 million.

The Term Loans are to be repaid in equal quarterly instalments, in aggregate annual amounts equal to 1% of the original principal amount of the Term Loans. The Term Loans mature on March 31, 2024.

The outstanding Term Loans denominated in US dollars bear interest at a rate per annum equal to LIBOR plus the Applicable Margin. The Term Loans denominated in Euros bear interest at a rate per annum equal to EURIBOR (subject to a floor of 0.50% per annum) plus the Applicable Margin.

As at December 31, 2018 the Applicable Margin for the Euro denominated Term Loans and the US dollar denominated Term Loans was 2.00%.

The Senior Secured Term Loans rank pari passu with the Senior Secured Notes due 2023, Senior Secured Notes due 2025 and are structurally senior to the Senior Notes due 2024. The notes are guaranteed by INEOS Group Holdings S.A., INEOS Holdings Limited and certain of their subsidiaries on a senior secured basis. The Term Loans and the guarantees are secured by first ranking liens on the same assets (subject to certain exceptions) that secure INEOS Holdings Limited's obligations under the senior secured notes.

The Term Loans have numerous customary operating and financial incurrence covenants including covenants relating to, among other things, limitations on indebtedness, ability to give guarantees, creation of security interests, making acquisitions and investments, disposing of assets and paying dividends. The Term Loans have no financial maintenance covenants.

The Senior Secured Term Loans are stated net of debt issue costs of €11.1 million (2017: €12.9 million, 2016: €24.1 million). These costs are allocated to the profit and loss account over the term of the Term Loans.

Senior Secured Notes due 2023

In May 2015 the Group issued €770 million of Senior Secured Notes due 2023. The Senior Secured Notes due 2023 are listed on the Luxembourg Stock Exchange. The Senior Secured Notes due 2023 bear interest at 4.0% per annum, payable semi-annually in arrears on May 1 and November 1 of each year. Unless previously redeemed as noted below, the Senior Secured Notes due 2023 will be redeemed by the Group at their principal amount on May 1, 2023.

19. INTEREST-BEARING LOANS AND BORROWINGS (continued)

The Senior Secured Notes due 2023 will be subject to redemption at any time on or after May 1, 2018, at the option of the Issuer, in whole or in part, on not less than 30 nor more than 60 days' prior notice at the following redemption prices (expressed as percentages of the aggregate principal amount), if redeemed during the 12-month period beginning May 1 of the year indicated below:

Year	Redemption Price
2019	101.000%
2020 and thereafter	100.000%

In each case, the redemption premium will be in addition to accrued and unpaid interest, if any, to the redemption date (subject to the rights of holders of record on relevant record dates to receive interest due on an interest payment date).

The Senior Secured Notes due 2023 rank pari passu with the Senior Secured Term Loans and Senior Secured Notes due 2025 and are structurally senior to the Senior Notes due 2024. The notes are guaranteed by INEOS Group Holdings S.A., INEOS Holdings Limited and certain of their subsidiaries on a senior secured basis. The notes and the guarantees are secured by first ranking liens on the same assets (subject to certain exceptions) that secure INEOS Holdings Limited's obligations under the Senior Secured Term Loans.

The Indenture contains a number of operating and financial covenants including limitations on indebtedness, restricted payments, transactions with affiliates, liens, sale of assets and dividend payments.

The Senior Secured Notes due 2023 are stated net of debt issue costs of €4.2 million (2017: €5.2 million, 2016: €6.2 million). These costs are allocated to the profit and loss account over the term of the Senior Secured Notes due 2023.

Senior Secured Notes due 2025

In November 2017 the Group issued €550 million of Senior Secured Notes due 2025. The proceeds from the new Notes were used to partially repay the Senior Secured Term Loans. The Senior Secured Notes due 2025 are listed on the Luxembourg Stock Exchange. The Senior Secured Notes due 2025 bear interest at 2.125% per annum, payable semi-annually in arrears on May 15 and November 15 of each year. Unless previously redeemed as noted below, the Senior Secured Notes due 2025 will be redeemed by the Group at their principal amount on November 15, 2025.

The Senior Secured Notes due 2025 will be subject to redemption at any time on or after November 15, 2020, at the option of the Issuer, in whole or in part, on not less than 10 nor more than 60 days' prior notice at the following redemption prices (expressed as percentages of the aggregate

19. INTEREST-BEARING LOANS AND BORROWINGS (continued)

principal amount), if redeemed during the 12-month period beginning November 15 of the year indicated below:

Year	Redemption Price
2020	101.0625%
2021	100.53125%
2022 and thereafter	100.000%

In each case, the redemption premium will be in addition to accrued and unpaid interest, if any, to the redemption date (subject to the rights of holders of record on relevant record dates to receive interest due on an interest payment date).

The Senior Secured Notes due 2025 rank pari passu with the Senior Secured Term Loans and Senior Secured Notes due 2023 and are structurally senior to the Senior Notes due 2024. The notes are guaranteed by INEOS Group Holdings S.A., INEOS Holdings Limited and certain of their subsidiaries on a senior secured basis. The notes and the guarantees are secured by first ranking liens on the same assets (subject to certain exceptions) that secure INEOS Holdings Limited's obligations under the Senior Secured Term Loans.

The Indenture contains a number of operating and financial covenants including limitations on indebtedness, restricted payments, transactions with affiliates, liens, sale of assets and dividend payments.

The Senior Secured Notes due 2025 are stated net of debt issue costs of €5.1 million (2017: €5.8 million). These costs are allocated to the profit and loss account over the term of the Senior Secured Notes due 2025.

Senior Notes due 2018

Before redemption the Senior Notes due 2018 were listed on the Luxembourg Stock Exchange and comprised of €500 million Senior Notes due 2018 (the "Euro Notes") and $678 million Senior Notes due 2018 (the "Dollar Notes"). The Senior Notes due 2018 bore interest at 6.50% per annum for the Euro Notes and 6.125% for the Dollar Notes, payable semi-annually in arrears on February 15 and August 15 of each year.

In August 2016 the Group issued €650 million and $500 million of Senior Notes due 2024. The proceeds of the refinancing were used to redeem in full the Senior Notes due 2018. As a result of the early redemption of the Senior Notes due 2018 an exceptional finance cost of €17.5 million was recognised within the income statement in respect of an early redemption premium in the year ended December 31, 2016 (see Note 5).

Following the full redemption of the Senior Secured Notes due 2018 unamortised debt issue costs of €3.2 million were charged to exceptional finance costs within the income statement in the year ended December 31, 2016 (see Note 5).

19. INTEREST-BEARING LOANS AND BORROWINGS (continued)

Senior Notes due 2019

On March 1, 2017 the Group redeemed in full the Senior Notes due 2019 with the proceeds from the issuance of the Senior Secured Term Loans due 2024. Before redemption the Senior Notes due 2019 were listed on the Luxembourg Stock Exchange and comprised of €600 million Senior Notes due 2019 (the "Euro Notes") and $590 million Senior Notes due 2019 (the "Dollar Notes"). The Senior Notes due 2019 bore interest at 5.75% per annum for the Euro Notes and 5.875% for the Dollar Notes, payable semi-annually in arrears on February 15 and August 15 of each year.

Following the full redemption of the Senior Notes due 2019 unamortised debt issue costs of €3.8 million were charged to exceptional finance costs in the year ended December 31, 2017 (see Note 5).

Senior Notes due 2024

The Senior Notes due 2024 are listed on the Luxembourg Stock Exchange and comprise €650 million Senior Notes due 2024 (the "Euro Notes") and $500 million Senior Notes due 2024 (the "Dollar Notes"). The Senior Notes due 2024 bear interest at 5.375% per annum for the Euro Notes and 5.625% for the Dollar Notes, payable semi-annually in arrears on February 1 and August 1 of each year.

Unless previously redeemed as noted below, the Senior Notes due 2024 will be redeemed by the Group at their principal amount on August 1, 2024.

The Senior Notes due 2024 are subject to redemption at the option of the Group, in whole or in part, at the following redemption prices (expressed as percentages of the principal amount), if redeemed during the 12-month period beginning 1 August of the years indicated below:

Year	Euro Notes redemption price	Dollar Notes redemption price
2019	102.688%	102.813%
2020	101.344%	101.406%
2021 and thereafter	100.000%	100.000%

In each case, the redemption premium will be in addition to accrued and unpaid interest, if any, to the redemption date (subject to the rights of holders of record on relevant record dates to receive interest due on an interest payment date).

The Senior Notes due 2024 are secured by junior pledges of all of the shares of INEOS Holdings Limited. The Senior Notes due 2024 are guaranteed by INEOS Luxembourg I S.A., INEOS Holdings Limited and their material operating subsidiaries on an unsecured senior subordinated basis. Such guarantees only become due 179 days after an event of default on the Senior Notes due 2024 has occurred or earlier under certain circumstances.

The Indenture contains a number of operating and financial covenants including limitations on indebtedness, restricted payments, transactions with affiliates, liens, sale of assets and dividend payments.

19. INTEREST-BEARING LOANS AND BORROWINGS (continued)

The Senior Notes due 2024 are stated net of debt issue costs of €7.1 million (2017: €8.4 million, 2016: €9.7 million). These costs are allocated to the profit and loss account over the term of the Senior Notes due 2024.

Receivables Securitisation Facility

The Company has entered into a €800 million receivables securitisation facilities agreement ("Receivables Securitisation Facility") which matures on December 31, 2020. The total amount outstanding at December 31, 2018 was €287.8 million (2017: €284.2 million, 2016: €300.4 million). The facility is secured by pledges over the trade receivables sold in to the programme. Interest is charged on the facility at a rate per annum of either EURIBOR or short term commercial paper rates plus a margin.

The Receivables Securitisation Facility is stated net of debt issue costs of €1.2 million (2017: €1.7 million, 2016: €1.0 million).

Koln CoGen Facility

As part of a project at the Group's Koln site to replace part of its incineration or cogeneration unit, the Group has entered into a €120 million loan facility ("Koln CoGen Facility"). The facility matures in December 2024. There are no scheduled interest or amortization payments during the first two years of the facility. The total amount outstanding at December 31, 2018 was €120.0 million.

The Koln CoGen Facility is to be repaid in equal quarterly instalments of €6 million, starting from March 2020. The facility is secured by pledges over the plant and equipment of INEOS Manufacturing Deutschland GmbH's new cogeneration assets. The outstanding Koln CoGen Facility bears a fixed interest rate of 2.85% per annum.

Noretyl Facility

As part of the Group's purchase of the remaining 50% interest in the Noretyl ethylene cracker at Rafnes, Norway from the Kerling group on July 1, 2015, the Group also assumed the obligations of a €140 million loan facility ("Noretyl Facility") that Noretyl had in place. The total amount outstanding at December 31, 2018 before issue costs was €27.5 million, all of which is due within one year.

The Noretyl Facility is to be repaid in equal quarterly instalments, in aggregate annual amounts equal to 6.25% of the original principal amount of the facility starting on March 31, 2016. The facility matures in December 2019. The facility is secured by pledges over the property, plant and equipment of Noretyl AS. The outstanding Noretyl Facility will bear interest a rate per annum equal to EURIBOR (subject to a floor of 0% per annum) plus a margin of 2.75%.

The Noretyl Facility is stated net of debt issue costs of €0.6 million (2017: €1.1 million, 2016: €1.9 million).

19. INTEREST-BEARING LOANS AND BORROWINGS (continued)

Finance lease liabilities

Finance lease liabilities are payable as follows:

	Minimum lease payments	Interest	Principal
		2018	
		€m	
Less than one year	0.2	(0.1)	0.1
Between one and five years	0.4	(0.3)	0.1
More than five years	6.9	(5.9)	1.0
	7.5	**(6.3)**	**1.2**

	Minimum lease payments	Interest	Principal
		2017	
		€m	
Less than one year	0.2	(0.1)	0.1
Between one and five years	0.4	(0.3)	0.1
More than five years	7.0	(5.9)	1.1
	7.6	**(6.3)**	**1.3**

	Minimum lease payments	Interest	Principal
		2016	
		€m	
Less than one year	0.3	(0.1)	0.2
Between one and five years	0.5	(0.4)	0.1
More than five years	7.0	(5.9)	1.1
	7.8	**(6.4)**	**1.4**

20. TRADE AND OTHER PAYABLES

	2018	2017	2016
		€m	
Current			
Trade payables	538.6	616.6	465.2
Amounts due to related parties	157.9	201.3	202.8
Other payables	598.7	564.1	423.1
Deferred consideration	31.5	22.6	18.1
Accruals and deferred income	514.9	473.3	454.2
	1,841.6	1,877.9	1,563.4
Non-current			
Other payables	77.4	70.1	62.5
Deferred consideration	14.7	27.4	27.0
Accruals and deferred income	20.0	22.6	17.7
	112.1	120.1	107.2

21. EMPLOYEE BENEFITS

Pension plans

The Group operates a number of pension plans throughout the world, devised in accordance with local conditions and practices. The plans are generally of the defined benefit type and are funded by payments to separately administered funds or insurance companies. The principal funded plans are in the United Kingdom, North America, Belgium, Norway and Switzerland.

The Group also operates a number of unfunded defined benefit pension schemes in Germany and France.

The most recent full valuations of the significant defined benefit plans were carried out as follows:

Plan	Country	Valuation date
All Plans	United Kingdom	April 5, 2016 and December 31, 2016
All Plans	North America	January 1, 2018
All Plans	Belgium	January 1, 2019
All Plans	Norway	December 31, 2018
All Plans	France	December 31, 2018
All Plans	Germany	December 31, 2018
All Plans	Switzerland	December 31, 2017

These valuations have been updated where appropriate to December 31, 2018 by independent qualified actuaries.

The Group's pension schemes have been disclosed on a geographical basis as those schemes in the United Kingdom, North America and Other European. Other European principally includes the Group's pension plans in Germany, Belgium, Norway, France and Switzerland.

21. EMPLOYEE BENEFITS (continued)

The UK defined benefit pension plans were historically final salary in nature, with a normal retirement age of 60. The majority of the UK plans are either closed to new entrants, or frozen to future accrual. The plans operate under trust law and are managed and administered by Trustees in accordance with the terms of each plan's Trust Deed and Rules and relevant legislation. The contributions paid to the UK plans are set every three years based on a funding agreement between the company and Trustee after taking actuarial advice.

The North American pension arrangements consist of two funded plans, both closed to new entrants and future accrual. Both plans were final salary defined benefit in nature, and the plans' liabilities are valued regularly in line with US statutory funding requirements. Around 90% of both plans' assets are invested in bond instruments, to closely match the profile of each plans' liabilities.

The Other European pension arrangements are primarily final salary in nature, the majority of which remain open to new entrants. The Norwegian and Swiss benefits are insured, the Belgian plan assets are held in trust, and the remaining schemes are unfunded with associated provisions held on the Group's balance sheet.

Pension plan assumptions

The principal actuarial assumptions (expressed as weighted averages or ranges) at the year end were as follows:

	United Kingdom			North America			Other European		
	2018	2017	2016	2018	2017	2016	2018	2017	2016
					%				
Major assumptions									
Rate of general increase in salaries	3.2	3.2	3.3	3.5	3.5	3.5	2.0-4.3	2.0-4.3	2.0-4.5
Rate of increase to pensions in payment	3.0-5.0	3.0-5.0	3.0-5.0	0.0	0.0	0.0	0.0-1.8	0.0-1.8	0.0-1.8
Discount rate for scheme liabilities	2.9	2.7	2.6	3.5	3.5	4.0	0.8-2.8	0.8-2.8	0.8-2.8
Inflation	3.2	3.2	3.3	2.5	2.5	2.5	1.0-1.8	1.0-1.8	1.3-3.0

The assumptions relating to longevity underlying the pension liabilities at the reporting date are based on standard actuarial mortality tables and include an allowance for future improvements in longevity. The assumptions are equivalent to expecting a 65-year old to live for a number of years as follows:

	United Kingdom			North America			Other European		
	2018	2017	2016	2018	2017	2016	2018	2017	2016
					Years				
Longevity at age 65 for current pensioners	22.4-25.9	22.6-26.0	23.3-27.3	21.6-24.7	21.7-24.7	21.8-24.5	20.0-30.0	19.3-30.0	19.1-30.0

21. EMPLOYEE BENEFITS (continued)

The following table presents the sensitivity of the defined benefit obligation to each significant actuarial assumption:

	United Kingdom	North America	Other European
		2018	
		%	
Major assumptions			
Discount rate: 1.0% decrease	23.0	13.0	24.6
Rate of inflation: 0.5% increase(1)	7.9	N/A	7.0
1 year increase in longevity for a member currently aged 65	3.6	0.8	2.7

(1) The sensitivity to the inflation assumption change includes corresponding changes to the future salary increase and future pension increase assumptions where these assumptions are set to be linked to the inflation assumption.

Post-retirement health care plans

The Group also operates a number of post retirement healthcare plans in the United States, which provide employees with other post-employment benefits in respect of health care. The plans are unfunded and the liability in respect of these benefits is included in provisions. The liability is assessed by qualified independent actuaries under the projected unit method, assuming the following rates:

	2018	2017	2016
		%	
Rates			
Liability discount rate	4.3	3.5	4.0
Long-term healthcare trend rate	5.0	5.0	5.0

History of plans

The history of the plans for the current and prior years is as follows:

Consolidated balance sheet

	2018	2017	2016
		€m	
Present value of the defined benefit obligation in respect of pension plan	1,533.7	1,491.0	1,564.7
Present value of obligations in respect of post retirement health care plan	23.9	23.1	24.2
Fair value of plan assets	(813.1)	(813.1)	(799.4)
Net deficit	**744.5**	**701.0**	**789.5**

21. EMPLOYEE BENEFITS (continued)

	2018
Non-current assets	(45.3)
Non-current liabilities	789.8
Net deficit	**744.5**

The Group's net liability in respect of defined benefit obligations (DBO) is as follows:

	2018	2017	2016
		€m	
Obligations in respect of pension plans:			
United Kingdom	(35.8)	(25.2)	61.3
North America	(9.5)	(3.4)	3.4
Other European	765.9	706.5	700.6
	720.6	677.9	765.3
Obligations in respect of post-retirement health care plans	23.9	23.1	24.2
Recognised liability for defined benefit obligations	**744.5**	**701.0**	**789.5**

The Group expects to contribute approximately €33.6 million to its funded defined benefit plans in the next financial year. This excludes direct company benefit payments and payments in relation to unfunded defined benefit plan schemes.

Expense recognised in the consolidated income statement

Year ended December 31, 2018	United Kingdom	North America	Other European	Post retirement health care plans	Total
			€m		
Current service cost	0.9	0.6	40.5	0.5	42.5
Past service cost	—	(0.3)	—	—	(0.3)
Cost of termination benefits	—	—	0.6	—	0.6
Interest cost on DBO	8.9	8.6	17.1	0.8	35.4
Interest income on assets	(9.7)	(8.8)	(3.5)	—	(22.0)
	0.1	**0.1**	**54.7**	**1.3**	**56.2**

21. EMPLOYEE BENEFITS (continued)

Year ended December 31, 2017	United Kingdom	North America	Other European	Post retirement health care plans	Total
			€m		
Current service cost	1.0	0.9	42.9	0.6	45.4
Cost of termination benefits	—	—	2.4	—	2.4
Interest cost on DBO	10.2	10.2	16.2	0.9	37.5
Interest income on assets	(8.8)	(10.1)	(2.9)	—	(21.8)
	2.4	**1.0**	**58.6**	**1.5**	**63.5**

Year ended December 31, 2016	United Kingdom	North America	Other European	Post retirement health care plans	Total
			€m		
Current service cost	0.9	0.7	40.6	0.7	42.9
Settlement (gain) / loss	—	0.2	(2.9)	—	(2.7)
Cost of termination benefits	—	—	3.0	—	3.0
Interest cost on DBO	11.9	11.0	16.7	1.1	40.7
Interest income on assets	(10.8)	(10.5)	(3.4)	—	(24.7)
	2.0	**1.4**	**54.0**	**1.8**	**59.2**

The expense is recognised in the following line items in the consolidated income statement:

	2018	2017	2016
		€m	
Cost of sales and administrative expenses	42.8	47.8	43.2
Finance income	—	—	—
Finance cost	13.4	15.7	16.0
	56.2	**63.5**	**59.2**

Pension plans

As at December 31, 2018	United Kingdom	North America	Other European	Total
		€m		
Present value of funded obligations	302.5	230.1	289.8	822.4
Present value of unfunded obligations	—	—	711.3	711.3
	302.5	230.1	1,001.1	1,533.7
Fair value of plan assets	(338.3)	(239.6)	(235.2)	(813.1)
	(35.8)	**(9.5)**	**765.9**	**720.6**

21. EMPLOYEE BENEFITS (continued)

As at December 31, 2017	United Kingdom	North America	Other European	Total
			€m	
Present value of funded obligations	329.8	252.0	243.0	824.8
Present value of unfunded obligations	—	—	666.2	666.2
	329.8	252.0	909.2	1,491.0
Fair value of plan assets	(355.0)	(255.4)	(202.7)	(813.1)
	(25.2)	**(3.4)**	**706.5**	**677.9**

As at December 31, 2016	United Kingdom	North America	Other European	Total
Present value of funded obligations	402.9	281.5	245.8	930.2
Present value of unfunded obligations	—	—	634.5	634.5
	402.9	281.5	880.3	1,564.7
Fair value of plan assets	(341.6)	(278.1)	(179.7)	(799.4)
	61.3	**3.4**	**700.6**	**765.3**

Included within the Other European deficits are amounts relating to unfunded German plans of €702.1 million (2017: €655.9 million, 2016: €623.5 million).

21. EMPLOYEE BENEFITS (continued)

Movements in present value of defined benefit obligation:

	United Kingdom	North America	Other European	Total
		€m		
At January 1, 2016	350.4	274.4	788.1	1,412.9
Current service cost	0.9	0.7	40.6	42.2
Interest cost on DBO	11.9	11.0	16.7	39.6
Member contributions	—	—	1.1	1.1
Actuarial loss—experience	0.1	1.2	4.7	6.0
Actuarial (gain)—demographic assumptions	—	(5.8)	(1.4)	(7.2)
Actuarial loss—financial assumptions	105.0	8.2	50.4	163.6
Disbursements from plan assets	(9.4)	(11.9)	(6.0)	(27.3)
Disbursements paid directly by the employer	(0.3)	(0.5)	(10.4)	(11.2)
Settlements	—	(11.3)	(8.5)	(19.8)
Termination benefits	—	—	3.0	3.0
Acquisitions	—	—	—	—
Reclassifications	—	4.7	—	4.7
Exchange	(55.7)	10.8	2.0	(42.9)
At December 31, 2016	**402.9**	**281.5**	**880.3**	**1,564.7**
Current service cost	1.0	0.9	42.9	44.8
Interest cost on DBO	10.2	10.2	16.2	36.6
Member contributions	—	—	1.4	1.4
Actuarial (gain)—experience	(28.0)	(1.4)	(0.1)	(29.5)
Actuarial (gain)—demographic assumptions	(13.8)	(1.1)	(0.1)	(15.0)
Actuarial (gain)/loss—financial assumptions	(9.5)	16.9	(11.2)	(3.8)
Disbursements from plan assets	(20.1)	(19.5)	(5.6)	(45.2)
Disbursements paid directly by the employer	(0.2)	(0.3)	(11.8)	(12.3)
Termination benefits	—	—	2.4	2.4
Reclassifications	—	(0.6)	—	(0.6)
Exchange	(12.7)	(34.6)	(5.2)	(52.5)
At December 31, 2017	**329.8**	**252.0**	**909.2**	**1,491.0**
Current service cost	0.9	0.6	40.5	42.0
Past service cost	—	(0.3)	—	(0.3)
Interest cost on DBO	8.9	8.6	17.1	34.6
Member contributions	—	—	1.5	1.5
Actuarial loss—experience	0.6	0.8	17.5	18.9
Actuarial (gain)/loss—demographic assumptions	(2.3)	(1.6)	8.9	5.0
Actuarial (gain)—financial assumptions	(13.1)	(20.9)	(2.8)	(36.8)
Disbursements from plan assets	(17.7)	(18.7)	(4.5)	(40.9)
Disbursements paid directly by the employer	(0.1)	(0.3)	(12.3)	(12.7)
Termination benefits	—	—	0.6	0.6
New material plans	—	—	24.1	24.1
Exchange	(4.5)	9.9	1.3	6.6
At December 31, 2018	**302.5**	**230.1**	**1,001.1**	**1,533.7**

21. EMPLOYEE BENEFITS (continued)

Movements in fair value of plan assets:

	United Kingdom	North America	Other European	Total
		€m		
At January 1, 2016	312.5	261.1	170.6	744.2
Interest income on plan assets	10.8	10.5	3.4	24.7
Return on plan assets greater than discount rate	65.3	7.7	1.8	74.8
Employer contributions	11.2	6.9	23.2	41.3
Member contributions	—	—	1.1	1.1
Disbursements	(9.7)	(12.4)	(16.4)	(38.5)
Settlements	—	(11.5)	(5.6)	(17.1)
Reclassifications	—	5.0	—	5.0
Exchange	(48.5)	10.8	1.6	(36.1)
At December 31, 2016	**341.6**	**278.1**	**179.7**	**799.4**
Interest income on plan assets	8.8	10.1	2.9	21.8
Return on plan assets greater than discount rate	24.5	16.3	14.5	55.3
Employer contributions	12.6	5.6	25.5	43.7
Member contributions	—	—	1.4	1.4
Disbursements	(20.3)	(19.8)	(17.4)	(57.5)
Reclassifications	—	(0.5)	—	(0.5)
Exchange	(12.2)	(34.4)	(3.9)	(50.5)
At December 31, 2017	**355.0**	**255.4**	**202.7**	**813.1**
Interest income on plan assets	9.7	8.8	3.5	22.0
Return on plan assets less than discount rate	(16.6)	(21.1)	0.2	(37.5)
Employer contributions	13.0	5.3	26.7	45.0
Member contributions	—	—	1.5	1.5
Disbursements	(17.8)	(19.0)	(16.8)	(53.6)
New material plans	—	—	16.5	16.5
Exchange	(5.0)	10.2	0.9	6.1
At December 31, 2018	**338.3**	**239.6**	**235.2**	**813.1**

The overall expected rate of return is calculated by weighting the individual rates in accordance with the anticipated balance in the plan's investment portfolio.

21. EMPLOYEE BENEFITS (continued)

The fair value of the plan assets were as follows:

	United Kingdom	North America	Other European	Total
		€m		
At December 31, 2018				
Equities	21.9	23.8	100.5	146.2
Corporate bonds	244.9	211.9	41.6	498.4
Property	9.2	—	16.3	25.5
Other	62.3	3.9	76.8	143.0
Total plan assets	**338.3**	**239.6**	**235.2**	**813.1**

	United Kingdom	North America	Other European	Total
		€m		
At December 31, 2017				
Equities	43.3	25.2	93.5	162.0
Corporate bonds	259.3	227.1	33.0	519.4
Property	9.3	—	10.2	19.5
Other	43.1	3.1	66.0	112.2
Total plan assets	**355.0**	**255.4**	**202.7**	**813.1**

	United Kingdom	North America	Other European	Total
		€m		
At December 31, 2016				
Equities	156.9	27.4	73.8	258.1
Corporate bonds	152.4	247.6	34.8	434.8
Property	12.5	—	9.7	22.2
Other	19.8	3.1	61.4	84.3
Total plan assets	**341.6**	**278.1**	**179.7**	**799.4**

There are no plans which hold investments in the Group's own financial instruments, or hold assets or property which are used by the Group.

21. EMPLOYEE BENEFITS (continued)

Post-retirement health care plans

Reconciliation of present value of scheme liabilities:

	2018	2017	2016
		€m	
At January 1	23.1	24.2	20.4
Current service cost	0.5	0.6	0.7
Interest cost on DBO	0.8	0.9	1.1
Actuarial loss/(gain)—experience	2.4	0.5	(1.1)
Actuarial (gain)/loss—demographic assumptions	(0.1)	(0.1)	(3.1)
Actuarial (gain)/loss—financial assumptions	(1.8)	1.3	0.6
Disbursements directly paid by the employer	(2.1)	(1.1)	(0.9)
Reclassifications	—	—	5.6
Exchange adjustments	1.1	(3.2)	0.9
At December 31	**23.9**	**23.1**	**24.2**

The post-retirement healthcare plans do not hold any assets.

The following table presents the sensitivity of the defined benefit obligation to each significant actuarial assumption:

	2018
	%
Major assumptions	
Discount rate: 1.0% decrease	10.9
Rate of inflation: 0.5% increase	N/A
1 year increase in longevity for a member currently aged 65	1.5

22. PROVISIONS

	Severance and restructuring costs	Remediation	Other	Total
		€m		
At January 1, 2018	32.5	8.4	0.4	41.3
Charged/(credited) to the income statement	0.3	(1.2)	2.0	1.1
Utilised in the year	(3.9)	(0.1)	(0.1)	(4.1)
Unwinding of discount	—	0.1	—	0.1
Reclassifications	(0.6)	—	0.6	—
Effects of movements in foreign exchange	(0.1)	0.1	0.1	0.1
At December 31, 2018	**28.2**	**7.3**	**3.0**	**38.5**
Non-current	21.2	6.7	0.6	28.5
Current	19.2	—	—	19.2
Balance at December 31, 2016	**40.4**	**6.7**	**0.6**	**47.7**
Non-current	20.1	8.3	0.4	28.8
Current	12.4	0.1	—	12.5
Balance at December 31, 2017	**32.5**	**8.4**	**0.4**	**41.3**
Non-current	20.1	7.1	0.4	27.6
Current	8.1	0.2	2.6	10.9
Balance at December 31, 2018	**28.2**	**7.3**	**3.0**	**38.5**

Severance and restructuring costs

The severance and restructuring costs largely relate to severance and early retirement costs at the Köln site following a reorganisation within the O&P North business in 2015. This provision is expected to be fully utilised within the next 5 years.

Remediation costs

The Group has provided for the cost of remediation works where there is a legal or constructive obligation for such work to be carried out. The provision was established to meet the clean-up costs of contaminated soil and groundwater, the removal of potentially hazardous substances and rectification work required to ensure compliance with license to operate obligations. These costs relate mainly to the Group's production facilities at the Saltend, Köln, Chocolate Bayou, Green Lake and Lima sites. The provision only covers items of specific work for which a reasonable estimate can be determined. The required work is expected to be completed within the next three year period. The discount rate used to determine the obligation in the balance sheet at December 31, 2018 was 4.0% (2017: 4.0%, 2016: 4.0%). By their nature the amounts and timing of any outflows in respect of remediation costs are difficult to predict.

22. PROVISIONS (continued)

Other provisions

Other provisions include a number of provisions for onerous contracts, other loss making contracts and commercial disputes.

23. SHARE CAPITAL

	2018	2017	2016
		€m	
Fully paid			
924,803 (2017: 924,803, 2016: 924,803) Ordinary shares of €1 each	0.9	0.9	0.9

The holders of ordinary shares are entitled to receive dividends as declared from time to time and are entitled to one vote per share at meetings of the Company.

24. DIVIDENDS

The following dividends were recognised during the year:

	2018	2017	2016
		€m	
Dividend paid (2018: €209.56 per share, 2017: €282.11 per share, 2016: €260.94 per share)	193.8	260.9	241.3

25. FINANCIAL INSTRUMENTS

25a Fair value of financial instruments

Investments in debt and equity securities

The fair value of financial assets at fair value through profit or loss (previously other investments) is estimated as the present value of future cash flows, discounted at the market rate of interest at the reporting date.

Financial assets at fair value through comprehensive income (previously available for sale financial assets) are accounted for at fair value based on the present value of future cash flows where such information is readily available based on the present value of future cash flows estimated from financial information made available during the year as a result of a recent transaction in the investment. However, as explained in Note 14, the Group's financial assets at fair value through comprehensive income (previously available for sale financial assets) include certain equity interests which are not quoted and for which there is no active market. In these circumstances, in the absence of reliable information, the Group considers that a reliable determination of fair value is not practicable and recording them at fair value instead of their acquisition cost will not materially change the value of the investment so no separate fair valuation is performed on these investments, although this is reviewed annually.

25. FINANCIAL INSTRUMENTS (continued)

Trade and other receivables

The carrying amount of trade and other receivables generally approximates to fair value due to their short maturities. Where settlement is not due in the short term and where the effect is material, fair value is estimated as the present value of future cash flows discounted at the market rate of interest at the reporting date.

Trade and other payables

The carrying amount of trade and other payables generally approximates to fair value due to their short maturities. Where settlement is not due in the short term and where the effect is material, fair value is estimated as the present value of future cash flows discounted at the market rate of interest at the reporting date.

Cash and cash equivalents

The fair value of cash and cash equivalents is estimated as its carrying amount where the cash is repayable on demand. Where it is not repayable on demand then the fair value is estimated at the present value of future cash flows, discounted at the market rate of interest at the reporting date.

Interest-bearing borrowings

The fair value of the Senior Secured Term Loans, Senior Secured Notes and Senior Notes, which after initial recognition is determined for disclosure purposes only are based on the market yields derived from quotes obtained at the year end from leading financial institutions (categorised as Level 1). The fair value of the Securitisation, Noretyl and Koln CoGen facilities is the same as the carrying value. The fair value of finance leases is determined by reference to market rates for similar lease agreements.

Derivative financial instruments

The fair value of interest rate swaps and commodity contracts are based on market or broker quotes.

25. FINANCIAL INSTRUMENTS (continued)

Fair values

The fair values for each class of financial assets and financial liabilities together with their carrying amounts shown in the consolidated balance sheet are as follows:

	Carrying amount	Fair value	Carrying amount	Fair value	Carrying amount	Fair value
	2018		2017		2016	
			€m			
Financial assets held at fair value through profit or loss:						
Investments	251.2	251.2	—	—	—	—
Derivative commodity contracts	10.1	10.1	—	—	8.2	8.2
Financial assets held at fair value through other comprehensive income:						
Equity investments	28.3	28.3	—	—	—	—
Financial assets held as available for sale at amortised cost:						
Equity investments	—	—	28.3	28.3	29.2	29.2
Financial assets held at amortised cost (previously loans and receivables):						
Trade receivables	1,177.5	1,177.5	1,236.3	1,236.3	1,039.8	1,039.8
Amounts due from related parties	1,011.7	1,011.7	1,211.2	1,211.2	1,376.9	1,376.9
Other receivables	144.8	144.8	125.2	125.2	106.7	106.7
Other investments	—	—	238.5	238.5	262.2	262.2
Cash and cash equivalents	2,071.3	2,071.3	1,366.3	1,366.3	2,204.1	2,204.1
Total financial assets	**4,694.9**	**4,694.9**	**4,205.8**	**4,205.8**	**5,027.1**	**5,027.1**

The Group's non-voting preferred partnership interest in Ineos Investments Partnership, an entity held under common control by the Group's ultimate shareholders was previously classified as other investments and held at amortised cost under IAS 39; however at January 1, 2018 this investment has been designated as a financial asset at fair value through profit or loss under IFRS 9 (see Note 13). The Group's equity investments which are held for long-term strategic purposes were previously classified as available-for-sale and held at amortised cost under IAS 39; however at January 1, 2018 the

25. FINANCIAL INSTRUMENTS (continued)

Group designated these investments as financial assets at fair value through other comprehensive income (see Note 14).

	Carrying amount	Fair value	Carrying amount	Fair value	Carrying amount	Fair value
	2018		2017		2016	
			€m			
Financial liabilities held for trading at fair value through profit and loss:						
Derivative commodity contracts	0.4	0.4	2.3	2.3	0.9	0.9
Financial liabilities carried at amortised cost:						
Senior Secured Term Loans	3,465.6	3,333.3	3,437.6	3,451.4	4,580.5	4,633.5
Senior Secured Notes	1,310.7	1,276.7	1,309.0	1,333.8	763.8	797.1
Senior Notes	1,080.2	1,024.6	1,060.4	1,128.8	2,275.4	2,303.4
Securitisation Facility	286.6	287.8	282.5	284.2	299.4	300.4
Noretyl Facility	26.9	27.5	53.9	55.0	80.6	82.5
Koln CoGen Facility	120.0	120.0	—	—	—	—
Other bank loans	11.4	11.4	13.2	13.2	19.0	19.0
Finance lease liabilities	1.2	1.2	1.3	1.3	1.4	1.4
Trade payables	538.6	538.6	616.6	616.6	465.2	465.2
Amounts due to related parties	157.9	157.9	201.3	201.3	202.8	202.8
Other payables	676.1	676.1	634.2	634.2	485.6	485.6
Total financial liabilities	**7,675.6**	**7,455.5**	**7,612.3**	**7,722.1**	**9,174.6**	**9,291.8**

The table below analyses financial instruments carried at fair value, by valuation method. The different levels, determined in accordance with IFRS 13 "Fair Value Measurement", have been defined as follows:

- Level 1: quoted prices (unadjusted) in active markets for identical assets or liabilities;
- Level 2: inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices); and
- Level 3: inputs for the asset or liability that are not based on observable market data (unobservable inputs).

25. FINANCIAL INSTRUMENTS (continued)

	2018				2017				2016			
	Fair value	Level 1	Level 2	Level 3	Fair value	Level 1	Level 2	Level 3	Fair value	Level 1	Level 2	Level 3
	€m											
Financial assets held at fair value through profit or loss:												
Investments	251.2	—	—	251.2	—	—	—	—	—	—	—	—
Derivative commodity contracts	10.1	—	10.1	—	—	—	—	—	8.2	—	8.2	—
Financial assets held at fair value through other comprehensive income:												
Equity investments	28.3	—	—	28.3	—	—	—	—	—	—	—	—
Financial liabilities held for trading at fair value through profit and loss:												
Derivative commodity contracts	(0.4)	—	(0.4)	—	(2.3)	—	(2.3)	—	(0.9)	—	(0.9)	—
Total financial assets and liabilities held at fair value	**289.2**	**—**	**9.7**	**279.5**	**(2.3)**	**—**	**(2.3)**	**—**	**7.3**	**—**	**7.3**	**—**

There have been no transfers from Level 2 to Level 1 in 2018 (2017 and 2016: no transfers from Level 2 to Level 1). In prior years the investment held at fair value through profit or loss and equity securities held at fair value though other comprehensive income were classified as amortised cost and available for sale assets, respectively.

25b Net gains and losses from financial instruments

Net gains and losses from financial instruments comprise the results of valuations, the amortisation of discounts, the recognition and derecognition of impairment losses, results from the translation of foreign currencies, interest, dividends and all effects on profit or loss of financial instruments.

Net gains from financial assets measured at amortised cost relate primarily to recognition and derecognition of impairment losses, results from the translation of foreign currencies and interest income.

Net losses from financial liabilities measured at amortised cost relate primarily to amortisation of discounts, results from the translation of foreign currencies, interest expense and other financing related expenses.

25. FINANCIAL INSTRUMENTS (continued)

The item 'financial instruments at fair value through profit or loss' comprise valuation gains and losses, and only includes gains and losses from instruments which are not designated as hedging instruments as defined by IFRS 9.

	Assets measured at amortised cost	Loans and receivables		Fair value through OCI	Available for sale financial assets	
	2018	2017	2016	2018	2017	2016
			€m			
Interest income	75.6	78.5	91.2	—	—	—
Dividend income	—	—	—	5.0	5.3	7.0
Foreign exchange (losses)/gains	(26.5)	80.5	(54.7)	—	—	—
Net result	**49.1**	**159.0**	**36.5**	**5.0**	**5.3**	**7.0**
Carrying value at December 31	**4,405.3**	**4,177.5**	**4,989.7**	**28.3**	**28.3**	**29.2**

	Liabilities measured at amortised cost			Financial instruments at fair value through profit or loss		
	2018	2017	2016	2018	2017	2016
			€m			
Interest cost	(227.9)	(277.6)	(376.8)	—	—	—
Other finance cost	(6.5)	(7.7)	(19.9)	—	—	—
Net fair value (losses)/gains on derivatives	—	—	—	(4.2)	(9.0)	17.3
Foreign exchange gains	173.5	304.8	86.2	10.2	—	—
Net result	**(60.9)**	**19.5**	**(310.5)**	**6.0**	**(9.0)**	**17.3**
Carrying value at December 31	**(7,675.2)**	**(7,610.0)**	**(9,173.7)**	**260.9**	**(2.3)**	**7.3**

25c Credit risk

Financial risk management

Credit risk is the risk of financial loss to the Group if a customer or counterparty to a financial instrument fails to meet its contractual obligations, and arises principally from the Group's receivables from customers, deposits with financial institutions and derivatives.

Group Treasury policy and objectives in relation to credit risk is to minimize the likelihood that the Group will experience financial loss due to counterparty failure and to ensure that in the event of a single loss, the failure of any single counterparty would not materially impact the financial wellbeing of the Group.

Trade and other receivables

The Group's exposure to credit risk is influenced mainly by the individual characteristics of each customer. However, management also considers the demographics of the Group's customer base, including the default risk of the industry and country in which customers operate, as these factors may

25. FINANCIAL INSTRUMENTS (continued)

have an influence on credit risk. Management considers that there is no geographical concentration of credit risk. The Group has established a credit policy under which each new customer is analysed individually for creditworthiness before the Group's standard payment and delivery terms and conditions are offered or are adjusted accordingly. The Group's review includes external ratings, when available, and in some cases bank references. Purchase limits are established for each customer, which represent the maximum open amount without requiring approval. Customers that fail to meet the Group's benchmark creditworthiness may transact with the Group only on a prepayment basis.

As of January 1, 2018, IFRS 9 replaced the 'incurred loss' model in IAS 39 with a forward-looking 'expected credit loss' (ECL) model in assessing the recoverability of trade receivables. Due to the quality of the Group's trade receivables and its low history of bad debts (see Note 18) the application of IFRS 9 did not result in a material change to the allowance for impairment in respect of trade receivables.

Investments, cash and cash equivalent

Surplus cash investments are only made with banks with which the Group has a relationship. Occasionally deposits are made with banking counterparties that provide financing arrangements, reducing the credit exposure of the Group.

Guarantees

The Group's policy is to provide financial guarantees only to wholly-owned subsidiaries. At December 31, 2018 no guarantees were outstanding (2017: none, 2016: none).

Exposure to credit risk

The carrying amount of financial assets represents the maximum credit exposure. Therefore, the maximum exposure to credit risk at the reporting date was the carrying amount of financial assets. Further details on the Group's exposure to credit risk are given in Note 18.

25d Liquidity risk

Financial risk management

Liquidity risk is the risk that the Group will not be able to meet its financial obligations as they fall due. The Group's approach to managing liquidity is to ensure, as far as possible, that it will always have sufficient liquidity to meet its liabilities when due, under normal and stressed conditions, without incurring unacceptable losses or risking damage to the Group. The Group's exposure to liquidity risk is limited by the fact that it operates with significant cash resources, and it maintains the most appropriate mix of short, medium and long-term borrowings from the Group's lenders.

The Group is reliant on committed funding from a variety of sources at Group and subsidiary company level to meet the anticipated needs of the Group for the period covered by the Group's budget.

The Group forecasts on a regular basis the expected cash flows that will occur on a weekly and monthly basis. This information is used in conjunction with the weekly reporting of actual cash balances

25. FINANCIAL INSTRUMENTS (continued)

at bank in order to calculate the level of funding that will be required in the short and medium term. On a monthly basis the level of headroom on existing facilities is reported and forecast forward until the end of the financial period.

In addition, the Group maintains various lines of credits in the form of Senior Notes, Senior Secured Notes, Senior Secured Term Loans, Securitisation, Noretyl Facility, Koln CoGen Facility and Other Loans. (See Note 19—"Interest-Bearing Loans and Borrowings" for more information).

The following are the contractual maturities of financial liabilities, including estimated interest payments and excluding the effect of netting agreements:

	2018					
	Carrying amount	Contractual cash flows	1 year or less	1 to<2 years	2 to<5 years	5 years and over
	€m					
Non-derivative financial liabilities						
Senior Secured Term Loans	3,465.6	(4,078.7)	(152.3)	(151.4)	(445.5)	(3,329.5)
Senior Secured Notes	1,310.7	(1,525.6)	(42.5)	(27.0)	(882.7)	(573.4)
Senior Notes	1,080.2	(1,439.4)	(58.7)	(58.7)	(176.0)	(1,146.0)
Securitisation Facility	286.6	(306.4)	(9.3)	(297.1)	—	—
Noretyl Facility	26.9	(28.0)	(28.0)	—	—	—
Koln CoGen Facility	120.0	(132.4)	(3.4)	(27.2)	(77.4)	(24.4)
Other loans	11.4	(13.5)	(1.1)	(1.1)	(11.3)	—
Finance lease liabilities	1.2	(7.5)	(0.2)	(0.1)	(0.3)	(6.9)
Trade payables	538.6	(538.6)	(538.6)	—	—	—
Amounts due to related parties	157.9	(157.9)	(157.9)	—	—	—
Other payables	676.1	(676.1)	(598.7)	(77.4)	—	—
Derivative financial liabilities						
Commodity contracts	0.4	(0.4)	(0.4)	—	—	—
	7,675.6	**(8,904.5)**	**(1,591.1)**	**(640.0)**	**(1,593.2)**	**(5,080.2)**

25. FINANCIAL INSTRUMENTS (continued)

	2017					
	Carrying amount	Contractual cash flows	1 year or less	1 to<2 years	2 to<5 years	5 years and over
	€m					
Non-derivative financial liabilities						
Senior Secured Term Loans	3,437.6	(4,040.6)	(131.9)	(130.4)	(385.3)	(3,393.0)
Senior Secured Notes	1,309.0	(1,568.6)	(42.9)	(42.5)	(112.1)	(1,371.1)
Senior Notes	1,060.4	(1,470.6)	(57.4)	(57.4)	(172.2)	(1,183.6)
Securitisation Facility	282.5	(307.3)	(7.7)	(7.7)	(291.9)	—
Noretyl Facility	53.9	(56.7)	(28.7)	(28.0)	—	—
Other loans	13.2	(15.7)	(2.9)	(1.0)	(3.1)	(8.7)
Finance lease liabilities	1.3	(7.6)	(0.2)	(0.1)	(0.3)	(7.0)
Trade payables	616.6	(616.6)	(616.6)	—	—	—
Amounts due to related parties	201.3	(201.3)	(201.3)	—	—	—
Other payables	634.2	(634.2)	(564.1)	(70.1)	—	—
Derivative financial liabilities						
Commodity contracts	2.3	(2.3)	(2.3)	—	—	—
	7,612.3	**(8,921.5)**	**(1,656.0)**	**(337.2)**	**(964.9)**	**(5,963.4)**

	2016					
	Carrying amount	Contractual cash flows	1 year or less	1 to<2 years	2 to<5 years	5 years and over
	€m					
Non-derivative financial liabilities						
Senior Secured Term Loans	4,580.5	(5,277.2)	(231.4)	(1,424.6)	(2,259.3)	(1,361.9)
Senior Secured Notes	763.8	(970.2)	(30.8)	(30.8)	(92.4)	(816.2)
Senior Notes	2,275.4	(2,950.3)	(127.9)	(129.2)	(1,381.4)	(1,311.8)
Securitisation Facility	299.4	(316.7)	(8.1)	(308.6)	—	—
Noretyl Facility	80.6	(86.2)	(29.5)	(28.7)	(28.0)	—
Other loans	19.0	(22.6)	(4.9)	(3.0)	(3.6)	(11.1)
Finance lease liabilities	1.4	(7.8)	(0.3)	(0.1)	(0.4)	(7.0)
Trade payables	465.2	(465.2)	(465.2)	—	—	—
Amounts due to related parties	202.8	(202.8)	(202.8)	—	—	—
Other payables	485.6	(485.6)	(423.1)	(62.5)	—	—
Derivative financial liabilities						
Commodity contracts	0.9	(0.9)	(0.9)	—	—	—
	9,174.6	**(10,785.5)**	**(1,524.9)**	**(1,987.5)**	**(3,765.1)**	**(3,508.0)**

25. FINANCIAL INSTRUMENTS (continued)

25e Net investment and cash flow hedges

The Group does not have derivative commodity contracts that qualify as cash flow hedges at December 31, 2018.

The Group has US$ and Sterling financial liabilities in respect of the Senior Secured Term Loans, Senior Notes and Securitisation Facility that are designated net investment hedges of US$ and Sterling operations in accordance with the requirements of IAS 21 "The effects of changes in Foreign Exchange Rates". The US$ and Sterling net investment hedges had a carrying value and fair value as follows:

	Carrying amounts 2018	Fair value 2018	Carrying amounts 2017	Fair value 2017	Carrying amounts 2016	Fair value 2016
			€m			
US Dollars	(1,981.2)	(1,851.2)	(1,909.9)	(1,940.3)	(3,814.5)	(3,844.1)
Sterling	(4.2)	(4.2)	(5.4)	(5.4)	(6.5)	(6.5)
	(1,985.4)	**(1,855.4)**	**(1,915.3)**	**(1,945.7)**	**(3,821.0)**	**(3,850.6)**

For the year ended December 31, 2018 gains net of tax of €271.3 million were taken directly to reserves and reported in the Statement of Comprehensive Income for the year then ended (2017: losses €637.5 million, 2016: gains €104.7 million). There was no ineffectiveness recognised in the income statement for the year ended December 31, 2018 (2017: €nil, 2016: €nil).

25f Market risk

Financial risk management

Market risk reflects the possibility that changes in market prices, such as crude oil, feedstock refined products, chemicals or currency exchange rates or changes in interest rates will adversely affect the value of the Group's assets, liabilities or expected future cash flows. The Group holds commodity contracts in order to manage market risk. The use of derivative instruments is confined to specialist teams that have the appropriate skills, experience, supervision, control and reporting systems.

Market risk—Foreign currency risk

The Group operates internationally and is exposed to foreign exchange risk arising from various currency exposures, primarily with respect to the U.S. Dollar and Sterling.

Foreign exchange risk arises from net investments in foreign operations, future commercial transactions, and recognised assets and liabilities.

The Group applies hedge accounting to foreign currency differences arising on the retranslation of a financial liability designated as a hedge of a net investment in a foreign operation. When the settlement of a monetary item receivable from or payable to a foreign operation is neither planned nor likely in the foreseeable future, foreign exchange gains and losses arising from such a monetary item is considered to form part of a net investment in a foreign operation and changes in the fair value are recognised directly within equity.

25. FINANCIAL INSTRUMENTS (continued)

A substantial portion of the Group's revenue is generated in, or linked to, the U.S. dollar and the euro. In the European petrochemical business, product prices, certain feedstock costs and most other costs are denominated in euro and sterling. In the U.S. petrochemical and specialty chemicals businesses, product prices, raw materials costs and most other costs are primarily denominated in U.S. dollars.

The Group generally does not enter into foreign currency exchange instruments to hedge foreign currency transaction exposure, although the Group has done so in the past and may do so in the future.

The Group benefits from natural hedging, to the extent that currencies in which net cash flows are generated from the Group's operations, are matched against long-term indebtedness.

The foreign currency exposure where the Group's financial assets/(liabilities) are not denominated in the functional currency of the operating unit involved is shown below. Foreign exchange differences on retranslation of these assets and liabilities are taken to the income statement/ other comprehensive income of the Group.

	2018	2017	2016
		€m	
Euros	22.4	125.0	33.4
US Dollars	(396.8)	(415.7)	(937.8)
Sterling	(10.5)	(10.9)	(1.8)
Other	(25.9)	(54.6)	(77.9)
	(410.8)	**(356.2)**	**(984.1)**

Sensitivity analysis

A ten percent weakening of the following currencies at December 31, would have increased/ (decreased) equity and profit or (loss) by the amounts shown below. This calculation assumes that the change occurred at the reporting date and had been applied to risk exposures existing at that date.

This analysis assumes that all other variables, in particular other exchange rates and interest rates, remain constant. The analysis is performed on the same basis for the comparative years.

	Equity			Profit or loss		
	2018	2017	2016	2018	2017	2016
			€m			
Euro	—	—	—	(2.2)	(12.5)	(3.3)
US Dollars	29.7	28.6	89.5	9.9	13.0	4.3
Sterling	0.4	0.5	0.7	0.6	0.5	(0.5)
Other	2.3	5.0	7.6	0.3	0.4	0.2

A ten percent strengthening of the above currencies against the euro at December 31, would have had the equal but opposite effect on the above currencies to the amounts shown above, on the basis that all other variables remain constant.

25. FINANCIAL INSTRUMENTS (continued)

Market risk—Interest rate risk

Profile

At the reporting date the interest rate profile of the Group's interest-bearing financial instruments was:

	2018	2017	2016
		€m	
Carrying amount—asset/(liability)			
Fixed rate instruments			
Financial assets	1,078.0	340.3	1,500.2
Financial liabilities	(2,523.5)	(2,383.9)	(3,059.6)
	(1,445.5)	**(2,043.6)**	**(1,559.4)**
Variable rate instruments			
Financial assets	2,071.3	1,366.3	2,204.1
Financial liabilities	(3,779.1)	(3,774.0)	(4,960.5)
	(1,707.8)	**(2,407.7)**	**(2,756.4)**

Sensitivity analysis

A change of 1% in interest rates at the reporting date would have increased/(decreased) equity and profit or loss by the amounts shown below. This calculation assumes that the change occurred at the reporting date and had been applied to risk exposures existing at that date.

This analysis assumes that all other variables, in particular foreign currency rates, remain constant and considers the effect of financial instruments with variable interest rates, financial instrument at fair value through profit or loss or available for sale with fixed interest rates and the fixed rate element of interest rate caps. The analysis is performed on the same basis for 2018, 2017 and 2016.

	2018	2017	2016
		€m	
Profit or loss			
Loss on increase in interest rates by 1%	(17.1)	(24.1)	(27.6)

A 1% change in the opposite direction of the above interest rates at December 31, would have had the equal but opposite effect on the above currencies to the amounts shown above, on the basis that all other variables remain constant.

Market risk—Commodity price risk

This section discusses the Group's exposure to the commodity contracts which are not covered under the own use exemption and are recognised as derivative instruments.

25. FINANCIAL INSTRUMENTS (continued)

The Group is exposed to commodity price risk through fluctuations in raw material prices and sales of products. The raw material exposures result primarily from the price of crude oil and base chemicals linked to the price of crude. The sales price exposures are primarily related to petrochemicals where prices are in general linked to the market price of crude oil.

The Group enters into contracts to supply or acquire physical volumes of commodities at future dates during the normal course of business that may be considered derivative contracts. Where such contracts exist and are in respect of the normal purchase or sale of products to fulfil the Group's requirements, the own use exemption from derivative accounting is applied.

The Group manages commodity price exposures through trading refined products and chemical feedstock and using commodity swaps, options and futures as a means of managing price and timing risks. In 2018 there are no significant instruments entered by the Group to manage such risk (2017: nil, 2016: nil).

The Group operates within procedures and policies designed to ensure that risks, including those relating to the default of counterparties, are minimised.

Market risk—Equity price risk

The Group's exposure to equity price risk arises from its investment in equity securities which are classified as financial assets at fair value through other comprehensive income. These financial assets are accounted for at fair value based on the present value of future cash flows where such information is readily available. However, as explained in Note 14, the Group's financial assets at fair value through comprehensive income (previously available for sale financial assets) include certain equity interests which are not quoted and for which there is no active market. In these circumstances, in the absence of reliable information, the Group considers that a reliable determination of fair value is not practicable and recording them at fair value instead of their acquisition cost will not materially change the value of the investment so no separate fair valuation is performed on these investments, although this is reviewed annually.

For the financial assets at fair value through other comprehensive income a 10 percent increase and decrease in transaction prices at the reporting date would have decreased and increased the profit for the year by €2.8 million (2017: €2.8 million, 2016: €2.9 million). Management consider that a change of 10 percent gives an appropriate benchmark to assess the risks that the Group is expected to be exposed to. This calculation assumes that the change occurred at the reporting date and had been applied to risk exposures existing at that date. This analysis assumes that all other variables, in particular foreign currency rates, remain constant.

25g Capital management

The Group's objectives for managing capital are to safeguard the Group's ability to continue as a going concern in order to provide returns for shareholders and benefits for other stakeholders and to maintain an optimal capital structure to reduce the cost of capital.

25. FINANCIAL INSTRUMENTS (continued)

The Group defines its capital employed of €7,148.8 million (2017: €6,488.4 million, 2016: €6,246.1 million) as shareholders' equity of €2,917.5 million (2017: €1,696.8 million, 2016: €430.1 million) and net debt (net of debt issue costs) of €4,231.3 million (2017: €4,791.6 million, 2016: €5,816.0 million).

The principal sources of debt available to the Group at December 31, 2018 include the Senior Secured Term Loans, Senior Secured Notes due 2023, Senior Secured Notes due 2025, Senior Notes due 2024, Receivables Securitisation Facility, Noretyl Facility and Koln CoGen Facility and are described in Note 19 along with the key operating and financial covenants that apply to these facilities.

In order to maintain or adjust the capital structure, the Group may adjust the amount of dividends paid to shareholders, issue new shares, raise new debt or sell assets to reduce debt. The ability of the Group to pay dividends and provide appropriate facilities to the Group is restricted by the terms of principal financing agreements to which members of the Group are party.

26. OPERATING LEASES

Future aggregate minimum lease payments are as follows:

	2018	2017	2016
		€m	
Less than one year	168.4	113.7	91.9
Between one and five years	445.5	374.8	329.7
More than five years	423.4	609.4	296.5
	1,037.3	**1,097.9**	**718.1**

The Group has entered into a number of significant operating lease arrangements relating to shipping capacity in respect of the supply chain activities for the European cracker assets. These leases typically run for a period of between 10 and 15 years with options to extend after that date.

