

CDP Climate Change 2021 Information Request – Royal Dutch Shell plc

www.shell.com/ghg

C0. Introduction

(C0.1) Give a general description and introduction to your organization.

On 26 May 2021, the District Court in The Hague (the "Court"), NL, handed down its judgment (the "Judgment") in a case filed against RDS by several plaintiffs. The Court ordered RDS, both directly and via the companies and legal entities it commonly includes in its consolidated annual accounts and with which it jointly forms the Shell Group, to limit or cause to be limited the aggregate annual volume of all CO₂ emissions into the atmosphere (Scope 1, 2 and 3) due to the business operations and sold energy-carrying products of the Shell Group to such an extent that this volume will have reduced by at least net 45% at end 2030, relative to 2019 levels. RDS continues to review and assess the Court's written opinion.

Accordingly, the responses provided in this questionnaire are not reflective of the Court's recent decision.

For the purposes of the present submission Shell aims to follow the definitions and structure used by CDP as much as reasonably feasible. However, some of the terminology used by CDP lends itself to various meanings and interpretation. Shell has endeavoured to use CDP's language to the extent possible and has not attempted to redefine or clarify meaning. In addition, the terms and definitions adopted in the Judgment have the meanings given to them by the Court and, as such, may not be consistent with the definitions and structure used by CDP. The comprehensive list of disclosures by Shell is available on www.shell.com.

The following clarifications apply to this submission:

- In Shell's Annual Report and Accounts 2020 (AR 2020), GHG emissions related data is reported on a 100% basis in respect of activities where we are the operator. Shell uses the following definition for GHG emissions reporting under "operational control": total direct (Scope 1) GHG emissions from assets and activities under operational control boundary, and total indirect (Scope 2) GHG emissions from imported energy from assets and activities under operational control boundary; indirect GHG emissions (Scope 3) based on the energy product sales included in the NCF boundary. See www.shell.com for information on Shell's NCF methodology.
- C9.3a: Reported as "Crude Distillation Capacity"; AR 2020, p74.
- OG9.3d: See Refinery processing outturn, AR 2020, p75.
- C12.3c: The organisations listed represent an extract of our 2021 Industry Associations Climate Report.

(AR 2020, p16)

Royal Dutch Shell plc is a public limited company registered in England and Wales, headquartered in The Hague, the Netherlands.

Shell is a global group of energy and petrochemical companies with 87,000 employees in more than 70 countries.

BUSINESS MODEL

We have expertise in the exploration, production, refining, marketing and trading of oil and natural gas, and the manufacturing and marketing of chemicals.

We use advanced technologies and take an innovative approach to help build a sustainable energy future. We also invest in power, including from renewable sources such as wind and solar, and new fuels for transport, such as advanced biofuels and hydrogen.

ORGANISATION:

INTEGRATED GAS (INCL NEW ENERGIES)

Integrated Gas manages LNG activities and the conversion of natural gas into GTL fuels and other products. It includes natural gas exploration and extraction, and the operation of upstream and midstream infrastructure necessary to deliver gas to market. It markets and trades natural gas, LNG, electricity and carbon-emission rights.

In New Energies (rebranded to Renewables and Energy Solutions in 2021), we are exploring emerging opportunities and investing in those where we believe sufficient commercial value is available. We focus on new fuels for transport and power.

UPSTREAM

Upstream manages the exploration for and extraction of crude oil, natural gas and natural gas liquids. It also markets and transports oil and gas, and operates infrastructure necessary to deliver them to market.

DOWNSTREAM

Downstream manages different Oil Products and Chemicals activities as part of an integrated value chain that trades and refines crude oil and other feedstocks into a range of products which are moved and marketed around the world for domestic, industrial and transport use.

PROJECTS & TECHNOLOGY

Our Projects & Technology (P&T) organisation manages the delivery of our major projects and drives research and innovation to develop new technology solutions. It provides technical services and technology capability for our activities. It is also responsible for providing functional leadership across Shell in the areas of safety and environment, contracting and procurement, wells activities and greenhouse gas management.

SEGMENTAL REPORTING

Our reporting segments are Integrated Gas, Upstream, Oil Products, Chemicals and Corporate. Integrated Gas, Upstream, Oil Products and Chemicals include their respective elements of our P&T organisation. The Corporate segment comprises our holdings and treasury organisation, self-insurance activities, and headquarters and central functions (AR, p230-232).

(C0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date	Indicate if you are providing emissions data for past reporting years	Select the number of past reporting years you will be providing emissions data for
Reporting year	January 1, 2020	December 31, 2020	Yes	1 year

(C0.3) Select the countries/areas for which you will be supplying data.

(extract) Australia, Canada, Germany, Malaysia, Netherlands, Nigeria, Singapore, United Kingdom of Great Britain and Northern Ireland, United States of America

(C0.4) Select the currency used for all financial information disclosed throughout your response.

USD

(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your chosen approach for consolidating your GHG inventory.

Operational control

(C-OG0.7) Which part of the oil and gas value chain and other areas does your organization operate in?

Oil and gas value chain

Upstream, Downstream, Chemicals

Other divisions

Biofuels, Carbon capture and storage/utilization

(Note: Biofuels and Carbon Capture and Storage/Utilisation are not considered “divisions” in Shell’s organisation.)

C1. Governance

(C1.1) Is there board-level oversight of climate-related issues within your organization?

Yes

(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual(s)	Please explain
Board-level committee	<p>(Annual Report 2020, p143/144)</p> <p>PURPOSE: The Safety, Environment and Sustainability Committee (SESCo) assists the Board in reviewing the practices and performance of Shell, primarily with respect to safety, environment including climate change, and broader sustainability.</p> <p>OVERVIEW: The Committee meets regularly to review and discuss a wide range of important topics. These include the safe and responsible operation of Shell’s facilities, environmental protection and greenhouse gas emissions, significant incidents that impact safety and environmental performance, progress towards Shell’s climate targets, and energy transition. The Committee also endorses the Shell annual HSSE & SP assurance plan, reviewing the execution of the plan and audit outcomes.</p> <p>The Committee assesses Shell’s overall sustainability performance and provides input to Shell’s annual reporting and disclosures on sustainability. It also advises the Remuneration Committee on metrics relating to sustainable development and energy transition that apply to the Executive Committee annual scorecard and long-term incentive plan.</p> <p>The Committee reviews and considers external stakeholder perspectives in relation to Shell’s business, as well as how Shell addresses issues of public concern that could affect its reputation and licence to operate. Examples include plastic waste, methane emissions, human rights, the UN Sustainable Development Goals, and access to energy in low- and middle-income countries.</p>