27. CAPITAL COMMITMENTS

Outstanding capital expenditure authorised by the Board and for which contracts had been placed as at December 31, 2018 by the Group amounted to approximately €662.3 million (2017: €807.5 million, 2016: €790.2 million).

28. RECONCILIATION OF NET CASH FLOW TO MOVEMENT IN NET DEBT

	2018	2017	2016
		€m	
Increase/(decrease) in cash and cash equivalents in the year	642.0	(701.0)	466.9
Cash (inflow)/outflow from change in debt financing	(54.1)	1,549.8	431.7
Change in net debt resulting from cash flows	587.9	848.8	898.6
Other net non-cash transactions	(21.8)	187.3	(61.5)
Movement in net debt in year	**566.1**	**1,036.1**	**837.1**

	1 Jan 2018	Cash Flow	Other Non Cash Changes	31 Dec 2018
Cash at bank and in hand	1,366.3	642.0	63.0	2,071.3
Debt due within one year	(64.8)	29.2	(28.1)	(63.7)
Debt due after more than one year	(6,126.9)	(83.4)	(56.7)	(6,267.0)
Finance leases	(1.3)	0.1	—	(1.2)
	(6,193.0)	(54.1)	(84.8)	(6,331.9)
Net debt	**(4,826.7)**	**587.9**	**(21.8)**	**(4,260.6)**

	1 Jan 2017	Cash Flow	Other Non Cash Changes	31 Dec 2017
Cash at bank and in hand	2,204.1	(701.0)	(136.8)	1,366.3
Debt due within one year	(77.6)	78.2	(65.4)	(64.8)
Debt due after more than one year	(7,987.9)	1,471.5	389.5	(6,126.9)
Finance leases	(1.4)	0.1	—	(1.3)
	(8,066.9)	1,549.8	324.1	(6,193.0)
Net debt	**(5,862.8)**	**848.8**	**187.3**	**(4,826.7)**

	1 Jan 2016	Cash Flow	Other Non Cash Changes	31 Dec 2016
Cash at bank and in hand	1,648.0	466.9	89.2	2,204.1
Debt due within one year	(296.7)	224.4	(5.3)	(77.6)
Debt due after more than one year	(8,049.5)	207.1	(145.5)	(7,987.9)
Finance leases	(1.7)	0.2	0.1	(1.4)
	(8,347.9)	431.7	(150.7)	(8,066.9)
Net debt	**(6,699.9)**	**898.6**	**(61.5)**	**(5,862.8)**

29. RELATED PARTIES

Identity of related parties with which the Group has transacted

Related parties comprise:

- Parent entities and their subsidiaries not included within the Ineos Group Holdings S.A. group;
- Entities controlled by the shareholders of Ineos Limited, the ultimate parent company of Ineos Group Holdings S.A.;
- Key management personnel; and
- Joint ventures.

Mr JA Ratcliffe, Mr AC Currie and Mr J Reece are shareholders in Ineos Limited.

Ineos AG, a subsidiary of Ineos Limited, provides operational management services to the Group through a management services agreement. Ineos AG management fees of €85.7 million (2017: €81.6 million, 2016: €81.3 million) were charged to the income statement. As at December 31, 2018 amounts owed to Ineos AG were €22.0 million (2017: €21.1 million, 2016: €22.0 million). Amounts owed to Ineos Holdings AG, a wholly owned subsidiary of Ineos AG, were €0.4 million (amounts due from Ineos Holdings AG, 2017: €148.8 million, 2016: €117.8 million).

Ineos Limited owns and controls a number of operating subsidiaries that are not included in the Ineos Group Holdings S.A. group, including INOVYN Limited, Ineos Industries Limited (which from September 1, 2017 includes the Grangemouth petrochemical subsidiaries), INEOS Enterprises Holdings Limited and the Lavéra petrochemical assets and businesses together with other French and Italian assets of INEOS O&P South.

During the year ended December 31, 2018 the Group has made sales to these subsidiaries of €1,182.6 million (2017: €987.1 million, 2016: €631.5 million), recovered costs of €107.5 million (2017: €135.1 million, 2016: €84.8 million) and made purchases of €1,469.7 million (2017: €1,624.9 million, 2016: €940.8 million). As at December 31, 2018, €430.9 million (2017: €393.8 million, 2016: €365.1 million) was owed by and €111.0 million (2017: €164.5 million, 2016: €150.2 million) was owed to these subsidiaries (excluding the Grangemouth shareholder loan, the INEOS Upstream Limited loan and transactions and balances with Styrolution).

During 2015 the Group provided a loan of $623.7 million to INEOS Upstream Limited, a related party, in connection with its acquisition of natural gas assets in the North Sea. The loan facility is unsecured and matures on October 26, 2020 and bears interest at 7% per annum. On September 29, 2017, INEOS Upstream Limited, a related party, acquired further natural gas assets in the North Sea through its acquisition of the entire oil and gas business of DONG Energy A/S. In connection with the DONG Acquisition, the Group advanced a loan of $376.2 million (€315.7 million) to INEOS Upstream Limited, the proceeds of which were on lent to certain of its subsidiaries. The loan is unsecured and matures in June 2022 and bears interest at 7% per annum. During 2018 net loan repayments of $122.5 million (€105.4 million) were received (2017: net loan repayments of $142.7 million (€121.4 million), 2016: net loan repayments of $117.6 million (€103.4 million)), leaving $617.1 million (€539.7 million) outstanding under the facility as at December 31, 2018 (2017: $739.6 million (€619.5 million), 2016: $506.1 million (€482.5 million)).

29. RELATED PARTIES (continued)

Following the divestment of the Grangemouth petrochemical business in 2013 the Group put in place a €200 million shareholder loan facility to fund the ongoing operations and investments required at the site. This facility matures on July 28, 2021 and is secured on a second lien basis on the assets of the Grangemouth petrochemical business. During the year ended December 31, 2017 INEOS Grangemouth plc repaid the Group €127.0 million in full repayment (including accrued interest) of the shareholder loan facility. As at December 31, 2016 €125.4 million was outstanding under the facility, which included €14.3 million of capitalised interest.

Styrolution was previously a 50-50 joint venture between Ineos Industries Limited, a related party, and BASF. On November 17, 2014 Ineos Industries Limited completed the acquisition of BASF's 50% share in Styrolution for a purchase price of €1.1 billion. As part of the funding for the acquisition the Group provided Ineos Styrolution Holding GmbH, a related party, with a Second Lien PIK Toggle Loan of €200.0 million. The loan bore interest at a rate per annum of 9.5% for cash interest payments or 10.25% for PIK interest and matured in November 2020. During the year ended December 31, 2016 Styrolution paid €22.5 million of interest relating to the Second Lien PIK Toggle Loan. During 2016 Styrolution refinanced its capital structure and repaid the €200 million Second Lien PIK Toggle Loan. The Group used the proceeds from the loan together with €50 million of cash in hand to invest €250 million in Styrolution Term Loan debt which was issued during September 2016. During the year ended December 31, 2017 Styrolution paid €7.7 million of interest relating to the Term Loan debt. In October 2017 the Term Loan was fully repaid to the Group. During the year ended December 31, 2018 the Group has made sales to Styrolution of €346.3 million (2017: €420.1 million, 2016: €354.9 million), recovered costs of €7.5 million (2017: €8.0 million, 2016: €6.8 million) and made purchases of €19.4 million (2017: €7.9 million, 2016: €4.2 million). As at December 31, 2018, €34.1 million (2017: €45.9 million, 2016: €282.1 million) was owed by Styrolution (2016: included €250 million Term Loan holding) and €4.1 million (2017: €3.5 million, 2016: €0.1 million) was owed to Styrolution.

Ineos Limited owns interests in a number of joint ventures that are not included in the Ineos Group Holdings S.A. group, including the French joint ventures associated with the Lavera petrochemical assets and businesses which were divested by the Group on July 1, 2014, the refining joint ventures between PetroChina and INEOS Investments (Jersey) Limited, a related party and a joint venture with Sasol Limited to build and operate a HDPE plant at Battleground site in Texas, USA which became operational at the end of 2017.

During the year ended December 31, 2018 the Group made sales of €0.1 million (2017: €0.1 million, 2016: none) to the French joint ventures and recovered costs of €nil (2017: €0.2 million, 2016: none) from the French joint ventures. As at December 31, 2018 €0.1 million (2017: €0.1 million, 2016: €nil) was owed by the French joint ventures.

The Refining joint ventures are between PetroChina and INEOS Investments (Jersey) Limited, a related party. During the year ended December 31, 2018 the Group made sales to the Refining joint ventures of €0.6 million (2017: €nil, 2016: €nil), recovered costs of €5.4 million (2017: €24.5 million, 2016: €43.3 million) and made purchases of €379.3 million (2017: €164.1 million, 2016: €262.0 million). As at December 31, 2018, €1.4 million (2017: €0.6 million, 2016: €1.2 million) was owed by the Refining joint ventures and €21.2 million (2017: €14.9 million, 2016: €30.4 million) was owed to the Refining joint ventures.

29. RELATED PARTIES (continued)

During the year ended December 31, 2018 the Group made sales to the HDPE joint venture of €5.6 million (2017: €nil), recovered costs of €58.4 million (2017: €0.1 million, 2016: €0.3 million) and made purchases of €44.7 million from the HDPE joint venture. As at December 31, 2018, €0.5 million was owed to (2017: €2.5 million was owed by, 2016: €2.3 million was owed by) the HDPE joint venture.

Compensation to key management personnel (including directors)

The Group defines key management as the directors of the Company. Details of Directors' remuneration are given in Note 7.

30. ULTIMATE PARENT UNDERTAKING AND CONTROLLING PARTY

The immediate parent undertaking is Ineos Holdings Luxembourg S.A.. The ultimate parent undertaking at December 31, 2018 was Ineos Limited, a company registered in the Isle of Man. The ultimate controlling party is Mr JA Ratcliffe, director and majority shareholder of the ultimate parent undertaking.

31. ACCOUNTING ESTIMATES AND JUDGEMENTS

The Group prepares its consolidated financial statements in accordance with IFRSs, which require management to make judgements, estimates and assumptions which affect the application of the accounting policies, and the reported amounts of assets, liabilities, income and expenses. Actual results may differ from these estimates. The estimates and assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised in the period in which the estimates change and in any future periods.

The following areas are considered to involve a significant degree of judgement or estimation:

Fair value measurement on business combination

The amount of goodwill initially recognised as a result of a business combination is dependent on the allocation of the purchase price to the fair value of the identifiable assets and liabilities acquired. The determination of the fair value of the acquired assets and liabilities is to a considerable extent based upon management's judgement, and estimates and assumptions made.

Allocation of the purchase price affects the results of the Group as intangible assets are amortised over their estimated useful lives, whereas goodwill, is not amortised. This could lead to differing amortisation charges based on the allocation to indefinite and finite lived intangible assets.

On acquisition of a business, the identifiable intangible assets may include customer contracts, customer relationships and preferential supply contracts. The fair value of these assets is determined by discounting estimated future net cash flows generated by the asset. The use of different estimates and assumptions for the expectations of future cash flows and the discount rate would change the valuation of these intangible assets.

The carrying amount of intangibles is disclosed in Note 11.

31. ACCOUNTING ESTIMATES AND JUDGEMENTS (continued)

Taxation

Management is required to estimate the tax payable in each of the jurisdictions in which the Group operates. This involves estimating the actual current tax charge or credit together with assessing temporary differences resulting from differing treatment of items for tax and accounting purposes. These differences result in deferred tax assets and liabilities, which may be included on the consolidated balance sheet of the Group. Management have performed an assessment as to the extent to which future taxable profits will allow the deferred asset to be recovered. The calculation of the Group's total tax charge necessarily involves a significant degree of estimation in respect of certain items whose tax treatment cannot be finally determined until resolution has been reached with the relevant tax authority, or, as appropriate, through a formal legal process.

The Group has, from time to time, contingent tax liabilities arising from trading and corporate transactions in the countries in which it operates. After appropriate consideration, management makes provision for these liabilities based on the probable level of economic loss that may be incurred and which is reliably measurable.

The breadth of the Group's structure with operations in many geographic locations makes the use of estimates and assumptions more challenging. The resolution of issues is not always within the control of the Group and can be reliant upon the efficiency of the legal processes in the relevant jurisdictions in which the Group operates, and as a result, issues can, and often do take many years to resolve.

Details of amounts recognised with regard to taxation are disclosed in Notes 9 and 16.

Post-retirement benefits

The Group operates a number of defined benefit post employment schemes. Under IAS 19 Revised Employee Benefits, management is required to estimate the present value of the future defined benefit obligation of each of the defined benefit schemes. The costs and year end obligations under defined benefit schemes are determined using actuarial valuations. The actuarial valuations involve making numerous assumptions, including:

- Future rate of increase in salaries;
- Inflation rate projections;
- Discount rate for scheme liabilities; and
- Expected rates of return on the scheme assets.

Details of post-retirement benefits are set out in Note 21.

Provisions

Provisions are recognised for the cost of remediation works where there is a legal or constructive obligation for such work to be carried out. Where the estimated obligation arises upon initial recognition of the related asset, the corresponding debit is treated as part of the cost of the related asset and depreciated over its estimated useful life.

31. ACCOUNTING ESTIMATES AND JUDGEMENTS (continued)

Other provisions are recognised in the period when it becomes probable that there will be a future outflow of funds resulting from past operations or events that can be reasonably estimated. The timing of recognition requires the application of judgement to existing facts and circumstances, which can be subject to change.

Estimates of the amounts of provisions recognised are based on current legal and constructive requirements, technology and price levels. Because actual outflows can differ from estimates due to changes in laws, regulations, public expectations, technology, prices and conditions, and can take place many years in the future, the carrying amounts of provisions are regularly reviewed and adjusted to take account of such changes.

In relation to remediation costs, the estimated interest rate used in discounting the cash flows is reviewed at least annually. The interest rate used to determine the obligation in the balance sheet at December 31, 2018 was 4% (2017: 4%, 2016: 4%).

The nature and amount of provisions included within the financial statements are detailed in Note 22.

Impairment reviews

IFRSs require management to test for impairment of goodwill and other intangible assets with indefinite lives, on an annual basis, and of tangible and intangible assets with finite lives if events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable.

An impairment test requires an assessment as to whether the carrying value of assets can be supported by its recoverable amount. Management calculates the recoverable amount based on the net present value of the future cash flows derived from the relevant assets, using cash flow projections which have been discounted at an appropriate discount rate.

In calculating the net present value of the future cash flows, certain assumptions and estimates are required to be made in respect of highly uncertain matters, including management's expectations of:

- Growth rates of various revenue streams;
- Long term growth rates;
- Future margins;
- The selection of an appropriately risk adjusted discount rate; and
- The determination of terminal values.

Changing the assumptions selected by management, in particular the discount rate used in the present value calculation, could significantly affect the Group's impairment evaluation and results.

The Group has property, plant and equipment with a carrying value of €5,046.3 million (2017: €4,255.4 million, 2016: €4,007.4 million) as disclosed in Note 10 and intangible assets with a carrying value of €744.8 million (2017: €731.6 million, 2016: €763.9 million) as disclosed in Note 11. All of these assets are assessed annually for impairment as described above.

31. ACCOUNTING ESTIMATES AND JUDGEMENTS (continued)

For the purpose of impairment testing (when required), to assess whether any impairment exists, estimates are made of the future cash flows expected to result from the use of the asset and its eventual disposal. Actual outcomes could vary significantly from such estimates of discounted future cash flows. Factors such as changes in the planned use of buildings, plant or equipment, or closure of facilities, the presence or absence of competition, lower than expected asset utilisation from events such as unplanned outages, strikes and hurricanes, technical obsolescence or lower than anticipated sales of products with capitalised intellectual property rights could result in shortened useful lives or impairment. Changes in the discount rates used could also lead to impairments.

Further details on the impairment review performed on the goodwill and intangible assets are provided in Note 11, including sensitivity analysis in relation to key assumptions.

Segment aggregation

IFRS 8 "Operating Segments" permits two or more operating segments to be aggregated into one for disclosure purposes when individual segments have characteristics so similar that they can be expected to have essentially the same future prospects. Management apply this judgement when aggregating the businesses within the Chemical Intermediates segment. In doing so they take into account that the businesses all have similar economic characteristics, similar products, services and types of customer and similar past cyclical financial performance.

Investments

The Group applies IFRS 11 to all joint arrangements. Under IFRS 11 investments in joint arrangements are classified as either joint operations or joint ventures depending on the contractual rights and obligations of each investor. The Group has assessed the nature of its joint arrangements and determined them to be joint ventures. Joint ventures are accounted for using the equity method.

Details of Investments are set out in Note 12.

32. SUBSEQUENT EVENTS

In February 2019 the Group paid a dividend of €1.45 billion to its parent company, INEOS Holdings Luxembourg S.A..

AUDITORS' REPORT ON THE CONSOLIDATED FINANCIAL STATEMENTS

Audit report
To the Shareholders of
Ineos Group Holdings S.A.

Report on the audit of the consolidated financial statements

Our opinion

In our opinion, the accompanying consolidated financial statements give a true and fair view of the consolidated financial position of Ineos Group Holdings S.A. (the "Company") and its subsidiaries (the "Group") as at 31 December 2017, and of its consolidated financial performance and its consolidated cash flows for the year then ended in accordance with International Financial Reporting Standards (IFRSs) as adopted by the European Union.

What we have audited

The Group's consolidated financial statements comprise:

- the consolidated balance sheet as at 31 December 2017;
- the consolidated income statement and comprehensive income for the year then ended;
- the consolidated statement of changes in equity for the year then ended;
- the consolidated statement of cash flows for the year then ended; and
- the notes to the consolidated financial statements, which include a summary of significant accounting policies.

Basis for opinion

We conducted our audit in accordance with the Law of 23 July 2016 on the audit profession (Law of 23 July 2016) and with International Standards on Auditing (ISAs) as adopted for Luxembourg by the "Commission de Surveillance du Secteur Financier" (CSSF). Our responsibilities under those Law and standards are further described in the "Responsibilities of the "Réviseur d'entreprises agréé" for the audit of the consolidated financial statements" section of our report.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

We are independent of the Group in accordance with the International Ethics Standards Board for Accountants' Code of Ethics for Professional Accountants (IESBA Code) as adopted for Luxembourg by the CSSF together with the ethical requirements that are relevant to our audit of the consolidated financial statements. We have fulfilled our other ethical responsibilities under those ethical requirements.

Other information

The Board of Directors is responsible for the other information. The other information comprises the information stated in the consolidated Management report but does not include the consolidated financial statements and our audit report thereon.

Our opinion on the consolidated financial statements does not cover the other information and we do not express any form of assurance conclusion thereon.

In connection with our audit of the consolidated financial statements, our responsibility is to read the other information identified above and, in doing so, consider whether the other information is materially inconsistent with the consolidated financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Responsibilities of the Board of Directors and those charged with governance for the consolidated financial statements

The Board of Directors is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with IFRSs as adopted by the European Union, and for such internal control as the Board of Directors determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, the Board of Directors is responsible for assessing the Group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the Board of Directors either intends to liquidate the Group or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Group's financial reporting process.

Responsibilities of the "Réviseur d'entreprises agréé" for the audit of the consolidated financial statements

The objectives of our audit are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an audit report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with the Law of 23 July 2016 and with ISAs as adopted for Luxembourg by the CSSF will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

As part of an audit in accordance with the Law of 23 July 2016 and with ISAs as adopted for Luxembourg by the CSSF, we exercise professional judgment and maintain professional scepticism throughout the audit. We also:

- identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control;
- obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's internal control;
- evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the Board of Directors;

- conclude on the appropriateness of the Board of Directors'use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our audit report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our audit report. However, future events or conditions may cause the Group to cease to continue as a going concern;
- evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation;
- obtain sufficient appropriate audit evidence regarding the financial information of the entities and business activities within the Group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the Group audit. We remain solely responsible for our audit opinion.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

Report on other legal and regulatory requirements

The consolidated Management report is consistent with the consolidated financial statements and has been prepared in accordance with applicable legal requirements.

PricewaterhouseCoopers, Société coopérative Luxembourg, 22 March 2018
Represented by

Philippe Piérard

INEOS Group Holdings S.A.

CONSOLIDATED INCOME STATEMENT

FOR THE YEAR ENDED 31 DECEMBER 2017

	Note	2017	2016	2015
			€m	
Revenue	2	**15,210.4**	**12,609.9**	**13,729.4**
Total cost of sales		(12,524.2)	(10,141.1)	(11,318.4)
Gross profit		**2,686.2**	**2,468.8**	**2,411.0**
Distribution costs		(206.5)	(195.3)	(212.1)
Administrative expenses before exceptional items		(418.6)	(385.6)	(372.3)
Exceptional administrative expenses	5	—	(21.3)	(16.0)
Total administrative expenses		(418.6)	(406.9)	(388.3)
Total expenses		(625.1)	(602.2)	(600.4)
Operating profit	6	**2,061.1**	**1,866.6**	**1,810.6**
Share of profit of associates and jointly controlled entities using the equity accounting method	13a	143.5	29.3	74.4
Profit on disposal of fixed assets		2.6	3.7	3.8
Profit before net finance costs		**2,207.2**	**1,899.6**	**1,888.8**
Total finance income	9	491.9	200.0	165.1
Finance costs before exceptional item	9	(355.2)	(505.3)	(774.1)
Exceptional finance cost	5	(44.1)	(20.7)	(131.6)
Total finance costs		(399.3)	(526.0)	(905.7)
Net finance income/(costs)		92.6	(326.0)	(740.6)
Profit before tax from continuing operations		**2,299.8**	**1,573.6**	**1,148.2**
Tax charge	10	(301.5)	(340.2)	(237.7)
Profit for the year from continuing operation		**1,998.3**	**1,233.4**	**910.5**

The notes on pages F-106 to F-191 are an integral part of these consolidated financial statements.

INEOS Group Holdings S.A.

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

FOR THE YEAR ENDED 31 DECEMBER 2017

	Note	2017	2016	2015
			€m	
Profit for the year		1,998.3	1,233.4	910.5
Other comprehensive income/(loss):				
Items that will not be recycled to profit or loss:				
Remeasurements of post employment benefit obligations net of tax		82.3	(61.9)	17.1
		82.3	**(61.9)**	**17.1**
Items that may subsequently be recycled to profit or loss:				
Foreign exchange translation differences		84.5	(40.6)	(266.3)
Net (loss)/gain on hedge of net investment in foreign operations net of tax	26.e	(637.5)	104.7	196.5
		(553.0)	**64.1**	**(69.8)**
Other comprehensive (loss)/income for the year net of tax		**(470.7)**	**2.2**	**(52.7)**
Total comprehensive income for the year		**1,527.6**	**1,235.6**	**857.8**

The notes on pages F-106 to F-191 are an integral part of these consolidated financial statements.

INEOS Group Holdings S.A.

CONSOLIDATED BALANCE SHEET

AS AT 31 DECEMBER 2017

	Note	2017	2016	2015
			€m	
Non-current assets				
Property, plant and equipment	11	4,255.4	4,007.4	3,508.8
Intangible assets	12	731.6	763.9	706.4
Investments in equity-accounted investees	13.a	351.1	161.7	101.4
Other investments	14	238.5	262.2	243.2
Other financial assets	15	28.3	29.2	29.2
Trade and other receivables	19	957.4	1,146.8	1,114.0
Deferred tax assets	17	160.2	205.1	200.9
		6,722.5	6,576.3	5,903.9
Current assets				
Inventories	18	1,246.5	1,068.1	956.6
Trade and other receivables	19	1,712.9	1,501.8	1,772.4
Other financial assets	15	—	8.2	1.1
Cash and cash equivalents	29	1,366.3	2,204.1	1,648.0
		4,325.7	4,782.2	4,378.1
Total assets		**11,048.2**	**11,358.5**	**10,282.0**
Equity attributable to owners of the parent				
Share capital	24	0.9	0.9	0.9
Share premium		779.4	779.4	779.4
Other reserves		(2,183.2)	(1,712.5)	(1,714.7)
Retained earnings		3,099.7	1,362.3	370.2
Total equity		**1,696.8**	**430.1**	**(564.2)**
Non-current liabilities				
Interest-bearing loans and borrowings	20	6,094.9	7,947.5	8,008.5
Trade and other payables	21	120.1	107.2	91.7
Employee benefits	22	701.0	789.5	689.1
Provisions	23	28.8	28.5	25.6
Deferred tax liabilities	17	202.3	275.6	198.1
Other financial liabilities	16	2.3	0.9	12.6
		7,149.4	9,149.2	9,025.6
Current liabilities				
Interest-bearing loans and borrowings	20	63.0	72.6	291.8
Trade and other payables	21	1,877.9	1,563.4	1,445.1
Tax payable		248.4	124.0	75.8
Other financial liabilities	16	0.2	—	1.8
Provisions	23	12.5	19.2	6.1
		2,202.0	1,779.2	1,820.6
Total liabilities		**9,351.4**	**10,928.4**	**10,846.2**
Total equity and liabilities		**11,048.2**	**11,358.5**	**10,282.0**

These financial statements were approved by the board of directors on 22 March 2018 and were signed on its behalf by:

Natalina Arena — *Director*

Florence Bardot — *Director*

The notes on pages F-106 to F-191 are an integral part of these consolidated financial statements.

INEOS Group Holdings S.A.

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

FOR THE YEAR ENDED 31 DECEMBER 2017

	Share capital	Share premium	Other reserves	Retained earnings	Total equity
			€m		
Balance at 1 January 2015	**0.9**	**779.4**	**(1,662.0)**	**(381.6)**	**(1,263.3)**
Profit for the year	—	—	—	910.5	910.5
Other comprehensive income/(loss):					
Foreign exchange translation Differences	—	—	(266.3)	—	(266.3)
Net gain on hedge of net investment in foreign operations	—	—	196.5	—	196.5
Remeasurements of post employment benefit obligations	—	—	17.1	—	17.1
Transactions with owners, recorded directly in equity:					
Amounts arising on common control transactions	—	—	—	(85.3)	(85.3)
Dividend	—	—	—	(73.4)	(73.4)
Balance at 31 December 2015	**0.9**	**779.4**	**(1,714.7)**	**370.2**	**(564.2)**
Profit for the year	—	—	—	1,233.4	1,233.4
Other comprehensive income/(loss):					
Foreign exchange translation differences	—	—	(40.6)	—	(40.6)
Net gain on hedge of net Investment in foreign operations	—	—	104.7	—	104.7
Remeasurements of post employment benefit obligations	—	—	(61.9)	—	(61.9)
Transactions with owners, recorded directly in equity:					
Dividend	—	—	—	(241.3)	(241.3)
Balance at 31 December 2016	**0.9**	**779.4**	**(1,712.5)**	**1,362.3**	**430.1**
Profit for the year	—	—	—	1,998.3	1,998.3
Other comprehensive income/(loss):					
Foreign exchange translation differences	—	—	84.5	—	84.5
Net loss on hedge of net investment in foreign operations	—	—	(637.5)	—	(637.5)
Remeasurements of post employment benefit obligations	—	—	82.3	—	82.3
Transactions with owners, recorded directly in equity:					
Dividend	—	—	—	(260.9)	(260.9)
Balance at 31 December 2017	**0.9**	**779.4**	**(2,183.2)**	**3,099.7**	**1,696.8**

The notes on pages F-106 to F-191 are an integral part of these consolidated financial statements.

INEOS Group Holdings S.A.
CONSOLIDATED STATEMENT OF CHANGES IN EQUITY
FOR THE YEAR ENDED 31 DECEMBER 2017 (Continued)

Analysis of other reserves

	Translation reserve	Employee benefits	Merger reserve	Total other reserves
		€m		
Balance at 1 January 2015	(284.1)	(577.2)	(800.7)	(1,662.0)
Foreign exchange translation differences	(266.3)	—	—	(266.3)
Net gain on hedge of net investment in foreign operations	196.5	—	—	196.5
Remeasurements of post employment benefit obligations	—	17.1	—	17.1
Balance at 31 December 2015	**(353.9)**	**(560.1)**	**(800.7)**	**(1,714.7)**
Foreign exchange translation differences	(40.6)	—	—	(40.6)
Net gain on hedge of net investment in foreign operations	104.7	—	—	104.7
Remeasurements of post employment benefit obligations	—	(61.9)	—	(61.9)
Balance at 31 December 2016	**(289.8)**	**(622.0)**	**(800.7)**	**(1,712.5)**
Foreign exchange translation differences	84.5	—	—	84.5
Net loss on hedge of net investment in foreign operations	(637.5)	—	—	(637.5)
Remeasurements of post employment benefit obligations	—	82.3	—	82.3
Balance at 31 December 2017	**(842.8)**	**(539.7)**	**(800.7)**	**(2,183.2)**

The notes on pages F-106 to F-191 are an integral part of these consolidated financial statements.

INEOS Group Holdings S.A.

CONSOLIDATED STATEMENT OF CASH FLOWS

FOR THE YEAR ENDED 31 DECEMBER 2017

	Note	2017	2016	2015
			€m	
Cash flows from operating activities				
Profit before tax		2,299.8	1,573.6	1,148.2
Adjustments for:				
Depreciation and impairment	11	454.4	398.7	370.7
Amortisation	12	13.9	44.2	12.7
Net finance (income)/costs	5,9	(92.6)	326.0	740.6
Share of profit of equity-accounted investees		(143.5)	(29.3)	(74.4)
Profit on sale of property, plant and equipment		(2.6)	(3.7)	(3.8)
(Increase)/decrease in trade and other receivables		(268.1)	289.3	(28.2)
(Increase)/decrease in inventories		(239.0)	(74.7)	107.0
Increase/(decrease) in trade and other payables		314.8	(35.4)	(138.3)
(Decrease)/increase in provisions and employee benefits		(6.5)	11.3	20.6
Tax paid		(143.1)	(221.8)	(167.2)
Net cash generated from operating activities		**2,187.5**	**2,278.2**	**1,987.9**
Cash flows from investing activities				
Proceeds from sale of property, plant and equipment		8.3	3.9	3.8
Proceeds from sales of investments		1.3	1.3	9.2
Interest and other finance income received		50.9	65.1	27.8
Dividends received		5.3	7.0	2.9
Disposal of businesses, net of cash disposed of	4	—	—	78.3
Acquisition of businesses, net of cash acquired	3	(2.5)	(125.3)	(179.8)
Acquisition of assets	3	—	—	(51.9)
Loans granted to related parties		(315.7)	(289.9)	(568.4)
Loan repayments from related parties		497.7	343.3	—
Acquisition of intangible assets		(18.4)	(9.0)	(4.6)
Acquisition of property, plant and equipment		(914.6)	(691.9)	(454.0)
Acquisition of other investments		(57.8)	(28.3)	(0.5)
Net cash used in investing activities		**(745.5)**	**(723.8)**	**1,137.2)**
Cash flows from financing activities				
Securitisation Facility		(0.1)	(130.5)	(97.7)
Proceeds from new Senior Notes		—	1,101.1	—
Proceeds from new Senior Secured Notes		550.0	—	770.0
Proceeds from new Senior Secured Term Loans		—	—	1,407.3
Refinancing of Senior Secured Term Loans		(883.1)	—	—
Redemption of Senior Secured Notes		—	—	(2,086.8)
Redemption of Senior Notes		(1,151.9)	(1,111.7)	—
Issue costs paid		(21.7)	(10.5)	(36.5)
Interest paid		(310.6)	(404.0)	(537.0)
Proceeds from other loans		—	13.1	—
Repayment of loans		(64.6)	(303.5)	(50.8)
Dividends paid	25	(260.9)	(241.3)	(73.4)
Capital element of finance lease payment		(0.1)	(0.2)	(0.3)
Net cash used in financing activities		**(2,143.0)**	**(1,087.5)**	**(705.2)**
Net (decrease)/increase in cash and cash equivalents	29	(701.0)	466.9	145.5
Cash and cash equivalents at 1 January	29	2,204.1	1,648.0	1,434.6
Effect of exchange rate fluctuations on cash held		(136.8)	89.2	67.9
Cash and cash equivalents at 31 December	29	**1,366.3**	**2,204.1**	**1,648.0**

The notes on pages F-106 to F-191 are an integral part of these consolidated financial statements.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
FOR THE YEAR ENDED 31 DECEMBER 2017
(forming part of the financial statements)

1. ACCOUNTING POLICIES

Overview

Ineos Group Holdings S.A. (the "Company") is a company incorporated and domiciled in the form of a société anonyme under the laws of the Grand-Duchy of Luxembourg, having its registered office at 58, rue Charles Martel, L-2134 Luxembourg, Grand-Duchy of Luxembourg. The nature of the operations and principal activities of the Company and its subsidiaries are the manufacture and sale of a range of chemicals and refined products used in a variety of applications.

Basis of accounting

The Group financial statements consolidate those of the Company and its subsidiaries (together referred to as the "Group") and equity account the Group's interest in associates and jointly controlled entities.

The Group financial statements have been prepared on a going concern basis and approved by the directors in accordance with International Financial Reporting Standards (IFRSs) as adopted by the European Union in response to the IAS regulation (EC 1606/2002) effective as of December 31, 2017 and have been approved on March 22, 2018.

The accounting policies set out below have, unless otherwise stated, been applied consistently to all periods presented in these Group financial statements.

Measurement convention

The financial statements are prepared on the historical cost basis except that derivative financial instruments and financial instruments classified as fair value through the profit or loss are stated at their fair value and non-current assets and disposal groups held for sale are stated at the lower of previous carrying amount and fair value less costs to sell.

Functional and presentation currency

These Group financial statements are presented in euro, which is the functional currency of the majority of operations. The Group's primary products are sold in an international commodities market which is priced and invoiced primarily in euros.

All financial information presented in euro has been rounded to the nearest €0.1 million.

Changes in accounting policies

There were no new standards applied during the year ended 31 December 2017 by the Group. The Group has applied the following amendments to accounting standards for the first time in 2017 with effect from 1 January 2017 (with material prior period comparative information restated, to the extent required and as explained below):

- *Amendments to IAS 7: Disclosure Initiative* (mandatory for year commencing on or after 1 January 2017).

  The amendment introduces a requirement to reconcile cash flows arising from financing activities to the corresponding liabilities in the opening and closing statements of financial

1. ACCOUNTING POLICIES (Continued)

position. This disclosure is included in the reconciliation of net cash flow to movement in net debt in Note 29.

- *Amendments to IAS 12: Recognition of Deferred Tax Assets for Unrealised Losses* (mandatory for year commencing on or after 1 January 2017).

  The amendment clarifies how to account for deferred tax assets related to debt instruments measured at fair value.

Basis of consolidation

Subsidiaries

Subsidiaries are all entities (including structured entities) over which the Group has control. The Group controls an entity when the Group is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity.

Subsidiaries are fully consolidated from the date on which control is transferred to the Group. They are deconsolidated from the date that control ceases.

The Group applies the acquisition method to account for business combinations, except acquisitions under common control which are outside the scope of IFRS 3. The consideration transferred for the acquisition of a subsidiary is the fair values of the assets transferred, the liabilities incurred to the former owners of the acquiree and the equity interests issued by the Group. The consideration transferred includes the fair value of any asset or liability resulting from a contingent consideration arrangement. Identifiable assets acquired and liabilities and contingent liabilities assumed in a business combination are measured initially at their fair values at the acquisition date. The Group recognises any non-controlling interest in the acquiree on an acquisition-by-acquisition basis, either at fair value or at the non-controlling interest's proportionate share of the recognised amounts of acquiree's identifiable net assets. Acquisition-related costs are expensed as incurred.

If the business combination is achieved in stages, the acquisition date carrying value of the acquirer's previously held equity interest in the acquiree is re-measured to fair value at the acquisition date; any gains or losses arising from such re-measurement are recognised in profit or loss.

Any contingent consideration to be transferred by the Group is recognised at fair value at the acquisition date. Subsequent changes to the fair value of the contingent consideration that is deemed to be an asset or liability is recognised in accordance with IAS 39 either in profit or loss or as a change to other comprehensive income. Contingent consideration that is classified as equity is not re-measured, and its subsequent settlement is accounted for within equity.

Inter-company transactions, balances and unrealised gains on transactions between Group companies are eliminated. Unrealised losses are also eliminated. When necessary, amounts reported by subsidiaries have been adjusted to conform with the Group's accounting policies.

Transactions with non-controlling interests that do not result in loss of control are accounted for as equity transactions—that is, as transactions with the owners in their capacity as owners. The difference between fair value of any consideration paid and the relevant share acquired of the carrying

1. ACCOUNTING POLICIES (Continued)

value of net assets of the subsidiary is recorded in equity. Gains or losses on disposals to non-controlling interests are also recorded in equity.

When the Group ceases to have control any retained interest in the entity is remeasured to its fair value at the date when control is lost, with the change in carrying amount recognised in profit or loss. The fair value is the initial carrying amount for the purposes of subsequently accounting for the retained interest as an associate, joint venture or financial asset. In addition, any amounts previously recognised in other comprehensive income in respect of that entity are accounted for as if the Group had directly disposed of the related assets or liabilities. This may mean that amounts previously recognised in other comprehensive income are reclassified to profit or loss.

Special purpose entities ("SPE")

An SPE is consolidated if, based on an evaluation of the substance of its relationship with the Group and the SPE's risks and rewards, the Group concludes that it controls the SPE. The Group has established an SPE, Ineos Finance Ireland Limited, for a debt securitisation programme. The Group does not have any direct or indirect shareholdings in this SPE. Ineos Finance Ireland Limited is controlled by the Group as it was established under terms that impose strict limitations on the decision-making powers of the SPE's management that result in the Group receiving the majority of the benefits related to the SPE's operations and net assets, being exposed to the majority of risks arising from the SPE's activities, and retaining the majority of the residual or ownership risks related to the SPE and its assets. Ineos Finance Ireland Limited is therefore regarded as an SPE and has been consolidated in these financial statements.

Associates

Associates are all entities over which the Group has significant influence but not control, generally accompanying a shareholding of between 20% and 50% of the voting rights. Investments in associates are accounted for using the equity method of accounting. Under the equity method, the investment is initially recognised at cost, and the carrying amount is increased or decreased to recognise the investor's share of the profit or loss of the investee after the date of acquisition. The Group's investment in associates includes goodwill identified on acquisition. If the ownership interest in an associate is reduced but significant influence is retained, only a proportionate share of the amounts previously recognised in other comprehensive income is reclassified to profit or loss where appropriate.

The Group's share of post-acquisition profit or loss is recognised in the income statement, and its share of post-acquisition movements in other comprehensive income is recognised in other comprehensive income with a corresponding adjustment to the carrying amount of the investment. When the Group's share of losses in an associate equals or exceeds its interest in the associate, including any other unsecured receivables, the Group does not recognise further losses, unless it has incurred legal or constructive obligations or made payments on behalf of the associate.

The Group determines at each reporting date whether there is any objective evidence that the investment in the associate is impaired. If this is the case, the Group calculates the amount of impairment as the difference between the recoverable amount of the associate and its carrying value and recognises the amount adjacent to 'share of profit/(loss) of associates' in the income statement.

1. ACCOUNTING POLICIES (Continued)

Profits and losses resulting from upstream and downstream transactions between the Group and its associate are recognised in the Group's financial statements only to the extent of unrelated investor's interests in the associates. Unrealised losses are eliminated unless the transaction provides evidence of an impairment of the asset transferred. Accounting policies of associates have been changed where necessary to ensure consistency with the policies adopted by the Group.

Dilution gains and losses arising in investments in associates are recognised in the income statement.

Joint arrangements

The Group applies IFRS 11 to all joint arrangements. Under IFRS 11 investments in joint arrangements are classified as either joint operations or joint ventures depending on the contractual rights and obligations of each investor. The Group has assessed the nature of its joint arrangements and determined them to be joint ventures. Joint ventures are accounted for using the equity method.

Under the equity method of accounting, interests in joint ventures are initially recognised at cost and adjusted thereafter to recognise the Group's share of the post-acquisition profits or losses and movements in other comprehensive income. When the Group's share of losses in a joint venture equals or exceeds its interests in the joint ventures (which includes any long-term interests that, in substance, form part of the Group's net investment in the joint ventures), the Group does not recognise further losses, unless it has incurred obligations or made payments on behalf of the joint ventures.

Unrealised gains on transactions between the group and its joint ventures are eliminated to the extent of the Group's interest in the joint ventures. Unrealised losses are also eliminated unless the transaction provides evidence of an impairment of the asset transferred. Accounting policies of the joint ventures have been changed where necessary to ensure consistency with the policies adopted by the Group.

Foreign exchange

Transactions in foreign currencies are translated to the respective functional currencies of Group entities at the foreign exchange rate ruling at the date of the transaction. Monetary assets and liabilities denominated in foreign currencies at the reporting date are retranslated to the functional currency at the foreign exchange rate ruling at that date. Foreign exchange differences arising on translation are recognised in the consolidated income statement except for differences arising on the retranslation of a financial liability designated as a hedge of the net investment in a foreign operation, or qualifying cash flow hedges, which are recognised in other comprehensive income. Non-monetary assets and liabilities that are measured in terms of historical cost in a foreign exchange are translated using the exchange rate at the date of the transaction. Non-monetary assets and liabilities denominated in foreign currencies that are stated at fair value are retranslated to the functional currency at foreign exchange rates ruling at the dates the fair value was determined.

The assets and liabilities of foreign operations, including goodwill and fair value adjustments arising on consolidation, are translated to the Group's presentational currency, euros, at foreign exchange rates ruling at the reporting date. The revenues and expenses of foreign operations are translated at exchange rates prevailing at the dates of the transactions. The Group applies an average

1. ACCOUNTING POLICIES (Continued)

rate for the year where this rate approximates to the foreign exchange rates ruling at the dates of the transactions. Exchange differences arising from this translation of foreign operations are taken directly to the translation reserve. They are recycled into the consolidated income statement upon disposal.

Exchange differences arising from a monetary item receivable from or payable to a foreign operation, the settlement of which is neither planned nor likely in the foreseeable future, are considered to form part of a net investment in a foreign operation and are recognised directly in equity in the translation reserve. Foreign exchange differences arising on the retranslation of a borrowing designated as a hedge of a net investment in a foreign operation are recognised directly in equity, in the translation reserve, to the extent that the hedge is effective. When the hedged part of a net investment is disposed of, the associated cumulative amount in equity is transferred to profit or loss as an adjustment to the profit or loss on disposal.

Classification of financial instruments issued by the Group

Financial instruments issued by the Group are treated as equity only to the extent that they meet the following two conditions:

(a) they include no contractual obligations upon the Group to deliver cash or other financial assets or to exchange financial assets or financial liabilities with another party under conditions that are potentially unfavourable to the Group; and

(b) where the instrument will or may be settled in the company's own equity instruments, it is either a non-derivative that includes no obligation to deliver a variable number of the company's own equity instruments or is a derivative that will be settled by the company's exchanging a fixed amount of cash or other financial assets for a fixed number of its own equity instruments.

To the extent that this definition is not met, the proceeds of issue are classified as a financial liability. Where the instrument so classified takes the legal form of the company's own shares, the amounts presented in these financial statements for called up share capital and share premium account exclude amounts in relation to those shares.

Non-derivative financial instruments

Non-derivative financial instruments comprise investments in equity and debt securities, trade and other receivables, cash and cash equivalents, loans and borrowings, and trade and other payables.

Trade and other receivables

Trade and other receivables are recognised initially at fair value plus transaction costs that are directly attributable to the acquisition or issue. Subsequent to initial recognition they are measured at amortised cost using the effective interest method, less any impairment losses.

1. ACCOUNTING POLICIES (Continued)

Trade and other payables

Trade and other payables are recognised initially at fair value less transaction costs that are directly attributable to the acquisition or issue. Subsequent to initial recognition they are measured at amortised cost using the effective interest method.

Investments in debt and equity securities

Investments in loans and receivables are stated at amortised cost less impairment.

Other investments in debt and equity securities held by the Group are classified as being available-for-sale and are stated at fair value, with any resultant gain or loss being recognised in other comprehensive income (in a fair value reserve), except for impairment losses and, in the case of monetary items such as debt securities, foreign exchange gains and losses. When these investments are derecognised, the cumulative gain or loss previously recognised directly in equity is recognised in profit or loss. Where these investments are interest-bearing, interest calculated using the effective interest method is recognised in profit or loss. Where no reliable measurement of fair value is available, available-for-sale investments are stated at historic acquisition cost (see Note 15).

Cash and cash equivalents

Cash and cash equivalents comprise cash balances and call deposits. Bank overdrafts that are repayable on demand and form an integral part of the Group's cash management are included as a component of cash and cash equivalents for the purpose only of the statement of cash flows.

Interest-bearing borrowings

Interest-bearing borrowings are recognised initially at fair value less attributable transaction costs. Subsequent to initial recognition, interest-bearing borrowings are stated at amortised cost using the effective interest method.

Debt restructuring

The Group derecognises financial liabilities in accordance with the provisions in IAS 39. When debt is modified, the Group analyses the modifications from both a quantitative and qualitative perspective to determine if the modifications are substantial and meet the IFRS requirements for derecognition, in which case the debt is treated as extinguished. All fees paid in connection with a debt extinguishment are expensed immediately. When a modification is accounted for as a non-substantial modification, associated fees incurred are deferred as an adjustment to the carrying value of the liability and amortised using the effective interest method.

Derivative financial instruments and hedging

Derivative financial instruments

Derivative financial instruments are initially recognised at fair value. The gain or loss on subsequent remeasurement to fair value is recognised immediately in the consolidated income

1. ACCOUNTING POLICIES (Continued)

statement as finance income or expense. Where derivatives qualify for hedge accounting, recognition of any resultant gain or loss depends on the nature of the item being hedged (see below).

Cash flow hedges

Where a derivative financial instrument is designated as a hedge of the variability in cash flows of a recognised asset or liability, or a highly probable forecast transaction, the effective part of any gain or loss on the derivative financial instrument is recognised directly in the hedging reserve. Any ineffective portion of the hedge is recognised immediately in the consolidated income statement as finance income or expense.

When the forecast transaction subsequently results in the recognition of a non-financial asset or non-financial liability, the associated cumulative gain or loss is removed from the hedging reserve and is included in the initial carrying amount of the non-financial asset or liability.

If a hedge of a forecast transaction subsequently results in the recognition of a financial asset or a financial liability, the associated gains and losses that were recognised directly in equity are reclassified into profit or loss in the same period or periods during which the asset acquired or liability assumed affects profit or loss, e.g. when interest income or expense is recognised.

For cash flow hedges, other than those covered by the preceding two policy statements, the associated cumulative gain or loss is removed from equity and included in the consolidated income statement as an adjustment to revenue and cost of sales in the same period or periods during which the hedged forecast transaction affects revenue and cost of sales in the consolidated income statement.

When a hedging instrument expires or is sold, terminated or exercised, or the Group revokes designation of the hedge relationship but the hedged forecast transaction is still expected to occur, the cumulative gain or loss at that point remains in equity and is recognised in accordance with the above policy when the transaction occurs. If the hedged transaction is no longer expected to take place, the cumulative unrealised gain or loss recognised in equity is recognised in the consolidated income statement immediately.

Hedge of net investment in foreign operation

The Group applies hedge accounting to foreign exchange differences arising on the retranslation of a foreign currency loan where the loan is designated as a hedge of a net investment in a foreign operation in accordance with IAS 21 and IAS 39.

Exchange differences arising on retranslation of foreign currency loans designated as a net investment hedge are taken directly to equity via the consolidated statement of comprehensive income. Gains and losses accumulated in the translation reserve will be recycled to the statement of comprehensive income when the foreign operation is sold.

Property, plant and equipment

Property, plant and equipment are stated at cost less accumulated depreciation and accumulated impairment losses.

1. ACCOUNTING POLICIES (Continued)

Cost includes expenditure that is directly attributable to the acquisition of the asset. Cost may include the cost of materials, labour and other costs directly attributable to bringing the assets to a working condition for their intended use. Cost may also include the cost of dismantling and removing items and restoring the site on which they are located.

Where parts of an item of property, plant and equipment have different useful lives, they are accounted for as separate items of property, plant and equipment.

Leases in which the Group assumes substantially all the risks and rewards of ownership of the leased asset are classified as finance leases. Where land and buildings are held under leases the accounting treatment of the land is considered separately from that of the buildings. Leased assets acquired by way of finance lease are stated at an amount equal to the lower of their fair value and the present value of the minimum lease payments at inception of the lease, less accumulated depreciation and less accumulated impairment losses. The assets are depreciated over the shorter of their useful life or asset lease term. Lease payments are accounted for as described below.

Depreciation is charged to the consolidated income statement on a straight-line basis over the estimated useful lives of each part of an item of property, plant and equipment. Depreciation commences from the date an asset is brought into service. Land and assets in the course of construction are not depreciated. The estimated useful lives are as follows:

- Buildings . . . . 10 - 40 years
- Plant and equipment and fixtures and fittings . . . . 3 - 40 years

Depreciation methods, useful lives and residual values are reviewed at each reporting date.

The carrying values of property, plant and equipment are reviewed for impairment when events or changes in circumstances indicate that the carrying value may not be recoverable. Where an indicator of impairment exists, the Group makes an estimate of the recoverable amount, which is the higher of the asset's fair value less cost to sell and value in use. Where the carrying amount of an asset exceeds its recoverable amount, the asset is considered impaired and is written down to its recoverable amount.

Assets are derecognised upon disposal or when no future economic benefits are expected to arise from the continued use of the asset. Any gain or loss arising on de-recognition of the asset (calculated as the difference between the net disposal proceeds and the carrying value of the asset) is included in the consolidated income statement in the period in which the item is derecognised.

Business combinations, goodwill and intangible assets

All business combinations are accounted for by applying the purchase method, except acquisitions under common control which are outside the scope of IFRS 3. Goodwill represents amounts arising on acquisition of subsidiaries, associates and jointly controlled entities. In respect of business acquisitions that have occurred since 1 January 2007, goodwill represents the difference between the cost of the acquisition and the net fair value of the identifiable assets, liabilities and contingent liabilities acquired. For any acquisitions occurring on or after 1 January 2009, all transaction costs are expensed as incurred.

1. ACCOUNTING POLICIES (Continued)

Acquisitions under common control are accounted for at book value. The difference in the book value of the assets acquired and consideration paid is recognised in retained earnings.

Goodwill is stated at cost less any accumulated impairment losses. Goodwill is allocated to groups of cash-generating units and is not amortised but is tested annually for impairment. At Ineos, cash generating units are predominately business units. In respect of equity accounted investees, the carrying amount of goodwill is included in the carrying amount of the investment in the investee.

Negative goodwill arising on an acquisition is recognised immediately in the consolidated income statement.

Intangible assets

Intangible assets that are acquired by the Group are stated at cost less accumulated amortisation and accumulated impairment losses. These intangible assets principally comprise intellectual property rights, customer relationships, non-compete agreements and license fees.

Intangible assets acquired separately from a business are carried initially at cost. The initial cost is the aggregate amount paid and the fair value of other consideration given to acquire the assets. An intangible asset acquired as part of a business combination is recognised separately from goodwill if the asset is separable or arises from contractual or other legal rights and its fair value can be measured reliably.

Amortisation

Amortisation is charged to the consolidated income statement on a straight-line basis over the estimated useful lives of intangible assets unless such lives are indefinite. Intangible assets with an indefinite useful life and goodwill are systematically tested for impairment at each reporting date. Other intangible assets are amortised from the date they are available for use. The estimated useful lives are as follows:

- Customer relationships . . . . 3 - 12 years
- Intellectual property rights . . . . 10 - 15 years
- Non-compete agreements . . . . life of the agreement
- Licenses . . . . up to 15 years

These intangible assets are tested for impairment at the end of the reporting period if events or changes in circumstances indicate that the carrying value may not be recoverable. Useful lives are examined on an annual basis and adjustments, where applicable, are made on a prospective basis.

Research and development

Expenditure on research activities is recognised in the consolidated income statement as an expense as incurred.

Expenditure on development activities is capitalised if the product or process is technically and commercially feasible and the Group intends to and has the technical ability and sufficient resources to complete development, future economic benefits are probable and if the Group can measure reliably

1. ACCOUNTING POLICIES (Continued)

the expenditure attributable to the intangible asset during its development. Development activities involve a plan or design for the production of new or substantially improved products or processes. The expenditure capitalised includes the cost of materials, direct labour and an appropriate proportion of overheads. Where regulatory and other uncertainties are such that the criteria are not met, the expenditure is recognised in the income statement. Other development expenditure is recognised in the income statement as an expense as incurred. Capitalised development expenditure is stated at cost less accumulated amortisation and less accumulated impairment losses.

Impairment excluding inventories and deferred tax assets

The carrying amounts of the Group's assets are assessed at the end of the reporting period to determine whether there is any indication of impairment. A financial asset is considered to be impaired if objective evidence indicates that one or more events have had a negative effect on the estimated future cash flows of that asset. If any such indication exists, the asset's recoverable amount is estimated.

For goodwill and other intangible assets that have an indefinite useful life and intangible assets that are not yet available for use, the recoverable amount is estimated at the end of the reporting period.

An impairment loss is recognised whenever the carrying amount of an asset or its cash-generating unit exceeds its recoverable amount. Impairment losses are recognised in the consolidated income statement.

Impairment losses recognised in respect of cash-generating units are allocated first to reduce the carrying amount of any goodwill allocated to cash-generating units and then to reduce the carrying amount of the other assets in the unit on a pro rata basis. A cash generating unit is the smallest identifiable group of assets that generates cash inflows that are largely independent of the cash inflows from other assets or groups of assets.

When a decline in the fair value of an available-for-sale financial asset has been recognised directly in equity and there is objective evidence that the asset is impaired, the cumulative loss that had been recognised directly in equity is recognised in profit or loss even though the financial asset has not been derecognised. The amount of the cumulative loss that is recognised in profit or loss is the difference between the acquisition cost and current fair value, less any impairment loss on that financial asset previously recognised in profit or loss.

Calculation of recoverable amount

The recoverable amount of the Group's receivables is calculated as the present value of estimated future cash flows, discounted at the original effective interest rate (i.e. the effective interest rate computed at initial recognition of these financial assets). Receivables are not discounted where their duration is less than one year or where the effect of discounting is not material.

The recoverable amount of other assets is the greater of their fair values less costs to sell and value in use. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset.

1. ACCOUNTING POLICIES (Continued)

For an asset that does not generate largely independent cash inflows, the recoverable amount is determined for the cash-generating unit to which the asset belongs.

Reversals of impairment

An impairment loss in respect of a held-to-maturity security or receivable carried at amortised cost is reversed if the subsequent increase in recoverable amount can be related objectively to an event occurring after the impairment loss was recognised.

An impairment loss in respect of an investment in an equity instrument classified as available for sale is not reversed through profit or loss. If the fair value of a debt instrument classified as available-for-sale increases and the increase can be objectively related to an event occurring after the impairment loss was recognised in profit or loss, the impairment loss is reversed through profit or loss.

An impairment loss in respect of goodwill is not reversed.

In respect of other assets, an impairment loss is reversed when there is an indication that the impairment loss may no longer exist and there has been a change in the estimates used to determine the recoverable amount.

An impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortisation, if no impairment loss had been recognised.

Inventories

Inventories are stated at the lower of average cost and net realisable value. Cost includes expenditure incurred in acquiring the inventories, production or conversion costs and other costs in bringing them to their existing location and condition. In the case of manufactured inventories and work in progress, cost includes an appropriate share of overheads based on normal operating capacity. Provision is made for obsolete, slow-moving or defective items where appropriate.

Items owned by the Group that are held on consignment at another entity's premises are included as part of the Group's inventory.

Commodities

Contracts that are entered into and continue to be held for the purpose of receipt or delivery of non-financial items in accordance with the company's expected purchase, sale or usage requirements (own-use contracts) are not accounted for as derivative financial instruments, but rather as executory contracts.

Employee benefits

The Group operates a number of defined contribution plans and funded and unfunded defined benefit pension schemes. The Group also provides unfunded early retirement benefits, long service awards and an incentive plan for certain employees.

1. ACCOUNTING POLICIES (Continued)

The Group provides health care insurance to eligible retired employees and their dependants, primarily in the United States.

Defined contribution plans

A defined contribution plan is a post-employment benefit plan under which the Group pays fixed contributions into a separate entity and will have no legal or constructive obligation to pay further amounts. Obligations for contributions to defined contribution pension plans are recognised as an expense in the consolidated income statement as incurred.

Defined benefit plans

A defined benefit plan is a post-employment benefit plan other than a defined contribution plan. The Group's net obligation in respect of defined benefit pension plans and other post employment benefits is calculated separately for each plan by estimating the amount of future benefit that employees have earned in return for their service in the current and prior periods; that benefit is discounted to determine its present value, and the fair value of any plan assets (at bid price) are deducted. The liability discount rate is the yield at the reporting date on AA credit rated bonds denominated in the currency of, and that have maturity dates approximating to the terms of, the Group's obligations. The calculation is performed by a qualified actuary using the projected unit credit method.

When the benefits of a plan are amended or curtailed, the portion of the increased or decreased benefit relating to past service by employees is recognised as an expense immediately in the consolidated income statement.

All actuarial gains and losses as at 1 January 2007, the date of transition to IFRSs, were recognised. In respect of actuarial gains and losses that arise subsequent to 1 January 2007, the Group recognises them in the period they occur directly in equity through the statement of comprehensive income.

Where the calculation results in a benefit to the Group, the asset recognised is limited to the present value of any future refunds from the plan or reductions in future contributions to the plan.

The pension scheme surplus (to the extent that it is recoverable) or deficit is recognised in full.