	<p>In line with the strategic importance of the Committee's agenda, the Chair and the Chief Executive Officer regularly attend the Committee meetings for discussions on specific topics.</p> <p>Royal Dutch Shell plc's Chief Executive Officer and the Executive Committee hold overall accountability for sustainability within Shell, supported by the Executive Vice President for Safety & Environment and other senior managers.</p>
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(C1.1b) Provide further details on the board's oversight of climate-related issues.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
Scheduled – all meetings	<ul style="list-style-type: none"> • Reviewing and guiding strategy • Reviewing and guiding major plans of action • Reviewing and guiding risk management policies • Reviewing and guiding annual budgets • Reviewing and guiding business plans • Setting performance objectives • Monitoring implementation and performance of objectives 	<p>(Annual Report 2020, page 96)</p> <p>Climate change and risks resulting from GHG emissions are a significant risk factor for Shell. They are managed in accordance with other significant risks through the Board and the Executive Committee.</p> <p>See "Other regulatory and statutory information".</p> <p>Shell's climate change risk management structure includes the work of the Board. In 2020, the Board discussed a variety of energy transition and climate change-related subjects. These included environmental topics ahead of Responsible Investment Day and Shell's announcement of its target to be a net-zero emissions energy business by 2050, in step with society. Directors received information on opportunities and priorities in the New Energies area. Throughout the year, Directors were also informed about topics of interest among investors and other stakeholder groups. These included sustainability, governance and the energy transition. During the annual strategy meeting, in virtual format, the Board discussed various topics including the energy transition and its implications.</p> <p>The Board committees play an important role in assisting the Board with regard to governance and oversight of management of climate change risks and opportunities, as described in "Governance".</p> <p>Board activities</p> <p>A rolling Board agenda is reviewed at Board meetings, enabling effective forward management of meetings and focused discussions. Forthcoming Board agenda items are categorised as: Strategy</p>

	<ul style="list-style-type: none"> Overseeing major capital expenditures, acquisitions and divestitures Monitoring and overseeing progress against goals and targets for addressing climate-related issues 	& Portfolio, Delivery & Performance, External Environment, Corporate & Miscellaneous or Standard items. Of the standard items, Board agendas regularly include reports from the Chief Executive Officer, the Chief Financial Officer, other Executive Committee members and from each Board committee. “Core values” moments also feature regularly led by a Director or Executive Committee member. In 2020, “Shell Heroes” vignettes were added to highlight extraordinary staff actions including those exemplifying care for people, society and/or the environment. Updates are also provided from the various businesses and key functions, including Investor Relations; Health and Safety, Security and Environment; Human Resources; and Legal, as well as the Company Secretary. The Board also considers and approves the quarterly, half-year and full-year financial results, shareholder distributions and the associated announcements, and, at most meetings, considers investment, divestment and/or financing proposals. To enable purposeful debates and/or focus on particular aspects of agenda topics, including the impact on key stakeholders, Directors have an opportunity to specify information they require to be provided in advance of Board meetings.
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(C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.

Name of the position(s) and/or committee(s)	Responsibility	Frequency of reporting to the board on climate-related issues
Chief Executive Officer (CEO)	Other, please specify: AR 2020, p96: The CEO is the most senior individual with accountability for climate change risks.	More frequently than quarterly

(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored (do not include the names of individuals).

(Annual Report 2020, p96/97)

The CEO is the most senior individual with accountability for climate change risk. Shell has established specialist forums at different levels of the organisation where climate change and GHG-related matters are addressed, monitored and reviewed. Each Shell entity and each Shell-operated venture is responsible for implementing climate change policies and strategies.

The Executive Vice President (EVP) Safety and Environment, a senior manager who reports directly to the Projects & Technology Director, is accountable for the oversight of GHG issues. This manager's department includes the Group Carbon team and the HSSE&SP Assurance and Reporting team.

Group Carbon is accountable for monitoring and examining the strategic implications of climate change for Shell. Group Carbon also reviews the effects of governmental policy and regulation. It proposes policy positions based on analysis by Shell and external organisations. The team also advises Shell companies to ensure that they are consistent in how they apply our core principles and policies when interacting with policymakers. Group Carbon also has oversight of Shell's GHG management programme. It helps our lines of business to adopt strategies for managing greenhouse gases. The team includes managers who advise projects on the risks and opportunities of GHG-related issues.

The HSSE&SP Assurance and Reporting team is accountable for the delivery of Shell's non-financial reporting. It is also responsible for auditing the performance of Shell businesses with regards to our HSSE&SP Control Framework requirements, which include climate change risk management.

MONITORING

(p97) Climate Change management organogram (text)

The CEO and the Executive Committee, together with the Executive Vice President Safety & Environment are the most senior individuals with accountability for the climate change risk management.

The Executive Vice President, together with the Vice President Group Carbon build the EVP Steering Team (exercising Group strategic steer) and the Safety and Environment Leadership Team.

The Safety and Environment Leadership Team provides operational implementation steer for the Businesses and Functions.

They are responsible for implementing Shell's GHG strategy.

(p85/86) HSSE&SP Control Framework

The Shell HSSE&SP Control Framework (CF) specifies the standards for health, safety, security, environment and social performance (HSSE&SP) and the scope for applying these standards. The CF consists of a series of mandatory manuals that align with the Shell Commitment and Policy on HSSE&SP and the Shell Code of Conduct. They are supported by guidance documents and complemented by assurance protocols.

The CF applies to every Shell entity and Shell-operated venture, including all employees and contract staff. The CF defines standards and accountabilities at each organisational level and sets out the procedures and processes that we require people to follow. We require that all significant HSSE&SP risks associated with our business activities are assessed and managed to make them as low as reasonably practicable. Our HSSE&SP functions provide expert advice and support for our businesses.

The Process Safety and HSSE&SP Assurance team provides assurance to the Board on the effectiveness of the HSSE&SP CF through an audit programme. The full Shell portfolio comprises about 200 organisational groups covered by this programme. Audits are performed with a frequency of

between three and five years, depending on the overall risk and complexity of a particular facility or organisational group. Overall, this results in a rolling five-year plan, with every annual plan being approved by the Board. On average, the assurance team conducts about 50 audits per year on a variety of issues. The scope of the audits is designed to test risk areas as defined in the CF. This includes the overall HSSE&SP management system and specific requirements for areas such as personal safety, environment and contractor management. Based on audit outcomes, the audit frequency for an entity may be increased. Audit findings and action items identified are documented and tracked to completion by the relevant business.

(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?

Provide incentives for the management of climate-related issues	Comment
Yes	<p>Sustainability Report 2020, p11</p> <p>Annual bonus</p> <p>In 2018, Shell announced plans to link executive remuneration to short-term targets to reduce the Net Carbon Footprint (NCF) of the energy products we sell, including our customers' emissions from their use of our energy products.</p> <p>The Board's Remuneration Committee added an energy transition condition to the 2019 long-term incentive plan award. This condition included our first three-year target aligned with the trajectory of our long-term NCF ambition at the time. It also featured other measures linked to our strategic ambitions, including the growth of Shell's power business, the commercialisation of advanced biofuel technology, and the development of sinks to capture and store carbon.</p> <p>The energy transition condition was included again in the 2020 long-term incentive plan awards for Executive Directors and senior executives and was also incorporated into the performance share plan awards made to around 16,500 employees globally.</p>

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).

Entitled to incentive	Type of incentive	Activity incentivized	Comment
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Chief Executive Officer (CEO)	Monetary reward	Emissions reduction target	<p>Sustainability Report 2020, p11</p> <p>Long-term incentive plan</p> <p>In December 2018, Shell announced plans to link executive remuneration to short-term targets to reduce the Net Carbon Footprint of the energy products we sell, including our customers' emissions from their use of our energy products.</p> <p>Following discussions with major shareholders and based on recommendations from the Board's Safety, Environment and Sustainability Committee, the Board's Remuneration Committee added an energy transition condition to the 2019 long-term incentive plan award. This condition included our first three-year target aligned with the trajectory of our long-term Net Carbon Footprint ambition at the time. It also featured other measures linked to our strategic ambitions, including the growth of Shell's power business, the commercialisation of advanced biofuel technology, and the development of sinks to capture and store carbon.</p> <p>The energy transition condition was included again in the 2020 long-term incentive plan awards for Executive Directors and senior executives and was also incorporated into the performance share plan awards made to around 16,500 employees globally.</p> <p>For 2021 share awards, the weighting of the energy transition condition has doubled, and for the long-term incentive plan it has been increased from 10% to 20%. The target range for the 2021-2023 long-term incentive plan grant is a 6-8% reduction in net carbon intensity against the 2016 baseline of 79 grams of CO2 equivalent per megajoule. The other targets linked to our strategic ambitions will also evolve, with the metric connected to commercialising advanced biofuel technology broadening to a measure of growing new cleaner energy product offerings. The targets for the leading energy transition measures are commercially sensitive and will be disclosed retrospectively.</p> <p>Read more about executive remuneration in the 2020 Directors' Remuneration Report in the Annual Report.</p>
Chief Financial Officer (CFO)	Monetary reward	Emissions reduction target	<p>Sustainability Report 2020, p11</p> <p>Long-term incentive plan</p> <p>In December 2018, Shell announced plans to link executive remuneration to short-term targets to reduce the Net Carbon Footprint of the energy products we sell, including our customers' emissions from their use of our energy products.</p> <p>Following discussions with major shareholders and based on recommendations from the Board's Safety, Environment and Sustainability Committee, the Board's Remuneration Committee added an energy transition</p>

			<p>condition to the 2019 long-term incentive plan award. This condition included our first three-year target aligned with the trajectory of our long-term Net Carbon Footprint ambition at the time. It also featured other measures linked to our strategic ambitions, including the growth of Shell's power business, the commercialisation of advanced biofuel technology, and the development of sinks to capture and store carbon.</p> <p>The energy transition condition was included again in the 2020 long-term incentive plan awards for Executive Directors and senior executives and was also incorporated into the performance share plan awards made to around 16,500 employees globally.</p> <p>For 2021 share awards, the weighting of the energy transition condition has doubled, and for the long-term incentive plan it has been increased from 10% to 20%. The target range for the 2021-2023 long-term incentive plan grant is a 6-8% reduction in net carbon intensity against the 2016 baseline of 79 grams of CO2 equivalent per megajoule. The other targets linked to our strategic ambitions will also evolve, with the metric connected to commercialising advanced biofuel technology broadening to a measure of growing new cleaner energy product offerings. The targets for the leading energy transition measures are commercially sensitive and will be disclosed retrospectively.</p> <p>Read more about executive remuneration in the 2020 Directors' Remuneration Report in the Annual Report.</p>
Other, please specify Senior management and other employees	Monetary reward	Emissions reduction target	<p>Sustainability Report 2020, p11</p> <p>Long-term incentive plan</p> <p>In December 2018, Shell announced plans to link executive remuneration to short-term targets to reduce the Net Carbon Footprint of the energy products we sell, including our customers' emissions from their use of our energy products.</p> <p>Following discussions with major shareholders and based on recommendations from the Board's Safety, Environment and Sustainability Committee, the Board's Remuneration Committee added an energy transition condition to the 2019 long-term incentive plan award. This condition included our first three-year target aligned with the trajectory of our long-term Net Carbon Footprint ambition at the time. It also featured other measures linked to our strategic ambitions, including the growth of Shell's power business, the commercialisation of advanced biofuel technology, and the development of sinks to capture and store carbon.</p> <p>The energy transition condition was included again in the 2020 long-term incentive plan awards for Executive Directors and senior executives and was also incorporated into the performance share plan awards made to around 16,500 employees globally.</p>

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C2. Risks and opportunities

(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities?

Yes

(C2.1a) How does your organization define short-, medium- and long-term time horizons?

	From (years)	To (years)	Comment
Short-term	0	3	In Shell, we use this definition: Short term (up to three years): we develop detailed financial projections and use them to manage performance and expectations on a three-year cycle.
Medium-term	3	10	In Shell, we use this definition: Medium term (generally three to 10 years): most of our expected production and earnings in this period come from our existing assets.
Long-term	10		In Shell, we use this definition: Long term (generally beyond 10 years): for this period, it is expected that the current Shell portfolio will change and evolve with the energy transition. Decision-making and risk identification on the thematic structure of the future portfolio are guided by the pace of society's progress and the aim of being in step with society as it moves towards the goals of the Paris Agreement.

(C2.1b) How does your organization define substantive financial or strategic impact on your business?

In general, we define substantial financial or strategic impact as an event that could have a large adverse or positive effect separately, or in combination, on our earnings, cash flows and/or financial condition, or which could have an impact on the company's Strategic Report which is a part of our Annual Report (AR) 2020 (p18). The event may influence the annual results of the company, the (longer-term) outlook, the free cash flow, as well as the obtained credit rating.

The Board is responsible for maintaining a sound system of risk management and internal control, and for regularly reviewing its effectiveness. A single overall control framework is in place for the Company and its subsidiaries that is designed to manage rather than eliminate the risk of failure to achieve business objectives. It therefore only provides reasonable and not absolute assurance against material misstatement or loss (AR2020, p186). Shell has developed a risk appetite framework, which helps management establish and articulate the level of risk that they are willing to accept in pursuit of Shell's strategy and objectives, noting that there are also risks that Shell accepts or does not seek to fully mitigate. The financial framework sets an overarching boundary condition in the consideration of risk appetite, as the financial resilience of Shell should logically inform the aggregate level of risk appetite that could be sustained. Examples of events that may have a substantive impact on our business are shared in the Annual Report 2020 as Risk Factors (p28-37). The impact of these events cannot be generalised as it depends on the specific circumstances once a potential risk materialises which will determine if an outcome of an event is to be assessed as low, medium or high. Many of the risks have in common that they exceed the scope of individual businesses and cover multiple years, hence have an extended impact on a longer term and on multiple areas of our company. At the Group level, the climate change and GHG emissions risk has been identified as a significant risk factor for Shell (AR2020, p29). The Executive Committee and Board regularly review this risk in the same way that they do for other significant Group risk factors. Potential impacts and likelihoods are considered and discussed bi-annually. Similarly, the effectiveness of risk responses is also considered and discussed on a regular basis. Where necessary, these reviews are further supplemented by additional in-depth reviews with the relevant management teams. These reviews help to guide operational decisions, maintenance schedules and response planning.

The risk "Rising climate change concerns", as reflected in the Annual Report (AR2020, p29), describes the widespread elements and potential consequences of this risk, which may have a substantial financial impact. The four sub-components are regulatory risks, commercial risks, physical risks and societal risks.

(C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.

Value chain stage(s) covered

Direct operations

Upstream

Downstream

Risk management process

Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment

More than once a year

Time horizon(s) covered

Short-term

Medium-term

Long-term

Description of process**OUR GOVERNANCE OF CLIMATE CHANGE**

Climate change and risks resulting from GHG emissions are a significant risk factor for Shell. They are managed in accordance with other significant risks through the Board and the Executive Committee. The Board committees play an important role in assisting the Board with regard to governance and oversight of management of climate change risks and opportunities. The overall role of Safety, Environment and Sustainability Committee (SESCo) is to review the practices and performance of Shell, primarily with respect to safety, environment including climate change, and broader sustainability.

CLIMATE CHANGE RISK MANAGEMENT PROCESS

The framework for managing the climate change and GHG emissions risk is underpinned by Shell's HSSE&SP Control Framework and Statement on Risk Management. The Control Framework defines standards and accountabilities at each organisational level and sets out the procedures and processes that we require people to follow. The Statement on Risk Management is a foundation element of the Control Framework and a key enabler of many of its management processes.