The movement in the scheme surplus/deficit is split between:

- cost of sales and administrative expenses,
- net finance costs and,
- in net expense recognised directly in equity, the remeasurements of post employment benefit obligations.

Short-term benefits

Short-term employee benefit obligations are measured on an undiscounted basis and are expensed as the related service is provided. A liability is recognised for the amount expected to be paid

1. ACCOUNTING POLICIES (Continued)

under short-term cash bonus or profit-sharing plans if the Group has a present legal or constructive obligation to pay this amount as a result of past service provided by the employee and the obligation can be estimated reliably.

Provisions

A provision is recognised in the consolidated balance sheet when the Group has a present legal or constructive obligation as a result of a past event, that can be reliably measured and it is probable that an outflow of economic benefits will be required to settle the obligation. Provisions are determined by discounting the expected future cash flows at a pre-tax rate that reflects risks specific to the liability.

Share capital

Ordinary shares are classified as equity. Incremental costs directly attributable to the issue of new shares are shown in equity as a deduction, net of tax, from the proceeds.

Revenue

Revenue represents the invoiced value of products sold or services provided to third parties net of sales discounts, value added taxes and duties. Revenue is recognised when the significant risks and rewards of ownership have passed to the buyer and it can be reliably measured.

The pricing for products sold is determined by market prices (market contracts and arrangements) or is linked by a formula to published raw material prices plus an agreed additional amount (formula contracts). Revenue arising from the sale of goods is recognised when the goods are either dispatched or delivered depending on the relevant delivery terms and the point at which risks and rewards have been transferred to the buyer when the prices are determinable and when collectability is considered probable.

Services provided to third parties include administrative and operational services provided to other chemical companies with units on our sites and services under tolling arrangements. Under tolling arrangements, customers pay for or provide raw materials to be converted into a certain specified product, for which the Group charges a toll fee. The Group only recognises the toll fee as revenue earned under such arrangements upon shipment of the converted product to the customer as this is the point at which risks and rewards have been transferred to the buyer. For all other services, revenue is recognised upon completion of the service provided.

Government grants

Government grants are shown in the consolidated balance sheet as deferred income. This income is amortised on a straight line basis over the same period as the tangible fixed asset to which it relates or the life of the related project.

1. ACCOUNTING POLICIES (Continued)

Expenses

Operating lease payments

Payments made under operating leases are recognised in the consolidated income statement on a straight-line basis over the term of the lease. Lease incentives received are recognised in the consolidated income statement as an integral part of the total lease expense.

Finance lease payments

Minimum lease payments are apportioned between the finance charge and the reduction of the outstanding liability. The finance charge is allocated to each period during the lease term so as to produce a constant periodic rate of interest on the remaining balance of the liability.

Finance income and expenses

Interest income and interest expense are recognised in the consolidated income statement as it accrues, using the effective interest method. Dividend income is recognised in the consolidated income statement on the date the entity's right to receive payments is established. Foreign exchange gains and losses are reported on a gross basis.

Finance costs comprise interest payable, finance charges on finance leases, unwinding of the discount on provisions, net fair value losses on derivatives, net interest on employee benefit liabilities and foreign exchange losses that are recognised in the consolidated income statement (see foreign exchange accounting policy). Finance income comprises interest receivable on funds invested and from related party loans, net fair value gains on derivatives and foreign exchange gains.

Taxation

Tax on the profit or loss for the year comprises current and deferred tax. Tax is recognised in the consolidated income statement except to the extent that it relates to items recognised directly in equity, in which case it is recognised in equity.

Current tax is the expected tax payable on the taxable income for the year, using tax rates enacted or substantively enacted at the end of the reporting period, and any adjustment to tax payable in respect of previous years.

Deferred tax is provided on temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes. The following temporary differences are not provided for: the initial recognition of goodwill; the initial recognition of assets or liabilities that affect neither accounting nor taxable profit other than in a business combination; and differences relating to investments in subsidiaries to the extent that they will probably not reverse in the foreseeable future. The amount of deferred tax provided is based on the expected manner of realisation or settlement of the carrying amount of assets and liabilities, using tax rates enacted or substantively enacted at the end of the reporting period. A deferred tax asset is recognised only to the extent that it is probable that future taxable profits will be available against which the temporary difference can be utilised.

1. ACCOUNTING POLICIES (Continued)

Segmental analysis

The Group determines its operating segments in a manner consistent with the internal reporting provided to the chief operating decision-makers. The chief operating decision-makers are responsible for allocating resources and assessing performance of the operating segments. The chief operating decision-makers are the members of the Executive Committee of the ultimate parent undertaking, Ineos Limited. The members of this committee are the previous company board members and the information presented is unchanged from prior year and therefore there is no change to the segment information presented.

An operating segment is a component of the Group that engages in business activities from which it may earn revenues and incur expenses, including revenues and expenses that relate to transactions with any of the Group's other components and for which discrete financial information is available. An operating segment's operating results are reviewed regularly by the chief operating decision-makers to make decisions about resources to be allocated to the segment and assess its performance.

The Group's primary format for segment reporting is based on business segments. The business segments are determined based on the Group's management and internal reporting structure and the aggregation criteria set out in IFRS 8.

Segment results that are reported to the chief operating decision-makers include items directly attributable to a segment as well as those that can be allocated on a reasonable basis.

Segment capital expenditure is the total payments made during the period to acquire property, plant and equipment and intangible assets other than as acquired through business combinations.

Emission trading scheme

The Group participates in the EU Emissions Trading Scheme. The Scheme encourages companies to reduce carbon emissions by offering financial incentives if they achieve their annual reduction targets. If a company reduces emissions beyond their target then the surplus may be traded in the form of emissions permits.

The incentive money due from the EU Emissions Trading Scheme is recognised in the consolidated income statement once the reduction targets have been met. The emissions permits allocated under the Scheme are at nil cost. The Group recognises the revenue from such permits upon their sale to third parties.

The Group recognises a provision for emissions produced. The provision is measured at the carrying amount of the emission rights held (nil if granted, otherwise at cost) or, in the case of a shortfall, at the current fair value of the emission rights needed.

Exceptional items

The presentation of the Group's results separately identifies the effect of profits and losses on the disposal of businesses, the impairment of non-current assets, the cost of restructuring acquired businesses, the impact of one off events such as legal settlements or finance costs relating to call

1. ACCOUNTING POLICIES (Continued)

premia and write-off of unamortised debt issue costs following substantial modification or redemption of debt as exceptional items. Results excluding disposals, impairments, restructuring costs and one off items are used by management and are presented in order to provide readers with a clear and consistent presentation of the underlying operating performance of the Group's ongoing business.

Accounting standards not applied

A number of new accounting standards are effective for annual periods beginning after 1 January 2018 and earlier application is permitted. However, the Group has not early adopted the new or amended standards in preparing these consolidated financial statements.

The impact of their adoption is being assessed and is not expected to have a material effect on the financial statements unless otherwise indicated:

- ***IFRS 15 Revenue from Contracts with Customers*** **(mandatory for year commencing on or after 1 January 2018 with early adoption permitted).**

IFRS 15 establishes a comprehensive framework for determining whether, how much and when revenue is recognised and replaces existing revenue recognition guidance, including IAS 18 Revenue, IAS 11 Construction Contracts and IFRIC 13 Customer Loyalty Programmes. IFRS 15 introduces a five-step model to determine when to recognise revenue and at what amount, based on transfer of control over goods or services to the customer. New qualitative and quantitative disclosures will also be required.

i. Contracts for goods and services

Currently, revenue arising from the sale of goods is recognised when the goods are either dispatched or delivered depending on the relevant delivery terms, the point at which risks and rewards have been transferred to the buyer, when the prices are determinable, and when collectability is considered probable.

The Group has analysed its material contracts for goods and services, and identified that a number of contracts include distinct performance obligations. The Group's assessment indicates that this will result, in a limited number of cases, revenue for certain performance obligations (being primarily separate shipping obligations) being recognised later than under current policies. However the Group has assessed that the application of IFRS 15 would not have a material impact on revenues recognised.

Certain customer contracts offer various forms of volume or early payment discount. Revenue is currently recognised when a reasonable estimate of the discount can be made, and provided that all other criteria for revenue recognition are met. Under IFRS 15, revenue will be only be recognised for these contracts to the extent that it is highly likely that a significant reversal in the amount of cumulative revenue recognised will not occur. The Group has assessed that this change will not result in any material impact on the timing of revenue recognition.

1. ACCOUNTING POLICIES (Continued)

ii. Transition

Changes in accounting policies resulting from the adoption of IFRS 15 will be applied retrospectively with the effect of initially applying the standard recognised at the date of the earliest comparative period (i.e. 1 January 2016). The Group plans to take advantage of the practical expedients offered on transition to IFRS 15 as presented below.

- The Group will take advantage of the exemption to not restate completed contracts that begin and end within the same annual reporting period or to restate contracts that are completed contracts at the beginning of the earliest comparative period presented.
- The Group will use the transaction price at the date on which the contract was completed, rather than estimating the variable consideration amounts in each comparative reporting period.
- The Group will take advantage of the exemption to not separately evaluate the effects of contract modifications before the beginning of the earliest reporting period presented using the contract modifications requirements in the new standard. Instead, the Group will reflect the aggregate effect of all of the modifications that occur before the beginning of the earliest period presented in:
  - identifying the satisfied and unsatisfied performance obligations;
  - determining the transaction price; and
  - allocating the transaction price to the satisfied and unsatisfied performance obligations.
- The Group will take advantage of the exemption to not disclose for reporting periods presented before the date of initial application (i.e. 1 January 2018):
  - the amount of the transaction price allocated to the remaining performance obligations; nor
  - an explanation of when the entity expects to recognise that amount as revenue.

- ***IFRS 9 Financial Instruments* (mandatory for year commencing on or after 1 January 2018 with early adoption permitted).**

IFRS 9 Financial Instruments sets out requirements for recognising and measuring financial assets, financial liabilities and some contracts to buy or sell non-financial items. This standard replaces IAS 39 Financial Instruments: Recognition and Measurement.

i. Classification—Financial assets

IFRS 9 contains a new classification and measurement approach for financial assets that reflects the business model in which assets are managed and their cash flow characteristics.

IFRS 9 contains three principal classification categories for financial assets: measured at amortised cost, fair value through other comprehensive income (FVOCI) and fair value through profit and loss (FVTPL). The standard eliminates the existing IAS 39 categories of held to maturity, loans and receivables and available for sale. The classification of financial assets under IFRS 9 is generally

1. ACCOUNTING POLICIES (Continued)

based on the business model in which a financial asset is managed and its contractual cash flow characteristics.

Under IFRS 9, derivatives embedded in contracts where the host is a financial asset in the scope of the standard are never bifurcated. Instead, the hybrid financial instrument as a whole is assessed for classification.

Based on its assessment, the Group does not believe that the new classification requirements will have a material impact on its accounting for financial assets or liabilities.

At 31 December 2017, the Group had a debt investment classified as loans and receivables with a carrying value of €238.5 million. Under IFRS 9, the Group has designated this investment as measured at FVTPL.

At 31 December 2017, the Group had equity investments classified as available-for-sale with a fair value of €28.3 million that are held for long-term strategic purposes. Under IFRS 9, the Group has designated these investments as measured at FVOCI. Consequently, all fair value gains and losses will be reported in OCI, no impairment losses will be recognised in profit or loss and no gains or losses will be reclassified to profit or loss on disposal.

ii. Impairment—Financial assets and contract assets

IFRS 9 replaces the ‘incurred loss’ model in IAS 39 with a forward-looking ‘expected credit loss’ (ECL) model. This will require considerable judgement about how changes in economic factors affect ECLs, which will be determined on a probability-weighted basis.

The new impairment model will apply to financial assets measured at amortised cost or FVOCI, except for investments in equity instruments, and to contract assets.

Under IFRS 9, loss allowances will be measured on either of the following bases:

- 12-month ECLs: these are ECLs that result from possible default events within the 12 months after the reporting date; and
- lifetime ECLs: these are ECLs that result from all possible default events over the expected life of a financial instrument.

Lifetime ECL measurement applies if the credit risk of a financial asset at the reporting date has increased significantly since initial recognition and 12-month ECL measurement applies if it has not.

All financial assets are in the scope of the impairment model except for financial instruments measured at FVTPL or FVOCI.

As a practical expedient the Lifetime ECL measurement applies for trade receivables and contract assets without a significant financing component.

The application of IFRS 9’s impairment requirements at 1 January 2018 requires a change of impairment methodology; however the Group has estimated that application of the lifetime ECL measurement will not result in any material change to the impairment losses.

1. ACCOUNTING POLICIES (Continued)

iii. Classification—Financial liabilities

IFRS 9 largely retains the existing requirements in IAS 39 for the classification of financial liabilities.

However, under IAS 39 all fair value changes of liabilities designated as at FVTPL are recognised in profit or loss, whereas under IFRS 9 these fair value changes are generally presented as follows:

- the amount of change in the fair value that is attributable to changes in the credit risk of the liability is presented in OCI; and
- the remaining amount of change in the fair value is presented in profit or loss.

The Group's assessment did not indicate any material impact regarding the classification of financial liabilities at 1 January 2018.

iv. Hedge accounting

When initially applying IFRS 9, the Group may choose as its accounting policy to continue to apply the hedge accounting requirements of IAS 39 instead of the requirements in IFRS 9. The Group has chosen to apply the new requirements of IFRS 9.

The Group's preliminary assessment indicates that the types of hedge accounting relationships that the Group currently designates should be capable of meeting the requirements of IFRS 9 if the Group completes certain planned changes to its internal documentation and monitoring processes.

As the Group is not applying hedge accounting as at 31 December 2017, the application of IFRS 9's hedge accounting requirements at 1 January 2018 will not have a material impact.

v. Disclosures

IFRS 9 will require extensive new disclosures, in particular regarding credit risk and ECLs. The Group's assessment included an analysis to identify data gaps against current processes and the Group is in the process of implementing the system and controls changes that it believes will be necessary to capture the required data.

vi. Transition

Changes in accounting policies resulting from the adoption of IFRS 9 will generally be applied retrospectively, except as described below.

- The Group will take advantage of the exemption allowing it not to restate comparative information for prior periods with respect to classification and measurement (including impairment) changes. Differences in the carrying amounts of financial assets and financial liabilities resulting from the adoption of IFRS 9 will generally be recognised in retained earnings and reserves as at 1 January 2018.
- The new hedge accounting requirements should generally be applied prospectively.

1. ACCOUNTING POLICIES (Continued)

- The following assessments have to be made on the basis of the facts and circumstances that exist at the date of initial application.
  - The determination of the business model within which a financial asset is held.
  - The designation and revocation of previous designations of certain financial assets and financial liabilities as measured at FVTPL.
  - The designation of certain investments in equity instruments not held for trading as FVOCI.

- **IFRS 16 Leases (mandatory for year commencing on or after 1 January 2019 with early adoption permitted only for companies that also apply IFRS 15 Revenue from Contracts with Customers).**

IFRS 16 replaces existing leasing guidance, including IAS 17 Leases, IFRIC 4 Determining whether an Arrangement contains a Lease, SIC-15 Operating Leases—Incentives and SIC-27 Evaluating the Substance of Transactions Involving the Legal Form of a Lease.

The standard is effective for annual periods beginning on or after 1 January 2019. Early adoption is permitted for entities that apply IFRS 15 at or before the date of initial application of IFRS 16.

IFRS 16 introduces a single, on-balance sheet lease accounting model for lessees. A lessee recognises a right-of-use asset representing its right to use the underlying asset and a lease liability representing its obligation to make lease payments. There are recognition exemptions for short-term leases and leases of low-value items. Lessor accounting remains similar to the current standard—i.e. lessors continue to classify leases as finance or operating leases.

The Group has completed an initial assessment of the potential impact on its consolidated financial statements but has not yet completed its detailed assessment. The actual impact of applying IFRS 16 on the financial statements in the period of initial application will depend on future economic conditions, including the Group's borrowing rate at 1 January 2019, the composition of the Group's lease portfolio at that date, the Group's latest assessment of whether it will exercise any lease renewal options and the extent to which the Group chooses to use practical expedients and recognition exemptions.

So far, the most significant impact identified is that the Group will recognise new assets and liabilities for its operating leases of vessels, storage and transportation infrastructure. As at 31 December 2017, the Group's future minimum lease payments under non-cancellable operating leases amounted to €1,097.9 million, on an undiscounted basis (see Note 27).

In addition, the nature of expenses related to those leases will now change as IFRS 16 replaces the straight-line operating lease expense with a depreciation charge for right-of-use assets and interest expense on lease liabilities.

No significant impact is expected for the Group's finance leases.

1. ACCOUNTING POLICIES (Continued)

i. Transition approach

The Group has a number of arrangements that are not in the legal form of a lease, for which it concluded that the arrangement contains a lease of equipment under IFRIC 4. On transition to IFRS 16, the Group can choose whether to:

- apply the IFRS 16 definition of a lease to all its contracts; or
- apply a practical expedient and not reassess whether a contract is, or contains, a lease.

The Group does not plan to apply the practical expedient to grandfather the definition of a lease on transition. This means that the new definition of a lease under IFRS 16 will be applied to all of the contracts in place on transition.

As a lessee, the Group can either apply the standard using a:

- retrospective approach; or
- modified retrospective approach with optional practical expedients.

The lessee applies the election consistently to all of its leases.

The Group plans to apply IFRS 16 initially on 1 January 2019, using the modified retrospective approach. Therefore, the cumulative effect of adopting IFRS 16 will be recognised as an adjustment to the opening balance of retained earnings at 1 January 2019, with no restatement of comparative information.

When applying the modified retrospective approach to leases previously classified as operating leases under IAS 17, the lessee can elect, on a lease-by-lease basis, whether to apply a number of practical expedients on transition. The Group is assessing the potential impact of using these practical expedients.

The Group is not required to make any adjustments for leases in which it is a lessor except where it is an intermediate lessor in a sub-lease.

- ***Other standards***

The following new or amended standards and interpretations are not expected to have a significant impact on the Group's consolidated financial statements.

- *Annual Improvements to IFRSs 2014-2016 Cycle—Amendments to IFRS 1 and IAS 28.*
- *Annual Improvements to IFRSs 2015-2017 Cycle—Amendments to IFRS 3, IFRS 11, IAS 12 and IAS 23.*
- *Classification and Measurement of Share-based Payment Transactions (Amendments to IFRS 2).*
- *Transfers of Investment Property (Amendments to IAS 40).*
- *Prepayment Features with Negative Compensation (Amendments to IFRS 9).*
- *Sale or Contribution of Assets between an Investor and its Associate or Joint Venture (Amendments to IFRS 10 and IAS 28).*

1. ACCOUNTING POLICIES (Continued)

- *Plan Amendment, Curtailment or Settlement (Amendments to IAS 19).*
- *IFRIC 22 Foreign Currency Transactions and Advance Consideration.*
- *IFRIC 23 Uncertainty over Income Tax Treatments.*

2. OPERATING SEGMENTS

The determination of the Group's operating segments is based on the business units for which information is reported to the Group's Chief Operating Decision Maker. The Group has three reportable segments, as described below.

The Group's Olefins and Polymers business units produce olefins and related products and a broad range of polymers. The Group's olefins businesses are focused on ethylene and propylene, which are the two largest volume olefins globally and are key building blocks for polymers. These olefins are primarily used as feedstock for the Group's polymers business. In addition, the Group sells olefins to third party customers for a variety of industrial and consumer applications, including plastics, rubber and fibre.

- O&P North America segment—In North America, the group's Olefins and Polymers business comprises five sites including major facilities in Chocolate Bayou, Texas, and Battleground, Texas.
- O&P Europe segment—In Europe, the Group owns and operates two major cracker complexes, in Köln, Germany and Rafnes, Norway. This includes polymers and derivatives units.
- Chemical Intermediates—This reportable segment is the aggregation, in compliance with IFRS 8, of a number of different business units with similar economic and other characteristics. Chemical Intermediates are high-value added chemical products used as key components in a variety of consumer and industrial products. The Group's chemical intermediates businesses are exposed to similar key commodities, namely oil and gas. They produce a range of products including phenol, alpha olefins, solvents, industrial chemicals and nitriles. The Chemical Intermediates processes are similar in that they are all capital intensive and based upon processing and mixing chemical raw materials to produce chemical products for the next stage along the value chain. The Chemical Intermediates products are distributed on a business-to-business basis across the world. This is performed using similar conventional methods of pipeline, truck, rail or ship container depending on the customer location and size of the order. The Chemical Intermediates customer base is similar in that the customers are generally manufacturers of consumer and industrial products in developed markets and mature industrial economies.

The accounting policies of all of the reportable segments are as described in Note 1.

Information regarding the operations of each reportable segment is included in the following tables. Performance is measured based on earnings before interest, tax, depreciation and amortisation and exceptional items, measured under IFRS ("Segment EBITDA"). Segment EBITDA is used to measure performance as management believes that such information is the most relevant in evaluating

2. OPERATING SEGMENTS (Continued)

the results of certain segments relative to other entities that operate within these industries. Intersegment pricing is determined on an arm's length basis. Information regarding segments reviewed by management includes management accounts comprising the profit or loss, cash flows and other financial and non-financial information used to manage the business.

Adjustments in the following tables comprise the following items:

- Elimination of inter-segmental transactions and balances; and
- The Group's share of profit/(loss) in respect of the Refining joint venture.

Segment information—2017

	Reportable segments					
	O&P North America	O&P Europe	Chemical Intermediates	Total of reportable segments	Adjustments	Amounts in financial statements
			€m			
Reportable segment revenue	3,573.9	5,896.7	7,589.4	17,060.0	(1,849.6)	15,210.4
Reportable segment EBITDA	896.0	814.0	819.4	2,529.4	—	2,529.4
Depreciation of property, plant and equipment and amortisation of intangible assets	(149.5)	(136.1)	(181.7)	(467.3)	(1.0)	(468.3)
Share of profit/(loss) of associates and jointly controlled entities	(2.6)	—	—	(2.6)	146.1	143.5
Profit on disposal of fixed assets	0.1	—	2.5	2.6	—	2.6
Net finance income						92.6
Profit before tax from continuing operations						2,299.8
Payments for capital expenditure	279.7	236.1	398.8	914.6	—	914.6

Major items in the adjustments column include:

- Reportable segment revenues: the elimination of inter-segmental revenues: 2017: €1,849.6 million (2016: €1,416.8 million, 2015: €1,712.7 million).
- Share of profit/(loss) of associates and jointly control entities: Refining joint venture: 2017: €146.1 million (2016: €29.5 million, 2015: €72.4 million).

2. OPERATING SEGMENTS (Continued)

Segment information—2016

	Reportable segments					
	O&P North America	O&P Europe	Chemical Intermediates	Total of reportable segments	Adjustments	Amounts in financial statements
			€m			
Reportable segment revenue	2,855.9	4,966.5	6,204.3	14,026.7	(1,416.8)	12,609.9
Reportable segment EBITDA	956.4	708.7	665.7	2,330.8	—	2,330.8
Depreciation of property, plant and equipment and amortisation of intangible assets	(119.2)	(109.1)	(212.5)	(440.8)	(2.1)	(442.9)
Exceptional items (excluding items relating to impairment and financing)	—	—	(21.3)	(21.3)	—	(21.3)
Share of profit/(loss) of associates and jointly controlled entities	(1.9)	—	1.7	(0.2)	29.5	29.3
Profit on disposal of fixed assets	—	—	3.7	3.7	—	3.7
Net finance costs						(326.0)
Profit before tax from continuing operations						1,573.6
Payments for capital expenditure	273.2	142.2	276.5	691.9	—	691.9

Segment information—2015

	Reportable segments					
	O&P North America	O&P Europe	Chemical Intermediates	Total of reportable segments	Adjustments	Amounts in financial statements
			€m			
Reportable segment revenue	3,025.9	5,331.1	7,085.1	15,442.1	(1,712.7)	13,729.4
Reportable segment EBITDA	1,016.7	576.8	616.5	2,210.0	—	2,210.0
Depreciation of property, plant and equipment and amortisation of intangible assets	(100.5)	(97.9)	(181.2)	(379.6)	(3.8)	(383.4)
Exceptional items (excluding items relating to impairment and financing)	—	(16.0)	—	(16.0)	—	(16.0)
Share of profit/(loss) of associates and jointly controlled entities	(1.1)	3.1	—	2.0	72.4	74.4
Profit on disposal of fixed assets	—	—	3.8	3.8	—	3.8
Net finance costs						(740.6)
Profit before tax from continuing operations						1,148.2
Payments for capital expenditure	172.3	108.9	172.8	454.0	—	454.0

2. OPERATING SEGMENTS (Continued)

Geographic segments

	Revenues		
	2017	2016	2015
		€m	
Geographical information by location of customers:			
Europe	8,720.3	7,903.3	7,986.5
Americas	4,724.3	3,916.2	4,262.2
Rest of World	1,765.8	790.4	1,480.7
Total	**15,210.4**	**12,609.9**	**13,729.4**
Geographical information by location from which the Group derives revenue:			
Europe	10,034.6	8,240.9	9,291.1
Americas	4,923.3	4,120.3	4,230.8
Rest of World	252.5	248.7	207.5
Total	**15,210.4**	**12,609.9**	**13,729.4**

In presenting information on the basis of geographic analysis of segments, segment revenue is based on the geographical location of customers and geographical locations from which the Group derives revenues.

Revenues from external customers for each product and service or each group of similar products and services and a geographic analysis of segment assets are not presented as the necessary information is not available and the Directors are of the opinion that the cost to develop it would be excessive.

3. ACQUISITIONS

Update to acquisition of subsidiary in the prior year

WL Plastics

On November 1, 2016 the Group acquired 100% of the shares of WLP Holding Corporation, one of the largest high density polyethylene (HDPE) pipe manufacturers in North America for an initial consideration of €162.1 million. The business is headquartered in Fort Worth, Texas with production facilities in Kentucky, South Dakota, Utah, Texas, and Wyoming. A facility in Georgia is currently under construction. WL Plastics has over 500 million pounds of annual production capacity and provides HDPE pipe for use in oil, gas, industrial, mining, conduit, and municipal water and sewer applications. This acquisition forms part of the O&P North America segment.

During the year ended December 31, 2017 the Group paid a further €2.5 million and updated its deferred consideration assessment. The €2.5 million payment was the first instalment of the contingent consideration which will be paid out over a three year period, subject to the acquired business achieving certain targets.

3. ACQUISITIONS (Continued)

Effect of the acquisition on individual assets and liabilities

Acquiree's net assets at acquisition:

	Provisional values recognised on acquisition	2017 revaluation updates	Final values recognised on acquisition
	€m	€m	€m
Property, plant and equipment	84.6	—	84.6
Intangible assets	22.6	—	22.6
Inventories	20.0	—	20.0
Trade and other receivables	22.6	—	22.6
Cash and cash equivalents	10.1	—	10.1
Trade and other payables	(33.9)	—	(33.9)
Deferred tax liabilities	(25.0)	—	(25.0)
Net identifiable assets and liabilities	101.0	—	101.0
Consideration paid:			
Cash	135.4	2.5	137.9
Deferred consideration	26.7	9.4	36.1
Total consideration paid	162.1	11.9	174.0
Differences between consideration and provisional net assets acquired	61.1	11.9	73.0

The difference between consideration and net assets acquired has been recognised as goodwill within intangible assets in Note 12.

Acquisition related costs

During the year ended December 31, 2016 the Group incurred acquisition related costs of €2.0 million mainly related to legal and professional fees. These costs have been included in administrative expenses in the Group's consolidated income statement.

Acquired receivables

The fair value of acquired trade and other receivables was €22.6 million and includes trade receivables with a fair value of €22.0 million. The gross contractual amounts receivable are €22.5 million and, at the acquisition date, €0.5 million of contractual cash flows were not expected to be received.

Acquisition of subsidiary in 2015

Noretyl

On July 1, 2015 the Group completed the purchase of the remaining 50% interest in the Noretyl ethylene cracker at Rafnes, Norway from the Kerling group, a related party, for a gross consideration of €200 million. The Noretyl cracker provides 570,000 tons per annum of ethylene, as

3. ACQUISITIONS (Continued)

well as propylene to the INEOS system. It supplies the Bamble site in Norway via a dedicated pipeline and is one of only four gas crackers in Europe. This acquisition forms part of the O&P Europe—North segment.

Effect of the acquisition on individual assets and liabilities

Acquiree's net assets at acquisition:

	Recognised values on acquisition
	€m
Property, plant and equipment	215.5
Inventories	16.2
Trade and other receivables	44.0
Cash and cash equivalents	20.2
Trade and other payables	(69.2)
Employee benefits	(6.6)
Deferred tax liabilities	(5.4)
Interest bearing loans and borrowings	(100.0)
Net identifiable assets and liabilities	114.7
Consideration paid:	
Cash	200.0
Difference between consideration and net assets acquired	**85.3**

This represents a business combination between two entities held under common control and therefore the transaction has been accounted for using book values. The difference between the consideration paid and the book value of net assets acquired was €85.3 million and has been recognised directly in retained earnings and includes the previous carrying value of the Noretyl AS joint venture investment.

Acquisition of assets in 2015

Axiall assets

On September 30, 2015 the Group acquired the aromatics and cumene assets from Axiall Corporation for cash consideration of $57.8 million (€51.9 million). Additional consideration of $5.0 million may become payable after closing, dependent upon the satisfaction of certain conditions. The acquisition includes a cumene plant, based in Pasadena, Texas, producing 900,000 tonnes of product. In addition the phenol, acetone and alpha-methylstyrene customers will transfer to the Group's phenol facility at Mobile, Alabama. This acquisition forms part of the Chemical Intermediates segment.

4. DISPOSALS

2015 disposals

There were no disposals in the year ended December 31, 2015. During the prior year the Group completed the Lavera Divestiture for a total consideration of €200 million in the form of loan notes. During 2015 the Group received €78.3 million of further proceeds on the loan notes. As at December 31, 2015 all of the disposal proceeds had been received.

5. EXCEPTIONAL ITEMS

	2017	2016	2015
		€m	
Exceptional administrative expenses:			
Restructuring of O&P Europe operations	—	—	(16.0)
Restructuring of Technologies operations	—	(21.3)	—
Total exceptional administrative expenses	—	(21.3)	(16.0)
Exceptional finance costs	(44.1)	(20.7)	(131.6)

Exceptional administrative expenses

In 2016 following a strategic review of the Technologies business the Group took a decision to cease marketing its polyolefins licensing technology externally and to transfer the remaining parts of the Technologies business to existing businesses within the Group to provide a clearer focus on individual product lines. This resulted in an exceptional administrative charge of €21.3 million being incurred during 2016 due to the cessation of new licensing activities and other restructuring within the Technologies business primarily relating to severance and early retirement costs.

In recognition of a significant number of strategic projects being implemented in the O&P Europe business, the operations were reorganised in to separate regional businesses during 2012, each with their own management team, to provide clear management focus at a regional level. During 2015 €16.0 million of costs were incurred relating to additional restructuring within the O&P North business primarily relating to severance and early retirement costs.

Exceptional finance costs

In February 2017, the Group completed a refinancing of the Senior Secured Term Loans and the redemption of the Senior Notes due 2019. The Group has assessed that the refinancing of the Senior Secured Term Loans represented a substantial modification and resulted in the extinguishment of the existing debt. As a result the existing debt has been derecognised and the modified debt recognised at fair value. Due to the substantial modification of the Senior Secured Term Loans, the unamortised issue costs of €23.6 million at this date were written off as exceptional finance costs. Following the early redemption of the Senior Notes due 2019, an exceptional finance cost of €20.5 million has been recognised, which includes an early prepayment premium of €16.7 million and the write-off of deferred issue costs associated with the redeemed Notes of €3.8 million.

5. EXCEPTIONAL ITEMS (Continued)

In August 2016, the Group issued €650 million and $500 million of Senior Notes due 2024. The proceeds of the Notes together with cash in hand were used to redeem in full the Senior Notes due 2018. As a result of the early redemption of the Senior Notes due 2018 an exceptional finance cost of €20.7 million has been recognised, which includes an early prepayment premium of €17.5 million and the write-off of deferred issue costs associated with the redeemed Notes of €3.2 million.

On March 27, 2015, the Group entered into an incremental term loan facility under the Senior Secured Term Loan Agreement to borrow an additional €850 million and $625 million. The proceeds of the additional Term Loans were used to redeem the Senior Secured Notes due 2019. As a result of the early redemption of the Senior Secured Notes due 2019 an exceptional finance cost of €85.4 million has been recognised, which includes an early prepayment premium of €66.0 million and the write-off of deferred issue costs associated with the redeemed notes of €19.4 million.

In May 2015, the Group issued €770 million of Senior Secured Notes due 2023. The proceeds of the Notes were used to redeem the Senior Secured Notes due 2020. As a result of the early redemption of the Senior Secured Notes due 2020 an exceptional finance cost of €46.2 million has been recognised, which includes an early prepayment premium of €39.1 million and the write-off of deferred issue costs associated with the redeemed notes of €7.1 million.

6. OPERATING PROFIT

Included in operating profit are the following:

	2017	2016 (Restated)	2015 (Restated)
		€m	
Exceptional costs—included in administrative expenses	—	21.3	16.0
Research and development expensed as incurred	31.6	15.4	18.1
Amortisation of other intangible assets	13.9	44.2	12.7
Profit on disposal of property, plant and equipment	(2.6)	(3.7)	(3.8)
Amortisation of government grants	(4.4)	(5.0)	(7.9)
Depreciation and impairment of property, plant and equipment:			
Owned assets	454.2	397.6	365.5
Finance leased assets	0.2	1.1	5.2
Operating lease rental charges:			
Plant, machinery and equipment	59.6	62.5	62.6
Other	78.1	64.4	35.3

During the year the Group undertook a project to reassess its operating lease classifications. This has resulted in a number of leases being reclassified as service contracts and for the service element of some leases being excluded from the operating lease charges as it does not entitle the Group to use the underlying asset.

6. OPERATING PROFIT (Continued)

Auditors' remuneration:

	2017	2016	2015
		€m	
Audit of these financial statements	0.7	0.7	0.7
Amounts receivable by auditors and their associates in respect of:			
Audit of financial statements of subsidiaries pursuant to legislation	2.4	2.4	2.5
Other services relating to taxation	1.7	2.0	2.1
Services relating to corporate finance transactions	0.1	0.4	0.3
All other services	0.2	0.3	0.3
	5.1	**5.8**	**5.9**

7. STAFF NUMBERS AND COSTS

The monthly average number of persons employed by the Group (including any divestitures up to the date of disposal and any acquisitions from the date of acquisition) during the year, analysed by category, was as follows:

	Number of employees		
	2017	2016	2015
Operations	5,228	5,214	4,838
Administration	1,394	1,265	1,117
Research and development	280	305	332
	6,902	**6,784**	**6,287**

The aggregate payroll costs of these persons were as follows:

	2017	2016	2015
		€m	
Wages and salaries	681.1	641.5	596.8
Social security costs	93.1	88.9	87.0
Expenses related to defined contribution pension plans	16.9	9.9	16.8
Expenses related to defined benefit pension plans	47.8	43.2	51.4
	838.9	**783.5**	**752.0**

8. DIRECTORS' REMUNERATION

	2017	2016	2015
		€m	
Salaries and other short term benefits	**1.3**	**1.3**	**1.2**

9. FINANCE INCOME AND COSTS

Recognised in income statement

	2017	2016	2015
		€m	
Finance income			
Interest income on bank balances	6.7	3.7	1.3
Other interest receivable	71.8	87.5	63.9
Total interest income on financial assets not at fair value through profit or loss	78.5	91.2	65.2
Exchange movements	408.1	84.5	72.5
Net fair value gain on derivatives	—	17.3	—
Interest income on the defined benefit plan assets	—	—	24.5
Dividend income	5.3	7.0	2.9
Total finance income	**491.9**	**200.0**	**165.1**
Finance costs			
Interest payable on senior notes	103.9	166.1	201.8
Interest payable on bank loans and overdrafts	159.5	191.5	175.3
Interest payable on securitisation	8.2	8.5	11.8
Amortisation of issue costs	6.0	10.7	11.6
Other finance charges	7.7	19.9	6.5
Exchange movements	45.2	92.6	310.8
Net fair value loss on derivatives	9.0	—	16.2
Interest on employee benefit liabilities	15.7	16.0	40.1
Total finance costs before exceptional items	355.2	505.3	774.1
Exceptional finance cost (see Note 5)	44.1	20.7	131.6
Total finance costs	**399.3**	**526.0**	**905.7**
Net finance (income)/costs	**(92.6)**	**326.0**	**740.6**

Net gains and losses on financial instruments are included in Note 26.b.

10. TAX CHARGE

Taxation recognised in the consolidated income statement

	2017	2016	2015
		€m	
Current tax expense			
Current year	362.5	252.1	231.3
Adjustments in respect of prior years	(13.0)	17.7	(20.4)
Current tax expense	349.5	269.8	210.9
Deferred tax expense			
Origination and reversal of temporary differences	43.8	52.2	5.0
Effect of rate change	(69.0)	—	—
Adjustments in respect of prior years	(22.8)	18.2	21.8
Deferred tax (credit)/charge (see Note 17)	(48.0)	70.4	26.8
Total tax charge	**301.5**	**340.2**	**237.7**

Reconciliation of effective tax rate

	2017	2016	2015
		€m	
Profit before taxation	2,299.8	1,573.6	1,148.2
Tax on above using the Luxembourg corporation tax rate of 27.08% (2016: 29.22%, 2015: 29.22%)	622.8	459.8	335.5
Non-deductible expenses/tax exempt revenue	(25.5)	(2.2)	16.0
Effect of tax rates in foreign jurisdictions	(189.3)	(150.5)	(97.3)
Utilisation of tax losses brought forward	(1.7)	(2.8)	(17.9)
Effect of rate change	(69.0)	—	—
Adjustments in respect of prior years	(35.8)	35.9	1.4
Total tax charge	**301.5**	**340.2**	**237.7**

The credit of €69.0 million from the effect of a rate change mainly results from the remeasurement of deferred tax liabilities following US tax reform in December 2017, which included a substantial reduction in US corporate tax rate from 35% to 21%.

Taxation recognised in other comprehensive (expense)/income

	2017			2016			2015		
	Gross	Tax	Net	Gross	Tax	Net	Gross	Tax	Net
					€m				
Foreign exchange translation differences	84.5	—	84.5	(40.6)	—	(40.6)	(266.3)	—	(266.3)
Net gain on hedge of net investment in foreign operations	(731.4)	93.9	(637.5)	104.7	—	104.7	196.5	—	196.5
Remeasurement of post employment benefit obligations	101.9	(19.6)	82.3	(84.0)	22.1	(61.9)	20.5	(3.4)	17.1
Total	**(545.0)**	**74.3**	**(470.7)**	**(19.9)**	**22.1**	**2.2**	**(49.3)**	**(3.4)**	**(52.7)**

11. PROPERTY, PLANT AND EQUIPMENT

	Land and buildings	Plant & equipment Fixtures and fittings	Under construction	Total
		€m		
Cost				
Balance at 1 January 2015	379.7	6,356.5	205.3	6,941.5
Acquisitions of assets	—	13.6	—	13.6
Acquisitions under common control	138.6	528.9	44.4	711.9
Additions	46.5	204.8	226.1	477.4
Disposals	(0.7)	(30.7)	—	(31.4)
Transfers	0.8	91.7	(92.5)	—
Effect of movements in foreign exchange	3.2	223.3	17.9	244.4
Balance at 31 December 2015	568.1	7,388.1	401.2	8,357.4
Business acquisitions	22.4	56.4	5.8	84.6
Additions	15.9	447.0	269.0	731.9
Disposal	(0.1)	(12.8)	—	(12.9)
Transfers	12.6	227.2	(239.8)	—
Effect of movements in foreign exchange	13.9	151.4	25.5	190.8
Balance at 31 December 2016	632.8	8,257.3	461.7	9,351.8
Additions	24.7	337.2	611.0	972.9
Disposals	(3.9)	(58.6)	(0.2)	(62.7)
Transfers	32.9	184.8	(217.7)	—
Effect of movements in foreign exchange	(42.8)	(486.7)	(74.8)	(604.3)
Balance at 31 December 2017	**643.7**	**8,234.0**	**780.0**	**9,657.7**
Accumulated depreciation and impairment				
Balance at 1 January 2015	177.4	3,696.6	—	3,874.0
Depreciation charge for the year	11.8	358.9	—	370.7
Acquisitions under common control	46.0	450.4	—	496.4
Disposals	(0.7)	(30.7)	—	(31.4)
Effect of movements in foreign exchange	3.2	135.7	—	138.9
Balance at 31 December 2015	237.7	4,610.9	—	4,848.6
Depreciation charge for the year	15.2	383.5	—	398.7
Disposals	(0.1)	(12.6)	—	(12.7)
Effect of movements in foreign exchange	5.9	103.9	—	109.8
Balance at 31 December 2016	258.7	5,085.7	—	5,344.4
Depreciation charge for the year	17.0	437.4	—	454.4
Disposals	(0.2)	(56.8)	—	(57.0)
Effect of movements in foreign exchange	(15.7)	(323.8)	—	(339.5)
Balance at 31 December 2017	**259.8**	**5,142.5**	**—**	**5,402.3**
Net book value				
At 31 December 2015	330.4	2,777.2	401.2	3,508.8
At 31 December 2016	374.1	3,171.6	461.7	4,007.4
At 31 December 2017	**383.9**	**3,091.5**	**780.0**	**4,255.4**

11. PROPERTY, PLANT AND EQUIPMENT (Continued)

Leased plant and machinery

Included in the above are assets held under hire purchase and finance leases with a net book value of €3.8 million (2016: €4.0 million, 2015: €5.1 million). See Note 20 for the secured leased obligations on leased assets.

Property, plant and equipment under construction

During 2017 infrastructure relating to the Gemini HDPE project were all transferred to other classes of property, plant and equipment after the new plant became fully operational in the fourth quarter of 2017.

Additions to assets under construction during 2017 included further expenditure in the USA on the Linear Alpha Olefins (LAO) and High Viscosity Poly Alpha Olefins (PAO) projects as well as additional expenditure on a cogeneration project at Chocolate Bayou, USA and a cracker turnaround in Köln, Germany. There was also significant expenditure at the Köln, Germany site on a cogeneration project, new office buildings and a lifecycle project.

During 2016, expenditure on a debottlenecking project and replacement of cracker furnace coils at the Köln site in Germany and turnarounds on olefin units in the USA were all transferred to other classes of property, plant and equipment.

Additions to assets under construction during 2016 included further expenditure in the USA on Linear Alpha Olefins (LAO) and High Viscosity Poly Alpha Olefins (PAO) projects and infrastructure projects relating to the Gemini HDPE project. In addition there was expenditure on a cogeneration project at Chocolate Bayou, USA and a cracker turnaround in Köln, Germany.

During 2015, the replacement of olefins furnaces and expenditure on a water well project at the Chocolate Bayou site in the USA along with revisions to the ammonia plant and turnarounds for the O&P Europe and Nitriles businesses at the Köln site in Germany were all transferred to other classes of property, plant and equipment.

Additions to assets under construction during 2015 included expenditure in the USA on Linear Alpha Olefins (LAO) and High Viscosity Poly Alpha Olefins (PAO) projects and turnarounds on olefin units in the USA and infrastructure projects relating to the Gemini project. In addition there was further expenditure on a debottlenecking project and replacement of a cracker propylene hydrogenation unit along with expenditure on a replacement of a furnace convection bank and burners of the radiation section of one of the crackers at the Köln site in Germany. In Antwerp, Belgium there was expenditure on replacing the distribution control system.

12. INTANGIBLE ASSETS

	Intellectual property rights	Customer relationships	Other	Goodwill	Total
		€m			
Cost					
Balance at 1 January 2015	142.6	—	26.2	599.5	768.3
Additions	—	—	4.6	—	4.6
Disposals	—	—	(3.3)	—	(3.3)
Acquisition of assets	—	37.6	—	—	37.6
Effect of movements in foreign exchange	7.0	1.1	1.4	26.2	35.7
Balance at 31 December 2015	149.6	38.7	28.9	625.7	842.9
Additions	—	1.9	7.0	—	8.9
Disposals	—	—	(3.9)	—	(3.9)
Business acquisition	—	22.6	—	61.1	83.7
Effect of movements in foreign exchange	2.7	1.8	1.0	10.2	15.7
Balance at 31 December 2016	152.3	65.0	33.0	697.0	947.3
Additions	—	0.1	17.8	—	17.9
Disposals	—	—	(7.0)	—	(7.0)
Business acquisition	—	—	—	11.9	11.9
Effect of movements in foreign exchange	(8.6)	(7.7)	0.8	(37.2)	(52.7)
Balance at 31 December 2017	**143.7**	**57.4**	**44.6**	**671.7**	**917.4**
Accumulated amortisation and impairment					
Balance at 1 January 2015	101.7	—	10.3	8.1	120.1
Amortisation for the year	12.4	—	0.3	—	12.7
Effect of movements in foreign exchange	3.5	—	0.2	—	3.7
Balance at 31 December 2015	117.6	—	10.8	8.1	136.5
Amortisation for the year	9.5	11.7	0.4	—	21.6
Exceptional amortisation charge	22.6	—	—	—	22.6
Effect of movements in foreign exchange	2.1	0.6	—	—	2.7
Balance at 31 December 2016	151.8	12.3	11.2	8.1	183.4
Amortisation for the year	0.1	13.4	0.4	—	13.9
Effect of movements in foreign exchange	(8.6)	(2.3)	(0.6)	—	(11.5)
Balance at 31 December 2017	**143.3**	**23.4**	**11.0**	**8.1**	**185.8**
Net book value					
At 31 December 2015	32.0	38.7	18.1	617.6	706.4
At 31 December 2016	0.5	52.7	21.8	688.9	763.9
At 31 December 2017	**0.4**	**34.0**	**33.6**	**663.6**	**731.6**

Other intangible assets include non-compete agreements, licence fees and environmental certificates.

12. INTANGIBLE ASSETS (Continued)

Amortisation charge

The amortisation charge is recognised in administrative expenses in the consolidated income statement. The exceptional amortisation charge of €22.6 million for the year ended December 31, 2016 reflects the write-off of the intellectual property rights following the restructuring of the Technologies business.

Impairment

Goodwill has been allocated to cash generating units (CGU) or groups of cash generating units as follows:

	2017	2016	2015
		€m	
O&P Europe	246.2	246.2	246.2
O&P North America	336.9	362.2	290.9
Chemical Intermediates	80.5	80.5	80.5
Total	**663.6**	**688.9**	**617.6**

The recoverable amount is based on the value in use of each operating segment before aggregation based on the latest board approved five year plan. The forecasts are based on current performance and management's assumptions regarding the future development of individual parameters including raw material prices and profit margins, utilising available market pricing forecasts. Future assumptions regarding market demand are based on external macroeconomic sources and specific data relevant to the petrochemical industry and management's knowledge of the local markets in which it operates.

The cash flows after the plan period are based on an average of each of the years in the five year plan to take account of the cyclical nature of the industry extrapolated using long term growth rates as set out in the table below.

No impairment charge has been recorded in these financial statements as a result of the annual impairment test.

The key assumptions underlying the value in use calculation are shown below:

	2017	2016	2015
Period on which management approved forecasts are based	5 years	5 years	5 years
Discount rate	9.0%	9.0%	10.0%
Growth rate	3.0%	3.0%	3.0%

A terminal value is calculated based on the average cash flows over the five year forecasting period assuming compound growth of 3% and is discounted over the expected lives of the assets.

The discount rate is based upon the pre-tax weighted average cost of capital of the Group as at each respective period end.

12. INTANGIBLE ASSETS (Continued)

The growth rate used includes inflationary growth across our various markets.

Sensitivity of recoverable amounts

The following table presents, for each CGU the change in the discount rate for the tests as of December 31, 2017 that would be required in order for the recoverable amount to equal carrying value.

	Applied discount rate	Change in discount rate in order for the recoverable amount to be equal to carrying value	Required discount rate
		%	
O&P Europe	9.0	8.0	17.0
O&P North America	9.0	11.5	20.5
Chemical Intermediates:			
Nitriles	9.0	5.5	14.5
Oxide	9.0	8.4	17.4
Phenol	9.0	13.1	22.1
Oligomers	9.0	2.2	11.2
Enterprises	9.0	11.8	20.8
Technologies	9.0	17.8	26.8

The following table presents, for each CGU the change in the growth rate for the tests as of December 31, 2017 that would be required in order for the recoverable amount to equal carrying value. For all operating segments there would need to be negative growth in order for an impairment to be recognised. For the Technologies segment growth sensitivity is not relevant as a €nil terminal value would not result in impairment.

	Applied growth rate	Change in growth rate in order for the recoverable amount to be equal to carrying value	Required growth rate
		%	
O&P Europe	3.0	(18.4)	(15.4)
O&P North America	3.0	(36.6)	(33.6)
Chemical Intermediates:			
Nitriles	3.0	(11.9)	(8.9)
Oxide	3.0	(21.3)	(18.3)
Phenol	3.0	(43.4)	(40.4)
Oligomers	3.0	(4.6)	(1.6)
Enterprises	3.0	(38.3)	(35.3)
Technologies	3.0	n/a	n/a

13. INVESTMENTS

13.a Investments In Equity—Accounted Investees

	Joint ventures
At 1 January 2015	96.8
Acquisition of a joint venture	(32.8)
Share of losses retained	74.4
Exchange adjustments	(37.0)
At 31 December 2015	101.4
Additions	28.3
Share of profits retained	29.3
Exchange adjustments	2.7
At 31 December 2016	161.7
Additions	57.8
Share of profits retained	143.5
Exchange adjustments	(11.9)
At 31 December 2017	**351.1**

Joint ventures

On July 1, 2011 the group disposed of the Refining business to a new joint venture between PetroChina and INEOS Investments (Jersey) Limited ('IIJL'), a related party. IIJL is held under common control by our controlling shareholders. The consideration received by the Group for the disposal consisted of cash consideration of $1.015 billion received from PetroChina for a 50% interest in the business and an investment in non-voting ordinary shares in IIJL for the other 50% interest in the business. The non-voting ordinary shares in IIJL were fair valued at €420 million. This reflects the net present value of the future cash flows expected to be realised by the group for the ownership of these non-voting shares and takes into account the loss in control of the refining trade and assets.

The Group effectively retains an economic interest in the Refining business by virtue of its investment in IIJL. The results of the Refining business are reported against the share of profit/(loss) of associates and jointly controlled entities using the equity accounting method by virtue of this interest.

On July 1, 2015 the Group completed the purchase of the remaining 50% interest in the Noretyl AS joint venture resulting in a transfer of €32.8 million from joint venture investments as Noretyl AS became a wholly owned subsidiary of the Group (see Note 13.b). Prior to this acquisition the Group had a loan investment with Noretyl AS of €19.3 million as at December 31, 2014.

In July 2014 the Group set up a joint venture with Sasol to build and operate an HDPE plant at the Battleground site in Texas, USA. The plant is expected to be operational in 2017. During 2014 the Group transferred €20.0 million from assets under construction and invested a further €9.4 million into the joint venture. During 2016 and 2017 a further €28.3 million and €57.8 million respectively, were invested into the joint venture.

13. INVESTMENTS (Continued)

Details of investments in joint ventures are set out below:

Company	Class of shares held	Place of business and country of incorporation	Percentage held	Principal activities
Petroineos Refining Limited	Ordinary	Lavéra, France Grangemouth, Scotland	50.1%	Refining
Petroineos Trading Limited	Ordinary	Lavéra, France Grangemouth, Scotland	49.9%	Refining
Ineos Infrastructure (Grangemouth) Limited	Ordinary	Grangemouth, Scotland	75%	Refining
Ineos Gemini HDPE Co LLC	Ordinary	Texas, USA	50%	Chemicals

Summary aggregated financial information for equity accounted joint ventures are as follows:

	2017	2016	2015
		€m	
Current assets	2,682.0	2,878.3	2,618.8
Long-term assets	2,661.1	3,186.7	2,979.9
Current liabilities	(3,526.2)	(4,231.1)	(3,801.8)
Long-term liabilities	(541.9)	(674.4)	(607.8)
Cash inflow/(outflow)	945.2	(141.8)	76.9
Revenue	23,574.8	17,228.5	19,751.7
Expenses	(23,267.7)	(17,148.7)	(19,581.7)

13.b Investments in Subsidiary Undertakings

The directors consider that to give full particulars of all subsidiary undertakings would lead to a statement of excessive length.

The directors believe the carrying value of the investments is supported by the underlying net assets of the subsidiaries.

The following information relates to the principal subsidiary undertakings of the Company.

Company	Country of incorporation and operation	Percentage holding	Principal activity
INEOS Luxembourg I S.A.*	Luxembourg	100%	Holding Company
INEOS Luxembourg II S.A.	Luxembourg	100%	Holding Company
INEOS Group AG	Switzerland	100%	Holding Company
INEOS Holdings Limited	England and Wales	100%	Holding Company
INEOS European Holdings Limited	England and Wales	100%	Holding Company
INEOS US Finance LLC	USA	100%	Finance

13. INVESTMENTS (Continued)

Company	Country of incorporation and operation	Percentage holding	Principal activity
INEOS Finance Plc	England and Wales	100%	Finance
INEOS Treasury (UK) Limited	England and Wales	100%	Finance
INEOS Europe AG	Switzerland	100%	Chemicals
INEOS Oxide Limited	England and Wales	100%	Chemicals
INEOS NV	Belgium	100%	Chemicals
INEOS Belgium NV	Belgium	100%	Chemicals
INEOS Phenol Belgium NV	Belgium	100%	Chemicals
INEOS Italia Srl	Italy	100%	Chemicals
INEOS Phenol GmbH	Germany	100%	Chemicals
INEOS Fluor Americas LLC	USA	100%	Chemicals
INEOS Americas LLC	USA	100%	Chemicals
INEOS Manufacturing Deutschland GmbH	Germany	100%	Chemicals
INEOS Köln GmbH	Germany	100%	Chemicals
INEOS France SAS	France	100%	Chemicals
INEOS Sales (UK) Limited	England and Wales	100%	Chemicals
INEOS Manufacturing Belgium NV	Belgium	100%	Chemicals
INEOS Feluy SPRL	Belgium	100%	Chemicals
INEOS Sales Belgium NV	Belgium	100%	Chemicals
INEOS Sales Italia s.r.l	Italy	100%	Chemicals
INEOS Singapore Pte Limited	Singapore	100%	Chemicals
INEOS USA LLC	USA	100%	Chemicals
INEOS Polymers Inc	USA	100%	Chemicals
INEOS Canada Company	Canada	100%	Chemicals
INEOS Canada Partnership	Canada	100%	Chemicals
INEOS Bamble AS	Norway	100%	Chemicals
INEOS Nitriles (UK) Limited	England and Wales	100%	Chemicals
INEOS Manufacturing (Hull) Limited	England and Wales	100%	Chemicals
INEOS Technologies (Vinyls) Limited	England and Wales	100%	Chemicals
INEOS Technologies France SAS	France	100%	Chemicals
INEOS US Sales Company	USA	100%	Chemicals
INEOS Nitriles USA LLC	USA	100%	Chemicals
INEOS Oligomers USA LLC	USA	100%	Chemicals
INEOS Technologies USA LLC	USA	100%	Chemicals
INEOS Technologies Italia S.r.l	Italy	100%	Chemicals
Noretyl AS	Norway	100%	Chemicals
WLP Holding Corporation	USA	100%	Manufacturer

* Held directly by the Company

14. OTHER INVESTMENTS

	2017	2016	2015
		€m	
At 1 January	262.2	243.2	210.2
Interest receivable	8.1	9.2	8.8
Exchange adjustments	(31.8)	9.8	24.2
At 31 December	**238.5**	**262.2**	**243.2**

The Group has a non-voting preferred partnership interest in Ineos Investments Partnership, an entity held under common control by the Group's ultimate shareholders, which owns 24% of the share capital of the PQ Corporation, a silicas business incorporated in the USA and listed on the New York stock exchange.

15. OTHER FINANCIAL ASSETS

	2017	2016	2015
		€m	
Non-current			
Available for sale financial assets (see below and Note 26.a)	28.3	29.2	29.2
Current			
Derivative commodity contracts designated as fair value through profit or loss (see Note 26.a)	—	8.2	1.1

Available for sale financial assets

Available for sale financial assets include a 20.0% investment in Aethylen Rohrleitungs Gesellschaft ('ARG') mbH and Co. KG, a company registered in Germany whose principal activity is the transportation of ethylene via pipelines in Northern Europe and other investments.

The investment in ARG mbH and Co. KG and other investments have been classified as available for sale financial assets and recorded at their acquisition cost. These investments comprise of shares in private limited companies. The carrying amount of these financial instruments was €28.3 million at December 31, 2017. These shares are not listed and there is no active market. A reliable determination of fair value would only be practicable if there were equity sales transactions on which fair values could be based. A disposal of these investments is not currently anticipated.

16. OTHER FINANCIAL LIABILITIES

	2017	2016	2015
		€m	
Non-current			
Derivative commodity contracts designated as fair value through profit or loss (see Note 26.a)	2.3	0.9	12.6
Current			
Derivative commodity contracts designated as fair value through profit or loss (see Note 26.a)	0.2	—	1.8

17. DEFERRED TAX ASSETS AND LIABILITIES

Recognised deferred tax assets and liabilities

Deferred tax assets and liabilities are attributable to the following:

	2017		
	Assets	Liabilities	Total
		€m	
Property, plant and equipment	—	254.8	254.8
Employee benefits	(189.8)	—	(189.8)
Tax value of loss carry-forwards	(50.6)	—	(50.6)
Other	—	27.7	27.7
Tax (assets)/liabilities	(240.4)	282.5	42.1
Set off of tax	80.2	(80.2)	—
Net tax (assets)/liabilities	(160.2)	202.3	42.1

	2016		
	Assets	Liabilities	Total
		€m	
Property, plant and equipment	—	371.8	371.8
Employee benefits	(225.6)	—	(225.6)
Tax value of loss carry-forwards	(49.7)	—	(49.7)
Other	(26.0)	—	(26.0)
Tax (assets)/liabilities	(301.3)	371.8	70.5
Set off of tax	96.2	(96.2)	—
Net tax (assets)/liabilities	(205.1)	275.6	70.5

17. DEFERRED TAX ASSETS AND LIABILITIES (Continued)

	2015		
	Assets	Liabilities	Total
		€m	
Property, plant and equipment	—	364.3	364.3
Employee benefits	(195.4)	—	(195.4)
Tax value of loss carry-forwards	(84.9)	—	(84.9)
Other	(86.8)	—	(86.8)
Tax (assets)/liabilities	(367.1)	364.3	(2.8)
Set off of tax	166.2	(166.2)	—
Net tax (assets)/liabilities	(200.9)	198.1	(2.8)

Movement in deferred tax

	Property, plant and equipment	Employee benefits	Tax value of loss carry- forward utilised	Other	Total
			€m		
At 1 January 2015	360.5	(186.2)	(121.1)	(86.2)	(33.0)
Recognised in profit or loss	3.8	(12.6)	36.2	(0.6)	26.8
Recognised in other comprehensive income	—	3.4	—	—	3.4
At 31 December 2015	364.3	(195.4)	(84.9)	(86.8)	(2.8)
Recognised in profit or loss	7.5	(8.1)	35.2	35.8	70.4
Recognised in other comprehensive income	—	(22.1)	—	—	(22.1)
Business acquisition	—	—	—	25.0	25.0
At 31 December 2016	371.8	(225.6)	(49.7)	(26.0)	70.5
Recognised in profit or loss	(117.0)	16.2	(0.9)	53.7	(48.0)
Recognised in other comprehensive income	—	19.6	—	—	19.6
At 31 December 2017	254.8	(189.8)	(50.6)	27.7	42.1

Deferred tax assets are recognised to the extent that the realisation of the related tax benefit through future taxable profits is probable based on an assessment of expected future profits modelled against the gross tax losses. The Group did not recognise gross deductible temporary differences of €71.7 million (2016: €153.0 million, 2015: €766.8 million).

The Group has not provided deferred tax in relation to temporary differences on its overseas subsidiaries or joint ventures as the Group can control the timing and realisation of these temporary differences, and it is probable that no material unprovided tax liability would arise.

18. INVENTORIES

	2017	2016	2015
		€m	
Raw materials and consumables	439.7	403.8	353.4
Work in progress	22.8	19.3	17.7
Finished goods	784.0	645.0	585.5
	1,246.5	1,068.1	956.6

Raw materials, consumables and changes in finished goods and work in progress recognised as cost of sales in the year amounted to €8,634.3 million (2016: €8,380.0 million, 2015: €10,606.7 million). The net write-down of inventories to net realisable value amounted to €5.9 million (2016: €2.5 million, 2015: €5.5 million) after the reversal of previous write downs of €0.1 million (2016: €0.3 million, 2015: €1.4 million).

19. TRADE AND OTHER RECEIVABLES

	2017	2016	2015
		€m	
Current			
Trade receivables	1,236.3	1,039.8	1,062.8
Amounts due from related parties	283.3	242.4	484.8
Other receivables	124.1	105.6	111.3
Prepayments	69.2	114.0	113.5
	1,712.9	1,501.8	1,772.4
Non-current			
Amounts due from related parties	927.9	1,134.5	1,101.8
Other receivables	1.1	1.1	1.1
Prepayments	28.4	11.2	11.1
	957.4	1,146.8	1,114.0

19. TRADE AND OTHER RECEIVABLES (Continued)

Credit quality of financial assets and impairment losses

The ageing of trade and other receivables at the end of the reporting period was:

	Trade receivables		Amounts due from related parties		Other receivables	
	Gross 2017	Impairment 2017	Gross 2017	Impairment 2017	Gross 2017	Impairment 2017
			€m			
Not past due	1,129.4	(14.5)	1,211.2	—	122.5	—
Past due 0-30 days	96.2	(2.4)	—	—	0.6	—
Past due 31-90 days	16.6	(0.3)	—	—	0.9	—
More than 90 days	32.0	(20.7)	—	—	1.2	—
	1,274.2	(37.9)	1,211.2	—	125.2	—

	Trade receivables		Amounts due from related parties		Other receivables	
	Gross 2016	Impairment 2016	Gross 2016	Impairment 2016	Gross 2016	Impairment 2016
			€m			
Not past due	927.9	(4.2)	1,376.9	—	104.8	—
Past due 0-30 days	112.6	(0.4)	—	—	0.9	—
Past due 31-90 days	8.9	(5.0)	—	—	0.8	—
More than 90 days	11.7	(11.7)	—	—	0.2	—
	1,061.1	(21.3)	1,376.9	—	106.7	—

	Trade receivables		Amounts due from related parties		Other receivables	
	Gross 2015	Impairment 2015	Gross 2015	Impairment 2015	Gross 2015	Impairment 2015
			€m			
Not past due	1,057.5	(4.1)	1,586.6	—	110.4	—
Past due 0-30 days	2.7	—	—	—	0.8	—
Past due 31-90 days	8.0	(1.3)	—	—	0.5	—
More than 90 days	13.9	(13.9)	—	—	0.7	—
	1,082.1	(19.3)	1,586.6	—	112.4	—

The accounts receivable not yet due after impairment losses as of the end of the reporting period are deemed to be collectible on the basis of established credit management processes such as regular analyses of the credit worthiness of our customers and external credit checks where appropriate for new customers (see Note 26.c). At December 31, 2015, 2016 and 2017 there were no significant trade, related party or other receivable balances not past due that were subsequently impaired.

19. TRADE AND OTHER RECEIVABLES (Continued)

Due to the global activities and diversified customer structure of the Group, there is no significant concentration of credit risk (2016: nil, 2015: nil).

During 2015, 2016 and 2017 there were no significant trade, related party or other receivable balances that were subject to renegotiation of terms. Credit enhancements are held in respect of trade and other receivables in the form of €17.7 million (2016: €19.0 million, 2015: €8.4 million) of assets pledged as security against amounts owed to the Group of which €2.0 million (2016: €6.6 million, 2015: €0.4 million) is in respect of amounts falling overdue.

Trade receivable balances totalling €999.8 million (2016: €852.3 million, 2015: €861.8 million) have been pledged as security against amounts drawn down under the Receivables Securitisation Facility, described in Note 20, totalling €284.2 million (2016: €300.4 million, 2015: €428.1 million). In accordance with IAS 39 'Financial Instruments: Recognition and Measurement' the trade receivable balances pledged as security do not qualify for derecognition and are included within the trade receivable balances above.

The movement in the allowance for impairment in respect of trade receivables during the year was as follows:

	2017	2016	2015
		€m	
Balance at 1 January	21.3	19.3	22.8
Impairment loss charged/(released)	16.6	2.0	(3.5)
Balance at 31 December	**37.9**	**21.3**	**19.3**

The allowance account for trade receivables is used to record impairment losses unless the Group is satisfied that no recovery of the amount owing is probable; at that point the amounts considered irrecoverable are written off against the trade receivables directly.

During the year the Group has not experienced a significant deterioration in the quality of receivable balances due to the current economic conditions.

There were no allowances made against amounts due from other receivables during the year (2016: €nil, 2015: €nil).

There were no allowances made against amounts due from related parties during the year (2016: €nil, 2015: €nil).

20. INTEREST-BEARING LOANS AND BORROWINGS

This note provides information about the contractual terms of the Group's interest-bearing loans and borrowings, which are measured at amortised cost. For more information about the Group's exposure to interest rate and foreign currency risk, see Note 26.f.

	2017	2016	2015
		€m	
Non-current liabilities			
Senior Secured Term Loans	3,404.4	4,538.6	4,476.9
Senior Secured Notes due 2023	764.8	763.8	762.9
Senior Secured Notes due 2025	544.2	—	—
Senior Notes due 2018	—	—	1,117.1
Senior Notes due 2019	—	1,158.5	1,134.8
Senior Notes due 2024	1,060.4	1,116.9	—
Securitisation Facility	282.5	299.4	426.9
Noretyl Facility	27.0	54.9	83.1
Finance lease liabilities	1.2	1.2	1.4
Other loans	10.4	14.2	5.4
	6,094.9	**7,947.5**	**8,008.5**

	2017	2016	2015
		€m	
Current liabilities			
Current portion of borrowings under Senior Secured Term Loans	33.2	41.9	261.0
Noretyl Facility	26.9	25.7	26.9
Other loans	2.8	4.8	3.6
Current portion of finance lease liabilities	0.1	0.2	0.3
	63.0	**72.6**	**291.8**

	Gross loans and borrowings	Issue costs	Net loans and borrowings
	2017	2017	2017
		€m	
Gross debt and issue costs			
Senior Secured Term Loans	3,450.5	(12.9)	3,437.6
Senior Secured Notes due 2023	770.0	(5.2)	764.8
Senior Secured Notes due 2025	550.0	(5.8)	544.2
Senior Notes due 2024	1,068.8	(8.4)	1,060.4
Securitisation Facility	284.2	(1.7)	282.5
Noretyl Facility	55.0	(1.1)	53.9
Other	14.5	—	14.5
Total	**6,193.0**	**(35.1)**	**6,157.9**

20. INTEREST-BEARING LOANS AND BORROWINGS (Continued)

	Gross loans and borrowings 2016	Issue costs 2016	Net loans and borrowings 2016
		€m	
Senior Secured Term Loans	4,604.6	(24.1)	4,580.5
Senior Secured Notes due 2023	770.0	(6.2)	763.8
Senior Notes due 2019	1,162.4	(3.9)	1,158.5
Senior Notes due 2024	1,126.6	(9.7)	1,116.9
Securitisation Facility	300.4	(1.0)	299.4
Noretyl Facility	82.5	(1.9)	80.6
Other	20.4	—	20.4
Total	**8,066.9**	**(46.8)**	**8,020.1**

	Gross loans and borrowings 2015	Issue costs 2015	Net loans and borrowings 2015
		€m	
Senior Secured Term Loans	4,767.2	(29.3)	4,737.9
Senior Secured Notes due 2023	770.0	(7.1)	762.9
Senior Notes due 2018	1,121.3	(4.2)	1,117.1
Senior Notes due 2019	1,140.6	(5.8)	1,134.8
Securitisation Facility	428.1	(1.2)	426.9
Noretyl Facility	110.0	—	110.0
Other	10.7	—	10.7
Total	**8,347.9**	**(47.6)**	**8,300.3**

Terms and debt repayment schedule

	Currency	Nominal interest rate	Year of maturity
Senior Secured Term Loans	$/€	LIBOR/ EURIBOR plus 2.00%	2024
Senior Secured Notes	€	2.125%/4.0%	2023-2025
Senior Notes	$/€	5.375%-5.875%	2024
Securitisation Facility	$/€/£	Variable	2020
Noretyl Facility	€	EURIBOR plus 2.75%	2019
Other	€/$	3.75-9.0%	2018-2024

Senior Secured Term Loans

The Group has outstanding borrowings under a senior credit facilities agreement (the 'Senior Secured Term Loans' or 'Term Loans') dated April 27, 2012 (as amended and restated). The term Loans are denominated in both Euros and US dollars and mature on March 31, 2024.

20. INTEREST-BEARING LOANS AND BORROWINGS (Continued)

In February 2017, the Group completed a refinancing of the Senior Secured Term Loans. The Term Loans due 2018 were repaid in full, the Term Loans due 2020 were extended to March 2022 and a new tranche of €1.4 billion Term Loans due 2024 were issued. The entire facility was repriced and the Applicable Margin on the Euro denominated Term Loans was reduced to 2.50% and on the US dollar denominated Term Loans was reduced to 2.75%. The LIBOR floor was also reduced to 0.75% on the Euro denominated Term Loans and was removed for the US dollar denominated Term Loans.

As a result of the substantial modification of the Senior Secured Term Loans in February 2017, the unamortised issue costs at this date of €23.6 million were written off (see Note 5).

In November 2017 the Group issued €550 million of Senior Secured Notes due 2025. The proceeds from the new Notes, along with the proceeds from the full repayment of the Styrolution Term Loan (see Note 30), were used to partially repay the Senior Secured Term Loans. The remaining Term Loans were refinanced with a lower interest margin and a new maturity date of March 31, 2024.

The Senior Secured Term Loans outstanding at December 31, 2017 before issue costs were €3,450.5 million (2016: €4,604.6 million, 2015: €4,767.2 million) of which €34.5 million (2016: €47.1 million, 2015: €266.2 million) is due within one year. The total amounts outstanding on the Euro denominated Term Loans were €2,060.0 million and the US dollar denominated Term Loans were €1,390.5 million.

As at December 31, 2016 the total amounts outstanding on the Term Loans due 2016 were €nil (2015: €220.1 million), the Term Loans due 2018 were €1,251.9 million (2015: €1,215.9 million), the Term Loans due 2020 were €1,932.8 million and the Term Loans due 2022 were €1,419.9 million.

The Term Loans are to be repaid in equal quarterly instalments, in aggregate annual amounts equal to 1% of the original principal amount of the Term Loans. The Term Loans mature on March 31, 2024.

The outstanding Term Loans denominated in US dollars bear interest at a rate per annum equal to LIBOR plus the Applicable Margin. The Term Loans denominated in Euros bear interest at a rate per annum equal to EURIBOR (subject to a floor of 0.50% per annum) plus the Applicable Margin.

As at December 31, 2017 the Applicable Margin for the Euro denominated Term Loans and the US dollar denominated Term Loans was 2.00%.

The Senior Secured Term Loans rank pari passu with the Senior Secured Notes due 2023, Senior Secured Notes due 2025 and are structurally senior to the Senior Notes due 2024. The notes are guaranteed by INEOS Group Holdings S.A., INEOS Holdings Limited and certain of their subsidiaries on a senior secured basis. The Term Loans and the guarantees are secured by first ranking liens on the same assets (subject to certain exceptions) that secure INEOS Holdings Limited's obligations under the senior secured notes.

The Term Loans have numerous customary operating and financial incurrence covenants including covenants relating to, among other things, limitations on indebtedness, ability to give guarantees, creation of security interests, making acquisitions and investments, disposing of assets and paying dividends. The Term Loans have no financial maintenance covenants.

20. INTEREST-BEARING LOANS AND BORROWINGS (Continued)

The Senior Secured Term Loans are stated net of debt issue costs of €12.9 million (2016: €24.1 million, 2015: €29.3 million). These costs are allocated to the profit and loss account over the term of the Term Loans in accordance with IAS 39—Financial Instruments: Recognition and Measurement.

Senior Secured Notes due 2019

On March 27, 2015, the Group entered into an incremental term loan facility under the Senior Secured Term Loan Agreement to borrow an additional €850 million and $625 million. The proceeds of the additional Term Loans were used to redeem the Senior Secured Notes due 2019. As a result of the early redemption of the Senior Secured Notes due 2019 an exceptional finance cost of €66.0 million was recognised in respect of an early prepayment premium in the year ended December 31, 2015 (see Note 5).

Before redemption the Senior Secured Notes due 2019 were listed on the Luxembourg Stock Exchange and comprised of €500.0 million Floating Rate Senior Secured Notes due 2019 (the "2019 Euro Floating Rate Notes") and $1,000.0 million Senior Secured Notes due 2019 (the "2019 Dollar Fixed Rate Notes"). The 2019 Euro Floating Rate Notes bore interest at a rate per annum, reset quarterly, equal to the sum of (i) the greater of (x) three-month EURIBOR and (y) 1.25% per annum plus (ii) 6.0%. Interest on the 2019 Euro Floating Rate Notes was payable quarterly in arrears on February 15, May 15, August 15 and November 15 of each year, beginning May 15, 2012. The 2019 Dollar Fixed Rate Notes bore interest at a rate of 8.375% per annum. Interest on the 2019 Dollar Fixed Rate Notes was payable semi-annually in arrears on February 15 and August 15 of each year, beginning August 15, 2012.

Following the full redemption of the Senior Secured Notes due 2019 the Group recognised an exceptional finance cost of €19.4 million in relation to the write-off of the associated unamortised debt issue costs in the year ended December 31, 2015 (see Note 5).

Senior Secured Notes due 2020

In May 2015 the Group issued €770 million of Senior Secured Notes due 2023. The proceeds of the refinancing were used to redeem in full the Senior Secured Notes due 2020. As a result of the early redemption of the Senior Secured Notes due 2020 an exceptional finance cost of €39.1 million was recognised in respect of an early prepayment premium in the year ended December 31, 2015 (see Note 5).

Before redemption the Senior Secured Notes due 2020 were listed on the Luxembourg Stock Exchange and comprised of $775.0 million Senior Secured Notes. The Senior Secured Notes due 2020 bore interest at 7.5% per annum, payable semi-annually in arrears on May 1 and November 1 of each year.

Following the full redemption of the Senior Secured Notes due 2020 unamortised debt issue costs of €7.1 million were charged to exceptional finance costs within the income statement in the year ended December 31, 2015 (see Note 5).

20. INTEREST-BEARING LOANS AND BORROWINGS (Continued)

Senior Secured Notes due 2023

In May 2015 the Group issued €770 million of Senior Secured Notes due 2023. The Senior Secured Notes due 2023 are listed on the Luxembourg Stock Exchange. The Senior Secured Notes due 2023 bear interest at 4.0% per annum, payable semi-annually in arrears on May 1 and November 1 of each year. Unless previously redeemed as noted below, the Senior Secured Notes due 2023 will be redeemed by the Group at their principal amount on May 1, 2023.

The Senior Secured Notes due 2023 will be subject to redemption at any time on or after May 1, 2018, at the option of the Issuer, in whole or in part, on not less than 30 nor more than 60 days' prior notice at the following redemption prices (expressed as percentages of the aggregate principal amount), if redeemed during the 12-month period beginning May 1 of the year indicated below:

Year	Redemption Price
2018	102.000%
2019	101.000%
2020 and thereafter	100.000%

In each case, the redemption premium will be in addition to accrued and unpaid interest, if any, to the redemption date (subject to the rights of holders of record on relevant record dates to receive interest due on an interest payment date).

The Senior Secured Notes due 2023 rank pari passu with the Senior Secured Term Loans and Senior Secured Notes due 2025 and are structurally senior to the Senior Notes due 2024. The notes are guaranteed by INEOS Group Holdings S.A., INEOS Holdings Limited and certain of their subsidiaries on a senior secured basis. The notes and the guarantees are secured by first ranking liens on the same assets (subject to certain exceptions) that secure INEOS Holdings Limited's obligations under the Senior Secured Term Loans.

The Indenture contains a number of operating and financial covenants including limitations on indebtedness, restricted payments, transactions with affiliates, liens, sale of assets and dividend payments.

The Senior Secured Notes due 2023 are stated net of debt issue costs of €5.2 million (2016: €6.2 million). These costs are allocated to the profit and loss account over the term of the Senior Secured Notes due 2023 in accordance with IAS 39—Financial Instruments: Recognition and Measurement.

Senior Secured Notes due 2025

In November 2017 the Group issued €550 million of Senior Secured Notes due 2025. The proceeds from the new Notes were used to partially repay the Senior Secured Term Loans. The Senior Secured Notes due 2025 are listed on the Luxembourg Stock Exchange. The Senior Secured Notes due 2025 bear interest at 2.125% per annum, payable semi-annually in arrears on May 15 and November 15 of each year. Unless previously redeemed as noted below, the Senior Secured Notes due 2025 will be redeemed by the Group at their principal amount on November 15, 2025.

20. INTEREST-BEARING LOANS AND BORROWINGS (Continued)

The Senior Secured Notes due 2025 will be subject to redemption at any time on or after November 15, 2020, at the option of the Issuer, in whole or in part, on not less than 10 nor more than 60 days' prior notice at the following redemption prices (expressed as percentages of the aggregate principal amount), if redeemed during the 12-month period beginning November 15 of the year indicated below:

Year	Redemption Price
2020	101.0625%
2021	100.53125%
2022 and thereafter	100.000%

In each case, the redemption premium will be in addition to accrued and unpaid interest, if any, to the redemption date (subject to the rights of holders of record on relevant record dates to receive interest due on an interest payment date).

The Senior Secured Notes due 2025 rank pari passu with the Senior Secured Term Loans and Senior Secured Notes due 2023 and are structurally senior to the Senior Notes due 2024. The notes are guaranteed by INEOS Group Holdings S.A., INEOS Holdings Limited and certain of their subsidiaries on a senior secured basis. The notes and the guarantees are secured by first ranking liens on the same assets (subject to certain exceptions) that secure INEOS Holdings Limited's obligations under the Senior Secured Term Loans.

The Indenture contains a number of operating and financial covenants including limitations on indebtedness, restricted payments, transactions with affiliates, liens, sale of assets and dividend payments.

The Senior Secured Notes due 2025 are stated net of debt issue costs of €5.8 million. These costs are allocated to the profit and loss account over the term of the Senior Secured Notes due 2025 in accordance with IAS 39—Financial Instruments: Recognition and Measurement.

Senior Notes due 2018

Before redemption the Senior Notes due 2018 were listed on the Luxembourg Stock Exchange and comprised of €500 million Senior Notes due 2018 (the "Euro Notes") and $678 million Senior Notes due 2018 (the "Dollar Notes"). The Senior Notes due 2018 bore interest at 6.50% per annum for the Euro Notes and 6.125% for the Dollar Notes, payable semi-annually in arrears on 15 February and 15 August of each year.

In August 2016 the Group issued €650 million and $500 million of Senior Notes due 2024. The proceeds of the refinancing were used to redeem in full the Senior Notes due 2018. As a result of the early redemption of the Senior Notes due 2018 an exceptional finance cost of €17.5 million was recognised within the income statement in respect of an early redemption premium in the year ended December 31, 2016 (see Note 5).

Following the full redemption of the Senior Secured Notes due 2018 unamortised debt issue costs of €3.2 million were charged to exceptional finance costs within the income statement in the year ended December 31, 2016 (see Note 5).

20. INTEREST-BEARING LOANS AND BORROWINGS (Continued)

Senior Notes due 2019

On March 1, 2017 the Group redeemed in full the Senior Notes due 2019 with the proceeds from the issuance of the Senior Secured Term Loans due 2024. Before redemption the Senior Notes due 2019 were listed on the Luxembourg Stock Exchange and comprised of €600 million Senior Notes due 2019 (the "Euro Notes") and $590 million Senior Notes due 2019 (the "Dollar Notes"). The Senior Notes due 2019 bore interest at 5.75% per annum for the Euro Notes and 5.875% for the Dollar Notes, payable semi-annually in arrears on 15 February and 15 August of each year.

Following the full redemption of the Senior Notes due 2019 unamortised debt issue costs of €3.8 million were charged to exceptional finance costs (see Note 5).

Senior Notes due 2024

The Senior Notes due 2024 are listed on the Luxembourg Stock Exchange and comprise €650 million Senior Notes due 2024 (the "Euro Notes") and $500 million Senior Notes due 2024 (the "Dollar Notes"). The Senior Notes due 2024 bear interest at 5.375% per annum for the Euro Notes and 5.625% for the Dollar Notes, payable semi-annually in arrears on 1 February and 1 August of each year.

Unless previously redeemed as noted below, the Senior Notes due 2024 will be redeemed by the Group at their principal amount on 1 August 2024.

The Senior Notes due 2024 are subject to redemption at the option of the Group, in whole or in part, at the following redemption prices (expressed as percentages of the principal amount), if redeemed during the 12-month period beginning 1 August of the years indicated below:

Year	Euro Notes redemption price	Dollar Notes redemption price
2019	102.688%	102.813%
2020	101.344%	101.406%
2021 and thereafter	100.000%	100.000%

In each case, the redemption premium will be in addition to accrued and unpaid interest, if any, to the redemption date (subject to the rights of holders of record on relevant record dates to receive interest due on an interest payment date).

The Senior Notes due 2024 are secured by junior pledges of all of the shares of INEOS Holdings Limited. The Senior Notes due 2024 are guaranteed by INEOS Holdings Limited and its material operating subsidiaries on an unsecured senior subordinated basis. Such guarantees only become due 179 days after an event of default on the Senior Notes due 2024 has occurred or earlier under certain circumstances.

The Indenture contains a number of operating and financial covenants including limitations on indebtedness, restricted payments, transactions with affiliates, liens, sale of assets and dividend payments.

20. INTEREST-BEARING LOANS AND BORROWINGS (Continued)

The Senior Notes due 2024 are stated net of debt issue costs of €8.4 million (December 31, 2016: €9.7 million). These costs are allocated to the profit and loss account over the term of the Senior Notes due 2024 in accordance with IAS 39—Financial Instruments: Recognition and Measurement.

Receivables Securitisation Facility

The Company has entered into a €800 million receivables securitisation facilities agreement ("Receivables Securitisation Facility") which matures on December 31, 2020. The total amount outstanding at December 31, 2017 was €284.2 million (2016: €300.4 million, 2015: €428.1 million). The facility is secured by pledges over the trade receivables sold in to the programme. Interest is charged on the facility at a rate per annum of either EURIBOR or short term commercial paper rates plus a margin.

The Receivables Securitisation Facility is stated net of debt issue costs of €1.7 million (2016: €1.0 million, 2015: €1.2 million).

Noretyl Facility

As part of the Group's purchase of the remaining 50% interest in the Noretyl ethylene cracker at Rafnes, Norway from the Kerling group on July 1, 2015 (see Note 3), the Group also assumed the obligations of a €140 million loan facility ("Noretyl Facility") that Noretyl had in place. The total amount outstanding at December 31, 2017 was €55.0 million, of which €27.5 million is due within one year.

The Noretyl Facility is to be repaid in equal quarterly instalments, in aggregate annual amounts equal to 6.25% of the original principal amount of the facility starting on March 31, 2016. The facility matures in December 2019. The facility is secured by pledges over the property, plant and equipment of Noretyl AS. The outstanding Noretyl Facility will bear interest a rate per annum equal to EURIBOR (subject to a floor of 0% per annum) plus a margin of 2.75%.

The Noretyl Facility is stated net of debt issue costs of €1.1 million (2016: €1.9 million, 2015: €nil).

Finance lease liabilities

Finance lease liabilities are payable as follows:

	Minimum lease payments	Interest	Principal
		2017	
		€m	
Less than one year	0.2	(0.1)	0.1
Between one and five years	0.4	(0.3)	0.1
More than five years	7.0	(5.9)	1.1
	7.6	**(6.3)**	**1.3**

20. INTEREST-BEARING LOANS AND BORROWINGS (Continued)

	Minimum lease payments	Interest	Principal
		2016	
		€m	
Less than one year	0.3	(0.1)	0.2
Between one and five years	0.5	(0.4)	0.1
More than five years	7.0	(5.9)	1.1
	7.8	**(6.4)**	**1.4**

	Minimum lease payments	Interest	Principal
		2015	
		€m	
Less than one year	0.4	(0.1)	0.3
Between one and five years	0.7	(0.4)	0.3
More than five years	7.2	(6.1)	1.1
	8.3	**(6.6)**	**1.7**

21. TRADE AND OTHER PAYABLES

	2017	2016	2015
		€m	
Current			
Trade payables	616.6	465.2	475.1
Amounts due to related parties	201.3	202.8	185.5
Other payables	564.1	423.1	333.3
Deferred consideration	22.6	18.1	17.4
Accruals and deferred income	473.3	454.2	433.8
	1,877.9	1,563.4	1,445.1
Non-current			
Other payables	70.1	62.5	90.3
Deferred consideration	27.4	27.0	—
Accruals and deferred income	22.6	17.7	1.4
	120.1	107.2	91.7

22. EMPLOYEE BENEFITS

Pension plans

The Group operates a number of pension plans throughout the world, devised in accordance with local conditions and practices. The plans are generally of the defined benefit type and are funded

22. EMPLOYEE BENEFITS (Continued)

by payments to separately administered funds or insurance companies. The principal funded plans are in the United Kingdom, North America, Belgium, Norway and Switzerland.

The Group also operates a number of unfunded defined benefit pension schemes in Germany and France.

The most recent full valuations of the significant defined benefit plans were carried out as follows:

Plan	Country	Valuation date
All Plans	United Kingdom	5 April 2016 or 31 December 2016
All Plans	North America	1 January 2017
All Plans	Belgium	1 January 2018
All Plans	Norway	31 December 2017
All Plans	France	31 December 2017
All Plans	Germany	31 December 2017
All Plans	Switzerland	31 December 2017

These valuations have been updated where appropriate to December 31, 2017 by independent qualified actuaries.

The Group's pension schemes have been disclosed on a geographical basis as those schemes in the United Kingdom, North America and Other European. Other European principally includes the Group's pension plans in Germany, Belgium, Norway and France.

The UK defined benefit pension plans were historically final salary in nature, with a normal retirement age of 60. The majority of the UK plans are either closed to new entrants, or frozen to future accrual. The plans operate under trust law and are managed and administered by Trustees in accordance with the terms of each plan's Trust Deed and Rules and relevant legislation. The contributions paid to the UK plans are set every three years based on a funding agreement between the company and Trustee after taking actuarial advice.

The North American pension arrangements consist of two funded plans, both closed to new entrants and future accrual. Both plans were final salary defined benefit in nature, and the plans' liabilities are valued regularly in line with US statutory funding requirements. Around 90% of both plans' assets are invested in bond instruments, to closely match the profile of each plans' liabilities.

The Other European pension arrangements are primarily final salary in nature, the majority of which remain open to new entrants. The Norwegian and Swiss benefits are insured, the Belgian plan assets are held in trust, and the remaining schemes are unfunded with associated provisions held on the Group's balance sheet.

22. EMPLOYEE BENEFITS (Continued)

Pension plan assumptions

The principal actuarial assumptions (expressed as weighted averages or ranges) at the year end were as follows:

	United Kingdom			North America			Other European		
	2017	2016	2015	2017	2016	2015	2017	2016	2015
					%				
Major assumptions									
Rate of general increase in salaries	3.2	3.3	3.1	3.5	3.5	3.3	2.0-4.3	2.0-4.5	2.3-4.5
Rate of increase to pensions in payment	3.0-5.0	3.0-5.0	2.9-5.0	0.0	0.0	0.0	0.0-1.8	0.0-1.8	0.0-1.8
Discount rate for scheme liabilities	2.7	2.6	3.8	3.5	4.0	4.3	0.8-2.8	0.8-2.8	1.0-2.8
Inflation	3.2	3.3	3.1	2.5	2.5	2.5	1.0-1.8	1.3-3.0	1.3-2.0

The assumptions relating to longevity underlying the pension liabilities at the reporting date are based on standard actuarial mortality tables and include an allowance for future improvements in longevity. The assumptions are equivalent to expecting a 65-year old to live for a number of years as follows:

	United Kingdom			North America			Other European		
	2017 years	2016 years	2015 years	2017 years	2016 years	2015 years	2017 years	2016 years	2015 years
Longevity at age 65 for current pensioners	22.6-26.0	23.3-27.3	23.2-27.2	21.7-24.7	21.8-24.5	22.2-24.9	19.3-30.0	19.1-30.0	19.0-30.0

The following table presents the sensitivity of the defined benefit obligation to each significant actuarial assumption:

	United Kingdom	North America	Other European
		2017	
		%	
Major assumptions			
Discount rate: 1.0% decrease	22.6%	14.9%	25.2%
Rate of inflation: 0.5% increase(1)	7.8%	N/A	7.1%
1 year increase in longevity for a member currently aged 65	3.5%	0.8%	2.7%

(1) The sensitivity to the inflation assumption change includes corresponding changes to the future salary increase and future pension increase assumptions where these assumptions are set to be linked to the inflation assumption.

Post-retirement health care plans

The Group also operates a number of post retirement healthcare plans in the United States, which provide employees with other post-employment benefits in respect of health care. The plans are

22. EMPLOYEE BENEFITS (Continued)

unfunded and the liability in respect of these benefits is included in provisions. The liability is assessed by qualified independent actuaries under the projected unit method, assuming the following rates:

Rates	2017	2016	2015
		%	
Liability discount rate	3.5	4.0	4.3
Long-term healthcare trend rate	5.0	5.0	5.0

History of plans

The history of the plans for the current and prior years is as follows:

Consolidated balance sheet

	2017	2016	2015
		€m	
Present value of the defined benefit obligation in respect of pension plan	1,491.0	1,564.7	1,412.9
Present value of obligations in respect of post retirement health care plan	23.1	24.2	20.4
Fair value of plan assets	(813.1)	(799.4)	(744.2)
Deficit	**701.0**	**789.5**	**689.1**

The Group's net liability in respect of defined benefit obligations (DBO) is as follows:

	2017	2016	2015
		€m	
Obligations in respect of pension plans			
United Kingdom	(25.2)	61.3	37.9
North America	(3.4)	3.4	13.3
Other European	706.5	700.6	617.5
	677.9	765.3	668.7
Obligations in respect of post-retirement health care plans	23.1	24.2	20.4
Recognised liability for defined benefit obligations	**701.0**	**789.5**	**689.1**

The Group expects to contribute approximately €31.4 million to its funded defined benefit plans in the next financial year. This excludes direct company benefit payments and payments in relation to unfunded defined benefit plan schemes.

22. EMPLOYEE BENEFITS (Continued)

Expense recognised in the consolidated income statement

Year ended 31 December 2017	United Kingdom	North America	Other European	Post retirement health care plans	Total
			€m		
Current service cost	1.0	0.9	42.9	0.6	45.4
Cost of termination benefits	—	—	2.4	—	2.4
Interest cost on DBO	10.2	10.2	16.2	0.9	37.5
Interest income on assets	(8.8)	(10.1)	(2.9)	—	(21.8)
	2.4	1.0	58.6	1.5	63.5

Year ended 31 December 2016	United Kingdom	North America	Other European	Post retirement health care plans	Total
			€m		
Current service cost	0.9	0.7	40.6	0.7	42.9
Settlement (gain) / loss	—	0.2	(2.9)	—	(2.7)
Cost of termination benefits	—	—	3.0	—	3.0
Interest cost on DBO	11.9	11.0	16.7	1.1	40.7
Interest income on assets	(10.8)	(10.5)	(3.4)	—	(24.7)
	2.0	**1.4**	**54.0**	**1.8**	**59.2**

Year ended 31 December 2015	United Kingdom	North America	Other European	Post retirement health care plans	Total
			€m		
Current service cost	1.6	0.8	46.5	0.7	49.6
Past service cost	—	—	(1.6)	(0.1)	(1.7)
Cost of termination benefits	—	—	3.5	—	3.5
Interest cost on DBO	13.4	10.5	15.4	0.8	40.1
Interest income on assets	(11.4)	(10.0)	(3.1)	—	(24.5)
	3.6	**1.3**	**60.7**	**1.4**	**67.0**

The expense is recognised in the following line items in the consolidated income statement:

	2017	2016	2015
		€m	
Cost of sales and administrative expenses	47.8	43.2	51.4
Finance income	—	—	(24.5)
Finance cost	15.7	16.0	40.1
	63.5	**59.2**	**67.0**

22. EMPLOYEE BENEFITS (Continued)

Pension plans

As at 31 December 2017	United Kingdom	North America	Other European	Total
			€m	
Present value of funded obligations	329.8	252.0	243.0	824.8
Present value of unfunded obligations	—	—	666.2	666.2
	329.8	252.0	909.2	1,491.0
Fair value of plan assets	(355.0)	(255.4)	(202.7)	(813.1)
	(25.2)	**(3.4)**	**706.5**	**677.9**

As at 31 December 2016	United Kingdom	North America	Other European	Total
			€m	
Present value of funded obligations	402.9	281.5	245.8	930.2
Present value of unfunded obligations	—	—	634.5	634.5
	402.9	281.5	880.3	1,564.7
Fair value of plan assets	(341.6)	(278.1)	(179.7)	(799.4)
	61.3	**3.4**	**700.6**	**765.3**

As at 31 December 2015	United Kingdom	North America	Other European	Total
			€m	
Present value of funded obligations	350.4	274.4	224.7	849.5
Present value of unfunded obligations	—	—	563.4	563.4
	350.4	274.4	788.1	1,412.9
Fair value of plan assets	(312.5)	(261.1)	(170.6)	(744.2)
	37.9	**13.3**	**617.5**	**668.7**

Included within the Other European deficits are amounts relating to unfunded German plans of €655.9 million (2016: €623.5 million, 2015: €552.8 million).

22. EMPLOYEE BENEFITS (Continued)

Movements in present value of defined benefit obligation:

	United Kingdom	North America	Other European	Total
		€m		
At 1 January 2015	**341.3**	**269.8**	**714.3**	**1,325.4**
Current service cost	1.6	0.8	46.5	48.9
Interest cost on DBO	13.4	10.5	15.4	39.3
Member contributions	—	—	1.0	1.0
Actuarial (gain)—experience	(7.4)	(1.7)	(12.0)	(21.1)
Actuarial (gain)/loss—demographic assumptions	(1.6)	3.7	—	2.1
Actuarial (gain)/loss—financial assumptions	(9.4)	(16.9)	11.3	(15.0)
Disbursements from plan assets	(8.9)	(18.8)	(15.1)	(42.8)
Disbursements paid directly by the employer	(0.1)	(0.5)	(9.7)	(10.3)
Past service cost	—	—	(1.6)	(1.6)
Termination benefits	—	—	3.5	3.5
Acquisitions	—	—	25.2	25.2
Reclassifications	—	(2.8)	8.0	5.2
Exchange	21.5	30.3	1.3	53.1
At 31 December 2015	**350.4**	**274.4**	**788.1**	**1,412.9**
Current service cost	0.9	0.7	40.6	42.2
Interest cost on DBO	11.9	11.0	16.7	39.6
Member contributions	—	—	1.1	1.1
Actuarial loss—experience	0.1	1.2	4.7	6.0
Actuarial (gain)—demographic assumptions	—	(5.8)	(1.4)	(7.2)
Actuarial loss—financial assumptions	105.0	8.2	50.4	163.6
Disbursements from plan assets	(9.4)	(11.9)	(6.0)	(27.3)
Disbursements paid directly by the employer	(0.3)	(0.5)	(10.4)	(11.2)
Settlements	—	(11.3)	(8.5)	(19.8)
Termination benefits	—	—	3.0	3.0
Acquisitions	—	—	—	—
Reclassifications	—	4.7	—	4.7
Exchange	(55.7)	10.8	2.0	(42.9)
At 31 December 2016	**402.9**	**281.5**	**880.3**	**1,564.7**
Current service cost	1.0	0.9	42.9	44.8
Interest cost on DBO	10.2	10.2	16.2	36.6
Member contributions	—	—	1.4	1.4
Actuarial (gain)—experience	(28.0)	(1.4)	(0.1)	(29.5)
Actuarial (gain)—demographic assumptions	(13.8)	(1.1)	(0.1)	(15.0)
Actuarial (gain)—financial assumptions	(9.5)	16.9	(11.2)	(3.8)
Disbursements from plan assets	(20.1)	(19.5)	(5.6)	(45.2)
Disbursements paid directly by the employer	(0.2)	(0.3)	(11.8)	(12.3)
Termination benefits	—	—	2.4	2.4
Reclassifications	—	(0.6)	—	(0.6)
Exchange	(12.7)	(34.6)	(5.2)	(52.5)
At 31 December 2017	**329.8**	**252.0**	**909.2**	**1,491.0**

22. EMPLOYEE BENEFITS (Continued)

Movements in fair value of plan assets:

	United Kingdom	North America	Other European	Total
		€m		
At 1 January 2015	**285.9**	**256.8**	**140.6**	**683.3**
Interest income on plan assets	11.4	10.0	3.1	24.5
Return on plan assets greater /(less) than discount rate	(7.7)	(16.5)	9.4	(14.8)
Employer contributions	14.2	4.0	22.9	41.1
Member contributions	—	—	1.0	1.0
Disbursements	(9.0)	(19.3)	(24.7)	(53.0)
Acquisitions	—	—	18.6	18.6
Reclassifications	—	(2.9)	—	(2.9)
Exchange	17.7	29.0	(0.3)	46.4
At 31 December 2015	**312.5**	**261.1**	**170.6**	**744.2**
Interest income on plan assets	10.8	10.5	3.4	24.7
Return on plan assets greater than discount rate	65.3	7.7	1.8	74.8
Employer contributions	11.2	6.9	23.2	41.3
Member contributions	—	—	1.1	1.1
Disbursements	(9.7)	(12.4)	(16.4)	(38.5)
Settlements	—	(11.5)	(5.6)	(17.1)
Reclassifications	—	5.0	—	5.0
Exchange	(48.5)	10.8	1.6	(36.1)
At 31 December 2016	**341.6**	**278.1**	**179.7**	**799.4**
Interest income on plan assets	8.8	10.1	2.9	21.8
Return on plan assets greater than discount rate	24.5	16.3	14.5	55.3
Employer contributions	12.6	5.6	25.5	43.7
Member contributions	—	—	1.4	1.4
Disbursements	(20.3)	(19.8)	(17.4)	(57.5)
Reclassifications	—	(0.5)	—	(0.5)
Exchange	(12.2)	(34.4)	(3.9)	(50.5)
At 31 December 2017	**355.0**	**255.4**	**202.7**	**813.1**

The overall expected rate of return is calculated by weighting the individual rates in accordance with the anticipated balance in the plan's investment portfolio.

22. EMPLOYEE BENEFITS (Continued)

The fair value of the plan assets were as follows:

At 31 December 2017	United Kingdom	North America	Other European	Total
		€m		
Equities	43.3	25.2	93.5	162.0
Corporate bonds	259.3	227.1	33.0	519.4
Property	9.3	—	10.2	19.5
Other	43.1	3.1	66.0	112.2
Total plan assets	**355.0**	**255.4**	**202.7**	**813.1**

At 31 December 2016	United Kingdom	North America	Other European	Total
		€m		
Equities	156.9	27.4	73.8	258.1
Corporate bonds	152.4	247.6	34.8	434.8
Property	12.5	—	9.7	22.2
Other	19.8	3.1	61.4	84.3
Total plan assets	**341.6**	**278.1**	**179.7**	**799.4**

At 31 December 2015	United Kingdom	North America	Other European	Total
		€m		
Equities	177.1	25.5	73.7	276.3
Corporate bonds	107.0	233.3	30.1	370.4
Property	12.6	—	12.7	25.3
Other	15.8	2.3	54.1	72.2
Total plan assets	**312.5**	**261.1**	**170.6**	**744.2**

There are no plans which hold investments in the Group's own financial instruments, or hold assets or property which are used by the Group.

22. EMPLOYEE BENEFITS (Continued)

Post-retirement health care plans

Reconciliation of present value of scheme liabilities:

	2017	2016	2015
		€m	
At 1 January	24.2	20.4	19.1
Current service cost	0.6	0.7	0.7
Interest cost on DBO	0.9	1.1	0.8
Actuarial loss/(gain)—experience	0.5	(1.1)	(0.8)
Actuarial (gain)/loss—demographic assumptions	(0.1)	(3.1)	0.6
Actuarial loss/(gain)—financial assumptions	1.3	0.6	(1.1)
Disbursements directly paid by the employer	(1.1)	(0.9)	(0.7)
Past service cost	—	—	(0.1)
Reclassifications	—	5.6	(0.3)
Exchange adjustments	(3.2)	0.9	2.2
At 31 December	**23.1**	**24.2**	**20.4**

The post-retirement healthcare plans do not hold any assets.

The following table presents the sensitivity of the defined benefit obligation to each significant actuarial assumption:

	2017
	%
Major assumptions	
Discount rate: 1.0% decrease	12.3
Rate of inflation: 0.5% increase	N/A
1 year increase in longevity for a member currently aged 65	1.6

23. PROVISIONS

	Severance and restructuring costs	Remediation	Other	Total
		€m		
At 1 January 2017	40.4	6.7	0.6	47.7
(Credited)/charged to the income statement	(2.4)	2.0	(0.1)	(0.5)
Utilised in the year	(5.3)	(0.1)	(0.6)	(6.0)
Unwinding of discount	—	0.1	—	0.1
Effects of movements in foreign exchange	(0.2)	(0.3)	0.5	—
At 31 December 2017	**32.5**	**8.4**	**0.4**	**41.3**
Non-current	21.8	2.8	1.0	25.6
Current	—	5.8	0.3	6.1
Balance at 31 December 2015	**21.8**	**8.6**	**1.3**	**31.7**
Non-current	21.2	6.7	0.6	28.5
Current	19.2	—	—	19.2
Balance at 31 December 2016	**40.4**	**6.7**	**0.6**	**47.7**
Non-current	20.1	8.3	0.4	28.8
Current	12.4	0.1	—	12.5
Balance at 31 December 2017	**32.5**	**8.4**	**0.4**	**41.3**

Severance and restructuring costs

As described in Note 5, the Group implemented a reorganisation of the Technologies business during 2016. The restructuring costs largely relate to severance and early retirement costs.

Remediation costs

The Group has provided for the cost of remediation works where there is a legal or constructive obligation for such work to be carried out. The provision was established to meet the clean-up costs of contaminated soil and groundwater, the removal of potentially hazardous substances and rectification work required to ensure compliance with license to operate obligations. These costs relate mainly to the Group's production facilities at the Saltend, Köln, Chocolate Bayou, Green Lake and Lima sites. The provision only covers items of specific work for which a reasonable estimate can be determined. The required work is expected to be completed within the next three year period. The interest rate used to determine the obligation in the balance sheet at December 31, 2017 was 4.0% (2016: 4.0%, 2015: 4.0%). By their nature the amounts and timing of any outflows in respect of remediation costs are difficult to predict.

Other provisions

Other provisions include a number of provisions for onerous contracts, other loss making contracts and commercial disputes.

24. SHARE CAPITAL

	2017	2016	2015
		€m	
Fully paid			
924,803 (2016: 924,803, 2015: 924,803) Ordinary shares of €1 each	0.9	0.9	0.9

The holders of ordinary shares are entitled to receive dividends as declared from time to time and are entitled to one vote per share at meetings of the Company.

25. DIVIDENDS

The following dividends were recognised during the year:

	2017	2016	2015
		€m	
Dividend paid	260.9	241.3	73.4

26. FINANCIAL INSTRUMENTS

26.a Fair value of financial instruments

Investments in debt and equity securities

The fair value of other investments shown as loans and receivables is estimated as the present value of future cash flows, discounted at the market rate of interest at the reporting date.

Available for sale financial assets are accounted for at fair value based on the present value of future cash flows where such information is readily available based on the present value of future cash flows estimated from financial information made available during the year as a result of a recent transaction in the investment. However, as explained in Note 15, the Group's available for sale financial assets include certain equity interests which are not quoted and for which there is no active market. In these circumstances, in the absence of reliable information, the Group considers that a reliable determination of fair value is not practicable and such investments are recorded at their acquisition cost. The fair value has therefore been presented as the equivalent to the carrying value at the reporting date.

Trade and other receivables

The carrying amount of trade and other receivables generally approximates to fair value due to their short maturities. Where settlement is not due in the short term and where the effect is material, fair value is estimated as the present value of future cash flows discounted at the market rate of interest at the reporting date.

Trade and other payables

The carrying amount of trade and other payables generally approximates to fair value due to their short maturities. Where settlement is not due in the short term and where the effect is material,

26. FINANCIAL INSTRUMENTS (Continued)

fair value is estimated as the present value of future cash flows discounted at the market rate of interest at the reporting date.

Cash and cash equivalents

The fair value of cash and cash equivalents is estimated as its carrying amount where the cash is repayable on demand. Where it is not repayable on demand then the fair value is estimated at the present value of future cash flows, discounted at the market rate of interest at the reporting date.

Interest-bearing borrowings

The fair value of the Senior Secured Term Loans, Senior Secured Notes and Senior Notes, which after initial recognition is determined for disclosure purposes only are based on the market yields derived from quotes obtained at the year end from leading financial institutions (categorised as Level 1). The fair value of Securitisation and Noretyl facilities is the same as the carrying value. The fair value of finance leases is determined by reference to market rates for similar lease agreements.

Derivative financial instruments

The fair value of interest rate swaps and commodity contracts are based on market or broker quotes.

26. FINANCIAL INSTRUMENTS (Continued)

Fair values

The fair values for each class of financial assets and financial liabilities together with their carrying amounts shown in the consolidated balance sheet are as follows:

	Carrying amount	Fair value	Carrying amount	Fair value	Carrying amount	Fair value
	2017		2016		2015	
			€m			
Financial assets held for trading at fair value through profit or loss:						
Derivative commodity contracts	—	—	8.2	8.2	1.1	1.1
Available for sale equity investments:						
Carried at cost	28.3	28.3	29.2	29.2	29.2	29.2
Loans and receivables carried at amortised cost:						
Trade receivables	1,236.3	1,236.3	1,039.8	1,039.8	1,062.8	1,062.8
Amounts due from related parties	1,211.2	1,211.2	1,376.9	1,376.9	1,586.6	1,586.6
Other receivables	125.2	125.2	106.7	106.7	112.4	112.4
Other investments	238.5	238.5	262.2	262.2	243.2	243.2
Loans and receivables	2,811.2	2,811.2	2,785.6	2,785.6	3,005.0	3,005.0
Cash and cash equivalents	1,366.3	1,366.3	2,204.1	2,204.1	1,648.0	1,648.0
	4,177.5	4,177.5	4,989.7	4,989.7	4,653.0	4,653.0
Total financial assets	**4,205.8**	**4,205.8**	**5,027.1**	**5,027.1**	**4,683.3**	**4,683.3**

26. FINANCIAL INSTRUMENTS (Continued)

	Carrying amount	Fair value	Carrying amount	Fair value	Carrying amount	Fair value
	2017		2016		2015	
			€m			
Financial liabilities held for trading at fair value through profit and loss:						
Derivative commodity contracts	2.3	2.3	0.9	0.9	14.4	14.4
Financial liabilities carried at amortised cost:						
Senior Secured Term Loans	3,437.6	3,451.4	4,580.5	4,633.5	4,737.9	4,620.2
Senior Secured Notes	1,309.0	1,333.8	763.8	797.1	762.9	718.2
Senior Notes	1,060.4	1,128.8	2,275.4	2,303.4	2,251.9	2,241.8
Securitisation Facility	282.5	284.2	299.4	300.4	426.9	428.1
Noretyl Facility	53.9	55.0	80.6	82.5	110.0	110.0
Other bank loans	13.2	13.2	19.0	19.0	9.0	9.0
Finance lease liabilities	1.3	1.3	1.4	1.4	1.7	1.7
Trade payables	616.6	616.6	465.2	465.2	475.1	475.1
Amounts due to related parties	201.3	201.3	202.8	202.8	185.5	185.5
Other payables	634.2	634.2	485.6	485.6	423.6	423.6
	7,610.0	7,719.8	9,173.7	9,290.9	9,384.5	9,213.2
Total financial liabilities	**7,612.3**	**7,722.1**	**9,174.6**	**9,291.8**	**9,398.9**	**9,227.6**

The table below analyses financial instruments carried at fair value, by valuation method. The different levels, determined in accordance with IFRS 13 “Fair Value Measurement”, have been defined as follows:

- Level 1: quoted prices (unadjusted) in active markets for identical assets or liabilities;
- Level 2: inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices); and
- Level 3: inputs for the asset or liability that are not based on observable market data (unobservable inputs).

26. FINANCIAL INSTRUMENTS (Continued)

	2017				2016				2015			
	Fair Value	Level 1	Level 2	Level 3	Fair Value	Level 1	Level 2	Level 3	Fair Value	Level 1	Level 2	Level 3
	€m											
Financial assets held for trading at fair value through profit or loss:												
Derivative commodity contracts	—	—	—	—	8.2	—	8.2	—	1.1	—	1.1	—
Financial liabilities held for trading at fair value through profit and loss:												
Derivative commodity contracts	(2.3)	—	(2.3)	—	(0.9)	—	(0.9)	—	(14.4)	—	(14.4)	—
Total financial assets and liabilities held at fair value	**(2.3)**	**—**	**(2.3)**	**—**	**7.3**	**—**	**7.3**	**—**	**(13.3)**	**—**	**(13.3)**	**—**

There have been no transfers from Level 2 to Level 1 in 2017 (2016 and 2015: no transfers from Level 2 to Level 1).

26.b Net gains and losses from financial instruments

Net gains and losses from financial instruments comprise the results of valuations, the amortisation of discounts, the recognition and derecognition of impairment losses, results from the translation of foreign currencies, interest, dividends and all effects on profit or loss of financial instruments.

Net gains from receivables and loans relate primarily to recognition and derecognition of impairment losses, results from the translation of foreign currencies and interest income.

Net losses from financial liabilities measured at amortised cost relate primarily to amortisation of discounts, results from the translation of foreign currencies, interest expense and other financing related expenses.

The item 'financial instruments at fair value through profit or loss' comprise valuation gains and losses, and only includes gains and losses from instruments which are not designated as hedging instruments as defined by IAS 39.

26. FINANCIAL INSTRUMENTS (Continued)

No gains or losses on items measured at fair value have been recognised in the income statement in respect of fair values determined based on a level 3 valuation technique using non-observable inputs. No gains or losses on available for sale equity investments have been recognised in the Statement of Comprehensive Income for the years ended December 31, 2017, December 31, 2016 and December 31, 2015 based on a level 3 valuation technique using non-observable inputs.

	Loans and receivables			Available for sale financial assets		
	2017	2016	2015	2017	2016	2015
			€m			
Interest income	78.5	91.2	65.2	—	—	—
Dividend income	—	—	—	5.3	7.0	2.9
Foreign exchange losses	80.5	(54.7)	(47.2)	—	—	—
Net result	**159.0**	**36.5**	**18.0**	**5.3**	**7.0**	**2.9**
Carrying value at 31 December	**4,177.5**	**4,989.7**	**4,653.0**	**28.3**	**29.2**	**29.2**

	Liabilities measured at amortised cost			Financial instruments at fair value through profit or loss		
	2017	2016	2015	2017	2016	2015
			€m			
Interest cost	(277.6)	(376.8)	(400.5)	—	—	—
Other finance cost	(7.7)	(19.9)	(6.4)	—	—	—
Net fair value gains/(losses) on derivatives	—	—	—	(9.0)	17.3	(16.2)
Foreign exchange (losses)/gains	304.8	86.2	342.0	—	—	—
Net result	**19.5**	**(310.5)**	**(64.9)**	**(9.0)**	**17.3**	**(16.2)**
Carrying value at 31 December	**(7,610.0)**	**(9,173.7)**	**(9,384.5)**	**(2.3)**	**7.3**	**(13.3)**

26.c Credit risk

Financial risk management

Credit risk is the risk of financial loss to the Group if a customer or counterparty to a financial instrument fails to meet its contractual obligations, and arises principally from the Group's receivables from customers, deposits with financial institutions and derivatives.

Group Treasury policy and objectives in relation to credit risk is to minimize the likelihood that the Group will experience financial loss due to counterparty failure and to ensure that in the event of a single loss, the failure of any single counterparty would not materially impact the financial wellbeing of the Group.

26. FINANCIAL INSTRUMENTS (Continued)

Trade and other receivables

The Group's exposure to credit risk is influenced mainly by the individual characteristics of each customer. However, management also considers the demographics of the Group's customer base, including the default risk of the industry and country in which customers operate, as these factors may have an influence on credit risk. Management considers that there is no geographical concentration of credit risk. The Group has established a credit policy under which each new customer is analysed individually for creditworthiness before the Group's standard payment and delivery terms and conditions are offered or are adjusted accordingly. The Group's review includes external ratings, when available, and in some cases bank references. Purchase limits are established for each customer, which represent the maximum open amount without requiring approval. Customers that fail to meet the Group's benchmark creditworthiness may transact with the Group only on a prepayment basis.

Investments, cash and cash equivalent

Surplus cash investments are only made with banks with which the Group has a relationship. Occasionally deposits are made with banking counterparties that provide financing arrangements, reducing the credit exposure of the Group.

Guarantees

The Group's policy is to provide financial guarantees only to wholly-owned subsidiaries. At December 31, 2017 no guarantees were outstanding (2016: none, 2015: none).

Exposure to credit risk

The carrying amount of financial assets represents the maximum credit exposure. Therefore, the maximum exposure to credit risk at the reporting date was the carrying amount of financial assets. Further details on the Group's exposure to credit risk are given in Note 19.

26.d Liquidity risk

Financial risk management

Liquidity risk is the risk that the Group will not be able to meet its financial obligations as they fall due. The Group's approach to managing liquidity is to ensure, as far as possible, that it will always have sufficient liquidity to meet its liabilities when due, under normal and stressed conditions, without incurring unacceptable losses or risking damage to the Group. The Group's exposure to liquidity risk is limited by the fact that it operates with significant cash resources, and it maintains the most appropriate mix of short, medium and long-term borrowings from the Group's lenders.

The Group is reliant on committed funding from a variety of sources at Group and subsidiary company level to meet the anticipated needs of the Group for the period covered by the Group's budget.

The Group forecasts on a regular basis the expected cash flows that will occur on a weekly and monthly basis. This information is used in conjunction with the weekly reporting of actual cash balances at bank in order to calculate the level of funding that will be required in the short and medium term.

26. FINANCIAL INSTRUMENTS (Continued)

On a monthly basis the level of headroom on existing facilities is reported and forecast forward until the end of the financial period.