Each Shell entity and each Shell-operated venture is responsible for implementing climate change policies and strategies. Several global teams, comprising a network of experts in subjects related to GHG and risk management, support Shell's businesses in GHG and energy management. They work globally across our lines of business and assist in:

- identifying and assessing risks;
- planning and implementing responses;
- sharing best practices; and

- monitoring, improving and completing actions that affect the objectives and performance of projects and assets.

These teams have created a set of mandatory manuals and complementary guidance documents that are updated periodically and are ultimately based on our HSSE&SP Control Framework. These manuals and documents provide guidance on how to monitor, communicate and report changes in the general risk environment, and how to review the effectiveness of actions taken to manage identified risks. The global teams mentioned above also support the businesses in monitoring and addressing certain physical risks, that could include weather and water related events, whether or not related to climate change. This includes the input of specialist teams who may provide direct technical assistance to facilities as necessary, based on their analysis of the potential impacts of physical risks in different operating environments.

We assess risks across the Shell Group in terms of three distinct categories, namely strategic, operational, and conduct and culture risks. Climate change and GHG emissions risk falls under the Strategic risks category. Shell has developed a risk appetite framework to support the assessment of risks across each category. This framework helps the management to establish and articulate the level of risk that they are willing to accept in pursuit of Shell's strategy and objectives, noting that there are also risks that Shell accepts or does not seek to fully mitigate.

Each of Shell's businesses and functions has an assurance committee that considers the climate change and GHG emissions risk on a regular basis and coordinates the applicable assurance activities.

In addition to other significant Group risk factors, the Board and the Executive Committee consider and discuss the potential impacts and likelihood of the Group level climate change and GHG emissions risk bi-annually. Similarly, the effectiveness of risk responses is also considered and discussed on a regular basis. Where necessary, these reviews are further supplemented by additional in-depth reviews with the relevant management teams. These reviews help to guide operational decisions, maintenance schedules and response planning.

Climate change risk management at project level

Shell requires that the GHG emissions of certain assets and projects are addressed in specific ways. This is described in our internal, mandatory GHG and Energy Management Manual. According to this manual, projects with a material GHG footprint must get their targets approved by the Executive Vice President Safety & Environment at certain defined stages. The project's GHG-abatement plan helps to determine the nature of these targets.

We use performance standards as our screening criteria for measuring projects' average lifetime GHG intensity or energy efficiency per asset type. Our current performance standards are reviewed and updated annually, based on changes to legislation and external and/or internal

benchmarking (latest update 2020). In addition to the use of performance standards, we consider the GHG emissions from the use of the products that are manufactured. We assess GHG emissions' impacts on facilities alongside economic and technical design factors. These assessments can lead to projects being stopped or designs being changed, but a project could also be allowed to continue. During project development, we consider ways to reduce GHG emissions and whether to include them in the design.

Case study 1 (transitional risk): To assess the resilience of new projects, we consider the potential costs associated with operational GHG emissions. We have developed country-specific short-, medium- and long-term estimates of future carbon costs which are reviewed and updated annually. The process for developing our cost of carbon estimates uses short-term policy outlooks and long-term scenario forecasts, both reflecting the current NDCs submitted by countries as part of the Paris Agreement and evolving national policy developments. We expect to update our estimates as countries update their NDCs and climate policies.

Case study 2 (physical risk): After a storm surge in December 2013, the land between the Bacton Gas terminal complex (jointly operated by Shell and its partner) and the sea was eroded by 10 metres, leaving just 15 metres between it and the sea. In addition, the extent of the erosion in the area meant that some 200 homes in the villages of Bacton and Walcott were at risk of being lost within five to ten years. Therefore, a sustainable solution was needed to protect the terminal and the associated pipelines against further erosion. After assessing various options, the unique option of using the innovative sand engine solution was chosen. The sand engine project was assessed to protect the Bacton Gas terminal from cliff erosion in a 1 in 10,000 per year storm and had the added benefit of protecting the villages of Bacton and Walcott. As a result of these additional benefits to the local community, the solution – with estimated total costs up to GBP20 million – evolved into a public-private partnership. The project implementation was finished in August 2019.

Link: <https://www.royalhaskoningdhv.com/en-gb/projects/a-uk-first-landscaping-c-building-with-nature-in-bacton-norfolk/7845>

(C2.2a) Which risk types are considered in your organization's climate-related risk assessments?

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	Some jurisdictions have introduced carbon pricing mechanisms and we expect more to follow. Government actions may affect the prices of crude oil, natural gas, oil products and chemicals. This could happen, for example, if governments promote the sale of lower-carbon electric vehicles or even prohibit future sales of new diesel or gasoline vehicles, such as the prohibition in the UK that is expected to come into force in 2030. We expect that a growing share of our GHG emissions will be subject to regulation, resulting in increased compliance costs

		<p>and operational restrictions. Also, we expect that the impact of such regulatory risks could be seen in the short term. If we are unable to find economically viable, publicly acceptable solutions that reduce our GHG emissions and/or GHG intensity for new and existing projects and for the products we sell, we could experience financial penalties or extra costs, delayed or cancelled projects, potential impairments of our assets, additional provisions and/or reduced production and product sales. Hence, this risk type is relevant to us and included in our assessment.</p> <p>Example of current regulation risk type: Existing carbon pricing schemes that reflect the Paris ambition are expected to lead to higher carbon costs, such as the European Union and the UK.</p>
Emerging regulation	Relevant, always included	<p>We operate in more than 70 countries that have differing degrees of political, legal and fiscal stability. This exposes us to a wide range of political developments that could result in changes to contractual terms, laws and regulations, including those related to climate change. Such changes in laws and regulations can and do affect our operations.</p> <p>GHG emissions regulation, among other factors, could affect the demand and potentially prices of fossil fuels, through taxes, fees and/or other incentives. Regulators in some advanced economies such as the EU and the UK have already started pushing for net-zero emissions by 2050 in an effort to achieve the 1.5 °C stretched goal of the Paris Agreement. Potential similar developments in other key locations might lead to similar or more stringent regulatory conditions on Shell's operations and products. Our annual carbon cost exposure is expected to increase over the next decade because of evolving carbon regulations. We expect that a growing share of our GHG emissions will be subject to regulation, resulting in increased compliance costs and operational restrictions. Also, we expect that the impact of such regulatory risks could be seen in the short term. If we are unable to find economically viable, publicly acceptable solutions that reduce our GHG emissions and/or GHG intensity for new and existing projects and for the products we sell, we could experience financial penalties or extra costs, delayed or cancelled projects, potential impairments of our assets, additional provisions and/or reduced production and product sales. Hence, this risk type is relevant to us and included in our assessment.</p> <p>Example of emerging regulation risk type: Potential increase in operating costs in several locations like Brazil, Brunei, UAE, USA (federal), etc. due to introduction of carbon pricing mechanisms in the future.</p>
Technology	Relevant, always included	<p>Technology and innovation are essential to our efforts to meet the world's energy demands competitively. Our future performance depends on the successful development and deployment of new technologies and new products. In developing new technologies and new products, unknown or unforeseeable technological failures or environmental and health effects could harm our reputation and licence to operate or expose us to litigation or sanctions. The associated costs of new technology are sometimes underestimated. Sometimes the development of new technology is subject to delays. The pace and extent of the energy transition could pose a risk to Shell if our own transition towards decarbonisation moves at a different</p>