In addition, the Group maintains various lines of credits in the form of Senior Notes, Senior Secured Notes, Senior Secured Term Loans, Securitisation, Noretyl Facility and Other Loans. (See Note 20—"Interest-Bearing Loans and Borrowings" for more information).

The following are the contractual maturities of financial liabilities, including estimated interest payments and excluding the effect of netting agreements:

	2017					
	Carrying amount	Contractual cash flows	1 year or less	1 to<2 years	2 to<5 years	5 years and over
			€m			
Non-derivative financial liabilities						
Senior Secured Term Loans	3,437.6	(4,040.6)	(131.9)	(130.4)	(385.3)	(3,393.0)
Senior Secured Notes	1,309.0	(1,568.6)	(42.9)	(42.5)	(112.1)	(1,371.1)
Senior Notes	1,060.4	(1,470.6)	(57.4)	(57.4)	(172.2)	(1,183.6)
Securitisation Facility	282.5	(307.3)	(7.7)	(7.7)	(291.9)	—
Noretyl Facility	53.9	(56.7)	(28.7)	(28.0)	—	—
Other loans	13.2	(15.7)	(2.9)	(1.0)	(3.1)	(8.7)
Finance lease liabilities	1.3	(7.6)	(0.2)	(0.1)	(0.3)	(7.0)
Trade payables	616.6	(616.6)	(616.6)	—	—	—
Amounts due to related parties	201.3	(201.3)	(201.3)	—	—	—
Other payables	634.2	(634.2)	(564.1)	(70.1)	—	—
Derivative financial liabilities						
Commodity contracts	2.3	(2.3)	(2.3)	—	—	—
	7,612.3	**(8,921.5)**	**(1,656.0)**	**(337.2)**	**(964.9)**	**(5,963.4)**

26. FINANCIAL INSTRUMENTS (Continued)

	2016					
	Carrying amount	Contractual cash flows	1 year or less	1 to<2 years	2 to<5 years	5 years and over
	€m					
Non-derivative financial liabilities						
Senior Secured Term Loans	4,580.5	(5,277.2)	(231.4)	(1,424.6)	(2,259.3)	(1,361.9)
Senior Secured Notes	763.8	(970.2)	(30.8)	(30.8)	(92.4)	(816.2)
Senior Notes	2,275.4	(2,950.3)	(127.9)	(129.2)	(1,381.4)	(1,311.8)
Securitisation Facility	299.4	(316.7)	(8.1)	(308.6)	—	—
Noretyl Facility	80.6	(86.2)	(29.5)	(28.7)	(28.0)	—
Other loans	19.0	(22.6)	(4.9)	(3.0)	(3.6)	(11.1)
Finance lease liabilities	1.4	(7.8)	(0.3)	(0.1)	(0.4)	(7.0)
Trade payables	465.2	(465.2)	(465.2)	—	—	—
Amounts due to related parties	202.8	(202.8)	(202.8)	—	—	—
Other payables	485.6	(485.6)	(423.1)	(62.5)	—	—
Derivative financial liabilities						
Commodity contracts	0.9	(0.9)	(0.9)	—	—	—
	9,174.6	**(10,785.5)**	**(1,524.9)**	**(1,987.5)**	**(3,765.1)**	**(3,508.0)**

	2015					
	Carrying amount	Contractual cash flows	1 year or less	1 to<2 years	2 to<5 years	5 years and over
	€m					
Non-derivative financial liabilities						
Senior Secured Term Loans	4,737.9	(5,591.2)	(452.5)	(225.3)	(3,506.0)	(1,407.4)
Senior Secured Notes	762.9	(999.1)	(31.3)	(31.2)	(93.8)	(842.8)
Senior Notes	2,251.9	(2,649.0)	(138.5)	(138.1)	(2,372.4)	—
Securitisation Facility	426.9	(451.0)	(8.0)	(8.0)	(435.0)	—
Noretyl Facility	110.0	(116.4)	(29.6)	(29.5)	(57.3)	—
Other loans	9.0	(9.6)	(3.9)	(3.7)	(2.0)	—
Finance lease liabilities	1.7	(8.7)	(0.4)	(0.1)	(0.5)	(7.7)
Trade payables	475.1	(475.1)	(475.1)	—	—	—
Amounts due to related parties	185.5	(185.5)	(185.5)	—	—	—
Other payables	423.6	(423.6)	(333.3)	(90.3)	—	—
Derivative financial liabilities						
Commodity contracts	14.4	(14.4)	(14.4)	—	—	—
	9,398.9	**(10,923.6)**	**(1,672.5)**	**(526.2)**	**(6,467.0)**	**(2,257.9)**

26.e Net investment and cash flow hedges

The Group does not have derivative commodity contracts that qualify as cash flow hedges at December 31, 2017.

26. FINANCIAL INSTRUMENTS (Continued)

The Group had entered into two interest rate caps to hedge the variable interest rate exposures on the €500.0 million Floating Rate Senior Secured Notes. These derivative instruments expired in May 2015 and did not qualify as hedge accounting under IAS 39.

The Group has US$ and Sterling financial liabilities in respect of the Senior Secured Term Loans, Senior Notes and Securitisation Facility that are designated net investment hedges of US$ and Sterling operations in accordance with the requirements of IAS 21 "The effects of changes in Foreign Exchange Rates". The US$ and Sterling net investment hedges had a carrying value and fair value as follows:

	Carrying amounts 2017	Fair value 2017	Carrying amounts 2016	Fair value 2016	Carrying amounts 2015	Fair value 2015
			€m			
US Dollars	(1,909.9)	(1,940.3)	(3,814.5)	(3,844.1)	(4,114.4)	(4,030.5)
Sterling	(5.4)	(5.4)	(6.5)	(6.5)	(9.3)	(9.3)
	(1,915.3)	**(1,945.7)**	**(3,821.0)**	**(3,850.6)**	**(4,123.7)**	**(4,039.8)**

For the year ended December 31, 2017 losses net of tax of €637.5 million were taken directly to reserves and reported in the Statement of Comprehensive Income for the year then ended (2016: gains €104.7 million, 2015: gains €196.5 million). There was no ineffectiveness recognised in the income statement for the year ended December 31, 2017 (2016: €nil, 2015: €nil).

26.f Market risk

Financial risk management

Market risk reflects the possibility that changes in market prices, such as crude oil, feedstock refined products, chemicals or currency exchange rates or changes in interest rates will adversely affect the value of the Group's assets, liabilities or expected future cash flows. The Group holds commodity contracts in order to manage market risk. The use of derivative instruments is confined to specialist teams that have the appropriate skills, experience, supervision, control and reporting systems.

Market risk—Foreign currency risk

The Group operates internationally and is exposed to foreign exchange risk arising from various currency exposures, primarily with respect to the U.S. Dollar and Sterling.

Foreign exchange risk arises from net investments in foreign operations, future commercial transactions, and recognised assets and liabilities.

The Group applies hedge accounting to foreign currency differences arising on the retranslation of a financial liability designated as a hedge of a net investment in a foreign operation. When the settlement of a monetary item receivable from or payable to a foreign operation is neither planned nor likely in the foreseeable future, foreign exchange gains and losses arising from such a monetary item is considered to form part of a net investment in a foreign operation and changes in the fair value are recognised directly within equity.

26. FINANCIAL INSTRUMENTS (Continued)

A substantial portion of the Group's revenue is generated in, or linked to, the U.S. dollar and the euro. In the European petrochemical business, product prices, certain feedstock costs and most other costs are denominated in euro and sterling. In the U.S. petrochemical and specialty chemicals businesses, product prices, raw materials costs and most other costs are primarily denominated in U.S. dollars.

The Group generally does not enter into foreign currency exchange instruments to hedge foreign currency transaction exposure, although the Group has done so in the past and may do so in the future.

The Group benefits from natural hedging, to the extent that currencies in which net cash flows are generated from the Group's operations, are matched against long-term indebtedness.

The foreign currency exposure where the Group's financial assets/(liabilities) are not denominated in the functional currency of the operating unit involved is shown below. Foreign exchange differences on retranslation of these assets and liabilities are taken to the income statement/ other comprehensive income of the Group.

	2017	2016	2015
		€m	
Euros	125.0	33.4	71.0
US Dollars	(415.7)	(937.8)	(1,233.5)
Sterling	(10.9)	(1.8)	(6.7)
Other	(54.6)	(77.9)	(108.3)
	(356.2)	**(984.1)**	**(1,277.5)**

Sensitivity analysis

A ten percent weakening of the following currencies at December 31, would have increased/ (decreased) equity and profit or (loss) by the amounts shown below. This calculation assumes that the change occurred at the reporting date and had been applied to risk exposures existing at that date.

This analysis assumes that all other variables, in particular other exchange rates and interest rates, remain constant. The analysis is performed on the same basis for the comparative years.

	Equity			Profit or loss		
	2017	2016	2015	2017	2016	2015
			€m			
Euro	—	—	—	(12.5)	(3.3)	(7.1)
US Dollars	28.6	89.5	114.1	13.0	4.3	9.3
Sterling	0.5	0.7	0.9	0.5	(0.5)	(0.3)
Other	5.0	7.6	10.6	0.4	0.2	0.3

A ten percent strengthening of the above currencies against the euro at December 31, would have had the equal but opposite effect on the above currencies to the amounts shown above, on the basis that all other variables remain constant.

26. FINANCIAL INSTRUMENTS (Continued)

Market risk—Interest rate risk

Profile

At the reporting date the interest rate profile of the Group's interest-bearing financial instruments was:

	2017	2016	2015
		€m	
Carrying amount—asset / (liability)			
Fixed rate instruments			
Financial assets	340.3	1,500.2	1,696.2
Financial liabilities	(2,383.9)	(3,059.6)	(3,025.5)
	(2,043.6)	**(1,559.4)**	**(1,329.3)**
Variable rate instruments			
Financial assets	1,366.3	2,204.1	1,648.0
Financial liabilities	(3,774.0)	(4,960.5)	(5,274.8)
	(2,407.7)	**(2,756.4)**	**(3,626.8)**

Sensitivity analysis

A change of 1% in interest rates at the reporting date would have increased/(decreased) equity and profit or loss by the amounts shown below. This calculation assumes that the change occurred at the reporting date and had been applied to risk exposures existing at that date.

This analysis assumes that all other variables, in particular foreign currency rates, remain constant and considers the effect of financial instruments with variable interest rates, financial instrument at fair value through profit or loss or available for sale with fixed interest rates and the fixed rate element of interest rate caps. The analysis is performed on the same basis for 2017, 2016 and 2015.

	2017	2016	2015
		€m	
Profit or loss			
Loss on increase in interest rates by 1%	(24.1)	(27.6)	(36.3)

A 1% change in the opposite direction of the above interest rates at December 31, would have had the equal but opposite effect on the above currencies to the amounts shown above, on the basis that all other variables remain constant.

Market risk—Commodity price risk

This section discusses the Group's exposure to the commodity contracts which are not covered under the own use exemption and are recognised as derivative instruments.

26. FINANCIAL INSTRUMENTS (Continued)

The Group is exposed to commodity price risk through fluctuations in raw material prices and sales of products. The raw material exposures result primarily from the price of crude oil and base chemicals linked to the price of crude. The sales price exposures are primarily related to petrochemicals where prices are in general linked to the market price of crude oil.

The Group enters into contracts to supply or acquire physical volumes of commodities at future dates during the normal course of business that may be considered derivative contracts. Where such contracts exist and are in respect of the normal purchase or sale of products to fulfil the Group's requirements, the own use exemption from derivative accounting is applied.

The Group manages commodity price exposures through trading refined products and chemical feedstock and using commodity swaps, options and futures as a means of managing price and timing risks. In 2017 there are no significant instruments entered by the Group to manage such risk (2016: nil, 2015: nil).

The Group operates within procedures and policies designed to ensure that risks, including those relating to the default of counterparties, are minimised.

Market risk—Equity price risk

The Group's exposure to equity price risk arises from its investment in equity securities which are classified as available for sale financial assets and are shown on the consolidated balance sheet as other financial assets. Available for sale financial assets are accounted for at fair value based on the present value of future cash flows where such information is readily available. However, as explained in Note 15, the Group's available for sale financial assets include certain equity interests which are not quoted and for which there is no active market. In these circumstances, in the absence of reliable information, the Group considers that a reliable determination of fair value is not practicable and such investments are recorded at their acquisition cost. The fair value has therefore been presented as the equivalent to the carrying value at the reporting date. The remainder of available for sale financial assets are valued at fair value based on the present value of future cash flows estimated from financial information made available during the year as a result of a recent transaction in the investment.

For the available for sale investments carried at fair value a 10 percent increase and decrease in transaction prices at the reporting date would have decreased and increased the loss for the year by €2.8 million (2016: €2.9 million, 2015: €2.9 million). Management consider that a change of 10 percent gives an appropriate benchmark to assess the risks that the Group is expected to be exposed to. This calculation assumes that the change occurred at the reporting date and had been applied to risk exposures existing at that date. This analysis assumes that all other variables, in particular foreign currency rates, remain constant.

26.g Capital management

The Group's objectives for managing capital are to safeguard the Group's ability to continue as a going concern in order to provide returns for shareholders and benefits for other stakeholders and to maintain an optimal capital structure to reduce the cost of capital.

26. FINANCIAL INSTRUMENTS (Continued)

The Group defines its capital employed of €6,488.4 million (2016: €6,246.1 million, 2015: €6,088.1 million) as shareholders' equity of €1,696.8 million (2016: €430.1 million, 2015: €(564.2) million) and net debt (net of debt issue costs) of €4,791.6 million (2016: €5,816.0 million, 2015: €6,652.3 million).

The principal sources of debt available to the Group at December 31, 2017 include the Senior Secured Term Loans, Senior Secured Notes due 2023, Senior Secured Notes due 2025, Senior Notes due 2024, Receivables Securitisation Facility and Noretyl Facility and are described in Note 20 along with the key operating and financial covenants that apply to these facilities.

In order to maintain or adjust the capital structure, the Group may adjust the amount of dividends paid to shareholders, issue new shares, raise new debt or sell assets to reduce debt. The ability of the Group to pay dividends and provide appropriate facilities to the Group is restricted by the terms of principal financing agreements to which members of the Group are party.

27. OPERATING LEASES

Future aggregate minimum lease payments are as follows:

	2017	2016 (Restated)	2015 (Restated)
		€m	
Less than one year	113.7	91.9	73.3
Between one and five years	374.8	329.7	190.3
More than five years	609.4	296.5	308.4
	1,097.9	**718.1**	**572.0**

During the year the Group undertook a project to reassess its operating lease classifications. This has resulted in a number of leases being reclassified as service contracts and for the service element of some leases being excluded from the lease obligation as it does not entitle the Group to use the underlying asset. The reassessment resulted in a reduction in future aggregate minimum lease payments of €1,280.0 million in 2016 and €257.0 million in 2015.

The Group has entered into a number of significant operating lease arrangements relating to shipping capacity in respect of the supply chain activities for the European cracker assets. These leases typically run for a period of between 10 and 15 years with options to extend after that date.

28. CAPITAL COMMITMENTS

Outstanding capital expenditure authorised by the Board and for which contracts had been placed as at December 31, 2017 by the Group amounted to approximately €807.5 million (2016: €790.2 million, 2015: €201.5 million).

29. RECONCILIATION OF NET CASH FLOW TO MOVEMENT IN NET DEBT

	2017	2016	2015
		€m	
(Decrease)/increase in cash and cash equivalents in the Year	(701.0)	466.9	145.5
Cash outflow from change in debt financing	1,549.8	431.7	58.3
Change in net debt resulting from cash flows	848.8	898.6	203.8
Debt acquired with acquisition of business	—	—	(100.0)
Other net non-cash transactions	187.3	(61.5)	(481.3)
Movement in net debt in year	**1,036.1**	**837.1**	**(377.5)**

	1 Jan 2017	Cash Flow	Acquisitions	Other Non Cash Changes	31 Dec 2017
			€m		
Cash at bank and in hand	2,204.1	(701.0)	—	(136.8)	1,366.3
Debt due within one year	(77.6)	78.2	—	(65.4)	(64.8)
Debt due after more than one year	(7,987.9)	1,471.5	—	389.5	(6,126.9)
Finance leases	(1.4)	0.1	—	—	(1.3)
	(8,066.9)	1,549.8	—	324.1	(6,193.0)
Net debt	**(5,862.8)**	**848.8**	**—**	**187.3**	**(4,826.7)**

	1 Jan 2016	Cash Flow	Acquisitions	Other Non Cash Changes	31 Dec 2016
			€m		
Cash at bank and in hand	1,648.0	466.9	—	89.2	2,204.1
Debt due within one year	(296.7)	224.4	—	(5.3)	(77.6)
Debt due after more than one year	(8,049.5)	207.1	—	(145.5)	(7,987.9)
Finance leases	(1.7)	0.2	—	0.1	(1.4)
	(8,347.9)	431.7	—	(150.7)	(8,066.9)
Net debt	**(6,699.9)**	**898.6**	**—**	**(61.5)**	**(5,862.8)**

	1 Jan 2015	Cash Flow	Disposals	Other Non Cash Changes	31 Dec 2015
			€m		
Cash at bank and in hand	1,434.6	145.5	—	67.9	1,648.0
Debt due within one year	(36.4)	—	(19.0)	(241.3)	(296.7)
Debt due after more than one year	(7,718.6)	58.0	(81.0)	(307.9)	(8,049.5)
Finance leases	(2.0)	0.3	—	—	(1.7)
	(7,757.0)	58.3	(100.0)	(549.2)	(8,347.9)
Net debt	**(6,322.4)**	**203.8**	**(100.0)**	**(481.3)**	**(6,699.9)**

30. RELATED PARTIES

Identity of related parties with which the Group has transacted

Related parties comprise:

- Parent entities and their subsidiaries not included within the Ineos Group Holdings S.A. group;
- Entities controlled by the shareholders of Ineos Limited, the ultimate parent company of Ineos Group Holdings S.A.;
- Key management personnel; and
- Joint ventures.

Mr JA Ratcliffe, Mr AC Currie and Mr J Reece are shareholders in Ineos Limited.

Ineos AG, a subsidiary of Ineos Limited, provides operational management services to the Group through a management services agreement. Ineos AG management fees of €81.6 million (2016: €81.3 million, 2015: €80.3 million) were charged to the income statement. As at December 31, 2017 amounts owed to Ineos AG were €21.1 million (2016: €22.0 million, 2015: €20.5 million). Amounts due from Ineos Holdings AG, a wholly owned subsidiary of Ineos AG, were €148.8 million (2016: €117.8 million, 2015: €80.3 million).

Ineos Limited owns and controls a number of operating subsidiaries that are not included in the Ineos Group Holdings S.A. group, including INOVYN Limited, Ineos Industries Limited (which from September 1, 2017 includes the Grangemouth petrochemical subsidiaries), INEOS Enterprises Limited and the Lavéra petrochemical assets and businesses together with other French and Italian assets of INEOS O&P South.

During the year ended December 31, 2017 the Group has made sales to these subsidiaries of €987.1 million (2016: €631.5 million, 2015: €516.9 million), recovered costs of €135.1 million (2016: €84.8 million, 2015: €96.8 million) and made purchases of €1,624.9 million (2016: €940.8 million, 2015: €986.9 million). As at December 31, 2017, €393.8 million (2016: €365.1 million, 2015: €521.5 million) was owed by and €164.5 million (2016: €150.2 million, 2015: €144.6 million) was owed to these subsidiaries (excluding the Grangemouth shareholder loan, the Lavera disposal proceeds receivable, the INEOS Upstream Limited loan and transactions and balances with Styrolution).

During 2015 the Group provided a loan of $623.7 million to INEOS Upstream Limited, a related party, in connection with its acquisition of natural gas assets in the North Sea. The loan facility is unsecured and matures on October 26, 2020 and bears interest at 7% per annum. During 2017 net loan repayments of $38.7 million (€33.7 million) were received (2016: net loan repayments of $117.6 million (€103.4 million)), leaving $467.4 million (€391.5 million) outstanding under the facility as at December 31, 2017 (2016: $506.1 million (€482.5 million)).

On September 29, 2017, INEOS Upstream Limited, a related party, acquired further natural gas assets in the North Sea through its acquisition of the entire oil and gas business of DONG Energy A/S. In connection with the DONG Acquisition, the Group advanced a loan of $376.2 million (€315.7 million) to INEOS Upstream Limited, the proceeds of which were on-lent to certain of its subsidiaries. The loan is unsecured and matures in June 2022. As at December 31, 2017 $272.2 million

30. RELATED PARTIES (Continued)

(€228.0 million) was outstanding under the facility following loan repayments of $104.0 million (€87.7 million) during the year ended December 31, 2017.

Following the divestment of the Grangemouth petrochemical business in 2013 the Group put in place a €200 million shareholder loan facility to fund the ongoing operations and investments required at the site. This facility matures on July 28, 2021 and is secured on a second lien basis on the assets of the Grangemouth petrochemical business. During the year ended December 31, 2017 INEOS Grangemouth plc repaid the Group €127.0 million in full repayment (including accrued interest) of the shareholder loan facility. As at December 31, 2016 €125.4 million (2015: €130.6 million) was outstanding under the facility, which included €14.3 million (2015: €8.2 million) of capitalised interest. The total consideration for the sale of the Lavera businesses in 2014 amounted to €200 million and was initially provided in the form of vendor loans, although all of the outstanding consideration had been repaid by the end of 2015 (2014: €78.3 million remained outstanding).

Styrolution was previously a 50-50 joint venture between Ineos Industries Limited, a related party, and BASF. On November 17, 2014 Ineos Industries Limited completed the acquisition of BASF's 50% share in Styrolution for a purchase price of €1.1 billion. As part of the funding for the acquisition the Group provided Ineos Styrolution Holding GmbH, a related party, with a Second Lien PIK Toggle Loan of €200.0 million. The loan bore interest at a rate per annum of 9.5% for cash interest payments or 10.25% for PIK interest and matured in November 2020. During the year ended December 31, 2016 Styrolution paid €22.5 million of interest relating to the Second Lien PIK Toggle Loan. During 2016 Styrolution refinanced its capital structure and repaid the €200 million Second Lien PIK Toggle Loan. The Group used the proceeds from the loan together with €50 million of cash in hand to invest €250 million in Styrolution Term Loan debt which was issued during September 2016. During the year ended December 31, 2017 Styrolution paid €7.7 million of interest relating to the Term Loan debt. In October 2017 the Term Loan was fully repaid to the Group. During the year ended December 31, 2017 the Group has made sales to Styrolution of €420.1 million (2016: €354.9 million, 2015: €349.2 million), recovered costs of €8.0 million (2016: €6.8 million, 2015: €5.2 million) and made purchases of €7.9 million (2016: €4.2 million, 2015: €0.2 million). As at December 31, 2017, €45.9 million (2016: €282.1 million, 2015: €242.1 million) was owed by Styrolution (2016: included €250 million Term Loan holding, 2015: included €200 million under the Second Lien PIK Toggle Loan) and €3.5 million (2016: €0.1 million, 2015: €0.2 million) was owed to Styrolution.

Ineos Limited owns interests in a number of joint ventures that are not included in the Ineos Group Holdings S.A. group, including the French joint ventures associated with the Lavera petrochemical assets and businesses which were divested by the Group on July 1, 2014 and the refining joint ventures between PetroChina and INEOS Investments (Jersey) Limited, a related party and INEOS Investments (Jersey) Limited, a related party and a joint venture with Sasol Limited to build and operate a HDPE plant at Battleground site in Texas, USA which became operational at the end of 2017.

During the year ended December 31, 2017 the Group made sales of €0.1 million (2016: none, 2015: none) to the French joint ventures and recovered costs of €0.2 million (2016: none, 2015: none) from the French joint ventures. As at December 31, 2017 €0.1 million (2016 €nil, 2015: €nil) was owed by the French joint ventures.

30. RELATED PARTIES (Continued)

The Refining joint ventures are between PetroChina and INEOS Investments (Jersey) Limited, a related party. During the year ended December 31, 2017 the Group made no sales to the Refining joint ventures (2016: €nil million, 2015: €0.3 million), recovered costs of €24.5 million (2016: €43.3 million, 2015: €1.3 million) and made purchases of €164.1 million (2016: €262.0 million, 2015: €317.9 million). As at December 31, 2017, €0.6 million (2016: €1.2 million, 2015: €1.9 million) was owed by the Refining joint ventures and €14.9 million (2016: €30.4 million, 2015: €20.2 million) was owed to the Refining joint ventures.

During the year ended December 31, 2017 the Group has recovered costs of €0.1 million (2016: €0.3 million) from the HDPE joint venture. As at December 31, 2017, €2.5 million (2016: €2.3 million) was owed by the HDPE joint venture.

Compensation to key management personnel (including directors)

The Group defines key management as the directors of the Company. Details of Directors' remuneration are given in Note 8.

31. ULTIMATE PARENT UNDERTAKING AND CONTROLLING PARTY

The immediate parent undertaking is Ineos Holdings Luxembourg S.A.. The ultimate parent undertaking at December 31, 2017 was Ineos Limited, a company registered in the Isle of Man. The ultimate controlling party is Mr JA Ratcliffe, director and majority shareholder of the ultimate parent undertaking.

32. ACCOUNTING ESTIMATES AND JUDGEMENTS

The Group prepares its consolidated financial statements in accordance with IFRSs, which require management to make judgements, estimates and assumptions which affect the application of the accounting policies, and the reported amounts of assets, liabilities, income and expenses. Actual results may differ from these estimates. The estimates and assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised in the period in which the estimates change and in any future periods.

The following areas are considered to involve a significant degree of judgement or estimation:

Fair value measurement on business combination

The amount of goodwill initially recognised as a result of a business combination is dependent on the allocation of the purchase price to the fair value of the identifiable assets and liabilities acquired. The determination of the fair value of the acquired assets and liabilities is to a considerable extent based upon management's judgement, and estimates and assumptions made.

Allocation of the purchase price affects the results of the Group as intangible assets are amortised over their estimated useful lives, whereas goodwill, is not amortised. This could lead to differing amortisation charges based on the allocation to indefinite and finite lived intangible assets.

On acquisition of a business, the identifiable intangible assets may include customer contracts, customer relationships and preferential supply contracts. The fair value of these assets is determined by

32. ACCOUNTING ESTIMATES AND JUDGEMENTS (Continued)

discounting estimated future net cash flows generated by the asset. The use of different estimates and assumptions for the expectations of future cash flows and the discount rate would change the valuation of these intangible assets.

The carrying amount of intangibles is disclosed in Note 12.

Taxation

Management is required to estimate the tax payable in each of the jurisdictions in which the Group operates. This involves estimating the actual current tax charge or credit together with assessing temporary differences resulting from differing treatment of items for tax and accounting purposes. These differences result in deferred tax assets and liabilities, which may be included on the consolidated balance sheet of the Group. Management have performed an assessment as to the extent to which future taxable profits will allow the deferred asset to be recovered. The calculation of the Group's total tax charge necessarily involves a significant degree of estimation in respect of certain items whose tax treatment cannot be finally determined until resolution has been reached with the relevant tax authority, or, as appropriate, through a formal legal process.

The Group has, from time to time, contingent tax liabilities arising from trading and corporate transactions in the countries in which it operates. After appropriate consideration, management makes provision for these liabilities based on the probable level of economic loss that may be incurred and which is reliably measurable.

The breadth of the Group's structure with operations in many geographic locations makes the use of estimates and assumptions more challenging. The resolution of issues is not always within the control of the Group and can be reliant upon the efficiency of the legal processes in the relevant jurisdictions in which the Group operates, and as a result, issues can, and often do take many years to resolve.

Details of amounts recognised with regard to taxation are disclosed in Notes 10 and 17.

Post-retirement benefits

The Group operates a number of defined benefit post employment schemes. Under IAS 19 Revised Employee Benefits, management is required to estimate the present value of the future defined benefit obligation of each of the defined benefit schemes. The costs and year end obligations under defined benefit schemes are determined using actuarial valuations. The actuarial valuations involve making numerous assumptions, including:

- Future rate of increase in salaries;
- Inflation rate projections;
- Discount rate for scheme liabilities; and
- Expected rates of return on the scheme assets.

Details of post-retirement benefits are set out in Note 22.

32. ACCOUNTING ESTIMATES AND JUDGEMENTS (Continued)

Provisions

Provisions are recognised for the cost of remediation works where there is a legal or constructive obligation for such work to be carried out. Where the estimated obligation arises upon initial recognition of the related asset, the corresponding debit is treated as part of the cost of the related asset and depreciated over its estimated useful life.

Other provisions are recognised in the period when it becomes probable that there will be a future outflow of funds resulting from past operations or events that can be reasonably estimated. The timing of recognition requires the application of judgement to existing facts and circumstances, which can be subject to change.

Estimates of the amounts of provisions recognised are based on current legal and constructive requirements, technology and price levels. Because actual outflows can differ from estimates due to changes in laws, regulations, public expectations, technology, prices and conditions, and can take place many years in the future, the carrying amounts of provisions are regularly reviewed and adjusted to take account of such changes.

In relation to remediation costs, the estimated interest rate used in discounting the cash flows is reviewed at least annually. The interest rate used to determine the obligation in the balance sheet at December 31, 2017 was 4% (2016: 4%, 2015: 4%).

The nature and amount of provisions included within the financial statements are detailed in Note 23.

Impairment reviews

IFRSs require management to test for impairment of goodwill and other intangible assets with indefinite lives, on an annual basis, and of tangible and intangible assets with finite lives if events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable.

An impairment test requires an assessment as to whether the carrying value of assets can be supported by its recoverable amount. Management calculates the recoverable amount based on the net present value of the future cash flows derived from the relevant assets, using cash flow projections which have been discounted at an appropriate discount rate.

In calculating the net present value of the future cash flows, certain assumptions and estimates are required to be made in respect of highly uncertain matters, including management's expectations of:

- Growth rates of various revenue streams;
- Long term growth rates;
- Future margins;
- The selection of an appropriately risk adjusted discount rate; and
- The determination of terminal values.

32. ACCOUNTING ESTIMATES AND JUDGEMENTS (Continued)

Changing the assumptions selected by management, in particular the discount rate used in the present value calculation, could significantly affect the Group's impairment evaluation and results.

The Group has property, plant and equipment with a carrying value of €4,255.4 million (2016: €4,007.4 million, 2015: €3,508.8 million) as disclosed in Note 11 and intangible assets with a carrying value of €731.6 million (2016: €763.9 million, 2015: €706.4 million) as disclosed in Note 12. All of these assets are assessed annually for impairment as described above.

For the purpose of impairment testing (when required), to assess whether any impairment exists, estimates are made of the future cash flows expected to result from the use of the asset and its eventual disposal. Actual outcomes could vary significantly from such estimates of discounted future cash flows. Factors such as changes in the planned use of buildings, plant or equipment, or closure of facilities, the presence or absence of competition, lower than expected asset utilisation from events such as unplanned outages, strikes and hurricanes, technical obsolescence or lower than anticipated sales of products with capitalised intellectual property rights could result in shortened useful lives or impairment. Changes in the discount rates used could also lead to impairments.

Further details on the impairment review performed on the goodwill and intangible assets are provided in Note 12, including sensitivity analysis in relation to key assumptions.

Segment aggregation

IFRS 8 "Operating Segments" permits two or more operating segments to be aggregated into one for disclosure purposes when individual segments have characteristics so similar that they can be expected to have essentially the same future prospects. Management apply this judgement when aggregating the businesses within the Chemical Intermediates segment. In doing so they take into account that the businesses all have similar economic characteristics, similar products, services and types of customer and similar past cyclical financial performance.

Investments

The Group applies IFRS 11 to all joint arrangements. Under IFRS 11 investments in joint arrangements are classified as either joint operations or joint ventures depending on the contractual rights and obligations of each investor. The Group has assessed the nature of its joint arrangements and determined them to be joint ventures. Joint ventures are accounted for using the equity method.

Details of Investments are set out in Note 13.

AUDITORS' REPORT ON THE CONSOLIDATED FINANCIAL STATEMENTS

Audit report
To the Shareholders of
INEOS Group Holdings S.A.

Report on the consolidated financial statements

We have audited the accompanying consolidated financial statements of INEOS Group Holdings S.A. and its subsidiaries, which comprise the consolidated balance sheet as at 31 December 2016, and the consolidated income statement, the consolidated statement of comprehensive income, the consolidated statement of changes in equity and the consolidated statement of cash flows for the year then ended and a summary of significant accounting policies and other explanatory information.

Board of Directors' responsibility for the consolidated financial statements

The Board of Directors is responsible for the preparation and fair presentation of these consolidated financial statements in accordance with International Financial Reporting Standards as adopted by the European Union, and for such internal control as the Board of Directors determines is necessary to enable the preparation of the consolidated financial statements that are free from material misstatement, whether due to fraud or error.

Responsibility of the "Réviseur d'entreprises agréé"

Our responsibility is to express an opinion on these consolidated financial statements based on our audit. We conducted our audit in accordance with International Standards on Auditing as adopted for Luxembourg by the "Commission de Surveillance du Secteur Financier". Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on the judgment of the "Réviseur d'entreprises agréé" including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, the "Réviseur d'entreprises agréé" considers internal control relevant to the entity's preparation and fair presentation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by the Board of Directors, as well as evaluating the overall presentation of the consolidated financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the consolidated financial statements give a true and fair view of the consolidated financial position of Ineos Group Holdings S.A. and its subsidiaries as of 31 December 2016, and of its consolidated financial performance and its consolidated cash flows for the year then ended in accordance with International Financial Reporting Standards as adopted by the European Union.

Other information

The Board of Directors is responsible for the other information. The other information comprises the information included in the management report but does not include the consolidated financial statements and our audit report thereon.

Our opinion on the consolidated financial statements does not cover the other information and we do not express any form of assurance conclusion thereon.

In connection with our audit of the consolidated financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the consolidated financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report this fact. We have nothing to report in this regard.

Report on other legal and regulatory requirements

The management report, which is the responsibility of the Board of Directors, is consistent with the consolidated financial statements.

PricewaterhouseCoopers, Société coopérative   Luxembourg, 23 March 2017
Represented by

Philippe Piérard

CONSOLIDATED INCOME STATEMENT
FOR THE YEAR ENDED 31 DECEMBER 2016

	Note	2016	2015	2014
			€m	
Revenue	2	**12,609.9**	**13,729.4**	**17,220.5**
Total cost of sales		(10,141.1)	(11,318.4)	(15,173.9)
Gross profit		**2,468.8**	**2,411.0**	**2,046.6**
Distribution costs		(195.3)	(212.1)	(203.8)
Administrative expenses before exceptional items		(385.6)	(372.3)	(333.5)
Exceptional administrative expenses	5	(21.3)	(16.0)	(62.7)
Total administrative expenses		(406.9)	(388.3)	(396.2)
Total expenses		(602.2)	(600.4)	(600.0)
Operating profit	6	**1,866.6**	**1,810.6**	**1,446.6**
Share of profit/(loss) of associates and jointly controlled entities using the equity accounting method	13a	29.3	74.4	(216.9)
Profit/(loss) on disposal of fixed assets		3.7	3.8	(1.4)
Loss on disposal of businesses	4	—	—	(349.0)
Profit before net finance costs		**1,899.6**	**1,888.8**	**879.3**
Total finance income	9	200.0	165.1	114.6
Finance costs before exceptional item	9	(505.3)	(774.1)	(707.7)
Exceptional finance cost	5	(20.7)	(131.6)	—
Total finance costs		(526.0)	(905.7)	(707.7)
Net finance costs		(326.0)	(740.6)	(593.1)
Profit before tax from continuing operations		**1,573.6**	**1,148.2**	**286.2**
Tax charge	10	(340.2)	(237.7)	(322.9)
Profit/(loss) for the year from continuing operations		**1,233.4**	**910.5**	**(36.7)**

The notes on pages F-200 to F-285 are an integral part of these consolidated financial statements.

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME
FOR THE YEAR ENDED 31 DECEMBER 2016

	Note	2016	2015	2014
			€m	
Profit/(loss) for the year		1,233.4	910.5	(36.7)
Other comprehensive income/(loss):				
Items that will not be recycled to profit or loss:				
Remeasurements of post employment benefit obligations net of tax		(61.9)	17.1	(102.1)
		(61.9)	**17.1**	**(102.1)**
Items that may subsequently be recycled to profit or loss:				
Foreign exchange translation differences		(40.6)	(266.3)	(315.7)
Net gain on hedge of net investment in foreign operations	26.e	104.7	196.5	242.8
Recognised in loss on disposal of business		—	—	(22.9)
		64.1	**(69.8)**	**(95.8)**
Other comprehensive income/(loss) for the year net of tax		**2.2**	**(52.7)**	**(197.9)**
Total comprehensive income/(loss) for the year		**1,235.6**	**857.8**	**(234.6)**

The notes on pages F-200 to F-285 are an integral part of these consolidated financial statements.

CONSOLIDATED BALANCE SHEET
AS AT 31 DECEMBER 2016

	Note	2016	2015	2014
			€m	
Non-current assets				
Property, plant and equipment	11	4,007.4	3,508.8	3,067.5
Intangible assets	12	763.9	706.4	648.2
Investments in equity-accounted investees	13.a	161.7	101.4	96.8
Other investments	14	262.2	243.2	210.2
Other financial assets	15	29.2	29.2	28.7
Trade and other receivables	19	1,146.8	1,114.0	546.5
Deferred tax assets	17	205.1	200.9	229.8
		6,576.3	5,903.9	4,827.7
Current assets				
Inventories	18	1,068.1	956.6	1,008.8
Trade and other receivables	19	1,501.8	1,772.4	1,821.7
Other financial assets	15	8.2	1.1	2.5
Cash and cash equivalents	29	2,204.1	1,648.0	1,434.6
		4,782.2	4,378.1	4,267.6
Total assets		**11,358.5**	**10,282.0**	**9,095.3**
Equity attributable to owners of the parent				
Share capital	24	0.9	0.9	0.9
Share premium		779.4	779.4	779.4
Other reserves		(1,712.5)	(1,714.7)	(1,662.0)
Retained earnings		1,362.3	370.2	(381.6)
Total equity		**430.1**	**(564.2)**	**(1,263.3)**
Non-current liabilities				
Interest-bearing loans and borrowings	20	7,947.5	8,008.5	7,672.9
Trade and other payables	21	107.2	91.7	89.0
Employee benefits	22	789.5	689.1	661.2
Provisions	23	28.5	25.6	8.3
Deferred tax liabilities	17	275.6	198.1	196.8
Other financial liabilities	16	0.9	12.6	—
		9,149.2	9,025.6	8,628.2
Current liabilities				
Interest-bearing loans and borrowings	20	72.6	291.8	34.9
Trade and other payables	21	1,563.4	1,445.1	1,657.3
Tax payable		124.0	75.8	32.0
Other financial liabilities	16	—	1.8	—
Provisions	23	19.2	6.1	6.2
		1,779.2	1,820.6	1,730.4
Total liabilities		**10,928.4**	**10,846.2**	**10,358.6**
Total equity and liabilities		**11,358.5**	**10,282.0**	**9,095.3**

These financial statements were approved by the board of directors on 23 March 2017 and were signed on its behalf by:

Natalina Arena *Director*

Florence Bardot *Director*

The notes on pages F-200 to F-285 are an integral part of these consolidated financial statements.

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY
FOR THE YEAR ENDED 31 DECEMBER 2016

	Share capital	Share premium	Other reserves	Retained earnings	Total equity
			€m		
Balance at 1 January 2014	0.9	779.4	(1,464.1)	(279.3)	(963.1)
Loss for the year	—	—	—	(36.7)	(36.7)
Other comprehensive income/(loss):					
Foreign exchange translation differences	—	—	(315.7)	—	(315.7)
Net gain on hedge of net investment in foreign operations	—	—	242.8	—	242.8
Remeasurements of post employment benefit obligations	—	—	(102.1)	—	(102.1)
Recognised in loss on disposal of business	—	—	(22.9)	—	(22.9)
Transactions with owners, recorded directly in equity:					
Dividend	—	—	—	(65.6)	(65.6)
Balance at 31 December 2014	**0.9**	**779.4**	**(1,662.0)**	**(381.6)**	**(1,263.3)**
Profit for the year	—	—	—	910.5	910.5
Other comprehensive income/(loss):					
Foreign exchange translation differences	—	—	(266.3)	—	(266.3)
Net gain on hedge of net investment in foreign operations	—	—	196.5	—	196.5
Remeasurements of post employment benefit obligations	—	—	17.1	—	17.1
Transactions with owners, recorded directly in equity:					
Amounts arising on common control transactions	—	—	—	(85.3)	(85.3)
Dividend	—	—	—	(73.4)	(73.4)
Balance at 31 December 2015	**0.9**	**779.4**	**(1,714.7)**	**370.2**	**(564.2)**
Profit for the year	—	—	—	1,233.4	1,233.4
Other comprehensive income/(loss):					
Foreign exchange translation differences	—	—	(40.6)	—	(40.6)
Net gain on hedge of net investment in foreign operations	—	—	104.7	—	104.7
Remeasurements of post employment benefit obligations	—	—	(61.9)	—	(61.9)
Transactions with owners, recorded directly in equity:					
Dividend	—	—	—	(241.3)	(241.3)
Balance at 31 December 2016	**0.9**	**779.4**	**(1,712.5)**	**1,362.3**	**430.1**

The notes on pages F-200 to F-285 are an integral part of these consolidated financial statements.

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY
FOR THE YEAR ENDED 31 DECEMBER 2016 (Continued)

Analysis of other reserves

	Translation reserve	Fair value reserve	Actuarial losses	Merger reserve	Total other reserves
			€m		
Balance at 1 January 2014	(211.2)	22.9	(475.1)	(800.7)	(1,464.1)
Foreign exchange translation differences	(315.7)	—	—	—	(315.7)
Net gain on hedge of net investment in foreign operations	242.8	—	—	—	242.8
Remeasurements of post employment benefit obligations	—	—	(102.1)	—	(102.1)
Recognised in loss on disposal of business	—	(22.9)	—	—	(22.9)
Balance at 31 December 2014	**(284.1)**	**—**	**(577.2)**	**(800.7)**	**(1,662.0)**
Foreign exchange translation differences	(266.3)	—	—	—	(266.3)
Net gain on hedge of net investment in foreign operations	196.5	—	—	—	196.5
Remeasurements of post employment benefit obligations	—	—	17.1	—	17.1
Balance at 31 December 2015	**(353.9)**	**—**	**(560.1)**	**(800.7)**	**(1,714.7)**
Foreign exchange translation differences	(40.6)	—	—	—	(40.6)
Net gain on hedge of net investment in foreign operations	104.7	—	—	—	104.7
Remeasurements of post employment benefit obligations	—	—	(61.9)	—	(61.9)
Balance at 31 December 2016	**(289.8)**	**—**	**(622.0)**	**(800.7)**	**(1,712.5)**

The notes on pages F-200 to F-285 are an integral part of these consolidated financial statements.

CONSOLIDATED STATEMENT OF CASH FLOWS
FOR THE YEAR ENDED 31 DECEMBER 2016

	Note	2016	2015	2014
			€m	
Cash flows from operating activities				
Profit/(loss) for the year		1,233.4	910.5	(36.7)
Adjustments for:				
Depreciation and impairment	11	398.7	370.7	381.9
Amortisation	12	44.2	12.7	12.3
Net finance costs	5,9	326.0	740.6	593.1
Share of (profit)/loss of equity-accounted investees		(29.3)	(74.4)	216.9
(Profit)/loss on sale of property, plant and equipment		(3.7)	(3.8)	1.4
Loss on disposal of businesses	4	—	—	349.0
Tax charge	10	340.2	237.7	322.9
Decrease/(increase) in trade and other receivables		289.3	(28.2)	(159.2)
(Increase)/decrease in inventories		(74.7)	107.0	150.4
Decrease in trade and other payables		(35.4)	(138.3)	(33.3)
Increase/(decrease) in provisions and employee benefits		11.3	20.6	(11.7)
Tax paid		(221.8)	(167.2)	(365.5)
Net cash generated from operating activities		**2,278.2**	**1,987.9**	**1,421.5**
Cash flows from investing activities				
Proceeds from sale of property, plant and equipment		3.9	3.8	—
Proceeds from sales of investments		1.3	9.2	3.3
Interest and other finance income received		65.1	27.8	1.7
Dividends received		7.0	2.9	5.3
Disposal of businesses, net of cash disposed of	4	—	78.3	121.6
Acquisition of businesses, net of cash acquired	3	(125.3)	(179.8)	—
Acquisition of assets	3	—	(51.9)	—
Loans granted to related parties		(289.9)	(568.4)	(288.7)
Loan repayments from related parties		343.3	—	—
Acquisition of intangible assets		(9.0)	(4.6)	(3.3)
Acquisition of property, plant and equipment		(691.9)	(454.0)	(411.4)
Acquisition of other investments		(28.3)	(0.5)	(10.0)
Net cash used in investing activities		**(723.8)**	**(1,137.2)**	**(581.5)**
Cash flows from financing activities				
Securitisation Facility		(130.5)	(97.7)	—
Proceeds from new Senior Notes		1,101.1	—	1,034.9
Proceeds from new Senior Secured Notes		—	770.0	—
Proceeds from new Senior Secured Term Loans		—	1,407.3	—
Redemption of Senior Secured Notes		—	(2,086.8)	—
Redemption of Senior Notes		(1,111.7)	—	(1,032.1)
Issue costs paid		(10.5)	(36.5)	(11.8)
Interest paid		(404.0)	(537.0)	(433.1)
Proceeds from other loans		13.1	—	—
Repayment of loans		(303.5)	(50.8)	(136.1)
Dividends paid	25	(241.3)	(73.4)	(65.6)
Capital element of finance lease payment		(0.2)	(0.3)	(1.8)
Net cash used in financing activities		**(1,087.5)**	**(705.2)**	**(645.6)**
Net increase in cash and cash equivalents	29	466.9	145.5	194.4
Cash and cash equivalents at 1 January	29	1,648.0	1,434.6	1,130.0
Effect of exchange rate fluctuations on cash held		89.2	67.9	110.2
Cash and cash equivalents at 31 December	29	**2,204.1**	**1,648.0**	**1,434.6**

The notes on pages F-200 to F-285 are an integral part of these consolidated financial statements.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
FOR THE YEAR ENDED 31 DECEMBER 2016
(forming part of the financial statements)

1. ACCOUNTING POLICIES

Overview

Ineos Group Holdings S.A. (the "Company") is a company incorporated and domiciled in the form of a société anonyme under the laws of the Grand-Duchy of Luxembourg, having its registered office at 58, rue Charles Martel, L-2134 Luxembourg, Grand-Duchy of Luxembourg. The nature of the operations and principal activities of the Company and its subsidiaries are the manufacture and sale of a range of chemicals and refined products used in a variety of applications.

Basis of accounting

The Group financial statements consolidate those of the Company and its subsidiaries (together referred to as the "Group") and equity account the Group's interest in associates and jointly controlled entities.

The Group financial statements have been prepared on a going concern basis and approved by the directors in accordance with International Financial Reporting Standards (IFRSs) as adopted by the European Union in response to the IAS regulation (EC 1606/2002) effective as of December 31, 2016 and have been approved on March 23, 2017.

The accounting policies set out below have, unless otherwise stated, been applied consistently to all periods presented in these Group financial statements.

Measurement convention

The financial statements are prepared on the historical cost basis except that derivative financial instruments and financial instruments classified as fair value through the profit or loss are stated at their fair value and non-current assets and disposal groups held for sale are stated at the lower of previous carrying amount and fair value less costs to sell.

Functional and presentation currency

These Group financial statements are presented in euro, which is the functional currency of the majority of operations. The Group's primary products are sold in an international commodities market which is priced and invoiced primarily in euros.

All financial information presented in euro has been rounded to the nearest €0.1 million.

Changes in accounting policies

There were no new standards applied during the year ended 31 December 2016 by the Group. The Group has applied the following amendments to accounting standards for the first time in 2016 with effect from 1 January 2016 (with material prior period comparative information restated, to the extent required and as explained below):

- *Amendments to IAS 27—Equity Method in Separate Financial Statements* (mandatory for year commencing on or after 1 January 2016).

  The amendments reinstate the equity method as an accounting option for investments in subsidiaries, joint ventures and associates in an entity's separate financial statements.

1. ACCOUNTING POLICIES (Continued)

- *Amendments to IAS 1—Disclosure Initiative* (mandatory for year commencing on or after 1 January 2016).

  This amendment has given certain clarifications regarding the use of concept of materiality, structure of notes and disclosures of accounting policies and information to be presented in the statement of financial position and in the statement of profit or loss and other comprehensive income.

- *Amendments to IAS 16 and IAS 38—Clarification of Acceptable Methods of Depreciation and Amortisation* (mandatory for year commencing on or after 1 January 2016).

  The amendments provide additional guidance on how the depreciation or amortisation of property, plant and equipment and intangible assets should be calculated.

- *Amendments to IFRS 11—Accounting for Acquisitions of Interests in Joint Operations* (mandatory for year commencing on or after 1 January 2016).

  This amendment clarifies that when acquiring interests in joint operations in which the activity constitutes a business pursuant to IFRS 3 all of the principles on business combinations accounting in IFRS 3 apply. This means that most identifiable assets and liabilities must be measured at fair value, deferred taxes and goodwill must be recognised and impairment tests must be performed. In addition the disclosure requirements in IFRS 3 also apply in these cases.

- *Annual Improvements to IFRSs—2012-2014 Cycle* (mandatory for year commencing on or after 1 January 2016).

  Annual Improvements to IFRSs 2012-2014 Cycle sets out five amendments to four standards, excluding those standards that are consequentially amended, and the related Basis for Conclusions.

  The standards affected and the subjects of the amendments are:

  - IFRS 5 *Non-current Assets Held for Sale and Discontinued Operations*—changes in methods of disposal;
  - IFRS 7 *Financial Instruments: Disclosures*—servicing contracts and applicability of the amendments to IFRS 7 to condensed interim financial statements;
  - IAS 19 *Employee Benefits*—regional market issue regarding discount rate;
  - IAS 34 *Interim Financial Reporting*—disclosure of information ‘elsewhere in the interim financial report’.

- *Amendments to IAS 19: Defined Benefit Plans: Employee Contributions* (mandatory for year commencing on or after 1 February 2015)

  The amendment clarifies the requirements that relate to how contributions from employees or third parties that are linked to service should be attributed to periods of service. In addition, it permits a practical expedient if the amount of the contributions is independent of the number of years of service, in that contributions, can, but are not required, to be

1. ACCOUNTING POLICIES (Continued)

recognised as a reduction in the service cost in the period in which the related service is rendered.

- *Annual Improvements to IFRSs 2010-2012 Cycle* (mandatory for year commencing on or after 1 February 2015)

  Annual Improvements to IFRSs 2010-2012 Cycle sets out a collection of amendments to IFRSs.

  The standards affected and the subjects of the amendments are:

  - IFRS 2: Definition of 'vesting condition';
  - IFRS 3: Accounting for contingent consideration in a business combination;
  - IFRS 8: Aggregation of operating segments;
  - IFRS 8: Reconciliation of the total of the reportable segments' assets to the entity's assets;
  - IFRS 13: Short-term receivables and payables;
  - IAS 7: Interest paid that is capitalised;
  - IAS 16/IAS 38: Revaluation method—proportionate restatement of accumulated depreciation;
  - IAS 24: Key management personnel.

Basis of consolidation

Subsidiaries

Subsidiaries are all entities (including structured entities) over which the Group has control. The Group controls an entity when the Group is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity.

Subsidiaries are fully consolidated from the date on which control is transferred to the Group. They are deconsolidated from the date that control ceases.

The Group applies the acquisition method to account for business combinations, except acquisitions under common control which are outside the scope of IFRS 3. The consideration transferred for the acquisition of a subsidiary is the fair values of the assets transferred, the liabilities incurred to the former owners of the acquiree and the equity interests issued by the Group. The consideration transferred includes the fair value of any asset or liability resulting from a contingent consideration arrangement. Identifiable assets acquired and liabilities and contingent liabilities assumed in a business combination are measured initially at their fair values at the acquisition date. The Group recognises any non-controlling interest in the acquiree on an acquisition-by-acquisition basis, either at fair value or at the non-controlling interest's proportionate share of the recognised amounts of acquiree's identifiable net assets. Acquisition-related costs are expensed as incurred.

1. ACCOUNTING POLICIES (Continued)

If the business combination is achieved in stages, the acquisition date carrying value of the acquirer's previously held equity interest in the acquiree is re-measured to fair value at the acquisition date; any gains or losses arising from such re-measurement are recognised in profit or loss.

Any contingent consideration to be transferred by the Group is recognised at fair value at the acquisition date. Subsequent changes to the fair value of the contingent consideration that is deemed to be an asset or liability is recognised in accordance with IAS 39 either in profit or loss or as a change to other comprehensive income. Contingent consideration that is classified as equity is not re-measured, and its subsequent settlement is accounted for within equity.

Inter-company transactions, balances and unrealised gains on transactions between Group companies are eliminated. Unrealised losses are also eliminated. When necessary, amounts reported by subsidiaries have been adjusted to conform with the Group's accounting policies.

Transactions with non-controlling interests that do not result in loss of control are accounted for as equity transactions—that is, as transactions with the owners in their capacity as owners. The difference between fair value of any consideration paid and the relevant share acquired of the carrying value of net assets of the subsidiary is recorded in equity. Gains or losses on disposals to non-controlling interests are also recorded in equity.

When the Group ceases to have control any retained interest in the entity is remeasured to its fair value at the date when control is lost, with the change in carrying amount recognised in profit or loss. The fair value is the initial carrying amount for the purposes of subsequently accounting for the retained interest as an associate, joint venture or financial asset. In addition, any amounts previously recognised in other comprehensive income in respect of that entity are accounted for as if the Group had directly disposed of the related assets or liabilities. This may mean that amounts previously recognised in other comprehensive income are reclassified to profit or loss.

Special purpose entities ("SPE")

An SPE is consolidated if, based on an evaluation of the substance of its relationship with the Group and the SPE's risks and rewards, the Group concludes that it controls the SPE. The Group has established an SPE, Ineos Finance Ireland Limited, for a debt securitisation programme. The Group does not have any direct or indirect shareholdings in this SPE. Ineos Finance Ireland Limited is controlled by the Group as it was established under terms that impose strict limitations on the decision-making powers of the SPE's management that result in the Group receiving the majority of the benefits related to the SPE's operations and net assets, being exposed to the majority of risks arising from the SPE's activities, and retaining the majority of the residual or ownership risks related to the SPE and its assets. Ineos Finance Ireland Limited is therefore regarded as an SPE and has been consolidated in these financial statements.

Associates

Associates are all entities over which the Group has significant influence but not control, generally accompanying a shareholding of between 20% and 50% of the voting rights. Investments in associates are accounted for using the equity method of accounting. Under the equity method, the investment is initially recognised at cost, and the carrying amount is increased or decreased to

1. ACCOUNTING POLICIES (Continued)

recognise the investor's share of the profit or loss of the investee after the date of acquisition. The Group's investment in associates includes goodwill identified on acquisition. If the ownership interest in an associate is reduced but significant influence is retained, only a proportionate share of the amounts previously recognised in other comprehensive income is reclassified to profit or loss where appropriate.

The Group's share of post-acquisition profit or loss is recognised in the income statement, and its share of post-acquisition movements in other comprehensive income is recognised in other comprehensive income with a corresponding adjustment to the carrying amount of the investment. When the Group's share of losses in an associate equals or exceeds its interest in the associate, including any other unsecured receivables, the Group does not recognise further losses, unless it has incurred legal or constructive obligations or made payments on behalf of the associate.

The Group determines at each reporting date whether there is any objective evidence that the investment in the associate is impaired. If this is the case, the Group calculates the amount of impairment as the difference between the recoverable amount of the associate and its carrying value and recognises the amount adjacent to 'share of profit/(loss) of associates' in the income statement.

Profits and losses resulting from upstream and downstream transactions between the Group and its associate are recognised in the Group's financial statements only to the extent of unrelated investor's interests in the associates. Unrealised losses are eliminated unless the transaction provides evidence of an impairment of the asset transferred. Accounting policies of associates have been changed where necessary to ensure consistency with the policies adopted by the Group.

Dilution gains and losses arising in investments in associates are recognised in the income statement.

Joint arrangements

The Group applies IFRS 11 to all joint arrangements. Under IFRS 11 investments in joint arrangements are classified as either joint operations or joint ventures depending on the contractual rights and obligations of each investor. The Group has assessed the nature of its joint arrangements and determined them to be joint ventures. Joint ventures are accounted for using the equity method.

Under the equity method of accounting, interests in joint ventures are initially recognised at cost and adjusted thereafter to recognise the Group's share of the post-acquisition profits or losses and movements in other comprehensive income. When the Group's share of losses in a joint venture equals or exceeds its interests in the joint ventures (which includes any long-term interests that, in substance, form part of the Group's net investment in the joint ventures), the Group does not recognise further losses, unless it has incurred obligations or made payments on behalf of the joint ventures.

Unrealised gains on transactions between the group and its joint ventures are eliminated to the extent of the Group's interest in the joint ventures. Unrealised losses are also eliminated unless the transaction provides evidence of an impairment of the asset transferred. Accounting policies of the joint ventures have been changed where necessary to ensure consistency with the policies adopted by the Group.

1. ACCOUNTING POLICIES (Continued)

Foreign exchange

Transactions in foreign currencies are translated to the respective functional currencies of Group entities at the foreign exchange rate ruling at the date of the transaction. Monetary assets and liabilities denominated in foreign currencies at the reporting date are retranslated to the functional currency at the foreign exchange rate ruling at that date. Foreign exchange differences arising on translation are recognised in the consolidated income statement except for differences arising on the retranslation of a financial liability designated as a hedge of the net investment in a foreign operation, or qualifying cash flow hedges, which are recognised in other comprehensive income. Non-monetary assets and liabilities that are measured in terms of historical cost in a foreign exchange are translated using the exchange rate at the date of the transaction. Non-monetary assets and liabilities denominated in foreign currencies that are stated at fair value are retranslated to the functional currency at foreign exchange rates ruling at the dates the fair value was determined.

The assets and liabilities of foreign operations, including goodwill and fair value adjustments arising on consolidation, are translated to the Group's presentational currency, euros, at foreign exchange rates ruling at the reporting date. The revenues and expenses of foreign operations are translated at exchange rates prevailing at the dates of the transactions. The Group applies an average rate for the year where this rate approximates to the foreign exchange rates ruling at the dates of the transactions. Exchange differences arising from this translation of foreign operations are taken directly to the translation reserve. They are recycled into the consolidated income statement upon disposal.

Exchange differences arising from a monetary item receivable from or payable to a foreign operation, the settlement of which is neither planned nor likely in the foreseeable future, are considered to form part of a net investment in a foreign operation and are recognised directly in equity in the translation reserve. Foreign exchange differences arising on the retranslation of a borrowing designated as a hedge of a net investment in a foreign operation are recognised directly in equity, in the translation reserve, to the extent that the hedge is effective. When the hedged part of a net investment is disposed of, the associated cumulative amount in equity is transferred to profit or loss as an adjustment to the profit or loss on disposal.

Classification of financial instruments issued by the Group

Financial instruments issued by the Group are treated as equity only to the extent that they meet the following two conditions:

(a) they include no contractual obligations upon the Group to deliver cash or other financial assets or to exchange financial assets or financial liabilities with another party under conditions that are potentially unfavourable to the Group; and

(b) where the instrument will or may be settled in the company's own equity instruments, it is either a non-derivative that includes no obligation to deliver a variable number of the company's own equity instruments or is a derivative that will be settled by the company's exchanging a fixed amount of cash or other financial assets for a fixed number of its own equity instruments.

1. ACCOUNTING POLICIES (Continued)

To the extent that this definition is not met, the proceeds of issue are classified as a financial liability. Where the instrument so classified takes the legal form of the company's own shares, the amounts presented in these financial statements for called up share capital and share premium account exclude amounts in relation to those shares.

Non-derivative financial instruments

Non-derivative financial instruments comprise investments in equity and debt securities, trade and other receivables, cash and cash equivalents, loans and borrowings, and trade and other payables.

Trade and other receivables

Trade and other receivables are recognised initially at fair value plus transaction costs that are directly attributable to the acquisition or issue. Subsequent to initial recognition they are measured at amortised cost using the effective interest method, less any impairment losses.

Trade and other payables

Trade and other payables are recognised initially at fair value less transaction costs that are directly attributable to the acquisition or issue. Subsequent to initial recognition they are measured at amortised cost using the effective interest method.

Investments in debt and equity securities

Investments in loans and receivables are stated at amortised cost less impairment.

Other investments in debt and equity securities held by the Group are classified as being available-for-sale and are stated at fair value, with any resultant gain or loss being recognised in other comprehensive income (in a fair value reserve), except for impairment losses and, in the case of monetary items such as debt securities, foreign exchange gains and losses. When these investments are derecognised, the cumulative gain or loss previously recognised directly in equity is recognised in profit or loss. Where these investments are interest-bearing, interest calculated using the effective interest method is recognised in profit or loss. Where no reliable measurement of fair value is available, available-for-sale investments are stated at historic acquisition cost (see Note 15).

Cash and cash equivalents

Cash and cash equivalents comprise cash balances and call deposits. Bank overdrafts that are repayable on demand and form an integral part of the Group's cash management are included as a component of cash and cash equivalents for the purpose only of the statement of cash flows.

Interest-bearing borrowings

Interest-bearing borrowings are recognised initially at fair value less attributable transaction costs. Subsequent to initial recognition, interest-bearing borrowings are stated at amortised cost using the effective interest method.

1. ACCOUNTING POLICIES (Continued)

Debt restructuring

The Group derecognises financial liabilities in accordance with the provisions in IAS 39. When debt is modified, the Group analyses the modifications from both a quantitative and qualitative perspective to determine if the modifications are substantial and meet the IFRS requirements for derecognition, in which case the debt is treated as extinguished. All fees paid in connection with a debt extinguishment are expensed immediately. When a modification is accounted for as a non-substantial modification, associated fees incurred are deferred as an adjustment to the carrying value of the liability and amortised using the effective interest method.

Derivative financial instruments and hedging

Derivative financial instruments

Derivative financial instruments are initially recognised at fair value. The gain or loss on subsequent remeasurement to fair value is recognised immediately in the consolidated income statement as finance income or expense. Where derivatives qualify for hedge accounting, recognition of any resultant gain or loss depends on the nature of the item being hedged (see below).

Cash flow hedges

Where a derivative financial instrument is designated as a hedge of the variability in cash flows of a recognised asset or liability, or a highly probable forecast transaction, the effective part of any gain or loss on the derivative financial instrument is recognised directly in the hedging reserve. Any ineffective portion of the hedge is recognised immediately in the consolidated income statement as finance income or expense.

When the forecast transaction subsequently results in the recognition of a non-financial asset or non-financial liability, the associated cumulative gain or loss is removed from the hedging reserve and is included in the initial carrying amount of the non-financial asset or liability.

If a hedge of a forecast transaction subsequently results in the recognition of a financial asset or a financial liability, the associated gains and losses that were recognised directly in equity are reclassified into profit or loss in the same period or periods during which the asset acquired or liability assumed affects profit or loss, e.g. when interest income or expense is recognised.

For cash flow hedges, other than those covered by the preceding two policy statements, the associated cumulative gain or loss is removed from equity and included in the consolidated income statement as an adjustment to revenue and cost of sales in the same period or periods during which the hedged forecast transaction affects revenue and cost of sales in the consolidated income statement.

When a hedging instrument expires or is sold, terminated or exercised, or the Group revokes designation of the hedge relationship but the hedged forecast transaction is still expected to occur, the cumulative gain or loss at that point remains in equity and is recognised in accordance with the above policy when the transaction occurs. If the hedged transaction is no longer expected to take place, the cumulative unrealised gain or loss recognised in equity is recognised in the consolidated income statement immediately.

1. ACCOUNTING POLICIES (Continued)

Hedge of net investment in foreign operation

The Group applies hedge accounting to foreign exchange differences arising on the retranslation of a foreign currency loan where the loan is designated as a hedge of a net investment in a foreign operation in accordance with IAS 21 and IAS 39.

Exchange differences arising on retranslation of foreign currency loans designated as a net investment hedge are taken directly to equity via the consolidated statement of comprehensive income. Gains and losses accumulated in the translation reserve will be recycled to the statement of comprehensive income when the foreign operation is sold.

Property, plant and equipment

Property, plant and equipment are stated at cost less accumulated depreciation and accumulated impairment losses.

Cost includes expenditure that is directly attributable to the acquisition of the asset. Cost may include the cost of materials, labour and other costs directly attributable to bringing the assets to a working condition for their intended use. Cost may also include the cost of dismantling and removing items and restoring the site on which they are located.

Where parts of an item of property, plant and equipment have different useful lives, they are accounted for as separate items of property, plant and equipment.

Leases in which the Group assumes substantially all the risks and rewards of ownership of the leased asset are classified as finance leases. Where land and buildings are held under leases the accounting treatment of the land is considered separately from that of the buildings. Leased assets acquired by way of finance lease are stated at an amount equal to the lower of their fair value and the present value of the minimum lease payments at inception of the lease, less accumulated depreciation and less accumulated impairment losses. The assets are depreciated over the shorter of their useful life or asset lease term. Lease payments are accounted for as described below.

Depreciation is charged to the consolidated income statement on a straight-line basis over the estimated useful lives of each part of an item of property, plant and equipment. Depreciation commences from the date an asset is brought into service. Land and assets in the course of construction are not depreciated. The estimated useful lives are as follows:

- Buildings . . . . 10 - 40 years
- Plant and equipment and fixtures and fittings . . . . 3 - 40 years

Depreciation methods, useful lives and residual values are reviewed at each reporting date.

The carrying values of property, plant and equipment are reviewed for impairment when events or changes in circumstances indicate that the carrying value may not be recoverable. Where an indicator of impairment exists, the Group makes an estimate of the recoverable amount, which is the higher of the asset's fair value less cost to sell and value in use. Where the carrying amount of an asset exceeds its recoverable amount, the asset is considered impaired and is written down to its recoverable amount.

1. ACCOUNTING POLICIES (Continued)

Assets are derecognised upon disposal or when no future economic benefits are expected to arise from the continued use of the asset. Any gain or loss arising on de-recognition of the asset (calculated as the difference between the net disposal proceeds and the carrying value of the asset) is included in the consolidated income statement in the period in which the item is derecognised.

Business combinations, goodwill and intangible assets

All business combinations are accounted for by applying the purchase method, except acquisitions under common control which are outside the scope of IFRS 3. Goodwill represents amounts arising on acquisition of subsidiaries, associates and jointly controlled entities. In respect of business acquisitions that have occurred since 1 January 2007, goodwill represents the difference between the cost of the acquisition and the net fair value of the identifiable assets, liabilities and contingent liabilities acquired. For any acquisitions occurring on or after 1 January 2009, all transaction costs are expensed as incurred.

Acquisitions under common control are accounted for at book value. The difference in the book value of the assets acquired and consideration paid is recognised in retained earnings.

Goodwill is stated at cost less any accumulated impairment losses. Goodwill is allocated to groups of cash-generating units and is not amortised but is tested annually for impairment. At Ineos, cash generating units are predominately business units. In respect of equity accounted investees, the carrying amount of goodwill is included in the carrying amount of the investment in the investee.

Negative goodwill arising on an acquisition is recognised immediately in the consolidated income statement.

Intangible assets

Intangible assets that are acquired by the Group are stated at cost less accumulated amortisation and accumulated impairment losses. These intangible assets principally comprise intellectual property rights, customer relationships, non-compete agreements and license fees.

Intangible assets acquired separately from a business are carried initially at cost. The initial cost is the aggregate amount paid and the fair value of other consideration given to acquire the assets. An intangible asset acquired as part of a business combination is recognised separately from goodwill if the asset is separable or arises from contractual or other legal rights and its fair value can be measured reliably.

Amortisation

Amortisation is charged to the consolidated income statement on a straight-line basis over the estimated useful lives of intangible assets unless such lives are indefinite. Intangible assets with an indefinite useful life and goodwill are systematically tested for impairment at each reporting date.

1. ACCOUNTING POLICIES (Continued)

Other intangible assets are amortised from the date they are available for use. The estimated useful lives are as follows:

- Customer relationships . . . . 3 - 12 years
- Intellectual property rights . . . . 10 - 15 years
- Non-compete agreements . . . . life of the agreement
- Licenses . . . . up to 15 years

These intangible assets are tested for impairment at the end of the reporting period if events or changes in circumstances indicate that the carrying value may not be recoverable. Useful lives are examined on an annual basis and adjustments, where applicable, are made on a prospective basis.

Research and development

Expenditure on research activities is recognised in the consolidated income statement as an expense as incurred.

Expenditure on development activities is capitalised if the product or process is technically and commercially feasible and the Group intends to and has the technical ability and sufficient resources to complete development, future economic benefits are probable and if the Group can measure reliably the expenditure attributable to the intangible asset during its development. Development activities involve a plan or design for the production of new or substantially improved products or processes. The expenditure capitalised includes the cost of materials, direct labour and an appropriate proportion of overheads. Where regulatory and other uncertainties are such that the criteria are not met, the expenditure is recognised in the income statement. Other development expenditure is recognised in the income statement as an expense as incurred. Capitalised development expenditure is stated at cost less accumulated amortisation and less accumulated impairment losses.

Impairment excluding inventories and deferred tax assets

The carrying amounts of the Group's assets are assessed at the end of the reporting period to determine whether there is any indication of impairment. A financial asset is considered to be impaired if objective evidence indicates that one or more events have had a negative effect on the estimated future cash flows of that asset. If any such indication exists, the asset's recoverable amount is estimated.

For goodwill and other intangible assets that have an indefinite useful life and intangible assets that are not yet available for use, the recoverable amount is estimated at the end of the reporting period.

An impairment loss is recognised whenever the carrying amount of an asset or its cash-generating unit exceeds its recoverable amount. Impairment losses are recognised in the consolidated income statement.

Impairment losses recognised in respect of cash-generating units are allocated first to reduce the carrying amount of any goodwill allocated to cash-generating units and then to reduce the carrying amount of the other assets in the unit on a pro rata basis. A cash generating unit is the smallest

1. ACCOUNTING POLICIES (Continued)

identifiable group of assets that generates cash inflows that are largely independent of the cash inflows from other assets or groups of assets.

When a decline in the fair value of an available-for-sale financial asset has been recognised directly in equity and there is objective evidence that the asset is impaired, the cumulative loss that had been recognised directly in equity is recognised in profit or loss even though the financial asset has not been derecognised. The amount of the cumulative loss that is recognised in profit or loss is the difference between the acquisition cost and current fair value, less any impairment loss on that financial asset previously recognised in profit or loss.

Calculation of recoverable amount

The recoverable amount of the Group's receivables is calculated as the present value of estimated future cash flows, discounted at the original effective interest rate (i.e. the effective interest rate computed at initial recognition of these financial assets). Receivables are not discounted where their duration is less than one year or where the effect of discounting is not material.

The recoverable amount of other assets is the greater of their fair values less costs to sell and value in use. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset.

For an asset that does not generate largely independent cash inflows, the recoverable amount is determined for the cash-generating unit to which the asset belongs.

Reversals of impairment

An impairment loss in respect of a held-to-maturity security or receivable carried at amortised cost is reversed if the subsequent increase in recoverable amount can be related objectively to an event occurring after the impairment loss was recognised.

An impairment loss in respect of an investment in an equity instrument classified as available for sale is not reversed through profit or loss. If the fair value of a debt instrument classified as available-for-sale increases and the increase can be objectively related to an event occurring after the impairment loss was recognised in profit or loss, the impairment loss is reversed through profit or loss.

An impairment loss in respect of goodwill is not reversed.

In respect of other assets, an impairment loss is reversed when there is an indication that the impairment loss may no longer exist and there has been a change in the estimates used to determine the recoverable amount.

An impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortisation, if no impairment loss had been recognised.

1. ACCOUNTING POLICIES (Continued)

Inventories

Inventories are stated at the lower of average cost and net realisable value. Cost includes expenditure incurred in acquiring the inventories, production or conversion costs and other costs in bringing them to their existing location and condition. In the case of manufactured inventories and work in progress, cost includes an appropriate share of overheads based on normal operating capacity. Provision is made for obsolete, slow-moving or defective items where appropriate.

Items owned by the Group that are held on consignment at another entity's premises are included as part of the Group's inventory.

Commodities

Contracts that are entered into and continue to be held for the purpose of receipt or delivery of non-financial items in accordance with the company's expected purchase, sale or usage requirements (own-use contracts) are not accounted for as derivative financial instruments, but rather as executory contracts.

Employee benefits

The Group operates a number of defined contribution plans and funded and unfunded defined benefit pension schemes. The Group also provides unfunded early retirement benefits, long service awards and an incentive plan for certain employees.

The Group provides health care insurance to eligible retired employees and their dependants, primarily in the United States.

Defined contribution plans

A defined contribution plan is a post-employment benefit plan under which the Group pays fixed contributions into a separate entity and will have no legal or constructive obligation to pay further amounts. Obligations for contributions to defined contribution pension plans are recognised as an expense in the consolidated income statement as incurred.

Defined benefit plans

A defined benefit plan is a post-employment benefit plan other than a defined contribution plan. The Group's net obligation in respect of defined benefit pension plans and other post employment benefits is calculated separately for each plan by estimating the amount of future benefit that employees have earned in return for their service in the current and prior periods; that benefit is discounted to determine its present value, and the fair value of any plan assets (at bid price) are deducted. The liability discount rate is the yield at the reporting date on AA credit rated bonds denominated in the currency of, and that have maturity dates approximating to the terms of, the Group's obligations. The calculation is performed by a qualified actuary using the projected unit credit method.

1. ACCOUNTING POLICIES (Continued)

When the benefits of a plan are amended or curtailed, the portion of the increased or decreased benefit relating to past service by employees is recognised as an expense immediately in the consolidated income statement.

All actuarial gains and losses as at 1 January 2007, the date of transition to IFRSs, were recognised. In respect of actuarial gains and losses that arise subsequent to 1 January 2007, the Group recognises them in the period they occur directly in equity through the statement of comprehensive income.

Where the calculation results in a benefit to the Group, the asset recognised is limited to the present value of any future refunds from the plan or reductions in future contributions to the plan.

The pension scheme surplus (to the extent that it is recoverable) or deficit is recognised in full.

The movement in the scheme surplus/deficit is split between:

- cost of sales and administrative expenses,
- net finance costs and,
- in net expense recognised directly in equity, the remeasurements of post employment benefit obligations.

Short-term benefits

Short-term employee benefit obligations are measured on an undiscounted basis and are expensed as the related service is provided. A liability is recognised for the amount expected to be paid under short-term cash bonus or profit-sharing plans if the Group has a present legal or constructive obligation to pay this amount as a result of past service provided by the employee and the obligation can be estimated reliably.

Provisions

A provision is recognised in the consolidated balance sheet when the Group has a present legal or constructive obligation as a result of a past event, that can be reliably measured and it is probable that an outflow of economic benefits will be required to settle the obligation. Provisions are determined by discounting the expected future cash flows at a pre-tax rate that reflects risks specific to the liability.

Share capital

Ordinary shares are classified as equity. Incremental costs directly attributable to the issue of new shares are shown in equity as a deduction, net of tax, from the proceeds.

Revenue

Revenue represents the invoiced value of products sold or services provided to third parties net of sales discounts, value added taxes and duties. Revenue is recognised when the significant risks and rewards of ownership have passed to the buyer and it can be reliably measured.

1. ACCOUNTING POLICIES (Continued)

The pricing for products sold is determined by market prices (market contracts and arrangements) or is linked by a formula to published raw material prices plus an agreed additional amount (formula contracts). Revenue arising from the sale of goods is recognised when the goods are either dispatched or delivered depending on the relevant delivery terms and the point at which risks and rewards have been transferred to the buyer when the prices are determinable and when collectability is considered probable.

Services provided to third parties include administrative and operational services provided to other chemical companies with units on our sites and services under tolling arrangements. Under tolling arrangements, customers pay for or provide raw materials to be converted into a certain specified product, for which the Group charges a toll fee. The Group only recognises the toll fee as revenue earned under such arrangements upon shipment of the converted product to the customer as this is the point at which risks and rewards have been transferred to the buyer. For all other services, revenue is recognised upon completion of the service provided.

Government grants

Government grants are shown in the consolidated balance sheet as deferred income. This income is amortised on a straight line basis over the same period as the tangible fixed asset to which it relates or the life of the related project.

Expenses

Operating lease payments

Payments made under operating leases are recognised in the consolidated income statement on a straight-line basis over the term of the lease. Lease incentives received are recognised in the consolidated income statement as an integral part of the total lease expense.

Finance lease payments

Minimum lease payments are apportioned between the finance charge and the reduction of the outstanding liability. The finance charge is allocated to each period during the lease term so as to produce a constant periodic rate of interest on the remaining balance of the liability.

Finance income and expenses

Interest income and interest expense are recognised in the consolidated income statement as it accrues, using the effective interest method. Dividend income is recognised in the consolidated income statement on the date the entity's right to receive payments is established. Foreign exchange gains and losses are reported on a gross basis.

Finance costs comprise interest payable, finance charges on finance leases, unwinding of the discount on provisions, net fair value losses on derivatives, net interest on employee benefit liabilities and foreign exchange losses that are recognised in the consolidated income statement (see foreign exchange accounting policy). Finance income comprises interest receivable on funds invested and from related party loans, net fair value gains on derivatives and foreign exchange gains.

1. ACCOUNTING POLICIES (Continued)

Taxation

Tax on the profit or loss for the year comprises current and deferred tax. Tax is recognised in the consolidated income statement except to the extent that it relates to items recognised directly in equity, in which case it is recognised in equity.

Current tax is the expected tax payable on the taxable income for the year, using tax rates enacted or substantively enacted at the end of the reporting period, and any adjustment to tax payable in respect of previous years.

Deferred tax is provided on temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes. The following temporary differences are not provided for: the initial recognition of goodwill; the initial recognition of assets or liabilities that affect neither accounting nor taxable profit other than in a business combination; and differences relating to investments in subsidiaries to the extent that they will probably not reverse in the foreseeable future. The amount of deferred tax provided is based on the expected manner of realisation or settlement of the carrying amount of assets and liabilities, using tax rates enacted or substantively enacted at the end of the reporting period. A deferred tax asset is recognised only to the extent that it is probable that future taxable profits will be available against which the temporary difference can be utilised.

Segmental analysis

The Group determines its operating segments in a manner consistent with the internal reporting provided to the chief operating decision-makers. The chief operating decision-makers are responsible for allocating resources and assessing performance of the operating segments. The chief operating decision-makers are the members of the Executive Committee of the ultimate parent undertaking, Ineos Limited. The members of this committee are the previous company board members and the information presented is unchanged from prior year and therefore there is no change to the segment information presented.

An operating segment is a component of the Group that engages in business activities from which it may earn revenues and incur expenses, including revenues and expenses that relate to transactions with any of the Group's other components and for which discrete financial information is available. An operating segment's operating results are reviewed regularly by the chief operating decision-makers to make decisions about resources to be allocated to the segment and assess its performance.

The Group's primary format for segment reporting is based on business segments. The business segments are determined based on the Group's management and internal reporting structure and the aggregation criteria set out in IFRS 8.

Segment results that are reported to the chief operating decision-makers include items directly attributable to a segment as well as those that can be allocated on a reasonable basis.

Segment capital expenditure is the total payments made during the period to acquire property, plant and equipment and intangible assets other than as acquired through business combinations.

1. ACCOUNTING POLICIES (Continued)

Emission trading scheme

The Group participates in the EU Emissions Trading Scheme. The Scheme encourages companies to reduce carbon emissions by offering financial incentives if they achieve their annual reduction targets. If a company reduces emissions beyond their target then the surplus may be traded in the form of emissions permits.

The incentive money due from the EU Emissions Trading Scheme is recognised in the consolidated income statement once the reduction targets have been met. The emissions permits allocated under the Scheme are at nil cost. The Group recognises the revenue from such permits upon their sale to third parties.

The Group recognises a provision for emissions produced. The provision is measured at the carrying amount of the emission rights held (nil if granted, otherwise at cost) or, in the case of a shortfall, at the current fair value of the emission rights needed.

Exceptional items

The presentation of the Group's results separately identifies the effect of profits and losses on the disposal of businesses, the impairment of non-current assets, the cost of restructuring acquired businesses and the impact of one off events such as legal settlements as exceptional items. Results excluding disposals, impairments, restructuring costs and one off items are used by management and are presented in order to provide readers with a clear and consistent presentation of the underlying operating performance of the Group's ongoing business.

Accounting standards not applied

The following IFRSs relevant to the Group have been issued by the IASB and are available for early application where endorsed by the EU, but have not been applied by the Group in these financial statements. The impact of their adoption is currently being assessed and is not expected to have a material effect on the financial statements unless otherwise indicated:

- *IFRS 15 Revenue from Contracts with Customers* (mandatory for year commencing on or after 1 January 2018 with early adoption permitted).

  IFRS 15 establishes a comprehensive framework for determining whether, how much and when revenue is recognised and replaces existing revenue recognition guidance, including IAS 18 Revenue, IAS 11 Construction Contracts and IFRIC 13 Customer Loyalty Programmes. IFRS 15 introduces a five-step model to determine when to recognize revenue and at what amount, based on transfer of control over goods or services to the customer. New qualitative and quantitative disclosures will also be required.

  The Group is in the process of carrying out a detailed assessment of the potential impact of the adoption of IFRS 15 on its consolidated financial statements and expects to disclose additional quantitative information before it adopts IFRS 15. Based on the work to date, the Group does not expect there to be a material impact on the consolidated financial statements, except for the requirement for additional and extensive disclosures.

1. ACCOUNTING POLICIES (Continued)

- *IFRS 9 Financial Instruments* (mandatory for year commencing on or after 1 January 2018 with early adoption permitted).

  The actual impact of adopting IFRS 9 on the Group's consolidated financial statements in 2018 is not known and cannot be reliably estimated because it will be dependent on the financial instruments that the Group holds and economic conditions at that time as well as accounting elections and judgements that it will make in the future. The new standard will require the Group to revise its accounting processes and internal controls related to reporting financial instruments and these changes are not yet complete. However, the Group is carrying out a preliminary assessment of the potential impact of adoption of IFRS 9 based on its positions at 31 December 2016 and hedging relationships designated during 2016 under IAS 39.

  Based on progress of the assessment made to date, the Group does not believe that the new classification requirements, if applied at 31 December 2016, would have had a material impact on its accounting for trade receivables, loans, investments in debt securities and investments in equity securities.

  The Group will record allowances for expected credit losses on its financial assets comprising largely of trade receivables, which, except for immaterial amounts, have credit terms of less than 12 months. Accordingly, the Group has evaluated that its receivables do not have a significant financial component, and therefore it has decided to adopt the simplified method to calculate the provision. Under the new requirements, an allowance will be recognized equal to the credit losses the Group expects to incur over the lifetime of the trade receivables. This may result in earlier recognition of loss allowances, because under the current guidance credit losses are not recognized until they are incurred.

  The Group's preliminary assessment indicates that the types of hedge accounting relationships that the Group currently designates should be capable of meeting the requirements of IFRS 9 if the Group completes certain planned changes to its internal documentation and monitoring processes. The Group's preliminary assessment also indicates that the expected changes in accounting policies for costs of hedging and hedges of inventory purchases would have had an immaterial impact if applied to the Group's hedge accounting during 2016.

- *IFRS 16 Leases* (mandatory for year commencing on or after 1 January 2019 with early adoption permitted only for companies that also apply *IFRS 15 Revenue from Contracts with Customers*).

  IFRS 16 replaces existing leases guidance including IAS 17 Leases, IFRIC 4 Determining whether an Arrangement contains a Lease, SIC-15 Operating Leases—Incentives and SIC-27 Evaluating the Substance of Transactions Involving the Legal Form of a Lease.

  The new standard introduces a single, on-balance lease sheet accounting model for lessees. A lessee recognises a right-of-use asset representing its right to use the underlying asset and a lease liability representing its obligation to make lease payments. There are optional exemptions for short-term leases and leases of low value items. Lessor accounting remains

1. ACCOUNTING POLICIES (Continued)

similar to the current standard—i.e. lessors continue to classify leases as finance or operating leases.

The Group has started an initial assessment of the potential impact on its consolidated financial statements. So far, the most significant impact identified is that the Group will recognise new assets and liabilities for its operating leases of property and significant plant and equipment, including ships. In addition, the nature of expenses related to those leases will now change as IFRS 16 replaces the straight-line operating lease expense with a depreciation charge for right-of-use assets and interest expense on lease liabilities.

The Group, as a lessee, will have to apply transition elections consistently to all of its leases. The Group currently plans to apply IFRS 16 initially on 1 January 2019. However, it has not yet determined which transition approach to apply. As a lessor, the Group is not required to make any adjustments for leases in which it is a lessor except where it is an intermediate lessor in a sub-lease. The Group has not yet quantified the impact on its reported assets and liabilities of adoption of IFRS 16. The quantitative effect will depend on, inter alia, the transition method chosen, the extent to which the Group uses the practical expedients and recognition exemptions, and any additional leases that the Group enters into. The Group expects to disclose its transition approach and quantitative information before adoption. Information on operating lease commitments outstanding at 31 December 2016 is presented in note 27 to these financial statements.

The following new or amended standards and interpretations are not expected to have a significant impact on the Group's consolidated financial statements.

- *Amendments to IAS 12: Recognition of Deferred Tax Assets for Unrealised Losses* (mandatory for year commencing on or after 1 January 2017).

  The amendments clarify the accounting for deferred tax assets for unrealised losses on debt instruments measured at fair value.

- *Amendments to IAS 7: Disclosure Initiative* (mandatory for year commencing on or after 1 January 2017).

  The amendments require disclosures that enable users of financial statements to evaluate changes in liabilities arising from financing activities, including both changes arising from cash flow and non-cash changes.

- *Amendments to IFRS 2: Classification and Measurement of Share-based Payment Transactions* (mandatory for year commencing on or after 1 January 2018).

  Amendments to IFRS 2 clarify the accounting for certain types of arrangements.

- *Annual Improvements to IFRSs 2014-2016 Cycle (Amendments to IFRS 12 Disclosure of Interests in Other Entities)* (mandatory for year commencing on or after 1 January 2017).

1. ACCOUNTING POLICIES (Continued)

The disclosure requirements for interests in other entities have been extended to also apply to interests that are classified as held for sale or distribution.

- *IFRIC 22 Foreign Currency Transactions and Advance Consideration* (mandatory for year commencing on or after 1 January 2018).

  IFRIC 22 clarifies the transaction date used to determine the exchange rate.

2. OPERATING SEGMENTS

The determination of the Group's operating segments is based on the business units for which information is reported to the Group's Chief Operating Decision Maker. The Group has three reportable segments, as described below.

The Group's Olefins and Polymers business units produce olefins and related products and a broad range of polymers. The Group's olefins businesses are focused on ethylene and propylene, which are the two largest volume olefins globally and are key building blocks for polymers. These olefins are primarily used as feedstock for the Group's polymers business. In addition, the Group sells olefins to third party customers for a variety of industrial and consumer applications, including plastics, rubber and fibre.

- O&P North America segment—In North America, the group's Olefins and Polymers business comprises five sites including major facilities in Chocolate Bayou, Texas, and Battleground, Texas.
- O&P Europe segment—In Europe, the Group owns and operates two major cracker complexes, in Köln, Germany and Rafnes, Norway. This includes polymers and derivatives units. The O&P Europe segment is now managed as one business following the divestment on July 1, 2014 of a major cracker complex in Lavéra, France which was integrated with a joint venture refinery (see Note 4).
- Chemical Intermediates—This reportable segment is the aggregation, in compliance with IFRS 8, of a number of different business units with similar economic and other characteristics. Chemical Intermediates are high-value added chemical products used as key components in a variety of consumer and industrial products. The Group's chemical intermediates businesses are exposed to similar key commodities, namely oil and gas. They produce a range of products including phenol, alpha olefins, solvents, industrial chemicals and nitriles. The Chemical Intermediates processes are similar in that they are all capital intensive and based upon processing and mixing chemical raw materials to produce chemical products for the next stage along the value chain. The Chemical Intermediates products are distributed on a business-to-business basis across the world. This is performed using similar conventional methods of pipeline, truck, rail or ship container depending on the customer location and size of the order. The Chemical Intermediates customer base is similar in that the customers are generally manufacturers of consumer and industrial products in developed markets and mature industrial economies.

The accounting policies of all of the reportable segments are as described in Note 1.

2. OPERATING SEGMENTS (Continued)

Information regarding the operations of each reportable segment is included in the following tables. Performance is measured based on earnings before interest, tax, depreciation and amortisation and exceptional items, measured under IFRS ("Segment EBITDA"). Segment EBITDA is used to measure performance as management believes that such information is the most relevant in evaluating the results of certain segments relative to other entities that operate within these industries. Inter-segment pricing is determined on an arm's length basis. Information regarding segments reviewed by management includes management accounts comprising the profit or loss, cash flows and other financial and non-financial information used to manage the business.

Adjustments in the following tables comprise the following items:

- Elimination of inter-segmental transactions and balances; and
- The group's share of profit/(loss) in respect of the Refining joint venture.

Segment information—2016

	Reportable segments					
	O&P North America	O&P Europe	Chemical Intermediates	Total of reportable segments	Adjustments	Amounts in financial statements
			€m			
Reportable segment revenue	2,855.9	4,966.5	6,204.3	14,026.7	(1,416.8)	12,609.9
Reportable segment EBITDA	956.4	708.7	665.7	2,330.8	—	2,330.8
Depreciation of property, plant and equipment and amortisation of intangible assets	(119.2)	(109.1)	(212.5)	(440.8)	(2.1)	(442.9)
Exceptional items (excluding items relating to impairment and financing)	—	—	(21.3)	(21.3)	—	(21.3)
Share of profit/(loss) of associates and jointly controlled entities	(1.9)	—	1.7	(0.2)	29.5	29.3
Profit on disposal of fixed assets	—	—	3.7	3.7	—	3.7
Net finance costs						(326.0)
Profit before tax from continuing operations						1,573.6
Payments for capital expenditure	273.2	142.2	275.9	691.3	—	691.3

Major items in the adjustments column include:

- Reportable segment revenues: the elimination of inter-segmental revenues: 2016: €1,416.8 million (2015: €1,712.7 million, 2014: €2,097.2 million).
- Share of profit/(loss) of associates and jointly control entities: Refining joint venture: 2016: €29.5 million (2015: €72.4 million €, 2014: €(218.4) million).

2. OPERATING SEGMENTS (Continued)

Segment information—2015

	Reportable segments					
	O&P North America	O&P Europe	Chemical Intermediates	Total of reportable segments	Adjustments	Amounts in financial statements
			€m			
Reportable segment revenue	3,025.9	5,331.1	7,085.1	15,442.1	(1,712.7)	13,729.4
Reportable segment EBITDA	1,016.7	576.8	616.5	2,210.0	—	2,210.0
Depreciation of property, plant and equipment and amortisation of intangible assets	(100.5)	(97.9)	(181.2)	(379.6)	(3.8)	(383.4)
Exceptional items (excluding items relating to impairment and financing)	—	(16.0)	—	(16.0)	—	(16.0)
Share of profit/(loss) of associates and jointly controlled entities	(1.1)	3.1	—	2.0	72.4	74.4
Profit on disposal of fixed assets	—	—	3.8	3.8	—	3.8
Net finance costs						(740.6)
Profit before tax from continuing operations						1,148.2
Payments for capital expenditure	172.3	108.9	172.8	454.0	—	454.0

Segment information—2014

	Reportable segments					
	O&P North America	O&P Europe	Chemical Intermediates	Total of reportable segments	Adjustments	Amounts in financial statements
			€m			
Reportable segment revenue	3,748.7	7,088.6	8,480.4	19,317.7	(2,097.2)	17,220.5
Reportable segment EBITDA	1,014.9	253.5	635.1	1,903.5	—	1,903.5
Depreciation of property, plant and equipment and amortisation of intangible assets	(112.4)	(92.4)	(185.4)	(390.2)	(4.0)	(394.2)
Exceptional items (excluding items relating to impairment and financing)	—	(12.9)	(49.8)	(62.7)	—	(62.7)
Share of profit/(loss) of associates and jointly controlled entities	(0.1)	1.5	0.1	1.5	(218.4)	(216.9)
Loss on disposal of fixed assets	(1.3)	—	(0.1)	(1.4)	—	(1.4)
Loss on disposal of businesses						(349.0)
Net finance costs						(593.1)
Profit before tax from continuing operations						286.2
Payments for capital expenditure	160.7	95.1	155.6	411.4	—	411.4

2. OPERATING SEGMENTS (Continued)

Geographic segments

	Revenues		
	2016	2015	2014
		€m	
Geographical information by location of customers:			
Europe	7,903.3	7,986.5	10,643.5
Americas	3,916.2	4,262.2	4,817.0
Rest of World	790.4	1,480.7	1,760.0
Total	**12,609.9**	**13,729.4**	**17,220.5**
Geographical information by location from which the Group derives revenue:			
Europe	8,240.9	9,291.1	11,782.7
Americas	4,120.3	4,230.8	5,195.3
Rest of World	248.7	207.5	242.5
Total	**12,609.9**	**13,729.4**	**17,220.5**

In presenting information on the basis of geographic analysis of segments, segment revenue is based on the geographical location of customers and geographical locations from which the Group derives revenues.

Revenues from external customers for each product and service or each group of similar products and services and a geographic analysis of segment assets are not presented as the necessary information is not available and the Directors are of the opinion that the cost to develop it would be excessive.

3. ACQUISITIONS

Acquisition of subsidiary in the current year

WL Plastics

On November 1, 2016 the Group acquired 100% of the shares of WLP Holding Corporation, one of the largest high density polyethylene (HDPE) pipe manufacturers in North America for a total consideration of €162.1 million. The business is headquartered in Fort Worth, Texas with production facilities in Kentucky, South Dakota, Utah, Texas, and Wyoming. A facility in Georgia is currently under construction. WL Plastics has over 500 million pounds of annual production capacity and provides HDPE pipe for use in oil, gas, industrial, mining, conduit, and municipal water and sewer applications. This acquisition forms part of the O&P North America segment.

3. ACQUISITIONS (Continued)

Effect of the acquisition on individual assets and liabilities

Acquiree's net assets at acquisition:	Recognised values on acquisition
	(€ in millions)
Property, plant and equipment	84.6
Intangible assets	22.6
Inventories	20.0
Trade and other receivables	22.6
Cash and cash equivalents	10.1
Trade and other payables	(33.9)
Deferred tax liabilities	(25.0)
Net identifiable assets and liabilities	**101.0**
Consideration paid:	
Cash	135.4
Deferred consideration	26.7
Total consideration	**162.1**
Difference between consideration and net assets acquired	**61.1**

The difference between consideration and net assets acquired has been recognised as goodwill within intangible assets in Note 12.

Acquisition related costs

The Group incurred acquisition related costs of €2.0 million mainly related to legal and professional fees. These costs have been included in administrative expenses in the Group's consolidated income statement.

Acquired receivables

The fair value of acquired trade and other receivables was €22.6 million and includes trade receivables with a fair value of €22.0 million. The gross contractual amounts receivable are €22.5 million and, at the acquisition date, €0.5 million of contractual cash flows were not expected to be received.

Acquisition of subsidiary in the prior year

Noretyl

On July 1, 2015 the Group completed the purchase of the remaining 50% interest in the Noretyl ethylene cracker at Rafnes, Norway from the Kerling group, a related party, for a gross consideration of €200 million. The Noretyl cracker provides 570,000 tons per annum of ethylene, as well as propylene to the INEOS system. It supplies the Bamble site in Norway via a dedicated pipeline

3. ACQUISITIONS (Continued)

and is one of only four gas crackers in Europe. This acquisition forms part of the O&P Europe—North segment.

Effect of the acquisition on individual assets and liabilities

Acquiree's net assets at acquisition:	Recognised values on acquisition
	(€ in millions)
Property, plant and equipment	215.5
Inventories	16.2
Trade and other receivables	44.0
Cash and cash equivalents	20.2
Trade and other payables	(69.2)
Employee benefits	(6.6)
Deferred tax liabilities	(5.4)
Interest bearing loans and borrowings	(100.0)
Net identifiable assets and liabilities	114.7
Consideration paid:	
Cash	200.0
Difference between consideration and net assets acquired	**85.3**

This represents a business combination between two entities held under common control and therefore the transaction has been accounted for using book values. The difference between the consideration paid and the book value of net assets acquired was €85.3 million and has been recognised directly in retained earnings and includes the previous carrying value of the Noretyl AS joint venture investment.

Acquisition of assets in the prior year

Axiall assets

On September 30, 2015 the Group acquired the aromatics and cumene assets from Axiall Corporation for cash consideration of $57.8 million (€51.9 million). Additional consideration of $5.0 million may become payable after closing, dependent upon the satisfaction of certain conditions. The acquisition includes a cumene plant, based in Pasadena, Texas, producing 900,000 tonnes of product. In addition the phenol, acetone and alpha-methylstyrene customers will transfer to the Group's phenol facility at Mobile, Alabama. This acquisition forms part of the Chemical Intermediates segment.

4. DISPOSALS

2015 disposals

There were no disposals in the year ended December 31, 2015. During the prior year the Group completed the Lavera Divestiture for a total consideration of €200 million in the form of loan notes. During 2015 the Group received €78.3 million of further proceeds on the loan notes. As at December 31, 2015 all of the disposal proceeds had been received.

2014 disposals

On July 1, 2014, the Group completed the disposal of the Lavéra petrochemical assets and businesses, together with the other French and Italian assets of O&P South, to a related party, for a total consideration of €200 million. As of December 31, 2014, €78.3 million remained outstanding.

The downstream assets at the Lavéra complex have formed a separate stand-alone finance group. These arrangements were put in place as part of a restructuring plan for these businesses, which had historically under-performed. The restructuring plan aims to improve the reliability and cost base of the Lavéra site going forward.

Effect of the aggregated disposals on individual assets and liabilities

	2014
	(€ in millions)
Property, plant and equipment	220.8
Intangibles	0.1
Investments (see Note 13.a)	61.0
Other financial assets	0.9
Inventories	212.9
Trade and other receivables	305.1
Cash	0.1
Employee benefits	(142.0)
Deferred tax asset on employee benefits	48.8
Trade and other payables	(155.6)
Deferred tax asset	19.7
Provisions	(29.4)
Net assets disposed of	542.4
Proceeds	200.0
Loss on disposal of business	**342.4**

Other disposals

During 2014, the Group completed the disposal of the Barex business to Ineos Holdings Luxembourg S.A., a related party for nil consideration resulting in a loss on disposal of €6.6 million.

5. EXCEPTIONAL ITEMS

	2016	2015	2014
		€m	
Exceptional administrative expenses:			
Restructuring of O&P Europe operations	—	(16.0)	(12.9)
Restructuring of Technologies operations	(21.3)	—	—
Plant closure costs	—	—	(30.2)
Arbitration settlement	—	—	(19.6)
Total exceptional administrative expenses	(21.3)	(16.0)	(62.7)
Exceptional finance costs	(20.7)	(131.6)	—

Exceptional administrative expenses

In 2016 following a strategic review of the Technologies business the Group took a decision to cease marketing its polyolefins licensing technology externally and to transfer the remaining parts of the Technologies business to existing businesses within the Group to provide a clearer focus on individual product lines. This resulted in an exceptional administrative charge of €21.3 million being incurred during 2016 due to the cessation of new licensing activities and other restructuring within the Technologies business primarily relating to severance and early retirement costs.

In recognition of a significant number of strategic projects being implemented in the O&P Europe business, the operations were reorganised in to separate regional businesses during 2012, each with their own management team, to provide clear management focus at a regional level. During 2015 a further €16.0 million (2014: €12.9 million) of costs were incurred relating to additional restructuring within the O&P North business primarily relating to severance and early retirement costs.

In 2013 the Group closed its vinyl acetate monomer facility in Saltend, Hull, United Kingdom. The costs incurred represents losses on onerous contracts, decommissioning and demolition costs, severance and general closure costs. During 2014 further costs of €30.2 million were incurred in relation to the closure of the vinyl acetate monomer facility, primarily relating to the loss of catalyst precious metals.

In December 2014 an award for damages of €19.6 million (including expenses) by the International Court of Arbitration was made against the Group for losses incurred by Mexichem in relation to the sale of the Fluor business by the Group in 2010. There will be no further liabilities associated with this matter.

Exceptional finance costs

In August 2016, the Group issued €650 million and $500 million of Senior Notes due 2024. The proceeds of the Notes together with cash in hand were used to redeem in full the Senior Notes due 2018. As a result of the early redemption of the Senior Notes due 2018 an exceptional finance cost of €20.7 million has been recognised, which includes an early prepayment premium of €17.5 million and the write-off of deferred issue costs associated with the redeemed Notes of €3.2 million.

5. EXCEPTIONAL ITEMS (Continued)

On March 27, 2015, the Group entered into an incremental term loan facility under the Senior Secured Term Loan Agreement to borrow an additional €850 million and $625 million. The proceeds of the additional Term Loans were used to redeem the Senior Secured Notes due 2019. As a result of the early redemption of the Senior Secured Notes due 2019 an exceptional finance cost of €85.4 million has been recognised, which includes an early prepayment premium of €66.0 million and the write-off of deferred issue costs associated with the redeemed notes of €19.4 million.

In May 2015, the Group issued €770 million of Senior Secured Notes due 2023. The proceeds of the Notes were used to redeem the Senior Secured Notes due 2020. As a result of the early redemption of the Senior Secured Notes due 2020 an exceptional finance cost of €46.2 million has been recognised, which includes an early prepayment premium of €39.1 million and the write-off of deferred issue costs associated with the redeemed notes of €7.1 million.

6. OPERATING PROFIT

Included in operating profit are the following:

	2016	2015	2014
		€m	
Exceptional costs—included in administrative expenses	21.3	16.0	62.7
Research and development expensed as incurred	15.4	18.1	14.9
Amortisation of other intangible assets	44.2	12.7	12.3
(Profit)/loss on disposal of property, plant and equipment	(3.7)	(3.8)	1.4
Amortisation of government grants	(5.0)	(7.9)	(5.1)
Depreciation and impairment of property, plant and equipment:			
Owned assets	397.6	365.5	373.9
Finance leased assets	1.1	5.2	8.0
Operating lease rental charges:			
Plant, machinery and equipment	62.5	62.6	51.9
Other	128.6	42.3	34.0

Auditors' remuneration:

	2016	2015	2014
		€m	
Audit of these financial statements	0.7	0.7	0.7
Amounts receivable by auditors and their associates in respect of:			
Audit of financial statements of subsidiaries pursuant to legislation	2.4	2.5	2.5
Other services relating to taxation	2.0	2.1	1.5
Services relating to corporate finance transactions	0.4	0.3	0.1
All other services	0.3	0.3	1.0
	5.8	**5.9**	**5.8**

7. STAFF NUMBERS AND COSTS

The monthly average number of persons employed by the Group (including any divestitures up to the date of disposal and any acquisitions from the date of acquisition) during the year, analysed by category, was as follows:

	Number of employees		
	2016	2015	2014
Operations	5,214	4,838	5,108
Administration	1,265	1,117	1,302
Research and development	305	332	444
	6,784	**6,287**	**6,854**

The aggregate payroll costs of these persons were as follows:

	2016	2015	2014
		€m	
Wages and salaries	641.5	596.8	534.7
Social security costs	88.9	87.0	90.9
Expenses related to defined contribution pension plans	9.9	16.8	5.5
Expenses related to defined benefit pension plans	43.2	51.4	44.4
	783.5	**752.0**	**675.5**

8. DIRECTORS' REMUNERATION

	2016	2015	2014
		€m	
Salaries and other short term benefits	**1.3**	**1.2**	**0.8**

9. FINANCE INCOME AND COSTS

Recognised in income statement

	2016	2015	2014
		€m	
Finance income			
Interest income on bank balances	3.7	1.3	1.5
Other interest receivable	87.5	63.9	29.8
Total interest income on financial assets not at fair value through profit or loss	91.2	65.2	31.3
Exchange movements	84.5	72.5	53.5
Net fair value gain on derivatives	17.3	—	—
Interest income on the defined benefit plan assets	—	24.5	24.5
Dividend income	7.0	2.9	5.3
Total finance income	**200.0**	**165.1**	**114.6**
Finance costs			
Interest payable on senior notes	166.1	201.8	269.4
Interest payable on bank loans and overdrafts	191.5	175.3	117.8
Interest payable on securitisation	8.5	11.8	12.4
Amortisation of issue costs	10.7	11.6	20.5
Interest payable on finance leases	—	—	0.2
Other finance charges	19.9	6.5	10.6
Exchange movements	92.6	310.8	231.6
Net fair value loss on derivatives	—	16.2	1.0
Interest on employee benefit liabilities	16.0	40.1	44.2
Total finance costs before exceptional items	505.3	774.1	707.7
Exceptional finance cost (see Note 5)	20.7	131.6	—
Total finance costs	**526.0**	**905.7**	**707.7**
Net finance costs	**326.0**	**740.6**	**593.1**

Net gains and losses on financial instruments are included in Note 26.b.

10. TAX CHARGE

Taxation recognised in the consolidated income statement

	2016	2015	2014
		€m	
Current tax expense			
Current year	252.1	231.3	338.9
Adjustments in respect of prior years	17.7	(20.4)	(78.6)
Current tax expense	269.8	210.9	260.3
Deferred tax expense			
Origination and reversal of temporary differences	52.2	5.0	10.0
Adjustments in respect of prior years	18.2	21.8	52.6
Deferred tax charge (see Note 17)	70.4	26.8	62.6
Total tax charge	**340.2**	**237.7**	**322.9**

Reconciliation of effective tax rate

	2016	2015	2014
		€m	
Profit before taxation	1,573.6	1,148.2	286.2
Tax on above using the Luxembourg corporation tax rate of 29.22% (2015: 29.22%, 2014: 29.22%)	459.8	335.5	83.6
Non-deductible expenses/tax exempt revenue	(2.2)	16.0	106.6
Effect of tax rates in foreign jurisdictions	(150.5)	(97.3)	126.3
Deferred tax not recognised	—	—	32.5
Utilisation of tax losses brought forward	(2.8)	(17.9)	—
Adjustments in respect of prior years	35.9	1.4	(26.1)
Total tax charge	**340.2**	**237.7**	**322.9**

Taxation recognised in other comprehensive income/(expense)

	2016			2015			2014		
	Gross	Tax	Net	Gross	Tax	Net	Gross	Tax	Net
					€m				
Foreign exchange translation differences	(40.6)	—	(40.6)	(266.3)	—	(266.3)	(315.7)	—	(315.7)
Net gain on hedge of net investment in foreign operations	104.7	—	104.7	196.5	—	196.5	242.8	—	242.8
Recognised in loss on disposal of business	—	—	—	—	—	—	(22.9)	—	(22.9)
Remeasurement of post employment benefit obligations	(84.0)	22.1	(61.9)	20.5	(3.4)	17.1	(140.9)	38.8	(102.1)
Total	**(19.9)**	**22.1**	**2.2**	**(49.3)**	**(3.4)**	**(52.7)**	**(236.7)**	**38.8**	**(197.9)**

11. PROPERTY, PLANT AND EQUIPMENT

	Land and buildings	Plant & equipment Fixtures and fittings	Under construction	Total
		€m		
Cost				
Balance at 1 January 2014	406.4	6,167.6	262.9	6,836.9
Disposal of businesses	(46.2)	(499.8)	(39.2)	(585.2)
Additions	0.5	229.0	173.8	403.3
Disposals	(2.4)	(34.0)	—	(36.4)
Transfers	2.1	191.6	(223.4)	(29.7)
Effect of movements in foreign exchange	19.3	302.1	31.2	352.6
Balance at 31 December 2014	379.7	6,356.5	205.3	6,941.5
Acquisitions of assets	—	13.6	—	13.6
Acquisitions under common control	138.6	528.9	44.4	711.9
Additions	46.5	204.8	226.1	477.4
Disposal	(0.7)	(30.7)	—	(31.4)
Transfers	0.8	91.7	(92.5)	—
Effect of movements in foreign exchange	3.2	223.3	17.9	244.4
Balance at 31 December 2015	568.1	7,388.1	401.2	8,357.4
Business acquisitions	22.4	56.4	5.8	84.6
Additions	15.9	447.0	269.0	731.9
Disposals	(0.1)	(12.8)	—	(12.9)
Transfers	12.6	227.2	(239.8)	—
Effect of movements in foreign exchange	13.9	151.4	25.5	190.8
Balance at 31 December 2016	**632.8**	**8,257.3**	**461.7**	**9,351.8**
Accumulated depreciation and impairment				
Balance at 1 January 2014	196.3	3,489.4	—	3,685.7
Disposal of businesses	(36.5)	(327.9)	—	(364.4)
Depreciation charge for the year	10.7	338.0	—	348.7
Exceptional depreciation charge for the year	—	33.2	—	33.2
Disposals	(1.1)	(33.9)	—	(35.0)
Effect of movements in foreign exchange	8.0	197.8	—	205.8
Balance at 31 December 2014	177.4	3,696.6	—	3,874.0
Depreciation charge for the year	11.8	358.9	—	370.7
Acquisitions under common control	46.0	450.4	—	496.4
Disposals	(0.7)	(30.7)	—	(31.4)
Effect of movements in foreign exchange	3.2	135.7	—	138.9
Balance at 31 December 2015	237.7	4,610.9	—	4,848.6
Depreciation charge for the year	15.2	383.5	—	398.7
Disposals	(0.1)	(12.6)	—	(12.7)
Effect of movements in foreign exchange	5.9	103.9	—	109.8
Balance at 31 December 2016	**258.7**	**5,085.7**	**—**	**5,344.4**
Net book value				
At 31 December 2014	202.3	2,659.9	205.3	3,067.5
At 31 December 2015	330.4	2,777.2	401.2	3,508.8
At 31 December 2016	**374.1**	**3,171.6**	**461.7**	**4,007.4**

11. PROPERTY, PLANT AND EQUIPMENT (Continued)

The exceptional depreciation charge of €33.2 million for the year ended December 31, 2014 reflects the write-off of the engineering work on the ethylene oxide/glycol unit project planned at Battleground, USA which was terminated during the year.

Leased plant and machinery

Included in the above are assets held under hire purchase and finance leases with a net book value of €4.0 million (2015: €5.1 million, 2014: €9.0 million). See Note 20 for the secured leased obligations on leased assets.

Property, plant and equipment under construction

During 2016, expenditure on a debottlenecking project and replacement of cracker furnace coils at the Köln site in Germany and turnarounds on olefin units in the USA were all transferred to other classes of property, plant and equipment.

Additions to assets under construction during 2016 included further expenditure in the USA on Linear Alpha Olefins (LAO) and High Viscosity Poly Alpha Olefins (PAO) projects and infrastructure projects relating to the Gemini HDPE project. In addition there was expenditure on a cogeneration project at Chocolate Bayou, USA and a cracker turnaround in Köln, Germany.

During 2015, the replacement of olefins furnaces and expenditure on a water well project at the Chocolate Bayou site in the USA along with revisions to the ammonia plant and turnarounds for the O&P Europe and Nitriles businesses at the Köln site in Germany were all transferred to other classes of property, plant and equipment.

Additions to assets under construction during 2015 included expenditure in the USA on Linear Alpha Olefins (LAO) and High Viscosity Poly Alpha Olefins (PAO) projects and turnarounds on olefin units in the USA and infrastructure projects relating to the Gemini project. In addition there was further expenditure on a debottlenecking project and replacement of a cracker propylene hydrogenation unit along with expenditure on a replacement of a furnace convection bank and burners of the radiation section of one of the crackers at the Köln site in Germany. In Antwerp, Belgium there was expenditure on replacing the distribution control system.

During 2014, the Mont Belvieu to Stratton Ridge pipeline connections and lateral lines to the Chocolate Bayou site, USA, which will provide purity ethane to the site, together with engineering work on an ethylene oxide/glycol unit at Battleground, USA and a polyethylene unit expansion also at the Battleground, USA site, were all transferred to other classes of property, plant and equipment.

Additions to assets under constructions during 2014 included expenditure on a water well project and expenditure on olefins furnaces at the Chocolate Bayou site in the USA, expenditure on the second peaking reactor along with a turnaround at the Joffre site in Canada and a debottlenecking project, a cracker turnaround and replacement of furnace coils and a propylene hydrogenation unit at the Köln site in Germany.

12. INTANGIBLE ASSETS

	Intellectual property rights	Customer relationships	Other	Goodwill	Total
		€m			
Cost					
Balance at 1 January 2014	134.4	3.8	18.5	571.2	727.9
Transfers	0.9	(3.8)	2.9	—	—
Additions	—	—	3.3	—	3.3
Disposals	—	—	(0.3)	—	(0.3)
Business disposal	—	—	(0.1)	—	(0.1)
Effect of movements in foreign exchange	7.3	—	1.9	28.3	37.5
Balance at 31 December 2014	142.6	—	26.2	599.5	768.3
Additions	—	—	4.6	—	4.6
Disposals	—	—	(3.3)	—	(3.3)
Acquisition of assets	—	37.6	—	—	37.6
Effect of movements in foreign exchange	7.0	1.1	1.4	26.2	35.7
Balance at 31 December 2015	149.6	38.7	28.9	625.7	842.9
Additions	—	1.9	7.0	—	8.9
Disposals	—	—	(3.9)	—	(3.9)
Business acquisition	—	22.6	—	61.1	83.7
Effect of movements in foreign exchange	2.7	1.8	1.0	10.2	15.7
Balance at 31 December 2016	**152.3**	**65.0**	**33.0**	**697.0**	**947.3**
Accumulated amortisation and impairment					
Balance at 1 January 2014	85.9	3.1	7.2	8.1	104.3
Transfers	0.2	(3.1)	2.9	—	—
Amortisation for the year	12.0	—	0.3	—	12.3
Disposals	—	—	(0.3)	—	(0.3)
Effect of movements in foreign exchange	3.6	—	0.2	—	3.8
Balance at 31 December 2014	101.7	—	10.3	8.1	120.1
Amortisation for the year	12.4	—	0.3	—	12.7
Effect of movements in foreign exchange	3.5	—	0.2	—	3.7
Balance at 31 December 2015	117.6	—	10.8	8.1	136.5
Amortisation for the year	9.5	11.7	0.4	—	21.6
Exceptional amortisation charge	22.6	—	—	—	22.6
Effect of movements in foreign exchange	2.1	0.6	—	—	2.7
Balance at 31 December 2016	**151.8**	**12.3**	**11.2**	**8.1**	**183.4**
Net book value					
At 31 December 2014	40.9	—	15.9	591.4	648.2
At 31 December 2015	32.0	38.7	18.1	617.6	706.4
At 31 December 2016	**0.5**	**52.7**	**21.8**	**688.9**	**763.9**

Other intangible assets include non-compete agreements, licence fees and environmental certificates.