		<p>speed to society. If we are slower than society, customers may prefer a different supplier which would adversely impact our reputation and demand for our products. If we move much faster than society, we risk investing in technologies, markets or low-carbon products that are unsuccessful because there is limited demand for them.</p> <p>If we are unable to develop the right technology and products in a timely and cost-effective manner, or if we develop technologies and products that harm the environment or people's health, there could be a large adverse effect on our earnings, cash flows and financial condition. Hence, this risk type is relevant to us and included in our assessment.</p> <p>Example of technology risk type: Failure to deploy CCUS and advanced biofuels at scale due to lack of economic feasibility.</p>
Legal	Relevant, always included	<p>We operate in more than 70 countries that have differing degrees of political, legal and fiscal stability. This exposes us to a wide range of political developments that could result in changes to contractual terms, laws and regulations, including those related to climate change. Such changes in laws and regulations can and do affect our operations. Examples of potential impacts of these changes, whether or not related to climate change, include changes to environmental regulations, changes to regulatory interpretations and enforcement, and changes to disclosure requirements. Any of these, individually or in aggregate, could have a large adverse effect on our earnings, cash flows and financial condition. In addition, we and our joint arrangements and associates also face the risk of litigation and disputes worldwide. In some countries, governments, regulators, organisations and individuals have filed lawsuits seeking to hold fossil fuel companies liable for costs associated with climate change. While we believe these lawsuits to be without merit, losing any of them could have a large adverse effect on our earnings, cash flows and financial condition. Hence, this risk type is relevant to us and included in our assessment.</p> <p>Example of legal risk type: Regulations or measures that would prevent Shell from exploring or producing its existing leases.</p>
Market	Relevant, always included	<p>Rising climate change concerns and the effects of the energy transition have led and could lead to a decrease in demand and potentially affect prices for fossil fuels. In a low oil and gas price environment, we would generate less revenue from our Upstream and Integrated Gas businesses, and parts of those businesses could become less profitable or incur losses. Prolonged periods of low oil and gas prices, or rising costs, have resulted and could continue to result in projects being delayed or cancelled. Low oil and gas prices could also affect our ability to maintain our long-term capital investment programme and dividend payments.</p> <p>Some groups are putting pressure on certain investors to divest their investments in fossil fuel companies. If this were to continue, it could have a large adverse effect on the price of our securities and our ability to access capital markets. Groups are also putting pressure on commercial and investment banks to stop financing fossil fuel companies. Accordingly, our ability to use financing for these types of future projects may be adversely affected. This could also adversely affect our potential partners' ability to finance their portion of costs.</p>

		<p>We expect that the impact of such commercial risks could be seen in the medium to long term. If we are unable to find economically viable, publicly acceptable solutions that reduce our GHG emissions and/or GHG intensity for new and existing projects and for the products we sell, we could experience financial penalties or extra costs, delayed or cancelled projects, potential impairments of our assets, additional provisions and/or reduced production and product sales. This could have a large adverse effect on our earnings, cash flows and financial condition. Hence, this risk type is relevant to us and included in our assessment.</p> <p>Example of market risk type: In 2020, the COVID-19 pandemic wreaked havoc with the global economy, dramatically suppressing energy demand. Our income went from \$16.4 billion in 2019 to a loss of \$21.5 billion in 2020, which included non-cash impairments of \$28.1 billion. In April 2020, with oil prices falling rapidly, Shell took swift, decisive action to preserve cash and stay resilient. We rebased the dividend, lowering it by 66%.</p>
Reputation	Relevant, always included	<p>There is increasing focus on the role of oil and gas in the context of climate change and energy transition. The pace and extent of the energy transition could pose a risk to Shell if our own transition towards decarbonisation moves at a different speed to society. If we fail to stay in step with the pace and extent of society's demands with regard to the energy transition to a low-carbon future, we could fail in sustaining and growing our business. If we are slower than society, customers may prefer a different supplier which would adversely impact our reputation and demand for our products. If we move much faster than society, we risk investing in technologies, markets or low-carbon products that are unsuccessful because there is limited demand for them.</p> <p>The factors that could potentially impact our reputation, including the above factors, could negatively affect our brand, reputation and licence to operate, which could limit our ability to deliver our strategy, reduce consumer demand for our branded and non-branded products, harm our ability to secure new resources and contracts, and restrict our ability to access capital markets or attract staff. Hence, this risk type is relevant to us and included in our assessment.</p> <p>Example of reputation risk type: In 2020, many people protested about climate change, sometimes directly targeting Shell.</p>
Acute physical	Relevant, always included	<p>The physical effects of climate change may increase Shell's exposure to hazards that could potentially include, for example, higher air and sea temperatures, rising sea levels, an increased chance of flooding and droughts, wildfires and more severe tropical storms, however the events related to these hazards are not always related to climate change. Physical risks (including those related to climate change) to Shell facilities could affect processes, equipment and safety. Whereas similar risks to the wider environment could potentially disrupt our operations indirectly by affecting people, infrastructure or supply chains. There could also be potential financial implications, such as increased operating costs and lower revenue because of decreased efficiency. The potential, timing, and severity of the impact of these risks are largely dependent on the</p>

		<p>geographical location and the asset type.</p> <p>Acute physical risks such as wildfires and droughts, whether or not related to climate change, could disrupt feedstock supply for biofuels or make it difficult to access assets, including areas that support our nature-based solutions programme. While not always related to climate change, severe tropical storms could cause structural damage and downtime in assets, and floods could affect staff and communities in low-lying areas. We expect that the impact of these physical risks could be seen across different time horizons, i.e. short, medium or long term, depending on the specific type of the risk. All these factors could potentially have an effect on our earnings, cash flows and financial condition. Hence, this risk is relevant to us and included in our assessment.</p> <p>Example of acute physical risk type: Severe tropical storms.</p>
Chronic physical	Relevant, always included	<p>The physical effects of climate change may increase Shell's exposure to hazards that could potentially include, for example, higher air and sea temperatures, rising sea levels, an increased chance of flooding and droughts, wildfires and more severe tropical storms, however the events related to these hazards are not always related to climate change. Physical risks (including those related to climate change) to Shell facilities could affect processes, equipment and safety. Whereas similar risks to the wider environment could potentially disrupt our operations indirectly by affecting people, infrastructure or supply chains. There could also be potential financial implications, such as increased operating costs and lower revenue because of decreased efficiency. The potential, timing, and severity of the impact of these risks are largely dependent on the geographical location and the asset type.</p> <p>Chronic physical risks such as rising temperatures could potentially impact the efficiency of our plants, increase equipment corrosion and decrease gas pipeline capacity. Rising sea levels, whether or not related to climate change, could potentially impact our coastal facilities through increased coastal erosion and flooding, damage to jetties, and salt-water intrusion in freshwater intake. All these factors could potentially have an effect on our earnings, cash flows and financial condition. Hence, this risk is relevant to us and included in our assessment.</p> <p>Example of chronic physical risk type: This includes increasing water and air temperatures, rising sea level etc., whether or not related to climate change.</p>

(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes

(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Risk 1: Carbon cost exposure

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Emerging regulation

Carbon pricing mechanisms

Primary potential financial impact

Increased direct costs

Company-specific description

Risk1: Carbon cost exposure

Some jurisdictions such as the EU, Canada etc. have introduced carbon pricing mechanisms and we expect more governments to follow. For Shell, the most significant carbon pricing mechanisms are established in the EU, Canada, Singapore and the USA. A significant portion of the emissions from our business are in countries (or jurisdictions) with limited or no pricing mechanisms at present. We expect that a growing share of our GHG emissions going forward will be subject to such regulation, resulting in increased compliance costs among other consequences. In 2020, Shell's emission and related cost for compliance with ETS and related schemes, as recognised in Shell's consolidated statement of income for 2020, was \$150 mln. It includes the cost of emission certificates that were allocated free of charge, with an equivalent fair value at grant date of \$377 mln.

Shell is encouraging carbon pricing mechanisms so that businesses and consumers are further incentivised to improve energy efficiency, provide and switch to lower-carbon options, and reduce carbon emissions. Such mechanisms can also help encourage projects such as CCS facilities and nature-based solutions like the planting of forests.

Time horizon

Short-term

Likelihood

Likely

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

150,000,000

Explanation of financial impact figure

Shell's cost for compliance with ETS and related schemes was \$150 mln in 2020, as recognised in Shell's consolidated statement of income for 2020. It includes the cost of emission certificates that were allocated free of charge, with an equivalent fair value at grant date of \$377 mln.

The above figure does not include costs related to other types of schemes such as biofuel schemes and renewable power schemes.

Cost of response to risk

12,000,000

Description of response and explanation of cost calculation

Response to manage the risk

We are already taking steps to cut emissions from our existing oil and gas operations, and to avoid generating more in the future. One element of our climate target is to achieve net-zero emissions from all our operations, as well as from the energy we need to power them. Improving the energy efficiency of our facilities is one of the ways to help us reduce GHG emissions from our operations. We achieve this by replacing old machinery with more energy-efficient equipment, among other things. We will work to ensure that any GHG emissions from making our products that cannot be avoided will be captured or offset using technology and nature.

To assess the resilience of new projects, we consider the potential costs associated with operational GHG emissions. We have developed country-specific short-, medium- and long-term estimates of future carbon costs which are reviewed and updated annually. We continue to test the robustness of our projects with a material GHG footprint by using long-term carbon cost estimates that are consistent with limiting the rise in global average temperature to well below 2°C.

Case study: As per the latest update in 2020, our real-terms carbon cost estimates for all countries are expected to increase to at least \$100 per

tonne of GHG emissions by 2050. The process for developing our cost of carbon estimates uses short-term policy outlooks and long-term scenario forecasts, both of which reflect the current NDCs submitted by countries as part of the Paris Agreement, and evolving national policy developments. We expect to update our estimates as countries update their NDCs and climate policies.

Explanation of cost calculation

A central team is accountable for monitoring and examining the strategic implications of climate change for Shell. It reviews the effects of governmental policy and regulation and has oversight of Shell's GHG management programme. It has broad responsibilities and supports all Shell businesses. Our carbon cost estimates were also developed by this team, leveraging the expertise of our internal in-country government relations focal points. The annual budget of this team has been used as the basis of "cost of response" to this risk.

This figure does not include the costs associated with abatement projects and other response actions.

Comment

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Identifier

Risk 2: Emerging fuel regulations – biofuels schemes

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Emerging regulation

Other, please specify: Mandates on and regulation of existing products and services

Primary potential financial impact

Increased direct costs

Company-specific description

Risk2: Emerging fuel regulations – biofuels schemes

Developments in politics, laws and regulations can and do affect our operations. Fuel regulations related to biofuels, i.e., biofuel schemes are an

example of such emerging regulations. The share of biofuels in the total sales mix of fuel is used to comply with regulatory requirements. This can be achieved by biofuel production through 'self-blending' in jurisdictions that grant the biofuel certificates at blending stage or through purchase of renewable, certified feedstock like ethanol used subsequently in the manufacturing process. Shell is already one of the world's largest blenders and distributors of biofuels, and we will continue to invest in and increase the production of these low-carbon fuels. In 2020, around 9.5 billion litres of biofuels went into Shell's petrol and diesel worldwide. In addition to own blending activities, we purchase biofuel certificates to fulfil our compliance requirements.

Time horizon

Short-term

Likelihood

Likely

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

1,137,000,000

Explanation of financial impact figure

Shell's cost for compliance with biofuels schemes was \$1,137 mln in 2020, as recognised in Shell's consolidated statement of income for 2020. It represents the cost of biofuel certificates required in addition to own blending activities performed. Out of the total amount, \$678 mln was spent for compliance in North America and \$459 mln was spent for compliance in Europe. The above figure does not include costs related to other types of schemes such as emissions trading schemes and renewable power schemes.

Cost of response to risk

441,000,000

Description of response and explanation of cost calculation

Response to manage the risk

Shell is already one of the world's largest blenders and distributors of biofuels, and we will continue to invest in and increase the production of these low-carbon fuels. In 2020, around 9.5 billion litres of biofuels went into Shell's petrol and diesel worldwide. This helped us to make progress towards achieving our climate ambition while complying with applicable mandates and targets in the markets where we operate.

We produce renewable natural gas, also known as biogas, which can be used instead of natural gas in vehicles and shipping to reduce CO2 emissions. We also have agreements with companies in Europe and North America to supply sustainable aviation fuel.

Case study: Our Raízen joint venture (Shell interest 50%, not Shell-operated) in Brazil is one of the world's largest biofuel producers, with one of the lowest-CO2 biofuels available today. In February 2021, Raízen announced the acquisition of Biosev, adding an additional 50% of production capacity in low-carbon fuels. It will allow to increase Raízen's bioethanol production capacity to a 3.75 billion litres a year. Raízen hosts the first commercial advanced bioethanol facility and the fourth largest renewable natural gas facility in the world.

Explanation of cost calculation

Shell's approach to manage the biofuels schemes related risk includes several activities as indicated above. One example of such activities is our association with the Raízen joint venture. Raízen Energia S.A. and its subsidiaries are mainly engaged in producing, trading sugar, ethanol and pellets, including abroad through its subsidiaries Raízen Trading LLP and Raízen International Universal Corporation, and co-generating energy produced from sugarcane bagasse at its 26 mills located in Brazil's Center-Southern Region and trading business of electricity. The Shell share (50% - not operated by Shell) of operating expenses (Selling, General & Administrative expenses - R\$4676 mln total) in our Raízen joint venture in FY 2020-21 was \$441 mln.

The above figure corresponds to entire Raízen Group's activities, not just the biofuels business. 2020 mid exchange rate of 5.301 R\$ per USD has been used for currency conversion (<https://www.poundsterlinglive.com/best-exchange-rates/best-us-dollar-to-brazilian-real-history-2020>).

Comment

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Identifier

Risk 3: Rising severity of tropical storms

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Acute physical

Other, please specify: Increased severity and frequency of extreme weather events such as cyclones and floods

Primary potential financial impact

Other, please specify: Decreased revenues due to reduced production capacity

Company-specific description

Risk3: Rising severity of tropical storms

Acute physical risks like severe tropical storms, whether or not related to climate change, could affect our processes, equipment and safety. Moreover, they could potentially disrupt our operations indirectly by affecting people, infrastructure or supply chains. Some examples of the potential impact of acute physical risks, whether or not related to climate change, include more extreme flooding, decreased power grid reliability, more frequent shipment interruptions, financial impact due to increased repair costs and production downtime etc. The potential impacts of physical risks to Shell facilities, where processes, equipment and safety could be affected, are reasonably understood in Shell's oil and gas businesses. On the other hand, the potential impacts of physical risks to the wider environment and their indirect effect on our facilities is an area that we continue to monitor and evaluate within the local context.