12. INTANGIBLE ASSETS (Continued)

Amortisation charge

The amortisation charge is recognised in administrative expenses in the consolidated income statement. The exceptional amortisation charge of €22.6 million for the year ended December 31, 2016 reflects the write-off of the intellectual property rights following the restructuring of the Technologies business.

Impairment

Goodwill has been allocated to cash generating units (CGU) or groups of cash generating units as follows:

	2016	2015	2014
		€m	
O&P Europe	246.2	246.2	246.2
O&P North America	362.2	290.9	264.7
Chemical Intermediates	80.5	80.5	80.5
Total	**688.9**	**617.6**	**591.4**

The recoverable amount is based on the value in use of each operating segment before aggregation based on the latest board approved five year plan. The forecasts are based on current performance and management's assumptions regarding the future development of individual parameters including raw material prices and profit margins, utilising available market pricing forecasts. Future assumptions regarding market demand are based on external macroeconomic sources and specific data relevant to the petrochemical industry and management's knowledge of the local markets in which it operates.

The cash flows after the plan period are based on an average of each of the years in the five year plan to take account of the cyclical nature of the industry extrapolated using long term growth rates as set out in the table below.

No impairment charge has been recorded in these financial statements as a result of the annual impairment test.

The key assumptions underlying the value in use calculation are shown below:

	2016	2015	2014
Period on which management approved forecasts are based	5 years	5 years	5 years
Discount rate	9.0%	10.0%	10.5%
Growth rate	3.0%	3.0%	3.0%

A terminal value is calculated based on the average cash flows over the five year forecasting period assuming compound growth of 3% and is discounted over the expected lives of the assets.

The discount rate is based upon the pre-tax weighted average cost of capital of the Group as at each respective period end.

The growth rate used includes inflationary growth across our various markets.

12. INTANGIBLE ASSETS (Continued)

Sensitivity of recoverable amounts

The following table presents, for each CGU the change in the discount rate for the tests as of December 31, 2016 that would be required in order for the recoverable amount to equal carrying value.

	Applied discount rate	Change in discount rate in order for the recoverable amount to be equal to carrying value	Required discount rate
		%	
O&P Europe	9.0	6.2	15.2
O&P North America	9.0	8.0	17.0
Chemical Intermediates:			
Nitriles	9.0	0.5	9.5
Oxide	9.0	12.6	21.6
Phenol	9.0	20.0	29.0
Oligomers	9.0	8.5	17.5
Enterprises	9.0	16.0	25.0
Technologies	9.0	29.1	38.1

The following table presents, for each CGU the change in the growth rate for the tests as of December 31, 2016 that would be required in order for the recoverable amount to equal carrying value. For all operating segments except Nitriles, Phenol and Technologies there would need to be negative growth in order for an impairment to be recognised. For Nitriles a growth rate of less than 2.0% would result in an impairment. For the Phenol and Enterprises segment growth sensitivity is not relevant as a €nil terminal value would not result in impairment.

	Applied growth rate	Change in growth rate in order for the recoverable amount to be equal to carrying value	Required growth rate
		%	
O&P Europe	3.0	(13.9)	(10.9)
O&P North America	3.0	(18.8)	(15.8)
Chemical Intermediates:			
Nitriles	3.0	(1.0)	2.0
Oxide	3.0	(43.6)	(40.6)
Phenol	3.0	n/a	n/a
Oligomers	3.0	(24.5)	(21.5)
Enterprises	3.0	(91.1)	(88.1)
Technologies	3.0	n/a	n/a

13. INVESTMENTS

13.a Investments In Equity—Accounted Investees

	Joint ventures	Associated undertakings	Total
		€m	
At 1 January 2014	**374.6**	**—**	**374.6**
Additions	9.4	—	9.4
Transfers	18.0	—	18.0
Share of losses retained	(216.9)	—	(216.9)
Business disposal (see Note 4)	(61.0)	—	(61.0)
Exchange adjustments	(27.3)	—	(27.3)
At 31 December 2014	96.8	—	96.8
Acquisition of a joint venture	(32.8)	—	(32.8)
Share of profits retained	74.4	—	74.4
Exchange adjustments	(37.0)	—	(37.0)
At 31 December 2015	101.4	—	101.4
Additions	28.3	—	28.3
Share of profits retained	29.3	—	29.3
Exchange adjustments	2.7	—	2.7
At 31 December 2016	**161.7**	**—**	**161.7**

Joint ventures

On July 1, 2011 the group disposed of the Refining business to a new joint venture between PetroChina and INEOS Investments (Jersey) Limited ('IIJL'), a related party. IIJL is held under common control by our controlling shareholders. The consideration received by the Group for the disposal consisted of cash consideration of $1.015 billion received from PetroChina for a 50% interest in the business and an investment in non-voting ordinary shares in IIJL for the other 50% interest in the business. The non-voting ordinary shares in IIJL were fair valued at €420 million. This reflects the net present value of the future cash flows expected to be realised by the group for the ownership of these non-voting shares and takes into account the loss in control of the refining trade and assets.

The Group effectively retains an economic interest in the Refining business by virtue of its investment in IIJL. The results of the Refining business are reported against the share of profit/(loss) of associates and jointly controlled entities using the equity accounting method by virtue of this interest.

On July 1, 2015 the Group completed the purchase of the remaining 50% interest in the Noretyl AS joint venture resulting in a transfer of €32.8 million from joint venture investments as Noretyl AS became a wholly owned subsidiary of the Group (see Note 13.b). Prior to this acquisition the Group had a loan investment with Noretyl AS of €19.3 million as at December 31, 2014.

In July 2014 the Group set up a joint venture with Sasol to build and operate an HDPE plant at the Battleground site in Texas, USA. The plant is expected to be operational in 2017. During 2014 the Group transferred €20.0 million from assets under construction and invested a further €9.4 million into the joint venture. During 2016 a further €28.3 million was invested into the joint venture.

13. INVESTMENTS (Continued)

Details of investments in joint ventures are set out below:

Company	Class of shares held	Place of business and country of incorporation	Percentage held	Principal activities
Petroineos Refining Limited	Ordinary	Lavéra, France Grangemouth, Scotland	50.1%	Refining
Petroineos Trading Limited	Ordinary	Lavéra, France Grangemouth, Scotland	49.9%	Refining
Ineos Infrastructure (Grangemouth) Limited	Ordinary	Grangemouth, Scotland	75%	Refining
Ineos Gemini HDPE Co LLC	Ordinary	Texas, USA	50%	Chemicals

Summary aggregated financial information for equity accounted joint ventures are as follows:

	2016	2015	2014
		€m	
Current assets	2,878.3	2,618.8	2,908.7
Long-term assets	3,186.7	2,979.9	2,304.2
Current liabilities	(4,231.1)	(3,801.8)	(3,800.9)
Long-term liabilities	(674.4)	(607.8)	(635.2)
Cash (outflow)/inflow	(141.8)	76.9	(320.0)
Revenue	17,228.5	19,751.7	24,467.5
Expenses	(17,148.7)	(19,581.7)	(24,944.4)

Associated undertakings

The Group retains interests in associated undertakings in the Bio and Healthcare businesses. All of the associated undertakings have December year ends.

Details of the associated undertakings are set out below:

Company	Class of shares held	Place of business and country of incorporation	Percentage held	Principal activities
Ineos Bio Limited	Ordinary	UK	20%	Chemicals
Ineos Bio US LLC	Ordinary	USA	20%	Chemicals
Ineos Healthcare Limited	Ordinary	UK	20%	Healthcare

The Group has not recognised its share of profits or losses relating to the Ineos Bio or Healthcare businesses of €2.2 million loss (2015: €5.2 million loss, 2014: €3.1 million loss) and €1.3 million (2015: €nil million, 2014: €0.1 million profit) respectively since the Group has no obligation in respect of these profits or losses. The net cumulative loss not recorded is €36.9 million. The Group has recognised these investments at their fair value on the date of reorganisation of these businesses, estimated by the Group to be €nil. During 2017 it is expected the investment in the Bio business will be disposed of for nil proceeds.

13. INVESTMENTS (Continued)

Summary aggregated financial information for equity accounted associated undertakings are as follows:

	2016	2015	2014
		€m	
Current assets	21.9	198.0	182.7
Long-term assets	129.5	130.3	123.1
Current liabilities	(147.0)	(347.0)	(284.8)
Long-term liabilities	(109.3)	(111.5)	(105.0)
Cash outflow	(2.0)	(1.4)	(2.5)
Income	—	1.5	1.9
Expenses	(17.5)	(27.5)	(17.0)

13.b Investments in Subsidiary Undertakings

The directors consider that to give full particulars of all subsidiary undertakings would lead to a statement of excessive length.

The directors believe the carrying value of the investments is supported by the underlying net assets of the subsidiaries.

13. INVESTMENTS (Continued)

The following information relates to the principal subsidiary undertakings of the Company.

Company	Country of incorporation and operation	Percentage holding	Principal activity
INEOS Luxembourg I S.A.*	Luxembourg	100%	Holding Company
INEOS Luxembourg II S.A.	Luxembourg	100%	Holding Company
INEOS Group AG	Switzerland	100%	Holding Company
INEOS Holdings Limited	England and Wales	100%	Holding Company
INEOS European Holdings Limited	England and Wales	100%	Holding Company
INEOS US Finance LLC	USA	100%	Finance
INEOS Finance Plc	England and Wales	100%	Finance
INEOS Treasury (UK) Limited	England and Wales	100%	Finance
INEOS Europe AG	Switzerland	100%	Chemicals
INEOS Oxide Limited	England and Wales	100%	Chemicals
INEOS NV	Belgium	100%	Chemicals
INEOS Belgium NV	Belgium	100%	Chemicals
INEOS Phenol Belgium NV	Belgium	100%	Chemicals
INEOS Italia Srl	Italy	100%	Chemicals
INEOS Phenol GmbH	Germany	100%	Chemicals
INEOS Fluor Americas LLC	USA	100%	Chemicals
INEOS Americas LLC	USA	100%	Chemicals
INEOS Manufacturing Deutschland GmbH	Germany	100%	Chemicals
INEOS Köln GmbH	Germany	100%	Chemicals
INEOS France SAS	France	100%	Chemicals
INEOS Sales (UK) Limited	England and Wales	100%	Chemicals
INEOS Manufacturing Belgium NV	Belgium	100%	Chemicals
INEOS Feluy SPRL	Belgium	100%	Chemicals
INEOS Sales Belgium NV	Belgium	100%	Chemicals
INEOS Sales Italia s.r.l.	Italy	100%	Chemicals
INEOS Singapore Pte Limited	Singapore	100%	Chemicals
INEOS USA LLC	USA	100%	Chemicals
INEOS Polymers Inc	USA	100%	Chemicals
INEOS Canada Company	Canada	100%	Chemicals
INEOS Canada Partnership	Canada	100%	Chemicals
INEOS Bamble AS	Norway	100%	Chemicals
INEOS Nitriles (UK) Limited	England and Wales	100%	Chemicals
INEOS Manufacturing (Hull) Limited	England and Wales	100%	Chemicals
INEOS Technologies (Vinyls) Limited	England and Wales	100%	Chemicals
INEOS Technologies France SAS	France	100%	Chemicals
INEOS US Sales Company	USA	100%	Chemicals
INEOS Nitriles USA LLC	USA	100%	Chemicals
INEOS Oligomers USA LLC	USA	100%	Chemicals
INEOS Technologies USA LLC	USA	100%	Chemicals
INEOS Technologies Italia S.r.l	Italy	100%	Chemicals
Noretyl AS	Norway	100%	Chemicals
WLP Holding Corporation	USA	100%	Manufacturer

* Held directly by the Company

14. OTHER INVESTMENTS

	2016	2015	2014
		€m	
At 1 January	243.2	210.2	181.4
Interest receivable	9.2	8.8	4.2
Exchange adjustments	9.8	24.2	24.6
At 31 December	**262.2**	**243.2**	**210.2**

The Group has a non-voting preferred partnership interest in Ineos Investments Partnership, an entity held under common control by the Group's ultimate shareholders, which owns 39% of the share capital of the PQ Corporation, a silicas business incorporated in the USA.

15. OTHER FINANCIAL ASSETS

	2016	2015	2014
		€m	
Non-current			
Available for sale financial assets (see below and Note 26.a)	29.2	29.2	28.7
Current			
Derivative commodity contracts designated as fair value through profit or loss (see Note 26.a)	8.2	1.1	2.5

Available for sale financial assets

Available for sale financial assets include a 16.7% investment in Aethylen Rohrleitungs Gesellschaft ('ARG') mbH and Co. KG, a company registered in Germany whose principal activity is the transportation of ethylene via pipelines in Northern Europe and other investments.

During 2014 the Group disposed of a €19.8 million investment in Geosud as part of the divestment of the Group's assets in Lavera, France.

The investment in ARG mbH and Co. KG and other investments have been classified as available for sale financial assets and recorded at their acquisition cost. These investments comprise of shares in private limited companies. The carrying amount of these financial instruments was €29.2 million at December 31, 2016. These shares are not listed and there is no active market. A reliable determination of fair value would only be practicable if there were equity sales transactions on which fair values could be based. A disposal of these investments is not currently anticipated.

16. OTHER FINANCIAL LIABILITIES

	2016	2015	2014
		€m	
Non-current			
Derivative commodity contracts designated as fair value through profit or loss (see Note 26.a)	0.9	12.6	—
Current			
Derivative commodity contracts designated as fair value through profit or loss (see Note 26.a)	—	1.8	—

17. DEFERRED TAX ASSETS AND LIABILITIES

Recognised deferred tax assets and liabilities

Deferred tax assets and liabilities are attributable to the following:

	2016		
	Assets	Liabilities	Total
		€m	
Property, plant and equipment	—	371.8	371.8
Employee benefits	(225.6)	—	(225.6)
Tax value of loss carry-forwards	(49.7)	—	(49.7)
Other	(26.0)	—	(26.0)
Tax (assets)/liabilities	(301.3)	371.8	70.5
Set off of tax	96.2	(96.2)	—
Net tax (assets)/liabilities	(205.1)	275.6	70.5

	2015		
	Assets	Liabilities	Total
		€m	
Property, plant and equipment	—	364.3	364.3
Employee benefits	(195.4)	—	(195.4)
Tax value of loss carry-forwards	(84.9)	—	(84.9)
Other	(86.8)	—	(86.8)
Tax (assets)/liabilities	(367.1)	364.3	(2.8)
Set off of tax	166.2	(166.2)	—
Net tax (assets)/liabilities	(200.9)	198.1	(2.8)

17. DEFERRED TAX ASSETS AND LIABILITIES (Continued)

	2014		
	Assets	Liabilities	Total
		€m	
Property, plant and equipment	—	360.5	360.5
Employee benefits	(186.2)	—	(186.2)
Tax value of loss carry-forwards	(121.1)	—	(121.1)
Other	(86.2)	—	(86.2)
Tax (assets)/liabilities	(393.5)	360.5	(33.0)
Set off of tax	163.7	(163.7)	—
Net tax (assets)/liabilities	(229.8)	196.8	(33.0)

Movement in deferred tax

	Property, plant and equipment	Employee benefits	Tax value of loss carry-forward utilised	Other	Total
			€m		
At 1 January 2014	310.1	(186.0)	(155.0)	(94.4)	(125.3)
Recognised in profit or loss	30.7	(10.2)	33.9	8.2	62.6
Included in businesses disposed of	19.7	48.8	—	—	68.5
Recognised in other comprehensive income	—	(38.8)	—	—	(38.8)
At 31 December 2014	360.5	(186.2)	(121.1)	(86.2)	(33.0)
Recognised in profit or loss	3.8	(12.6)	36.2	(0.6)	26.8
Recognised in other comprehensive income	—	3.4	—	—	3.4
At 31 December 2015	364.3	(195.4)	(84.9)	(86.8)	(2.8)
Recognised in profit or loss	7.5	(8.1)	35.2	35.8	70.4
Recognised in other comprehensive income	—	(22.1)	—	—	(22.1)
Business acquisition	—	—	—	25.0	25.0
At 31 December 2016	371.8	(225.6)	(49.7)	(26.0)	70.5

Deferred tax assets are recognised to the extent that the realisation of the related tax benefit through future taxable profits is probable based on an assessment of expected future profits modelled against the gross tax losses. The Group did not recognise gross deductible temporary differences of €153.0 million (2015: €766.8 million, 2014: €666.7 million).

The Group has not provided deferred tax in relation to temporary differences on its overseas subsidiaries or joint ventures as the Group can control the timing and realisation of these temporary differences, and it is probable that no material unprovided tax liability would arise.

18. INVENTORIES

	2016	2015	2014
		€m	
Raw materials and consumables	403.8	353.4	336.4
Work in progress	19.3	17.7	20.6
Finished goods	645.0	585.5	651.8
	1,068.1	956.6	1,008.8

Raw materials, consumables and changes in finished goods and work in progress recognised as cost of sales in the year amounted to €8,380.0 million (2015: €10,606.7 million, 2014: €13,914.8 million). The net write-down of inventories to net realisable value amounted to €2.5 million (2015: €5.5 million, 2014: €17.3 million) after the reversal of previous write downs of €0.3 million (2015: €1.4 million, 2014: €2.3 million).

19. TRADE AND OTHER RECEIVABLES

	2016	2015	2014
		€m	
Current			
Trade receivables	1,039.8	1,062.8	1,260.0
Amounts due from related parties	242.4	484.8	390.3
Other receivables	105.6	111.3	114.8
Prepayments	114.0	113.5	56.6
	1,501.8	1,772.4	1,821.7
Non-current			
Amounts due from related parties	1,134.5	1,101.8	525.7
Other receivables	1.1	1.1	1.0
Prepayments	11.2	11.1	19.8
	1,146.8	1,114.0	546.5

19. TRADE AND OTHER RECEIVABLES (Continued)

Credit quality of financial assets and impairment losses

The ageing of trade and other receivables at the end of the reporting period was:

	Trade receivables		Amounts due from related parties		Other receivables	
	Gross	Impairment	Gross	Impairment	Gross	Impairment
	2016	2016	2016	2016	2016	2016
			€m			
Not past due	927.9	(4.2)	1,376.9	—	104.8	—
Past due 0-30 days	112.6	(0.4)	—	—	0.9	—
Past due 31-90 days	8.9	(5.0)	—	—	0.8	—
More than 90 days	11.7	(11.7)	—	—	0.2	—
	1,061.1	(21.3)	1,376.9	—	106.7	—

	Trade receivables		Amounts due from related parties		Other receivables	
	Gross	Impairment	Gross	Impairment	Gross	Impairment
	2015	2015	2015	2015	2015	2015
			€m			
Not past due	1,057.5	(4.1)	1,586.6	—	110.4	—
Past due 0-30 days	2.7	—	—	—	0.8	—
Past due 31-90 days	8.0	(1.3)	—	—	0.5	—
More than 90 days	13.9	(13.9)	—	—	0.7	—
	1,082.1	(19.3)	1,586.6	—	112.4	—

	Trade receivables		Amounts due from related parties		Other receivables	
	Gross	Impairment	Gross	Impairment	Gross	Impairment
	2014	2014	2014	2014	2014	2014
			€m			
Not past due	1,222.1	(9.4)	916.2	(0.2)	113.4	(0.1)
Past due 0-30 days	43.1	—	—	—	—	—
Past due 31-90 days	2.4	(0.7)	—	—	1.7	—
More than 90 days	15.2	(12.7)	—	—	0.8	—
	1,282.8	(22.8)	916.2	(0.2)	115.9	(0.1)

The accounts receivable not yet due after impairment losses as of the end of the reporting period are deemed to be collectible on the basis of established credit management processes such as regular analyses of the credit worthiness of our customers and external credit checks where appropriate for new customers (see Note 26.c). At December 31, 2014, 2015 and 2016 there were no significant trade, related party or other receivable balances not past due that were subsequently impaired.

19. TRADE AND OTHER RECEIVABLES (Continued)

Due to the global activities and diversified customer structure of the Group, there is no significant concentration of credit risk (2015: nil, 2014: nil).

During 2014, 2015 and 2016 there were no significant trade, related party or other receivable balances that were subject to renegotiation of terms. Credit enhancements are held in respect of trade and other receivables in the form of €179.9 million (2015: €136.6 million, 2014: €200.6 million) of assets pledged as security against amounts owed to the Group of which €9.6 million (2015: €0.2 million, 2014: €5.4 million) is in respect of amounts falling overdue.

Trade receivable balances totalling €852.3 million (2015: €861.8 million, 2014: €1,024.1 million) have been pledged as security against amounts drawn down under the Receivables Securitisation Facility, described in Note 20, totalling €300.4 million (2015: €428.1 million, 2014: €502.7 million). In accordance with IAS 39 'Financial Instruments: Recognition and Measurement' the trade receivable balances pledged as security do not qualify for derecognition and are included within the trade receivable balances above.

The movement in the allowance for impairment in respect of trade receivables during the year was as follows:

	2016	2015	2014
		€m	
Balance at 1 January	19.3	22.8	18.1
Impairment loss charged/(released)	2.0	(3.5)	4.7
Balance at 31 December	**21.3**	**19.3**	**22.8**

The allowance account for trade receivables is used to record impairment losses unless the Group is satisfied that no recovery of the amount owing is probable; at that point the amounts considered irrecoverable are written off against the trade receivables directly.

During the year the Group has not experienced a significant deterioration in the quality of receivable balances due to the current economic conditions.

There were no allowances made against amounts due from other receivables during the year (2015: €nil, 2014: €0.1 million).

There were no allowances made against amounts due from related parties during the year (2015: €nil, 2014: €0.2 million).

20. INTEREST-BEARING LOANS AND BORROWINGS

This note provides information about the contractual terms of the Group's interest-bearing loans and borrowings, which are measured at amortised cost. For more information about the Group's exposure to interest rate and foreign currency risk, see Note 26.f.

	2016	2015	2014
		€m	
Non-current liabilities			
Senior Secured Term Loans	4,538.6	4,476.9	3,101.4
Senior Secured Notes due 2019	—	—	1,301.3
Senior Secured Notes due 2020	—	—	629.5
Senior Secured Notes due 2023	763.8	762.9	—
Senior Notes due 2018	—	1,117.1	1,051.4
Senior Notes due 2019	1,158.5	1,134.8	1,077.3
Senior Notes due 2024	1,116.9	—	—
Securitisation Facility	299.4	426.9	501.4
Noretyl Facility	54.9	83.1	—
Finance lease liabilities	1.2	1.4	1.7
Other loans	14.2	5.4	8.9
	7,947.5	**8,008.5**	**7,672.9**

	2016	2015	2014
		€m	
Current liabilities			
Current portion of borrowings under Senior Secured Term Loans	41.9	261.0	31.0
Noretyl Facility	25.7	26.9	—
Other loans	4.8	3.6	3.6
Current portion of finance lease liabilities	0.2	0.3	0.3
	72.6	**291.8**	**34.9**

	Gross loans and borrowings	Issue costs	Net loans and borrowings
	2016	2016	2016
		€m	
Gross debt and issue costs			
Senior Secured Term Loans	4,604.6	(24.1)	4,580.5
Senior Secured Notes due 2023	770.0	(6.2)	763.8
Senior Notes due 2019	1,162.4	(3.9)	1,158.5
Senior Notes due 2024	1,126.6	(9.7)	1,116.9
Securitisation Facility	300.4	(1.0)	299.4
Noretyl Facility	82.5	(1.9)	80.6
Other	20.4	—	20.4
Total	**8,066.9**	**(46.8)**	**8,020.1**

20. INTEREST-BEARING LOANS AND BORROWINGS (Continued)

	Gross loans and borrowings 2015	Issue costs 2015	Net loans and borrowings 2015
		€m	
Senior Secured Term Loans	4,767.2	(29.3)	4,737.9
Senior Secured Notes due 2023	770.0	(7.1)	762.9
Senior Notes due 2018	1,121.3	(4.2)	1,117.1
Senior Notes due 2019	1,140.6	(5.8)	1,134.8
Securitisation Facility	428.1	(1.2)	426.9
Noretyl Facility	110.0	—	110.0
Other	10.7	—	10.7
Total	**8,347.9**	**(47.6)**	**8,300.3**

	Gross loans and borrowings 2014	Issue costs 2014	Net loans and borrowings 2014
		€m	
Senior Secured Term Loans	3,138.4	(6.0)	3,132.4
Senior Secured Notes due 2019	1,322.0	(20.7)	1,301.3
Senior Secured Notes due 2020	637.1	(7.6)	629.5
Senior Notes due 2018	1,057.3	(5.9)	1,051.4
Senior Notes due 2019	1,085.0	(7.7)	1,077.3
Securitisation Facility	502.7	(1.3)	501.4
Other	14.5	—	14.5
Total	**7,757.0**	**(49.2)**	**7,707.8**

Terms and debt repayment schedule

	Currency	Nominal interest rate	Year of maturity
Senior Secured Term Loans	$/€	LIBOR plus 2.50%-3.25%	2018-2022
Senior Secured Notes	€	4.0%	2023
Senior Notes	$/€	5.375%-5.875%	2019-2024
Securitisation Facility	$/€/£	Variable	2018
Noretyl Facility	€	EURIBOR plus 2.75%	2019
Other	€/$	3.75-9.0%	2017-2023

Senior Secured Term Loans

The Group has outstanding borrowings under a senior credit facilities agreement (the 'Senior Secured Term Loans' or 'Term Loans') dated April 27, 2012 (as amended and restated). The term Loans are denominated in both Euros and US dollars with tranches maturing in 2016, 2018, 2020 and 2022.

20. INTEREST-BEARING LOANS AND BORROWINGS (Continued)

The Senior Secured Term Loans outstanding at December 31, 2016 before issue costs were €4,604.6 million (2015: €4,767.2 million, 2014: €3,138.4 million) of which €47.1 million (2015: €266.2 million, 2014: €32.8 million) is due within one year. The total amounts outstanding on the Term Loans due 2016 were €nil (2015: €220.1 million, 2014: €199.8 million), the Term Loans due 2018 were €1,251.9 million (2015: €1,215.9 million, 2014: €2,047.6 million), the Term Loans due 2020 were €1,932.8 million (2015: €1,919.8 million) and the Term Loans due 2022 were €1,419.9 million (2015: €1,411.4 million).

The Term Loans are to be repaid in equal quarterly instalments, in aggregate annual amounts equal to 1% of the original principal amount of the Term Loans. The Term Loans due 2016 were fully repaid in December 2016. The Term Loans due 2018 mature in May 2018. The Term Loans due 2020 mature in December 2020 and the Term Loans due 2022 mature in March 2022.

The outstanding Term Loans denominated in US dollars bear interest at a rate per annum equal to LIBOR (subject to a floor of 1.00% per annum) plus the Applicable Margin. The Term Loans denominated in Euros bear interest at a rate per annum equal to LIBOR (subject to a floor of 1.00% per annum) plus the Applicable Margin.

As at December 31, 2016 the Applicable Margin for the Term Loans due 2018 was 2.75%, the Euro denominated Term Loans due 2020 was 3.00%, the US dollar denominated Term Loans due 2020 was 2.75% and the Term Loans due 2022 was 3.25%.

The Senior Secured Term Loans rank pari passu with the Senior Secured Notes due 2023 and are structurally senior to the Senior Notes due 2019 and Senior Notes due 2024. The notes are guaranteed by INEOS Group Holdings S.A., INEOS Holdings Limited and certain of their subsidiaries on a senior secured basis. The Term Loans and the guarantees are secured by first ranking liens on the same assets (subject to certain exceptions) that secure INEOS Holdings Limited's obligations under the senior secured notes.

The Term Loans have numerous customary operating and financial incurrence covenants including covenants relating to, among other things, limitations on indebtedness, ability to give guarantees, creation of security interests, making acquisitions and investments, disposing of assets and paying dividends. The Term Loans have no financial maintenance covenants.

The Senior Secured Term Loans are stated net of debt issue costs of €24.1 million (2015: €29.3 million, 2014: €6.0 million). These costs are allocated to the profit and loss account over the term of the Term Loans in accordance with IAS 39—Financial Instruments: Recognition and Measurement.

In February 2017 the Group completed a refinancing of the Senior Secured Term Loans. The Term Loans due 2018 were repaid in full, the Term Loans due 2020 were extended to March 2022 and a new tranche of €1.4 billion Term Loans due 2024 were issued. The entire facility was repriced and the Applicable Margin on the Euro denominated Term Loans was reduced to 2.50% and on the US dollar denominated Term Loans was reduced to 2.75%. The LIBOR floor was also reduced to 0.75% on the Euro denominated Term Loans and was removed for the US dollar denominated Term Loans.

20. INTEREST-BEARING LOANS AND BORROWINGS (Continued)

Senior Secured Notes due 2019

On March 27, 2015, the Group entered into an incremental term loan facility under the Senior Secured Term Loan Agreement to borrow an additional €850 million and $625 million. The proceeds of the additional Term Loans were used to redeem the Senior Secured Notes due 2019. As a result of the early redemption of the Senior Secured Notes due 2019 an exceptional finance cost of €66.0 million has been recognised in respect of an early prepayment premium (see Note 5).

Before redemption the Senior Secured Notes due 2019 were listed on the Luxembourg Stock Exchange and comprised of €500.0 million Floating Rate Senior Secured Notes due 2019 (the "2019 Euro Floating Rate Notes") and $1,000.0 million Senior Secured Notes due 2019 (the "2019 Dollar Fixed Rate Notes"). The 2019 Euro Floating Rate Notes beared interest at a rate per annum, reset quarterly, equal to the sum of (i) the greater of (x) three-month EURIBOR and (y) 1.25% per annum plus (ii) 6.0%. Interest on the 2019 Euro Floating Rate Notes was payable quarterly in arrears on February 15, May 15, August 15 and November 15 of each year, beginning May 15, 2012. The 2019 Dollar Fixed Rate Notes beared interest at a rate of 8.375% per annum. Interest on the 2019 Dollar Fixed Rate Notes was payable semi-annually in arrears on February 15 and August 15 of each year, beginning August 15, 2012.

Following the full redemption of the Senior Secured Notes due 2019 the Group recognised an exceptional finance cost of €19.4 million in relation to the write-off of the associated unamortised debt issue costs (see Note 5). As at December 31, 2014 the Senior Secured Notes due 2019 were stated net of debt issue costs of €20.7 million.

Senior Secured Notes due 2020

In May 2015 the Group issued €770 million of Senior Secured Notes due 2023. The proceeds of the refinancing were used to redeem in full the Senior Secured Notes due 2020. As a result of the early redemption of the Senior Secured Notes due 2020 an exceptional finance cost of €39.1 million has been recognised in respect of an early prepayment premium (see Note 5).

Before redemption the Senior Secured Notes due 2020 were listed on the Luxembourg Stock Exchange and comprised of $775.0 million Senior Secured Notes. The Senior Secured Notes due 2020 beared interest at 7.5% per annum, payable semi-annually in arrears on May 1 and November 1 of each year.

Following the full redemption of the Senior Secured Notes due 2020 unamortised debt issue costs of €7.1 million were charged to exceptional finance costs within the income statement (see Note 5). As at December 31, 2014 the Senior Secured Notes due 2020 were stated net of debt issue costs of €7.6 million (2013: €9.0 million).

Senior Secured Notes due 2023

In May 2015 the Group issued €770 million of Senior Secured Notes due 2023. The Senior Secured Notes due 2023 are listed on the Luxembourg Stock Exchange. The Senior Secured Notes due 2023 bear interest at 4.0% per annum, payable semi-annually in arrears on May 1 and November 1 of

20. INTEREST-BEARING LOANS AND BORROWINGS (Continued)

each year. Unless previously redeemed as noted below, the Senior Secured Notes due 2023 will be redeemed by the Group at their principal amount on May 1, 2023.

The Senior Secured Notes due 2023 will be subject to redemption at any time on or after May 1, 2018, at the option of the Issuer, in whole or in part, on not less than 30 nor more than 60 days' prior notice at the following redemption prices (expressed as percentages of the aggregate principal amount), if redeemed during the 12-month period beginning May 1 of the year indicated below:

Year	2023 Dollar Fixed Rate Notes Redemption Price
2018	102.000%
2019	101.000%
2020 and thereafter	100.000%

In each case, the redemption premium will be in addition to accrued and unpaid interest, if any, to the redemption date (subject to the rights of holders of record on relevant record dates to receive interest due on an interest payment date).

The Senior Secured Notes due 2023 rank pari passu with the Senior Secured Term Loans and are structurally senior to the Senior Notes due 2019 and the Senior Notes due 2024. The notes are guaranteed by INEOS Group Holdings S.A., INEOS Holdings Limited and certain of their subsidiaries on a senior secured basis. The notes and the guarantees are secured by first ranking liens on the same assets (subject to certain exceptions) that secure INEOS Holdings Limited's obligations under the senior secured term loans.

The Indenture contains a number of operating and financial covenants including limitations on indebtedness, restricted payments, transactions with affiliates, liens, sale of assets and dividend payments.

The Senior Secured Notes due 2023 are stated net of debt issue costs of €6.2 million (2015: €7.1 million). These costs are allocated to the profit and loss account over the term of the Senior Secured Notes due 2023 in accordance with IAS 39—Financial Instruments: Recognition and Measurement.

Senior Notes due 2016

The Group used the proceeds from the Senior Notes due 2018 to refinance all of its outstanding U.S. dollar-denominated Senior Notes due 2016 on May 15, 2013 and redeem €500 million aggregate principal amount of its outstanding euro-denominated Senior Notes due 2016 pursuant to a partial redemption (redemption date of June 5, 2013). The remaining Senior Notes due 2016 were fully redeemed by the Group at their principal amount on February 19, 2014 with the proceeds of the Senior Notes due 2019. The Senior Notes due 2016 were listed on the Luxembourg Stock Exchange.

Following the full redemption of the Senior Notes due 2016 on February 19, 2014 the Group wrote-off the associated unamortised debt issue costs.

20. INTEREST-BEARING LOANS AND BORROWINGS (Continued)

Senior Notes due 2018

Before redemption the Senior Notes due 2018 were listed on the Luxembourg Stock Exchange and comprised of €500 million Senior Notes due 2018 (the "Euro Notes") and $678 million Senior Notes due 2018 (the "Dollar Notes"). The Senior Notes due 2018 beared interest at 6.50% per annum for the Euro Notes and 6.125% for the Dollar Notes, payable semi-annually in arrears on 15 February and 15 August of each year.

In August 2016 the Group issued €650 million and $500 million of Senior Notes due 2024. The proceeds of the refinancing were used to redeem in full the Senior Notes due 2018. As a result of the early redemption of the Senior Notes due 2018 an exceptional finance cost of €17.5 million was recognised within the income statement in respect of an early redemption premium (see Note 5).

Following the full redemption of the Senior Secured Notes due 2018 unamortised debt issue costs of €3.2 million were charged to exceptional finance costs within the income statement (see Note 5).

As at December 31, 2015 the Senior Notes due 2018 were stated net of debt issue costs of €4.2 million (2014: €5.9 million).

Senior Notes due 2019

The Senior Notes due 2019 are listed on the Luxembourg Stock Exchange and comprise €600 million (2015: €600 million) Senior Notes due 2019 (the "Euro Notes") and $590 million (2015: $590 million) Senior Notes due 2019 (the "Dollar Notes"). The Senior Notes due 2019 bear interest at 5.75% per annum for the Euro Notes and 5.875% for the Dollar Notes, payable semi-annually in arrears on 15 February and 15 August of each year. Unless previously redeemed as noted below, the Senior Notes due 2019 will be redeemed by the Group at their principal amount on 15 February 2019.

The Senior Notes due 2019 are subject to redemption at the option of the Group, in whole or in part, at the following redemption prices (expressed as percentages of the principal amount), if redeemed during the 12-month period beginning 15 February of the years indicated below:

Year	Euro Notes redemption price	Dollar Notes redemption price
2017	101.438%	101.469%
2018 and thereafter	100.000%	100.000%

In each case, the redemption premium will be in addition to accrued and unpaid interest, if any, to the redemption date (subject to the rights of holders of record on relevant record dates to receive interest due on an interest payment date).

The Senior Notes due 2019 are secured by junior pledges of all of the shares of INEOS Holdings Limited. The Senior Notes due 2019 are guaranteed by INEOS Holdings Limited and its material operating subsidiaries on an unsecured senior subordinated basis. Such guarantees only become due 179 days after an event of default on the Senior Notes due 2019 has occurred or earlier under certain circumstances.

20. INTEREST-BEARING LOANS AND BORROWINGS (Continued)

The Indenture contains a number of operating and financial covenants including limitations on indebtedness, restricted payments, transactions with affiliates, liens, sale of assets and dividend payments.

The Senior Notes due 2019 are stated net of debt issue costs of €3.9 million (2015: €5.8 million). These costs are allocated to the profit and loss account over the term of the Senior Notes due 2019 in accordance with IAS 39—Financial Instruments: Recognition and Measurement.

On March 1, 2017 the Group redeemed in full the Senior Notes due 2019 with the proceeds from the issuance of the Senior Secured Term Loans due 2024.

Senior Notes due 2024

The Senior Notes due 2024 are listed on the Luxembourg Stock Exchange and comprise €650 million Senior Notes due 2024 (the "Euro Notes") and $500 million Senior Notes due 2024 (the "Dollar Notes"). The Senior Notes due 2024 bear interest at 5.375% per annum for the Euro Notes and 5.625% for the Dollar Notes, payable semi-annually in arrears on 1 February and 1 August of each year.

Unless previously redeemed as noted below, the Senior Notes due 2024 will be redeemed by the Group at their principal amount on 1 August 2024.

The Senior Notes due 2024 are subject to redemption at the option of the Group, in whole or in part, at the following redemption prices (expressed as percentages of the principal amount), if redeemed during the 12-month period beginning 1 August of the years indicated below:

Year	Euro Notes redemption price	Dollar Notes redemption price
2019	102.688%	102.813%
2020	101.344%	101.406%
2021 and thereafter	100.000%	100.000%

In each case, the redemption premium will be in addition to accrued and unpaid interest, if any, to the redemption date (subject to the rights of holders of record on relevant record dates to receive interest due on an interest payment date).

The Senior Notes due 2024 are secured by junior pledges of all of the shares of INEOS Holdings Limited. The Senior Notes due 2024 are guaranteed by INEOS Holdings Limited and its material operating subsidiaries on an unsecured senior subordinated basis. Such guarantees only become due 179 days after an event of default on the Senior Notes due 2024 has occurred or earlier under certain circumstances.

The Indenture contains a number of operating and financial covenants including limitations on indebtedness, restricted payments, transactions with affiliates, liens, sale of assets and dividend payments.

20. INTEREST-BEARING LOANS AND BORROWINGS (Continued)

The Senior Notes due 2024 are stated net of debt issue costs of €9.7 million. These costs are allocated to the profit and loss account over the term of the Senior Notes due 2024 in accordance with IAS 39—Financial Instruments: Recognition and Measurement.

Receivables Securitisation Facility

The Company has entered into a €800 million receivables securitisation facilities agreement (“Receivables Securitisation Facility”) which matures in December 2018. The total amount outstanding at December 31, 2016 was €300.4 million (2015: €428.1 million, 2014: €502.7 million). The facility is secured by pledges over the trade receivables sold in to the programme. Interest is charged on the facility at a rate per annum of either EURIBOR or short term commercial paper rates plus a margin.

The Receivables Securitisation Facility is stated net of debt issue costs of €1.0 million (2015: €1.2 million, 2014: €1.3 million).

Noretyl Facility

As part of the Group’s purchase of the remaining 50% interest in the Noretyl ethylene cracker at Rafnes, Norway from the Kerling group on July 1, 2015 (see Note 3), the Group also assumed the obligations of a €140 million loan facility (“Noretyl Facility”) that Noretyl had in place. The total amount outstanding at December 31, 2016 was €82.5 million, of which €27.5 million is due within one year.

The Noretyl Facility is to be repaid in equal quarterly instalments, in aggregate annual amounts equal to 6.25% of the original principal amount of the facility starting on March 31, 2016. The facility matures in December 2019. The facility is secured by pledges over the property, plant and equipment of Noretyl AS. The outstanding Noretyl Facility will bear interest a rate per annum equal to EURIBOR (subject to a floor of 0% per annum) plus a margin of 2.75%.

The Noretyl Facility is stated net of debt issue costs of €1.9 million (2015: €nil million).

Finance lease liabilities

Finance lease liabilities are payable as follows:

	Minimum lease payments	Interest	Principal
		2016	
		€m	
Less than one year	0.3	(0.1)	0.2
Between one and five years	0.5	(0.4)	0.1
More than five years	7.0	(5.9)	1.1
	7.8	**(6.4)**	**1.4**

20. INTEREST-BEARING LOANS AND BORROWINGS (Continued)

	Minimum lease payments	Interest	Principal
		2015	
		€m	
Less than one year	0.4	(0.1)	0.3
Between one and five years	0.7	(0.4)	0.3
More than five years	7.2	(6.1)	1.1
	8.3	**(6.6)**	**1.7**

	Minimum lease payments	Interest	Principal
		2014	
		€m	
Less than one year	0.5	(0.1)	0.4
Between one and five years	0.9	(0.4)	0.5
More than five years	7.3	(6.2)	1.1
	8.7	**(6.7)**	**2.0**

21. TRADE AND OTHER PAYABLES

	2016	2015	2014
		€m	
Current			
Trade payables	465.2	475.1	507.6
Amounts due to related parties	202.8	185.5	209.8
Other payables	423.1	333.3	451.0
Deferred consideration	18.1	17.4	11.5
Accruals and deferred income	454.2	433.8	477.4
	1,563.4	1,445.1	1,657.3
Non-current			
Other payables	62.5	90.3	82.9
Deferred consideration	27.0	—	—
Accruals and deferred income	17.7	1.4	6.1
	107.2	91.7	89.0

22. EMPLOYEE BENEFITS

Pension plans

The Group operates a number of pension plans throughout the world, devised in accordance with local conditions and practices. The plans are generally of the defined benefit type and are funded

22. EMPLOYEE BENEFITS (Continued)

by payments to separately administered funds or insurance companies. The principal funded plans are in the United Kingdom, North America, Belgium, Norway and Switzerland.

The Group also operates a number of unfunded defined benefit pension schemes in Germany and France.

The most recent full valuations of the significant defined benefit plans were carried out as follows:

Plan	Country	Valuation date
All Plans	United Kingdom	5 April 2013 or 31 December 2013
All Plans	North America	1 January 2016
All Plans	Belgium	1 January 2017
All Plans	Norway	31 December 2016
All Plans	France	31 December 2016
All Plans	Germany	31 December 2016
All Plans	Switzerland	31 December 2016

These valuations have been updated where appropriate to December 31, 2016 by independent qualified actuaries.

The Group's pension schemes have been disclosed on a geographical basis as those schemes in the United Kingdom, North America and Other European. Other European principally includes the Group's pension plans in Germany, Belgium, Norway and France.

The UK defined benefit pension plans were historically final salary in nature, with a normal retirement age of 60. The majority of the UK plans are either closed to new entrants, or frozen to future accrual. The plans operate under trust law and are managed and administered by Trustees in accordance with the terms of each plan's Trust Deed and Rules and relevant legislation. The contributions paid to the UK plans are set every three years based on a funding agreement between the company and Trustee after taking actuarial advice.

The North American pension arrangements consist of two funded plans, both closed to new entrants and future accrual. Both plans were final salary defined benefit in nature, and the plans' liabilities are valued regularly in line with US statutory funding requirements. Around 90% of both plans' assets are invested in bond instruments, to closely match the profile of each plans' liabilities.

The Other European pension arrangements are primarily final salary in nature, the majority of which remain open to new entrants. The Norwegian and Swiss benefits are insured, the Belgian plan assets are held in trust, and the remaining schemes are unfunded with associated provisions held on the Group's balance sheet.

22. EMPLOYEE BENEFITS (Continued)

Pension plan assumptions

The principal actuarial assumptions (expressed as weighted averages or ranges) at the year end were as follows:

	United Kingdom			North America			Other European		
	2016	2015	2014	2016	2015	2014	2016	2015	2014
					%				
Major assumptions									
Rate of general increase in salaries	3.3	3.1	3.1	3.5	3.3	3.5	2.0-4.5	2.3-4.5	2.3-4.5
Rate of increase to pensions in payment	3.0-5.0	2.9-5.0	2.9-5.0	0.0	0.0	0.0	0.0-1.8	0.0-1.8	0.0-1.8
Discount rate for scheme liabilities	2.6	3.8	3.7	4.0	4.3	3.8	0.8-2.8	1.0-2.8	1.3-2.5
Inflation	3.3	3.1	3.1	2.5	2.5	2.5	1.3-3.0	1.3-2.0	1.3-1.8

The assumptions relating to longevity underlying the pension liabilities at the reporting date are based on standard actuarial mortality tables and include an allowance for future improvements in longevity. The assumptions are equivalent to expecting a 65-year old to live for a number of years as follows:

	United Kingdom			North America			Other European		
	2016 years	2015 years	2014 years	2016 years	2015 years	2014 years	2016 years	2015 years	2014 years
Longevity at age 65 for current pensioners	23.3-27.3	23.2-27.2	22.9-25.3	21.8-24.5	22.2-24.9	19.6-21.3	19.1-30.0	19.0-30.0	18.9-27.0

The following table presents the sensitivity of the defined benefit obligation to each significant actuarial assumption:

	United Kingdom	North America	Other European
		2016	
		%	
Major assumptions			
Discount rate: 1.0% decrease	25.7	14.5	25.5
Rate of inflation: 0.5% increase(1)	10.6	0.0	5.1
1 year increase in longevity for a member currently aged 65	3.3	0.7	2.6

(1) The sensitivity to the inflation assumption change includes corresponding changes to the future salary increase and future pension increase assumptions where these assumptions are set to be linked to the inflation assumption.

Post-retirement health care plans

The Group also operates a number of post retirement healthcare plans in the United States, which provide employees with other post-employment benefits in respect of health care. The plans are

22. EMPLOYEE BENEFITS (Continued)

unfunded and the liability in respect of these benefits is included in provisions. The liability is assessed by qualified independent actuaries under the projected unit method, assuming the following rates:

Rates	2016	2015	2014
		%	
Liability discount rate	4.0	4.3	3.8
Long-term healthcare trend rate	5.0	5.0	5.0

History of plans

The history of the plans for the current and prior years is as follows:

Consolidated balance sheet

	2016	2015	2014
		€m	
Present value of the defined benefit obligation in respect of pension plan	1,564.7	1,412.9	1,325.4
Present value of obligations in respect of post retirement health care plan	24.2	20.4	19.1
Fair value of plan assets	(799.4)	(744.2)	(683.3)
Deficit	**789.5**	**689.1**	**661.2**

The Group's net liability in respect of defined benefit obligations (DBO) is as follows:

	2016	2015	2014
		€m	
Obligations in respect of pension plans			
United Kingdom	61.3	37.9	55.4
North America	3.4	13.3	13.0
Other European	700.6	617.5	573.7
	765.3	668.7	642.1
Obligations in respect of post-retirement health care plans	24.2	20.4	19.1
Recognised liability for defined benefit obligations	**789.5**	**689.1**	**661.2**

The Group expects to contribute approximately €29.1 million to its funded defined benefit plans in the next financial year. This excludes direct company benefit payments and payments in relation to unfunded defined benefit plan schemes.

22. EMPLOYEE BENEFITS (Continued)

Expense recognised in the consolidated income statement

Year ended 31 December 2016	United Kingdom	North America	Other European	Post retirement health care plans	Total
			€m		
Current service cost	0.9	0.7	40.6	0.7	42.9
Settlement (gain) / loss	—	0.2	(2.9)	—	(2.7)
Cost of termination benefits	—	—	3.0	—	3.0
Interest cost on DBO	11.9	11.0	16.7	1.1	40.7
Interest income on assets	(10.8)	(10.5)	(3.4)	—	(24.7)
	2.0	**1.4**	**54.0**	**1.8**	**59.2**

Year ended 31 December 2015	United Kingdom	North America	Other European	Post retirement health care plans	Total
			€m		
Current service cost	1.6	0.8	46.5	0.7	49.6
Past service cost	—	—	(1.6)	(0.1)	(1.7)
Cost of termination benefits	—	—	3.5	—	3.5
Interest cost on DBO	13.4	10.5	15.4	0.8	40.1
Interest income on assets	(11.4)	(10.0)	(3.1)	—	(24.5)
	3.6	**1.3**	**60.7**	**1.4**	**67.0**

Year ended 31 December 2014	United Kingdom	North America	Other European	Post retirement health care plans	Total
			€m		
Current service cost	1.3	0.8	36.2	0.5	38.8
Settlement gains	0.4	—	1.5	—	1.9
Cost of termination benefits	—	—	3.7	—	3.7
Interest cost on DBO	13.2	9.8	20.5	0.7	44.2
Interest income on assets	(11.3)	(9.1)	(4.1)	—	(24.5)
	3.6	1.5	57.8	1.2	64.1

22. EMPLOYEE BENEFITS (Continued)

The expense is recognised in the following line items in the consolidated income statement:

	2016	2015	2014
		€m	
Cost of sales and administrative expenses	43.2	51.4	44.4
Finance income	—	(24.5)	(24.5)
Finance cost	16.0	40.1	44.2
	59.2	**67.0**	**64.1**

Pension plans

As at 31 December 2016	United Kingdom	North America	Other European	Total
		€m		
Present value of funded obligations	402.9	281.5	245.8	930.2
Present value of unfunded obligations	—	—	634.5	634.5
	402.9	281.5	880.3	1,564.7
Fair value of plan assets	(341.6)	(278.1)	(179.7)	(799.4)
	61.3	**3.4**	**700.6**	**765.3**

As at 31 December 2015	United Kingdom	North America	Other European	Total
		€m		
Present value of funded obligations	350.4	274.4	224.7	849.5
Present value of unfunded obligations	—	—	563.4	563.4
	350.4	274.4	788.1	1,412.9
Fair value of plan assets	(312.5)	(261.1)	(170.6)	(744.2)
	37.9	**13.3**	**617.5**	**668.7**

As at 31 December 2014	United Kingdom	North America	Other European	Total
		€m		
Present value of funded obligations	341.3	269.8	216.1	827.2
Present value of unfunded obligations	—	—	498.2	498.2
	341.3	269.8	714.3	1,325.4
Fair value of plan assets	(285.9)	(256.8)	(140.6)	(683.3)
	55.4	**13.0**	**573.7**	**642.1**

Included within the Other European deficits are amounts relating to unfunded German plans of €623.5 million (2015: €552.8 million, 2014: €484.5 million).

22. EMPLOYEE BENEFITS (Continued)

Movements in present value of defined benefit obligation:

	United Kingdom	North America	Other European	Total
		€m		
At 1 January 2014	**284.5**	**219.8**	**682.1**	**1,186.4**
Current service cost	1.3	0.8	36.2	38.3
Interest cost on DBO	13.2	9.8	20.5	43.5
Member contributions	—	—	1.0	1.0
Actuarial (gain)/loss—experience	(2.6)	0.6	(5.9)	(7.9)
Actuarial (gain)/loss—demographic assumptions	(2.6)	0.2	(2.5)	(4.9)
Actuarial loss—financial assumptions	37.1	21.5	144.2	202.8
Disbursements from plan assets	(10.2)	(13.0)	(10.8)	(34.0)
Disbursements paid directly by the employer	(0.6)	(0.4)	(12.0)	(13.0)
Past service cost	0.4	—	1.5	1.9
Termination benefits	—	—	3.7	3.7
Disposals	—	(0.8)	(143.0)	(143.8)
Exchange	20.8	31.3	(0.7)	51.4
At 31 December 2014	**341.3**	**269.8**	**714.3**	**1,325.4**
Current service cost	1.6	0.8	46.5	48.9
Interest cost on DBO	13.4	10.5	15.4	39.3
Member contributions	—	—	1.0	1.0
Actuarial (gain)—experience	(7.4)	(1.7)	(12.0)	(21.1)
Actuarial (gain)/loss—demographic assumptions	(1.6)	3.7	—	2.1
Actuarial (gain)/loss—financial assumptions	(9.4)	(16.9)	11.3	(15.0)
Disbursements from plan assets	(8.9)	(18.8)	(15.1)	(42.8)
Disbursements paid directly by the employer	(0.1)	(0.5)	(9.7)	(10.3)
Past service cost	—	—	(1.6)	(1.6)
Termination benefits	—	—	3.5	3.5
Acquisitions	—	—	25.2	25.2
Reclassifications	—	(2.8)	8.0	5.2
Exchange	21.5	30.3	1.3	53.1
At 31 December 2015	**350.4**	**274.4**	**788.1**	**1,412.9**
Current service cost	0.9	0.7	40.6	42.2
Interest cost on DBO	11.9	11.0	16.7	39.6
Member contributions	—	—	1.1	1.1
Actuarial loss—experience	0.1	1.2	4.7	6.0
Actuarial (gain)—demographic assumptions	—	(5.8)	(1.4)	(7.2)
Actuarial loss—financial assumptions	105.0	8.2	50.4	163.6
Disbursements from plan assets	(9.4)	(11.9)	(6.0)	(27.3)
Disbursements paid directly by the employer	(0.3)	(0.5)	(10.4)	(11.2)
Settlements	—	(11.3)	(8.5)	(19.8)
Termination benefits	—	—	3.0	3.0
Acquisitions	—	—	—	—
Reclassifications	—	4.7	—	4.7
Exchange	(55.7)	10.8	2.0	(42.9)
At 31 December 2016	**402.9**	**281.5**	**880.3**	**1,564.7**

22. EMPLOYEE BENEFITS (Continued)

Movements in fair value of plan assets:

	United Kingdom	North America	Other European	Total
		€m		
At 1 January 2014	**238.6**	**200.4**	**127.3**	**566.3**
Interest income on plan assets	11.3	9.1	4.1	24.5
Return on plan assets greater /(less) than discount rate	19.1	22.3	8.7	50.1
Employer contributions	10.1	9.6	23.8	43.5
Member contributions	—	—	1.0	1.0
Disbursements	(10.7)	(13.5)	(22.8)	(47.0)
Disposals	—	(0.7)	(0.8)	(1.5)
Exchange	17.5	29.6	(0.7)	46.4
At 31 December 2014	**285.9**	**256.8**	**140.6**	**683.3**
Interest income on plan assets	11.4	10.0	3.1	24.5
Return on plan assets greater /(less) than discount rate	(7.7)	(16.5)	9.4	(14.8)
Employer contributions	14.2	4.0	22.9	41.1
Member contributions	—	—	1.0	1.0
Disbursements	(9.0)	(19.3)	(24.7)	(53.0)
Acquisitions	—	—	18.6	18.6
Reclassifications	—	(2.9)	—	(2.9)
Exchange	17.7	29.0	(0.3)	46.4
At 31 December 2015	**312.5**	**261.1**	**170.6**	**744.2**
Interest income on plan assets	10.8	10.5	3.4	24.7
Return on plan assets greater than discount rate	65.3	7.7	1.8	74.8
Employer contributions	11.2	6.9	23.2	41.3
Member contributions	—	—	1.1	1.1
Disbursements	(9.7)	(12.4)	(16.4)	(38.5)
Settlements	—	(11.5)	(5.6)	(17.1)
Reclassifications	—	5.0	—	5.0
Exchange	(48.5)	10.8	1.6	(36.1)
At 31 December 2016	**341.6**	**278.1**	**179.7**	**799.4**

The overall expected rate of return is calculated by weighting the individual rates in accordance with the anticipated balance in the plan's investment portfolio.

22. EMPLOYEE BENEFITS (Continued)

The fair value of the plan assets and the return on those assets were as follows:

At 31 December 2016	United Kingdom	North America	Other European	Total
		€m		
Equities	156.9	27.4	73.8	258.1
Corporate bonds	152.4	247.6	34.8	434.8
Property	12.5	—	9.7	22.2
Other	19.8	3.1	61.4	84.3
Total plan assets	**341.6**	**278.1**	**179.7**	**799.4**

At 31 December 2015	United Kingdom	North America	Other European	Total
		€m		
Equities	177.1	25.5	73.7	276.3
Corporate bonds	107.0	233.3	30.1	370.4
Property	12.6	—	12.7	25.3
Other	15.8	2.3	54.1	72.2
Total plan assets	**312.5**	**261.1**	**170.6**	**744.2**

At 31 December 2014	United Kingdom	North America	Other European	Total
		€m		
Equities	137.5	25.2	64.5	227.2
Corporate bonds	123.7	230.1	29.2	383.0
Property	9.8	—	11.2	21.0
Other	14.9	1.5	35.7	52.1
Total plan assets	**285.9**	**256.8**	**140.6**	**683.3**

There are no plans which hold investments in the Group's own financial instruments, or hold assets or property which are used by the Group.

22. EMPLOYEE BENEFITS (Continued)

Post-retirement health care plans

Reconciliation of present value of scheme liabilities:

	2016	2015	2014
		€m	
At 1 January	20.4	19.1	14.8
Current service cost	0.7	0.7	0.5
Interest cost on DBO	1.1	0.8	0.7
Actuarial gain—experience	(1.1)	(0.8)	(0.3)
Actuarial (gain)/loss—demographic assumptions	(3.1)	0.6	—
Actuarial loss/(gain)—financial assumptions	0.6	(1.1)	1.4
Disbursements directly paid by the employer	(0.9)	(0.7)	(0.1)
Past service cost	—	(0.1)	—
Reclassifications	5.6	(0.3)	—
Exchange adjustments	0.9	2.2	2.1
At 31 December	**24.2**	**20.4**	**19.1**

The post-retirement healthcare plans do not hold any assets.