The presence of tropical storms in a certain area has implications for the design of offshore structures as well as how one operates them. For example, tropical storms can potentially cause disruptions due to damage of Shell's coastal infrastructure such as terminals, refineries and LNG plants.

The potential, timing, and severity of the impact of these risks are largely dependent on the geographical location and the asset type. We expect that the impact of these risks varies in nature and type, and to be seen across different time horizons, i.e., short, medium or long term.

Time horizon

Long-term

Likelihood

About as likely as not

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

50,000,000

Explanation of financial impact figure

Approximately \$50 million on average, representing the post-tax revenue loss from our Upstream Business in the USA from a hurricane / severe tropical storm event in the 2020 price environment, which was around \$40/bbl.

An overview of historic Storm activity and how we prepare for severe weather can be found on U.S. Storm Center | Shell United States:

<https://www.shell.us/media/us-storm-center.html>

Cost of response to risk

25,700,000

Description of response and explanation of cost calculation

Response to manage the risk

Measures to adapt to climate change could help reduce the impact of some of the physical risks including tropical storms, whether or not related to climate change. These measures can range from local actions for a specific facility, to more general changes, such as adjustments to engineering design codes and alterations to the set limits and conditions within which facilities are deemed safe to operate.

Some of our global teams support the businesses in monitoring and addressing certain physical risks that could include weather and water related events, whether or not related to climate change. This support includes the input of specialist teams who may provide direct technical assistance to facilities as necessary, based on their analysis of the potential impacts of physical risks in different operating environments. The specialist teams may also provide expertise on how to include considerations of certain potential physical climate change risks in the internal Design and Engineering Practice (DEP) requirements for new projects. The DEPs for new projects are reviewed periodically to take account of changes in the risk environment, including emerging weather and climate factors.

Case study: After a storm surge in December 2013, the land between our Bacton Gas terminal complex in UK (jointly operated by Shell and its partner) and the sea was eroded by 10 metres, leaving just 15 metres between it and the sea. A sustainable solution was needed to protect the terminal and the associated pipelines against further erosion. After assessing various options, the unique option of using the innovative sand engine solution was chosen.

Explanation of cost calculation

Shell's approach to manage the risk related to tropical storms includes many activities as indicated above. One example of such activities is the sand engine project implemented to address the erosion related issue near our Bacton Gas terminal complex in the UK. The aggregate cost (not just Shell share) of the project was around GBP20 mln. As a result of additional benefits to the local community, the solution evolved into a public-private partnership between the terminal operators (Shell and its JV partner) and other stakeholders.

2019 mid exchange rate of 1.2854 USD per GBP has been used for currency conversion (<https://www.poundsterlinglive.com/best-exchange-rates/best-british-pound-to-us-dollar-history-2019>).

Comment

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(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?

Yes

(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Opp1: Renewables and Energy Solutions

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Products and services

Primary climate-related opportunity driver

Shift in consumer preferences

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

Opportunity1: Renewables and Energy Solutions

Renewables and Energy Solutions, formerly New Energies, encompasses Shell's low-carbon businesses. These include Shell's activities in integrated power, hydrogen, nature-based solutions and carbon capture and storage.

Integrated Power

Shell is building an interconnected power business that is designed to be sustainable and offer long-term opportunities. We aim for our power business to sell around 560 terawatt hours of electricity a year by 2030, which is twice as much electricity as we sell today, and for the electricity we sell to have lower carbon intensity than the grid average within the markets where we operate. We are growing our power businesses with a focus on Europe, the USA, Australia and Asia. The proportion of our renewable power sales and countries where we sell power to the market both affect Shell's overall power mix and its resulting emissions intensity.

Hydrogen

Shell is helping to build the infrastructure that will be needed if hydrogen is to fulfil its potential. Nearly all hydrogen today is produced through fossil-fuel reforming, a process that creates a reaction between natural gas and steam. Shell is also assessing the feasibility of using hydrogen produced by electrolysis on a large scale for our own facilities as a starting point, then rolling it out with our customers.

Nature-based solutions (NBS)

As customers' and society's demand for the use of low-carbon products and services grows, nature-based solutions are becoming an increasingly attractive option for emissions offsetting for a range of industries and operators. As well as investing directly in projects that protect or restore nature, we are also working with projects that already generate carbon credits for our customers. We are one of the world's most established traders of carbon credits and have been operating in compliance and voluntary emissions markets since 2003. We also provide customers with tailor-made solutions for environmental compliance markets globally.

Carbon capture and storage (CCS)

We invest in projects to capture and store carbon dioxide (CO₂) and we are exploring new ways of using CO₂ once it has been captured. Today, Shell is involved in seven of the 51 large-scale CCS projects globally, listed in 2019 by the Global CCS Institute. These seven projects store around 5 mtpa of CO₂, or around 12.5% of global CCS capacity. We seek to have access to an additional 25 million tonnes per year CCS capacity by 2035.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

493,000,000

Explanation of financial impact figure

Renewables and Energy Solutions, formerly New Energies, encompasses Shell's low-carbon businesses. These include Shell's activities in integrated power, hydrogen, nature-based solutions (NBS) and carbon capture and storage (CCS). In 2020, Shell's total cash flow from operations (CFFO) was \$34.1 bln, out of which around 1.44% corresponds to Renewables and Energy Solutions business.

Cost to realize opportunity

2,000,000,000

Strategy to realize opportunity and explanation of cost calculation

The Renewables and Energy Solutions portfolio is being built through organic growth and acquisitions.

Integrated Power

Our ambition to grow our power business is based on selective investments in generation, and in business models based on reselling power generated by others. In Power, we are working with our customers in different markets, finding commercial ways to meet their specific needs. For example, Shell is supplying Microsoft with renewable energy, supporting it towards its goal of using 100% renewable energy by 2025. Shell also provides low-carbon electricity to workplaces and homes in several countries. We are also expanding our solar and wind power generation capacity.

Hydrogen

We plan to build on Shell's leading position in hydrogen by developing integrated hydrogen hubs to serve industry and heavy-duty transport, aiming to achieve double-digit share of global clean hydrogen sales. We are helping to build networks of hydrogen refuelling stations in Europe and North America.

Nature-based solutions

We aim to use NBS, in line with the philosophy of avoid, reduce and only then mitigate, to offset emissions of around 120 million tonnes a year by 2030, through projects of the highest independently verified quality. In 2020, we increased the number of drivers and business customers who use our nature-based carbon credits to offset the life-cycle CO₂-equivalent emissions generated by their use of the Shell fuel they buy. We also offer a range of products with nature-based carbon credits, including home energy in the UK, LNG in Asia, bitumen in Europe and selected lubricants.

Carbon capture and storage

In our refreshed CCS strategy, we placed greater emphasis on how CCS could enable the energy transition for low-carbon fuels and power, and for industrial hub developments where CO₂ from different industrial sources is routed to a single storage location. For example, in Norway, we are working with Equinor, Total and the Norwegian government to create a market across Europe for industry to capture and safely store CO₂.

Explanation of cost calculation

Renewables and Energy Solutions business includes Shell's activities in integrated power, hydrogen, nature-based solutions and carbon capture and storage. In the near-term, we could invest on average \$2-3 billion each year in our Renewables and Energy Solutions business. The lower end of our expected range has been added in the corresponding data field.

Comment

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Identifier

Opp2: Biofuels

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

Opportunity2: Biofuels

Shell believes that low-carbon fuels will play a valuable role in reducing carbon dioxide (CO₂) emissions from the transport sector in the coming decades.