The following table presents the sensitivity of the defined benefit obligation to each significant actuarial assumption:

	2016
	%
Major assumptions	
Discount rate: 1.0% decrease	12.5
Rate of inflation: 0.5% increase	0.0
1 year increase in longevity for a member currently aged 65	1.4

23. PROVISIONS

	Severance and restructuring costs	Remediation	Other	Total
		€m		
At 1 January 2016	21.8	8.6	1.3	31.7
Charged/(credited) to the consolidated income statement	21.3	0.8	(0.5)	21.6
Utilised in the year	(2.7)	(2.9)	(0.2)	(5.8)
Unwinding of discount	—	0.2	—	0.2
At 31 December 2016	**40.4**	**6.7**	**0.6**	**47.7**
Non-current	4.9	2.5	0.9	8.3
Current	—	6.2	—	6.2
Balance at 31 December 2014	**4.9**	**8.7**	**0.9**	**14.5**
Non-current	21.8	2.8	1.0	25.6
Current	—	5.8	0.3	6.1
Balance at 31 December 2015	**21.8**	**8.6**	**1.3**	**31.7**
Non-current	21.2	6.7	0.6	28.5
Current	19.2	—	—	19.2
Balance at 31 December 2016	**40.4**	**6.7**	**0.6**	**47.7**

Severance and restructuring costs

As described in Note 5, the Group implemented a reorganisation of the Technologies business during 2016. The restructuring costs largely relate to severance and early retirement costs.

Remediation costs

The Group has provided for the cost of remediation works where there is a legal or constructive obligation for such work to be carried out. The provision was established to meet the clean-up costs of contaminated soil and groundwater, the removal of potentially hazardous substances and rectification work required to ensure compliance with license to operate obligations. These costs relate mainly to the Group's production facilities at the Saltend, Köln, Chocolate Bayou, Green Lake and Lima sites. The provision only covers items of specific work for which a reasonable estimate can be determined. The required work is expected to be completed within the next three year period. The interest rate used to determine the obligation in the balance sheet at December 31, 2016 was 4.0% (2015: 4.0%, 2014: 5.0%). By their nature the amounts and timing of any outflows in respect of remediation costs are difficult to predict.

Other provisions

Other provisions include a number of provisions for onerous contracts, other loss making contracts and commercial disputes.

24. SHARE CAPITAL

	2016	2015	2014
		€m	
Fully paid			
924,803 (2015: 924,803, 2014: 924,803) Ordinary shares of €1 each	0.9	0.9	0.9

The holders of ordinary shares are entitled to receive dividends as declared from time to time and are entitled to one vote per share at meetings of the Company.

25. DIVIDENDS

The following dividends were recognised during the year:

	2016	2015	2014
		€m	
Dividend paid	241.3	73.4	65.6

26. FINANCIAL INSTRUMENTS

26.a Fair value of financial instruments

Investments in debt and equity securities

The fair value of other investments shown as loans and receivables is estimated as the present value of future cash flows, discounted at the market rate of interest at the reporting date.

Available for sale financial assets are accounted for at fair value based on the present value of future cash flows where such information is readily available based on the present value of future cash flows estimated from financial information made available during the year as a result of a recent transaction in the investment. However, as explained in Note 15, the Group's available for sale financial assets include certain equity interests which are not quoted and for which there is no active market. In these circumstances, in the absence of reliable information, the Group considers that a reliable determination of fair value is not practicable and such investments are recorded at their acquisition cost. The fair value has therefore been presented as the equivalent to the carrying value at the reporting date.

Trade and other receivables

The carrying amount of trade and other receivables generally approximates to fair value due to their short maturities. Where settlement is not due in the short term and where the effect is material, fair value is estimated as the present value of future cash flows discounted at the market rate of interest at the reporting date.

Trade and other payables

The carrying amount of trade and other payables generally approximates to fair value due to their short maturities. Where settlement is not due in the short term and where the effect is material, fair value is estimated as the present value of future cash flows discounted at the market rate of interest at the reporting date.

26. FINANCIAL INSTRUMENTS (Continued)

Cash and cash equivalents

The fair value of cash and cash equivalents is estimated as its carrying amount where the cash is repayable on demand. Where it is not repayable on demand then the fair value is estimated at the present value of future cash flows, discounted at the market rate of interest at the reporting date.

Interest-bearing borrowings

The fair value of the Senior Secured Term Loans, Senior Secured Notes and Senior Notes, which after initial recognition is determined for disclosure purposes only are based on the market yields derived from quotes obtained at the year end from leading financial institutions (categorised as Level 1). The fair value of Securitisation and Noretyl facilities is the same as the carrying value. The fair value of finance leases is determined by reference to market rates for similar lease agreements.

Derivative financial instruments

The fair value of interest rate swaps and commodity contracts are based on market or broker quotes.

26. FINANCIAL INSTRUMENTS (Continued)

Fair values

The fair values for each class of financial assets and financial liabilities together with their carrying amounts shown in the consolidated balance sheet are as follows:

	Carrying amount	Fair value	Carrying amount	Fair value	Carrying amount	Fair value
	2016		2015		2014	
			€m			
Financial assets held for trading at fair value through profit or loss:						
Derivative commodity contracts	8.2	8.2	1.1	1.1	2.5	2.5
Interest rate cap	—	—	—	—	—	—
	8.2	8.2	1.1	1.1	2.5	2.5
Available for sale equity investments:						
Carried at fair value	—	—	—	—	—	—
Carried at cost	29.2	29.2	29.2	29.2	28.7	28.7
Total available for sale equity investments	29.2	29.2	29.2	29.2	28.7	28.7
Loans and receivables carried at amortised cost:						
Trade receivables	1,039.8	1,039.8	1,062.8	1,062.8	1,260.0	1,260.0
Amounts due from related parties	1,376.9	1,376.9	1,586.6	1,586.6	916.0	916.0
Other receivables	106.7	106.7	112.4	112.4	115.8	115.8
Other investments	262.2	262.2	243.2	243.2	210.2	210.2
Loans and receivables	2,785.6	2,785.6	3,005.0	3,005.0	2,502.0	2,502.0
Cash and cash equivalents	2,204.1	2,204.1	1,648.0	1,648.0	1,434.6	1,434.6
	4,989.7	4,989.7	4,653.0	4,653.0	3,936.6	3,936.6
Total financial assets	**5,027.1**	**5,027.1**	**4,683.3**	**4,683.3**	**3,967.8**	**3,967.8**

26. FINANCIAL INSTRUMENTS (Continued)

	Carrying amount	Fair value	Carrying amount	Fair value	Carrying amount	Fair value
	2016		2015		2014	
			€m			
Financial liabilities held for trading at fair value through profit and loss:						
Derivative commodity contracts	0.9	0.9	14.4	14.4	—	—
Financial liabilities carried at amortised cost:						
Senior Secured Term Loans	4,580.5	4,633.5	4,737.9	4,620.2	3,132.4	3,052.0
Senior Secured Notes	763.8	797.1	762.9	718.2	1,930.8	2,065.1
Senior Notes	2,275.4	2,303.4	2,251.9	2,241.8	2,128.7	2,058.6
Securitisation Facility	299.4	300.4	426.9	428.1	501.4	502.7
Noretyl Facility	80.6	82.5	110.0	110.0	—	—
Other bank loans	19.0	19.0	9.0	9.0	12.5	12.5
Finance lease liabilities	1.4	1.4	1.7	1.7	2.0	2.0
Trade payables	465.2	465.2	475.1	475.1	507.6	507.6
Amounts due to related parties	202.8	202.8	185.5	185.5	209.8	209.8
Other payables	485.6	485.6	423.6	423.6	533.9	533.9
	9,173.7	9,290.9	9,384.5	9,213.2	8,959.1	8,944.2
Total financial liabilities	**9,174.6**	**9,291.8**	**9,398.9**	**9,227.6**	**8,959.1**	**8,944.2**

The table below analyses financial instruments carried at fair value, by valuation method. The different levels, determined in accordance with IFRS 13 "Fair Value Measurement", have been defined as follows:

- Level 1: quoted prices (unadjusted) in active markets for identical assets or liabilities;
- Level 2: inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices); and
- Level 3: inputs for the asset or liability that are not based on observable market data (unobservable inputs).

26. FINANCIAL INSTRUMENTS (Continued)

	2016				2015				2014			
	Fair Value	Level 1	Level 2	Level 3	Fair Value	Level 1	Level 2	Level 3	Fair Value	Level 1	Level 2	Level 3
	€m											
Financial assets held for trading at fair value through profit or loss:												
Derivative commodity contracts	8.2	—	8.2	—	1.1	—	1.1	—	2.5	—	2.5	—
Financial liabilities held for trading at fair value through profit and loss:												
Derivative commodity contracts	(0.9)	—	(0.9)	—	(14.4)	—	(14.4)	—	—	—	—	—
Total financial assets and liabilities held at fair value	**7.3**	**—**	**7.3**	**—**	**(13.3)**	**—**	**(13.3)**	**—**	**2.5**	**—**	**2.5**	**—**

There have been no transfers from Level 2 to Level 1 in 2016 (2015 and 2014: no transfers from Level 2 to Level 1).

The only financial assets and liabilities held at fair value based on a level 3 valuation technique were disposed of during the year ended December 31, 2014 as part of the business disposals (see Note 4).

26.b Net gains and losses from financial instruments

Net gains and losses from financial instruments comprise the results of valuations, the amortisation of discounts, the recognition and derecognition of impairment losses, results from the translation of foreign currencies, interest, dividends and all effects on profit or loss of financial instruments.

Net gains from receivables and loans relate primarily to recognition and derecognition of impairment losses, results from the translation of foreign currencies and interest income.

Net losses from financial liabilities measured at amortised cost relate primarily to amortisation of discounts, results from the translation of foreign currencies, interest expense and other financing related expenses.

The item 'financial instruments at fair value through profit or loss' comprise valuation gains and losses, and only includes gains and losses from instruments which are not designated as hedging instruments as defined by IAS 39.

26. FINANCIAL INSTRUMENTS (Continued)

No gains or losses on items measured at fair value have been recognised in the income statement in respect of fair values determined based on a level 3 valuation technique using non-observable inputs. No gains or losses on available for sale equity investments have been recognised in the Statement of Comprehensive Income for the years ended December 31, 2016, December 31, 2015 and December 31, 2014 based on a level 3 valuation technique using non-observable inputs.

	Loans and receivables			Available for sale financial assets		
	2016	2015	2014	2016	2015	2014
			€m			
Interest income	91.2	65.2	31.3	—	—	—
Dividend income	—	—	—	7.0	2.9	5.3
Foreign exchange (losses)/gains	(54.7)	(47.2)	81.5	—	—	—
Net result	**36.5**	**18.0**	**112.8**	**7.0**	**2.9**	**5.3**
Carrying value at 31 December	**4,989.7**	**4,653.0**	**3,936.6**	**29.2**	**29.2**	**28.7**

	Liabilities measured at amortised cost			Financial instruments at fair value through profit or loss		
	2016	2015	2014	2016	2015	2014
			€m			
Interest cost	(376.8)	(400.5)	(410.3)	—	—	—
Other finance cost	(19.9)	(6.4)	(20.7)	—	—	—
Net fair value gains/(losses) on derivatives	—	—	—	17.3	(16.2)	(1.0)
Foreign exchange gains	86.2	342.0	179.2	—	—	—
Net result	**(310.5)**	**(64.9)**	**(251.8)**	**17.3**	**(16.2)**	**(1.0)**
Carrying value at 31 December	**(9,173.7)**	**(9,384.5)**	**(8,959.1)**	**7.3**	**(13.3)**	**2.5**

26.c Credit risk

Financial risk management

Credit risk is the risk of financial loss to the Group if a customer or counterparty to a financial instrument fails to meet its contractual obligations, and arises principally from the Group's receivables from customers, deposits with financial institutions and derivatives.

Group Treasury policy and objectives in relation to credit risk is to minimize the likelihood that the Group will experience financial loss due to counterparty failure and to ensure that in the event of a single loss, the failure of any single counterparty would not materially impact the financial wellbeing of the Group.

Trade and other receivables

The Group's exposure to credit risk is influenced mainly by the individual characteristics of each customer. However, management also considers the demographics of the Group's customer base,

26. FINANCIAL INSTRUMENTS (Continued)

including the default risk of the industry and country in which customers operate, as these factors may have an influence on credit risk. Management considers that there is no geographical concentration of credit risk. The Group has established a credit policy under which each new customer is analysed individually for creditworthiness before the Group's standard payment and delivery terms and conditions are offered or are adjusted accordingly. The Group's review includes external ratings, when available, and in some cases bank references. Purchase limits are established for each customer, which represent the maximum open amount without requiring approval. Customers that fail to meet the Group's benchmark creditworthiness may transact with the Group only on a prepayment basis.

Investments, cash and cash equivalent

Surplus cash investments are only made with banks with which the Group has a relationship. Occasionally deposits are made with banking counterparties that provide financing arrangements, reducing the credit exposure of the Group.

Guarantees

The Group's policy is to provide financial guarantees only to wholly-owned subsidiaries. At December 31, 2016 no guarantees were outstanding (2015: none, 2014: none).

Exposure to credit risk

The carrying amount of financial assets represents the maximum credit exposure. Therefore, the maximum exposure to credit risk at the reporting date was the carrying amount of financial assets. Further details on the Group's exposure to credit risk are given in Note 19.

26.d Liquidity risk

Financial risk management

Liquidity risk is the risk that the Group will not be able to meet its financial obligations as they fall due. The Group's approach to managing liquidity is to ensure, as far as possible, that it will always have sufficient liquidity to meet its liabilities when due, under normal and stressed conditions, without incurring unacceptable losses or risking damage to the Group. The Group's exposure to liquidity risk is limited by the fact that it operates with significant cash resources, and it maintains the most appropriate mix of short, medium and long-term borrowings from the Group's lenders.

The Group is reliant on committed funding from a variety of sources at Group and subsidiary company level to meet the anticipated needs of the Group for the period covered by the Group's budget.

The Group forecasts on a regular basis the expected cash flows that will occur on a weekly and monthly basis. This information is used in conjunction with the weekly reporting of actual cash balances at bank in order to calculate the level of funding that will be required in the short and medium term. On a monthly basis the level of headroom on existing facilities is reported and forecast forward until the end of the financial period.

26. FINANCIAL INSTRUMENTS (Continued)

In addition, the Group maintains various lines of credits in the form of Senior Notes, Senior Secured Notes, Senior Secured Term Loans, Securitisation, Noretyl Facility and Other Loans. (See Note 20— "Interest-Bearing Loans and Borrowings" for more information).

The following are the contractual maturities of financial liabilities, including estimated interest payments and excluding the effect of netting agreements:

	2016					
	Carrying amount	Contractual cash flows	1 year or less	1 to<2 years	2 to<5 years	5 years and over
	€m					
Non-derivative financial liabilities						
Senior Secured Term Loans	4,580.5	(5,277.2)	(231.4)	(1,424.6)	(2,259.3)	(1,361.9)
Senior Secured Notes	763.8	(970.2)	(30.8)	(30.8)	(92.4)	(816.2)
Senior Notes	2,275.4	(2,950.3)	(127.9)	(129.2)	(1,381.4)	(1,311.8)
Securitisation Facility	299.4	(316.7)	(8.1)	(308.6)	—	—
Noretyl Facility	80.6	(86.2)	(29.5)	(28.7)	(28.0)	—
Other loans	19.0	(22.6)	(4.9)	(3.0)	(3.6)	(11.1)
Finance lease liabilities	1.4	(7.8)	(0.3)	(0.1)	(0.4)	(7.0)
Trade payables	465.2	(465.2)	(465.2)	—	—	—
Amounts due to related parties	202.8	(202.8)	(202.8)	—	—	—
Other payables	485.6	(485.6)	(423.1)	(62.5)	—	—
Derivative financial liabilities						
Commodity contracts	0.9	(0.9)	(0.9)	—	—	—
	9,174.6	**(10,785.5)**	**(1,524.9)**	**(1,987.5)**	**(3,765.1)**	**(3,508.0)**

26. FINANCIAL INSTRUMENTS (Continued)

	2015					
	Carrying amount	Contractual cash flows	1 year or less	1 to<2 years	2 to<5 years	5 years and over
	€m					
Non-derivative financial liabilities						
Senior Secured Term Loans	4,737.9	(5,591.2)	(452.5)	(225.3)	(3,506.0)	(1,407.4)
Senior Secured Notes	762.9	(999.1)	(31.3)	(31.2)	(93.8)	(842.8)
Senior Notes	2,251.9	(2,649.0)	(138.5)	(138.1)	(2,372.4)	—
Securitisation Facility	426.9	(451.0)	(8.0)	(8.0)	(435.0)	—
Noretyl Facility	110.0	(116.4)	(29.6)	(29.5)	(57.3)	—
Other loans	9.0	(9.6)	(3.9)	(3.7)	(2.0)	—
Finance lease liabilities	1.7	(8.7)	(0.4)	(0.1)	(0.5)	(7.7)
Trade payables	475.1	(475.1)	(475.1)	—	—	—
Amounts due to related parties	185.5	(185.5)	(185.5)	—	—	—
Other payables	423.6	(423.6)	(333.3)	(90.3)	—	—
Derivative financial liabilities						
Commodity contracts	14.4	(14.4)	(14.4)	—	—	—
	9,398.9	**(10,923.6)**	**(1,672.5)**	**(526.2)**	**(6,467.0)**	**(2,257.9)**

	2014					
	Carrying amount	Contractual cash flows	1 year or less	1 to<2 years	2 to<5 years	5 years and over
	€m					
Non-derivative financial liabilities						
Senior Secured Term Loans	3,132.4	(3,524.1)	(150.7)	(345.5)	(3,027.9)	—
Senior Secured Notes	1,930.8	(2,687.9)	(153.3)	(153.4)	(1,720.2)	(661.0)
Senior Notes	2,128.7	(2,692.3)	(129.6)	(129.6)	(2,433.1)	—
Securitisation Facility	501.4	(525.0)	(11.1)	(513.9)	—	—
Other loans	12.5	(13.4)	(4.0)	(3.9)	(5.5)	—
Finance lease liabilities	2.0	(9.3)	(0.5)	(0.1)	(0.8)	(7.9)
Trade payables	507.6	(507.6)	(507.6)	—	—	—
Amounts due to related parties	209.8	(209.8)	(209.8)	—	—	—
Other payables	533.9	(533.9)	(451.0)	(82.9)	—	—
	8,959.1	**(10,703.3)**	**(1,617.6)**	**(1,229.3)**	**(7,187.5)**	**(668.9)**

26. FINANCIAL INSTRUMENTS (Continued)

26.e Net investment and cash flow hedges

The Group does not have derivative commodity contracts that qualify as cash flow hedges at December 31, 2016.

The Group had entered into two interest rate caps to hedge the variable interest rate exposures on the €500.0 million Floating Rate Senior Secured Notes. These derivative instruments expired in May 2015 and did not qualify as hedge accounting under IAS 39.

The Group has US$ and Sterling financial liabilities in respect of the Senior Secured Term Loans, Senior Secured Notes, Senior Notes and Securitisation Facility that are designated net investment hedges of US$ and Sterling operations in accordance with the requirements of IAS 21 "The effects of changes in Foreign Exchange Rates". The US$ and Sterling net investment hedges had a carrying value and fair value as follows:

	Carrying amounts 2016	Fair value 2016	Carrying amounts 2015	Fair value 2015	Carrying amounts 2014	Fair value 2014
			€m			
US Dollars	(3,814.5)	(3,844.1)	(4,114.4)	(4,030.5)	(4,917.6)	(4,904.6)
Sterling	(6.5)	(6.5)	(9.3)	(9.3)	(13.6)	(13.6)
	(3,821.0)	**(3,850.6)**	**(4,123.7)**	**(4,039.8)**	**(4,931.2)**	**(4,918.2)**

For the year ended December 31, 2016 gains totaling €104.7 million were taken directly to reserves and reported in the Statement of Comprehensive Income for the year then ended (2015: gains €196.5 million, 2014: gains €242.8 million). There was no ineffectiveness recognised in the income statement for the year ended December 31, 2016 (2015: €nil, 2014: €nil).

26.f Market risk

Financial risk management

Market risk reflects the possibility that changes in market prices, such as crude oil, feedstock refined products, chemicals or currency exchange rates or changes in interest rates will adversely affect the value of the Group's assets, liabilities or expected future cash flows. The Group holds commodity contracts in order to manage market risk. The use of derivative instruments is confined to specialist teams that have the appropriate skills, experience, supervision, control and reporting systems.

Market risk—Foreign currency risk

The Group operates internationally and is exposed to foreign exchange risk arising from various currency exposures, primarily with respect to the U.S. Dollar and Sterling.

Foreign exchange risk arises from net investments in foreign operations, future commercial transactions, and recognised assets and liabilities.

The Group applies hedge accounting to foreign currency differences arising on the retranslation of a financial liability designated as a hedge of a net investment in a foreign operation.

26. FINANCIAL INSTRUMENTS (Continued)

When the settlement of a monetary item receivable from or payable to a foreign operation is neither planned nor likely in the foreseeable future, foreign exchange gains and losses arising from such a monetary item is considered to form part of a net investment in a foreign operation and changes in the fair value are recognised directly within equity.

A substantial portion of the Group's revenue is generated in, or linked to, the U.S. dollar and the euro. In the European petrochemical business, product prices, certain feedstock costs and most other costs are denominated in euro and sterling. In the U.S. petrochemical and specialty chemicals businesses, product prices, raw materials costs and most other costs are primarily denominated in U.S. dollars.

The Group generally does not enter into foreign currency exchange instruments to hedge foreign currency transaction exposure, although the Group has done so in the past and may do so in the future.

The Group benefits from natural hedging, to the extent that currencies in which net cash flows are generated from the Group's operations, are matched against long-term indebtedness.

The foreign currency exposure where the Group's financial assets/(liabilities) are not denominated in the functional currency of the operating unit involved is shown below. Foreign exchange differences on retranslation of these assets and liabilities are taken to the income statement/ other comprehensive income of the Group.

	2016	2015	2014
		€m	
Euros	33.4	71.0	39.2
US Dollars	(937.8)	(1,233.5)	(2,606.5)
Sterling	(1.8)	(6.7)	(55.2)
Other	(77.9)	(108.3)	31.6
	(984.1)	**(1,277.5)**	**(2,590.9)**

Sensitivity analysis

A ten percent weakening of the following currencies at December 31, would have increased/ (decreased) equity and profit or (loss) by the amounts shown below. This calculation assumes that the change occurred at the reporting date and had been applied to risk exposures existing at that date.

26. FINANCIAL INSTRUMENTS (Continued)

This analysis assumes that all other variables, in particular other exchange rates and interest rates, remain constant. The analysis is performed on the same basis for the comparative years.

	Equity			Profit or loss		
	2016	2015	2014	2016	2015	2014
			€m			
Euro	—	—	—	(3.3)	(7.1)	(3.9)
US Dollars	89.5	114.1	251.6	4.3	9.3	9.1
Sterling	0.7	0.9	1.4	(0.5)	(0.3)	4.2
Other	7.6	10.6	(3.4)	0.2	0.3	0.2

A ten percent strengthening of the above currencies against the euro at December 31, would have had the equal but opposite effect on the above currencies to the amounts shown above, on the basis that all other variables remain constant.

Market risk—Interest rate risk

Profile

At the reporting date the interest rate profile of the Group's interest-bearing financial instruments was:

	2016	2015	2014
		€m	
Carrying amount—asset / (liability)			
Fixed rate instruments			
Financial assets	1,500.2	1,696.2	1,064.0
Financial liabilities	(3,059.6)	(3,025.5)	(3,581.8)
	(1,559.4)	**(1,329.3)**	**(2,517.8)**
Variable rate instruments			
Financial assets	2,204.1	1,648.0	1,434.6
Financial liabilities	(4,960.5)	(5,274.8)	(4,126.0)
	(2,756.4)	**(3,626.8)**	**(2,691.4)**

Sensitivity analysis

A change of 1% in interest rates at the reporting date would have increased/(decreased) equity and profit or loss by the amounts shown below. This calculation assumes that the change occurred at the reporting date and had been applied to risk exposures existing at that date.

This analysis assumes that all other variables, in particular foreign currency rates, remain constant and considers the effect of financial instruments with variable interest rates, financial instrument at fair value through profit or loss or available for sale with fixed interest rates and the

26. FINANCIAL INSTRUMENTS (Continued)

fixed rate element of interest rate caps. The analysis is performed on the same basis for 2016, 2015 and 2014.

	2016	2015	2014
		€m	
Profit or loss			
Loss on increase in interest rates by 1%	(27.6)	(36.3)	(26.9)

A 1% change in the opposite direction of the above interest rates at December 31, would have had the equal but opposite effect on the above currencies to the amounts shown above, on the basis that all other variables remain constant.

Market risk—Commodity price risk

This section discusses the Group's exposure to the commodity contracts which are not covered under the own use exemption and are recognised as derivative instruments.

The Group is exposed to commodity price risk through fluctuations in raw material prices and sales of products. The raw material exposures result primarily from the price of crude oil and base chemicals linked to the price of crude. The sales price exposures are primarily related to petrochemicals where prices are in general linked to the market price of crude oil.

The Group enters into contracts to supply or acquire physical volumes of commodities at future dates during the normal course of business that may be considered derivative contracts. Where such contracts exist and are in respect of the normal purchase or sale of products to fulfil the Group's requirements, the own use exemption from derivative accounting is applied.

The Group manages commodity price exposures through trading refined products and chemical feedstock and using commodity swaps, options and futures as a means of managing price and timing risks. In 2016 there are no significant instruments entered by the Group to manage such risk (2015: nil, 2014: nil).

The Group operates within procedures and policies designed to ensure that risks, including those relating to the default of counterparties, are minimised.

Market risk—Equity price risk

The Group's exposure to equity price risk arises from its investment in equity securities which are classified as available for sale financial assets and are shown on the consolidated balance sheet as other financial assets. Available for sale financial assets are accounted for at fair value based on the present value of future cash flows where such information is readily available. However, as explained in Note 15, the Group's available for sale financial assets include certain equity interests which are not quoted and for which there is no active market. In these circumstances, in the absence of reliable information, the Group considers that a reliable determination of fair value is not practicable and such investments are recorded at their acquisition cost. The fair value has therefore been presented as the equivalent to the carrying value at the reporting date. The remainder of available for sale financial

26. FINANCIAL INSTRUMENTS (Continued)

assets are valued at fair value based on the present value of future cash flows estimated from financial information made available during the year as a result of a recent transaction in the investment.

For the available for sale investments carried at fair value a 10 percent increase and decrease in transaction prices at the reporting date would have decreased and increased the loss for the year by €2.9 million (2015: €2.9 million, 2014: €2.9 million). Management consider that a change of 10 percent gives an appropriate benchmark to assess the risks that the Group is expected to be exposed to. This calculation assumes that the change occurred at the reporting date and had been applied to risk exposures existing at that date. This analysis assumes that all other variables, in particular foreign currency rates, remain constant.

26.g Capital management

The Group's objectives for managing capital are to safeguard the Group's ability to continue as a going concern in order to provide returns for shareholders and benefits for other stakeholders and to maintain an optimal capital structure to reduce the cost of capital.

The Group defines its capital employed of €6,246.1 million (2015: €6,088.1 million, 2014: €5,009.9 million) as shareholders' equity of €430.1 million (2015: €(564.2) million, 2014: €(1,263.3) million) and net debt (net of debt issue costs) of €5,816.0 million (2015: €6,652.3 million, 2014: €6,273.2 million).

The principal sources of debt available to the Group at December 31, 2016 include the Senior Secured Term Loans, Senior Secured Notes due 2023, Senior Notes due 2024, Senior Notes due 2019, Receivables Securitisation Facility and Noretyl Facility and are described in Note 20 along with the key operating and financial covenants that apply to these facilities.

In order to maintain or adjust the capital structure, the Group may adjust the amount of dividends paid to shareholders, issue new shares, raise new debt or sell assets to reduce debt. The ability of the Group to pay dividends and provide appropriate facilities to the Group is restricted by the terms of principal financing agreements to which members of the Group are party.

27. OPERATING LEASES

Future aggregate minimum lease payments are as follows:

	2016	2015	2014
		€m	
Less than one year	200.3	99.1	70.6
Between one and five years	733.0	280.3	109.7
More than five years	1,064.8	449.6	171.6
	1,998.1	**829.0**	**351.9**

The Group has certain operating lease arrangements in respect of manufacturing facilities and combined heat and power plants where the Group has the option to acquire at fair value or depreciated cost to the lessor in certain circumstances either during the life of the lease or at the end of the lease term.

28. CAPITAL COMMITMENTS

Outstanding capital expenditure authorised by the Board and for which contracts had been placed as at December 31, 2016 by the Group amounted to approximately €790.2 million (2015: €201.5 million, 2014: €83.9 million).

29. RECONCILIATION OF NET CASH FLOW TO MOVEMENT IN NET DEBT

	2016	2015	2014
		€m	
Increase in cash and cash equivalents in the year	466.9	145.5	194.4
Cash outflow from change in debt financing	431.7	58.3	135.1
Change in net debt resulting from cash flows	898.6	203.8	329.5
Debt acquired with acquisition of business	—	(100.0)	—
Finance leases disposed of with subsidiary	—	—	0.1
Other net non-cash transactions	(61.5)	(481.3)	(484.6)
Movement in net debt in year	**837.1**	**(377.5)**	**(155.0)**

	1 Jan 2016	Cash Flow	Acquisitions	Other Non Cash Changes	31 Dec 2016
			€m		
Cash at bank and in hand	1,648.0	466.9	—	89.2	2,204.1
Debt due within one year	(296.7)	224.4	—	(5.3)	(77.6)
Debt due after more than one year	(8,049.5)	207.1	—	(145.5)	(7,987.9)
Finance leases	(1.7)	0.2	—	0.1	(1.4)
	(8,347.9)	431.7	—	(150.7)	(8,066.9)
Net debt	**(6,699.9)**	**898.6**	**—**	**(61.5)**	**(5,862.8)**

	1 Jan 2015	Cash Flow	Acquisitions	Other Non Cash Changes	31 Dec 2015
			€m		
Cash at bank and in hand	1,434.6	145.5	—	67.9	1,648.0
Debt due within one year	(36.4)	—	(19.0)	(241.3)	(296.7)
Debt due after more than one year	(7,718.6)	58.0	(81.0)	(307.9)	(8,049.5)
Finance leases	(2.0)	0.3	—	—	(1.7)
	(7,757.0)	58.3	(100.0)	(549.2)	(8,347.9)
Net debt	**(6,322.4)**	**203.8**	**(100.0)**	**(481.3)**	**(6,699.9)**

29. RECONCILIATION OF NET CASH FLOW TO MOVEMENT IN NET DEBT (Continued)

	1 Jan 2014	Cash Flow	Disposals	Other Non Cash Changes	31 Dec 2014
			€m		
Cash at bank and in hand	1,130.0	194.4	—	110.2	1,434.6
Debt due within one year	(31.2)	—	—	(5.2)	(36.4)
Debt due after more than one year	(7,261.5)	133.3	—	(590.4)	(7,718.6)
Finance leases	(4.7)	1.8	0.1	0.8	(2.0)
	(7,297.4)	135.1	0.1	(594.8)	(7,757.0)
Net debt	**(6,167.4)**	**329.5**	**0.1**	**(484.6)**	**(6,322.4)**

30. RELATED PARTIES

Identity of related parties with which the Group has transacted

Related parties comprise:

- Parent entities and their subsidiaries not included within the Ineos Group Holdings S.A. group;
- Entities controlled by the shareholders of Ineos Limited, the ultimate parent company of Ineos Group Holdings S.A.;
- Key management personnel; and
- Joint ventures

Mr JA Ratcliffe, Mr AC Currie and Mr J Reece are shareholders in Ineos Limited.

Ineos AG, a subsidiary of Ineos Limited, provides operational management services to the Group through a management services agreement. Ineos AG management fees of €81.3 million (2015: €80.3 million, 2014: €80.1 million) were charged to the income statement . As at December 31, 2016 amounts owed to Ineos AG were €22.0 million (2015: €20.5 million, 2014: €20.1 million). Amounts due from Ineos Holdings AG, a wholly owned subsidiary of Ineos AG, were €117.8 million (2015: €80.3 million, 2014: €42.6 million).

Ineos Limited owns and controls a number of operating subsidiaries that are not included in the Ineos Group Holdings S.A. group, including INOVYN Limited, Ineos Industries Limited, INEOS Enterprises Limited, the Grangemouth petrochemical subsidiaries which were divested on October 1, 2013 and the Lavéra petrochemical assets and businesses together with other French and Italian assets of O&P South which were divested during 2014 (see Note 4).

During the year ended December 31, 2016 the Group has made sales to these subsidiaries of €631.5 million (2015: €516.9 million, 2014: €880.1 million), recovered costs of €84.8 million (2015: €96.8 million, 2014: €62.9 million) and made purchases of €940.8 million (2015: €986.9 million, 2014: €857.6 million). As at December 31, 2016, €365.1 million (2015: €521.5 million, 2014: €413.5 million) was owed by and €150.2 million (2015: €144.6 million, 2014: €279.1 million) was owed to these

30. RELATED PARTIES (Continued)

subsidiaries (excluding the Grangemouth shareholder loan, the Lavera disposal proceeds receivable, the INEOS Upstream Limited loan and transactions and balances with Styrolution).

During 2015 the Group provided a loan of $623.7 million to INEOS Upstream Limited, a related party, in connection with its acquisition of natural gas assets in the North Sea. The loan facility is unsecured and matures on October 26, 2020 and bears interest at 7% per annum. During 2016 net loan repayments of $117.6 million (€103.4 million) were received, leaving $506.1 million (€482.5 million) outstanding under the facility as at December 31, 2016 (2015: $623.7 million (€571.5 million)).

Following the divestment of the Grangemouth petrochemical business in 2013 the Group put in place a €200 million shareholder loan facility to fund the ongoing operations and investments required at the site. This facility matures on July 28, 2021 and is secured on a second lien basis on the assets of the Grangemouth petrochemical business. As at December 31, 2016 €125.4 million (2015: €130.6 million, 2014: €116.9 million) was outstanding under the facility, which includes €14.3 million (2015: €8.2 million, 2014: €0.6 million) of capitalised interest. The total consideration for the sale of the Lavera businesses in 2014 amounted to €200 million and was initially provided in the form of vendor loans, although all of the outstanding consideration has now been paid (2014: €78.3 million remained outstanding).

Styrolution was previously a 50-50 joint venture between Ineos Industries Limited, a related party, and BASF. On November 17, 2014 Ineos Industries Limited completed the acquisition of BASF's 50% share in Styrolution for a purchase price of €1.1 billion. As part of the funding for the acquisition the Group provided Ineos Styrolution Holding GmbH, a related party, with a Second Lien PIK Toggle Loan of €200.0 million. The loan bears interest at a rate per annum of 9.5% for cash interest payments or 10.25% for PIK interest and matures in November 2020. During year ended December 31, 2016 Styrolution paid €22.5 million (2015: €17.1 million) of interest relating to the Second Lien PIK Toggle Loan. During 2016 Styrolution refinanced its capital structure and repaid the €200 million Second Lien PIK Toggle Loan. The Group used the proceeds from the loan together with €50 million of cash in hand to invest €250 million in Styrolution Term Loan B debt which was issued during September 2016. The new Term Loan B will bear interest at a rate per annum equal to EURIBOR (subject to a floor of 1.00% per annum) plus a margin of 3.75% and matures on September 30, 2021. During the year ended December 31, 2016 the Group has made sales to Styrolution of €354.9 million (2015: €349.2 million, 2014: €398.3 million), recovered costs of €6.8 million (2015: €5.2 million, 2014: €6.1 million) and made purchases of €4.2 million (2015: €0.2 million, 2014: € nil million). As at December 31, 2016, €282.1 million (2015: €242.1 million, 2014: €252.5 million) was owed by Styrolution, which included the Group's €250 million Term Loan B holding (2015: included €200 million under the Second Lien PIK Toggle Loan and €0.1 million (2015: €0.2 million, 2014: €nil million) was owed to Styrolution.

Ineos Limited owns interests in a number of joint ventures that are not included in the Ineos Group Holdings S.A. group, including the French joint ventures associated with the Lavera petrochemical assets and businesses which were divested by the Group on July 1, 2014 and the refining joint ventures between PetroChina and INEOS Investments (Jersey) Limited, a related party and INEOS Investments (Jersey) Limited, a related party and a joint venture with Sasol Limited to build and operate a HDPE plant at Battleground site in Texas, USA which is expected to be operational in 2017.

30. RELATED PARTIES (Continued)

During the year ended December 31, 2016 the Group recovered no costs from French joint ventures (2015: none, 2014: €55.8 million) and made no purchases (2015: none, 2014: €0.8 million).

The Refining joint ventures are between PetroChina and INEOS Investments (Jersey) Limited, a related party. During the year ended December 31, 2016 the Group has made sales to the Refining joint ventures of €nil million (2015: €0.3 million, 2014: €182.3 million), recovered costs of €43.3 million (2015: €1.3 million, 2014: €13.6 million) and made purchases of €262.0 million (2015: €317.9 million, 2014: €951.0 million). As at December 31, 2016, €1.2 million (2015: €1.9 million, 2014: €2.8 million) was owed by the Refining joint ventures and €30.4 million (2015: €20.2 million, 2014: €25.6 million) was owed to the Refining joint ventures.

During the year ended December 31, 2016 the Group has recovered costs of €0.3 million from the HDPE joint venture. As at December 31, 2016, €2.3 million was owed by the HDPE joint venture.

Compensation to key management personnel (including directors)

The Group defines key management as the directors of the Company. Details of Directors' remuneration are given in Note 8.

31. ULTIMATE PARENT UNDERTAKING AND CONTROLLING PARTY

The immediate parent undertaking is Ineos Holdings Luxembourg S.A.. The ultimate parent undertaking at December 31, 2016 was Ineos Limited, a company registered in the Isle of Man. The ultimate controlling party is Mr JA Ratcliffe, director and majority shareholder of the ultimate parent undertaking.

32. SUBSEQUENT EVENTS

In February 2017 the Group addressed its capital structure with a complete refinancing of the Senior Secured Term Loans and the redemption of the Senior Notes due 2019 (see Note 20).

33. ACCOUNTING ESTIMATES AND JUDGEMENTS

The Group prepares its consolidated financial statements in accordance with IFRSs, which require management to make judgements, estimates and assumptions which affect the application of the accounting policies, and the reported amounts of assets, liabilities, income and expenses. Actual results may differ from these estimates. The estimates and assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised in the period in which the estimates change and in any future periods.

The following areas are considered to involve a significant degree of judgement or estimation:

Fair value measurement on business combination

The amount of goodwill initially recognised as a result of a business combination is dependent on the allocation of the purchase price to the fair value of the identifiable assets and liabilities acquired. The determination of the fair value of the acquired assets and liabilities is to a considerable extent based upon management's judgement, and estimates and assumptions made.

33. ACCOUNTING ESTIMATES AND JUDGEMENTS (Continued)

Allocation of the purchase price affects the results of the Group as intangible assets are amortised over their estimated useful lives, whereas goodwill, is not amortised. This could lead to differing amortisation charges based on the allocation to indefinite and finite lived intangible assets.

On acquisition of a business, the identifiable intangible assets may include customer contracts, customer relationships and preferential supply contracts. The fair value of these assets is determined by discounting estimated future net cash flows generated by the asset. The use of different estimates and assumptions for the expectations of future cash flows and the discount rate would change the valuation of these intangible assets.

The carrying amount of intangibles is disclosed in Note 12.

Taxation

Management is required to estimate the tax payable in each of the jurisdictions in which the Group operates. This involves estimating the actual current tax charge or credit together with assessing temporary differences resulting from differing treatment of items for tax and accounting purposes. These differences result in deferred tax assets and liabilities, which may be included on the consolidated balance sheet of the Group. Management have performed an assessment as to the extent to which future taxable profits will allow the deferred asset to be recovered. The calculation of the Group's total tax charge necessarily involves a significant degree of estimation in respect of certain items whose tax treatment cannot be finally determined until resolution has been reached with the relevant tax authority, or, as appropriate, through a formal legal process.

The Group has, from time to time, contingent tax liabilities arising from trading and corporate transactions in the countries in which it operates. After appropriate consideration, management makes provision for these liabilities based on the probable level of economic loss that may be incurred and which is reliably measurable.

The breadth of the Group's structure with operations in many geographic locations makes the use of estimates and assumptions more challenging. The resolution of issues is not always within the control of the Group and can be reliant upon the efficiency of the legal processes in the relevant jurisdictions in which the Group operates, and as a result, issues can, and often do take many years to resolve.

Details of amounts recognised with regard to taxation are disclosed in Notes 10 and 17.

Post-retirement benefits

The Group operates a number of defined benefit post employment schemes. Under IAS 19 Revised Employee Benefits, management is required to estimate the present value of the future defined benefit obligation of each of the defined benefit schemes. The costs and year end obligations under defined benefit schemes are determined using actuarial valuations. The actuarial valuations involve making numerous assumptions, including:

- Future rate of increase in salaries;
- Inflation rate projections;

33. ACCOUNTING ESTIMATES AND JUDGEMENTS (Continued)

- Discount rate for scheme liabilities; and
- Expected rates of return on the scheme assets.

Details of post-retirement benefits are set out in Note 22.

Provisions

Provisions are recognised for the cost of remediation works where there is a legal or constructive obligation for such work to be carried out. Where the estimated obligation arises upon initial recognition of the related asset, the corresponding debit is treated as part of the cost of the related asset and depreciated over its estimated useful life.

Other provisions are recognised in the period when it becomes probable that there will be a future outflow of funds resulting from past operations or events that can be reasonably estimated. The timing of recognition requires the application of judgement to existing facts and circumstances, which can be subject to change.

Estimates of the amounts of provisions recognised are based on current legal and constructive requirements, technology and price levels. Because actual outflows can differ from estimates due to changes in laws, regulations, public expectations, technology, prices and conditions, and can take place many years in the future, the carrying amounts of provisions are regularly reviewed and adjusted to take account of such changes.

In relation to remediation costs, the estimated interest rate used in discounting the cash flows is reviewed at least annually. The interest rate used to determine the obligation in the balance sheet at December 31, 2016 was 4% (2015: 4%, 2014: 5%).

The nature and amount of provisions included within the financial statements are detailed in Note 23.

Impairment reviews

IFRSs require management to test for impairment of goodwill and other intangible assets with indefinite lives, on an annual basis, and of tangible and intangible assets with finite lives if events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable.

An impairment test requires an assessment as to whether the carrying value of assets can be supported by its recoverable amount. Management calculates the recoverable amount based on the net present value of the future cash flows derived from the relevant assets, using cash flow projections which have been discounted at an appropriate discount rate.

In calculating the net present value of the future cash flows, certain assumptions and estimates are required to be made in respect of highly uncertain matters, including management's expectations of:

- Growth rates of various revenue streams;
- Long term growth rates;

33. ACCOUNTING ESTIMATES AND JUDGEMENTS (Continued)

- Future margins;
- The selection of an appropriately risk adjusted discount rate; and
- The determination of terminal values.

Changing the assumptions selected by management, in particular the discount rate used in the present value calculation, could significantly affect the Group's impairment evaluation and results.

The Group has property, plant and equipment with a carrying value of €4,007.4 million (2015: €3,508.8 million, 2014: €3,067.5 million) as disclosed in Note 11 and intangible assets with a carrying value of €763.9 million (2015: €706.4 million, 2014: €648.2 million) as disclosed in Note 12. All of these assets are assessed annually for impairment as described above.

For the purpose of impairment testing (when required), to assess whether any impairment exists, estimates are made of the future cash flows expected to result from the use of the asset and its eventual disposal. Actual outcomes could vary significantly from such estimates of discounted future cash flows. Factors such as changes in the planned use of buildings, plant or equipment, or closure of facilities, the presence or absence of competition, lower than expected asset utilisation from events such as unplanned outages, strikes and hurricanes, technical obsolescence or lower than anticipated sales of products with capitalised intellectual property rights could result in shortened useful lives or impairment. Changes in the discount rates used could also lead to impairments.

Further details on the impairment review performed on the goodwill and intangible assets are provided in Note 12, including sensitivity analysis in relation to key assumptions.

Segment aggregation

IFRS 8 "Operating Segments" permits two or more operating segments to be aggregated into one for disclosure purposes when individual segments have characteristics so similar that they can be expected to have essentially the same future prospects. Management apply this judgement when aggregating the businesses within the Chemical Intermediates segment. In doing so they take into account that the businesses all have similar economic characteristics, similar products, services and types of customer and similar past cyclical financial performance.

Investments

The Group applies IFRS 11 to all joint arrangements. Under IFRS 11 investments in joint arrangements are classified as either joint operations or joint ventures depending on the contractual rights and obligations of each investor. The Group has assessed the nature of its joint arrangements and determined them to be joint ventures. Joint ventures are accounted for using the equity method.

Details of Investments are set out in Note 13.

GLOSSARY OF SELECTED TERMS

Term	Definition
Acetone	Byproduct of the production of phenol. Is used in the production of methylmethacrylate, polymethylmethacrylate, acrylate and Bisphenol A and acetone-based solvents.
Acetonitrile	Co-produced in the manufacture of acrylonitrile and is largely used in solvents.
Acrylic acid	Produced from propylene and used in manufacturing absorbent polymers, coatings and adhesives/sealants.
Acrylonitrile	A commodity used in a wide variety of consumer applications. Used in the production of acrylic fiber, acrylonitrile butadiene styrene and styrene acrylonitrile. Is manufactured from propylene, ammonia and air with the use of a catalyst.
Acrylonitrile-butadiene styrene (ABS)	A tough thermoplastic that has a variety of consumer appliance and automotive component uses. Made from acrylonitrile, butadiene and styrene.
Additive	An ingredient added to a chemical reaction, usually in polymerization reactions, to impart additional performance properties on the resulting product.
Alkoxylate (Alkox)	The addition of an epoxide to an alcohol, or other reactive OH group. Typical industrially important epoxides being ethylene oxide and propylene oxide. Alkoxylates are used in a variety of applications including cosmetics, industrial cleaners and oil and gas processing chemicals.
Alpha olefins (AO)	See "Linear alpha olefins" and "Poly alpha olefins."
Ammonia	Used in the manufacture of acrylonitrile, although its largest end use is in the manufacture of fertilizers. Made from nitrogen and hydrogen with the use of a catalyst.
Aromatics	Hydrocarbons that are in a ring formation instead of a linear formation. The major products comprising this group are: benzene, toluene, mixed xylenes, ortho-xylene and para-xylene.
Barrel or bbl	Barrel of crude oil, 159 liters by volume.
Benzene	A building block for styrene and is also used to make cumene and nylon. Mainly produced from refinery processes or as a co-product of steam cracker operations.
Bisphenol A	An intermediate product produced from acetone and phenol used to produce polycarbonate and epoxy-resins.

Term	Definition
Butadiene	A gas, one of the co-products of the steam cracking process and is used primarily in the production of polymers, principally synthetic rubbers, such as styrene butadiene rubber, which is used to manufacture tires and other rubber products.
Catalyst	An ingredient added to facilitate a chemical reaction, but which does not itself get consumed during the reaction process.
Comonomer	An additional monomer used in a polymerization reaction to offer additional properties to a polymer.
Copolymer	A polymer created by the polymerization of one or more additional monomers (comonomers) to offer additional properties to the resulting polymer.
Cracker	See "Olefins cracker."
Cracking	The conversion of large hydrocarbon molecules into smaller ones. Carried out either at high temperatures (thermal cracking), or with the aid of a catalyst and high pressure (catalytic cracking and hydrocracking). The cracking process enables greater quantities of saturated hydrocarbons suitable for gasoline and other light hydrocarbon fractions to be recovered from crude oil.
Cumene	Produced from benzene and propylene and is used as a feedstock for producing phenol/acetone, which have a large number of uses in the manufacture of plastics and resins.
Cyclopentane (CP)	The lightest non-polar cycloalkane solvent used by the chemical industry. Cyclopentane is a non-ozone depleting substitute for chlorofluorocarbons (CFCs) principally used as a blowing agent in foam manufacture.
Diisobutylene (DIB)	A dimer and an intermediate for a wide range of chemical products used in rubbers, polymers and lubricants, when high compatibility and chemical stability are demanded.
Ethane	A colorless, odorless gas which is a byproduct of petroleum refining. Primarily used as a petrochemical feedstock for ethylene production.
Ethanolamine	An ethylene oxide derivative. Major applications are herbicides, surfactants (used in personal care products and detergent formulations), cement additives, textile chemicals and pigments.
Ethylbenzene	An intermediate made from benzene and ethylene and used to make styrene. Virtually all worldwide ethylbenzene production is consumed in the manufacture of styrene.

Term	Definition
Ethylene	A flammable gas obtained in a process called steam cracking. Itself has no consumer applications, but is the basic feedstock for a large number of industrial uses, including the manufacture of polyethylene. Is a key building block for polyethylene, polystyrene, ethylene oxide and other derivatives.
Ethylene glycol (EG)	An industrial chemical, primarily used in the manufacture of polyesters and antifreeze/coolants. Produced from ethylene oxide.
Ethylene propylene diene monomer	Made from a combination of ethylene, propylene and another monomer containing two double bonds. Key end use applications after further processing and reaction, are for roofing materials and automotive seals.
Ethylene oxide (EO)	A commodity monomer used as a building block for the manufacture of a wide range of products and intermediates in the chemical industry. Mainly used to produce ethylene glycol and industrial detergents. The products derived from ethylene oxide have many familiar applications and coolants for auto engines, polyester fibers and film. Manufactured from ethylene and oxygen.
Ethylene propylene diene monomer	Ethylene propylene diene monomer Made from a combination of ethylene, propylene and another monomer containing two double bonds. Key end use applications after further processing and reaction, are for roofing materials and automotive seals.
Ethylene norbomene (ENB) monomer	Made by reacting butadiene with dicyclopentadiene and is used as a termonomer in ethylene propylene diene monomer rubber.
Feedstocks	Crude oil and other hydrocarbons used as basic materials in a refining or manufacturing process.
Forties Pipeline System	The pipeline that carries crude oil from a variety of oil fields in the North Sea to the mainland.
Fractionator	Splits gas into its components ethane, propane, butane and other natural gas liquids.
Gas	Includes methane, ethane, butane and propane.
Glycol ethers	Used as solvents in paints, inks and cleaning fluids and are derivatives of ethylene oxide.
High-density polyethylene	A type of polyethylene and is a relatively tough thermoplastic. Most common household use is container plastics. Also commonly used for molding, pipe and thin film applications.
Homopolymers	Polymers that are created by the polymerization of a single monomer.

Term	Definition
Hydrocarbons	All compounds that consist of hydrogen and carbon. These include crude oil, natural gas, gas, olefins and their derivatives.
Hydrogen cyanide	Manufactured as a co-product of acrylonitrile. Is an extremely hazardous gas used mainly to produce polymers, coatings and nylon, and for chemicals used in gold extraction.
Isoamylene (IA)	Isoamylene is used in the synthesis of many chemicals and chemical intermediates, with numerous applications including, flavours and fragrances, pesticides and pharmaceuticals.
kta	Kilotonnes per annum.
Linear alpha olefins (LAO)	Hydrocarbons in a straight chain formation which have physical characteristics and commercial uses that vary according to the length of the hydrocarbon chain. Are comonomers for certain types of polyethylene. They also have applications as surfactant intermediates, base oil for synthetic lubricants and drilling fluids. They are made from ethylene.
Linear low-density polyethylene	A type of polyethylene and has basic properties similar to low-density polyethylene. Low-density polyethylene and linear low-density polyethylene are to a certain extent substitutes. The most significant end use for linear low-density polyethylene is film.
Liquefied petroleum gas (LPG)	A mixture of gases, usually propane and butane, used as fuel in heating appliances and vehicles and also as a petrochemical feedstock.
Low-density polyethylene (LDPE)	The first type of polyethylene invented. Its most common household use is in plastic bags.
Methylmethacrylate	Produced from acetone and is used to manufacture polymethylmethacrylate resins.
Monomer	Feedstock material for the manufacture of polymers and derivative products.
Naphtha	A refinery product that is used as a gasoline component, but also serves as feedstock for petrochemical plants.
Natural gas liquids (NGL)	Generally comprise a mixture of ethane, propane, butanes and smaller amounts of other lighter hydrocarbons.
Nitriles	Used to describe acrylonitrile, its co-products and other products produced from ammonia feedstock.
Olefins	Including ethylene and propylene, are the key building blocks of the petrochemical industry and produce a large range of derivative products.

Term	Definition
Olefins cracker	Breaks down naphtha or other gas feedstocks into olefins, principally ethylene and propylene.
Oxo-alcohols	A feedstock for intermediates which are used in many soft plastic products and solvent applications. They are largely produced from propylene feedstock.
Ppm	Parts per million.
Phenol	Produced from cumene, and is used in the production of Bisphenol A, as well as phenolic resins and capralactam.
Poly alpha olefins (PAO)	Made by polymerizing, or merging, several linear alpha olefins together and are used in a large number of automotive and industrial applications (mainly as synthetic lubricants).
Polycarbonate	An engineering thermoplastic polymer which, due to its superior optical qualities, structural strength and weight, has a wide range of uses, including CDs and DVDs, optic-fibers, optical lenses, structural parts in cars and trucks and housings for electrical household appliances and office equipment.
Polyethylene	The world's most used thermoplastic (including high-density polyethylene, low-density polyethylene and linear low-density polyethylene). Manufactured by the polymerization of ethylene and comonomers. Used primarily to produce films for packaging, agricultural applications, molded products, pipes and coatings.
Polyethylene terephthalate (PET)	Made by the combination of ethylene glycol and terephthalic acid. Typical end uses include films for packaging and fibers.
Polymer	A chemical compound usually made up of a large number of identical components linked together into long molecular chains.
Polymethylmethacrylate resins	Used in a wide range of architectural and industrial applications, ranging from point of sale retail displays to glazing and decorative light panels, and compounds for molding and extrusion.
Polypropylene	The world's second most widely used thermoplastic after polyethylene. It is manufactured by the polymerization of propylene. It is used mainly for molding, filaments, fibers and films and is the most significant thermoplastic material used in molded containers and automotive applications.
Polyvinyl chloride (PVC)	The world's third most widely used thermoplastic after polyethylene and polypropylene. It is produced by the polymerization of the vinyl chloride monomer. It is used mainly in the construction industry in the form of pipes and insulation on electric cables.

Term	Definition
Propane	A gaseous hydrocarbon in its natural state but can be easily liquefied. Its major end uses are as a fuel and as a feedstock for petrochemicals.
Propylene	A flammable gas which is largely derived either as a co-product of the refinery fluid catalytic cracker process used to make gasoline or as a co-product of the steam cracking process used to make ethylene. Has virtually no independent end use, but is an important input for a significant number of industrial products, and is the main feedstock used to make polypropylene and acrylonitrile.
Propylene glycols	An industrial chemical, mainly used to produce polyester, paints and coatings, airplane de-icers, antifreeze and industrial coolants, made from propylene oxide.
Propylene oxide	Used in manufacture of polyurethane foams and to make propylene glycols. Primarily made from propylene feedstock.
Pygas	A by-product of olefins production from steam crackers and is used by refineries as a liquid gasoline blending component.
Solvents	Used to dissolve solids and keep them in liquid form.
Specialty Oligomers (SO)	Includes high performance chemicals, such as aromatic-free hydrocarbons, isoolefins and isoparaffins.
Spot market	A term used to describe the international trade in one-off cargoes or shipments of commodities, such as crude oil, in which prices closely follow demand and availability.
Thermoplastic	A plastic which softens when heated and hardens again when cooled. Includes polyethylene, polypropylene and polystyrene.
Turnaround	Temporary shutdown of a refinery or petrochemical production facility for required maintenance. Can be scheduled (planned, routine maintenance, inspections and tests to comply with industry regulations) or unscheduled (in response to an unexpected outage or plant failure).

REGISTERED OFFICE OF THE ISSUER
INEOS Finance plc
Hawkslease Chapel Lane
Lyndhurst
Hampshire SO43 7FG
United Kingdom

LEGAL ADVISORS TO THE ISSUER

As to U.S. law
Cravath, Swaine & Moore LLP
CityPoint
One Ropemaker Street
EC2Y 9HR
London
United Kingdom

As to English law
Slaughter and May
One Bunhill Row
EC1Y 8YY
London
United Kingdom

LEGAL ADVISOR TO THE INITIAL PURCHASERS
As to U.S. and English law
Latham & Watkins
99 Bishopsgate
London EC2M 3XF
United Kingdom

LEGAL ADVISOR TO THE TRUSTEE
White & Case LLP
5 Old Broad Street
London EC2N lDW
United Kingdom

INDEPENDENT AUDITORS
PricewaterhouseCoopers, Société coopérative
2, Rue Gerhard Mercator
L-1014 Luxembourg
Luxembourg

TRUSTEE AND
PRINCIPAL PAYING AGENT
The Bank of New York Mellon, London Branch
One Canada Square
London E14 5AL
United Kingdom

SECURITY TRUSTEE
Barclays Bank PLC
5 The North Colonnade
Canary Wharf
London E14 4BB
United Kingdom

REGISTRAR, LUXEMBOURG LISTING AGENT,
PAYING AGENT AND TRANSFER AGENT
The Bank of New York Mellon SA/NV, Luxembourg Branch
Vertigo Building - Polaris
2-4 rue Eugène Ruppert
L-2453 Luxembourg
Grand Duchy of Luxembourg

INEOS Finance plc

€770,000,000 % Senior Secured Notes due 2026

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