Shell is already one of the world's largest blenders and distributors of biofuels, and we will continue to invest in and increase the production of these low-carbon fuels. Our low-carbon fuels projects and operations around the world form part of a wider commitment to provide a range of energy choices for customers. In 2020, around 9.5 billion litres of biofuels went into Shell's petrol and diesel worldwide. This helped us to make progress towards achieving our climate ambition while complying with applicable mandates and targets in the markets where we operate.

We can work with customers, suppliers and regulators to develop a commercially viable and profitable market for sustainable aviation fuel (SAF). In 2020, we collaborated with many organisations to develop a scalable supply of sustainable aviation fuel made from renewable raw materials and waste products. Shell has taken a final investment decision to construct, own and operate its first renewable compressed natural gas (R-CNG) fuelling site in the USA. This will be at Shell's products distribution complex in Carson, California. The R-CNG will be sourced from Shell's portfolio of anaerobic digestion projects. The heavy-duty road transport sector is starting to use RNG in its efforts to decarbonise. Shell recently won tenders to supply RNG to fuel around 300 of the Los Angeles (LA) bus fleet and vehicles of the West LA waste haulers fleet.

Our 2030 milestone is to produce eight times more low-carbon fuels than today, including both biofuels and hydrogen. We want to increase our low-carbon fuel sales, including both biofuels and hydrogen, to >10% of transport fuels.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

146,000,000

Explanation of financial impact figure

The biofuels opportunity could have an impact on different parts of Shell. One example of such impacts is related to our association with the Raízen joint venture.

Raízen Energia S.A. and its subsidiaries are mainly engaged in producing, trading sugar, ethanol and pellets, including abroad through its subsidiaries Raízen Trading LLP and Raízen International Universal Corporation, and co-generating energy produced from sugarcane bagasse at its 26 mills located in Brazil's Center-Southern Region and trading business of electricity. The estimated Shell share (Shell's Joint Venture interest 50% - not operated by Shell) of net income (R\$1547 mln total) of our Raízen joint venture in FY 2020-21 was around \$146 mln.

The above figure corresponds to entire Raízen Group's activities, not just the biofuels business. 2020 mid exchange rate of R\$5.301 per USD has been used for currency conversion (<https://www.poundsterlinglive.com/best-exchange-rates/best-us-dollar-to-brazilian-real-history-2020>).

Cost to realize opportunity

441,000,000

Strategy to realize opportunity and explanation of cost calculation

Shell is already one of the world's largest blenders and distributors of biofuels, and we will continue to invest in and increase the production of these low-carbon fuels. Our production strategy is anchored around access to competitive feedstock, commercialisation of advanced technology, supportive government policy, and building internal capability.

The Raízen joint venture (Shell interest 50%, not Shell-operated) in Brazil is one of the world's largest biofuel producers, with one of the lowest-CO2 biofuels available today. In February 2021, Raízen announced the acquisition of Biosev, adding an additional 50% of production capacity in low-carbon fuels. We are also transforming our refining footprint, keeping sites in key locations but manufacturing low-carbon fuels suitable for use as aviation, road transport and shipping fuels or as a chemical feedstock (for liquid crackers). We continue to invest in new ways to produce advanced biofuels from sustainable raw materials. These include waste and cellulosic biomass from non-food plants at our demonstration plant in India and investments in biofuel start-ups, such as FORGE Hydrocarbons, Canada.

We are investing in renewable natural gas for use in natural-gas-fuelled vehicles in the USA and Europe.

Case study: Shell's hydro-processed esters and fatty acids (HEFA) technology yields up to 65% low-carbon fuels compared to fossil diesel and aviation equivalent. We are working on a project to add a HEFA facility at our Pernis refinery in the Netherlands. A final investment decision has

not yet been taken.

Explanation of cost calculation

Shell's strategy to realize the biofuels opportunity includes several activities as indicated above. One example of such activities is our association with the Raízen joint venture. The estimated Shell share (50% - not operated by Shell) of operating expenses (Selling, General & Administrative expenses - R\$4,676 mln total) of our Raízen joint venture in FY 2020-21 was around \$441 mln. The above figure corresponds to entire Raízen Group's activities, not just the biofuels business. 2020 mid exchange rate of R\$5.301 per USD has been used for currency conversion (<https://www.poundsterlinglive.com/best-exchange-rates/best-us-dollar-to-brazilian-real-history-2020>).

Comment

-

Identifier

Opp3: Natural Gas

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

Opportunity3: Natural Gas

Increasing the role that gas plays in the energy mix is one way how countries can take action as the world moves to a net-zero emissions future.

Gas will help us achieve our target, in step with society's progress towards meeting the Paris Agreement goal, to become a net-zero emissions energy business by 2050. Our investments in natural gas can help to decarbonise energy use when it replaces energy with a higher carbon intensity such as coal and fuel for shipping. Currently, we provide around 2.5% of the world's natural gas. In 2020, gas accounted for around 47% of our total production.

Liquefied natural gas (LNG) demand is expected to grow, by up to 4% a year until 2040. We are a leading producer, marketer and trader of LNG and gas-to-liquids (GTL) products. With 70 million tonnes sold last year, we are the world leader in LNG. We manage one of the world's largest fleets of LNG carriers. Our trading operation buys and sells LNG to and from Shell, its partners and third parties, helping to meet customers' long-term energy needs and respond flexibly to short-term changes in demand.

In our new strategy, launched in February 2021, one of the energy transition milestones by 2030 is that we expect the percentage of total gas production in our portfolio to gradually rise to around 55% or more.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

36,697,000,000

Explanation of financial impact figure

The share of our Integrated Gas business in Shell's aggregate revenue in 2020, including the contribution of inter-segment sales, was around \$36.7 bln. Out of the total amount, \$33.3 bln correspond to revenue from sale to third parties and \$3.4 bln correspond to revenue from inter-segment sales within Shell.

Cost to realize opportunity

4,000,000,000

Strategy to realize opportunity and explanation of cost calculation

With 70 million tonnes sold last year, we are already the world leader in LNG. And we are also the leading producer of GTL products. We will grow our Integrated Gas business from this position of strength. Firstly, we intend to lead the market by leveraging world-class innovation, our flexibility and LNG trading capabilities. We want to grow our market footprint by creating new markets and embracing new customers. We also want to build a material LNG for transport business by 2030 with >20% share in LNG bunkering sales. Secondly, we intend to run the business effectively by leveraging our unmatched portfolio optionality and resilience. We are aiming to grow the value generated from GTL products. Finally, we intend to grow our business through selective investments in competitive LNG assets. We expect >7 mtpa of new capacity coming onstream by middle of the decade.

Case study: We are delivering carbon neutral LNG to business customers in Asia. We made the world's first deliveries of carbon-neutral LNG in 2019 to Tokyo Gas in Japan and GS Energy in South Korea. Since 2019, we have delivered seven cargoes, providing enough carbon-neutral LNG to power nearly 1 million homes for a year. Carbon-neutral LNG allows our customers to offer, in turn, carbon-neutral gas to companies that want to decarbonise their energy use. For example, in Japan, Tokyo Gas sells carbon-neutral gas to offices and utilities.

Explanation of cost calculation

Our Integrated Gas segment includes LNG activities and the conversion of natural gas into GTL fuels and other products, as well as our New Energies businesses which were rebranded to Renewables and Energy Solutions in 2021. The segment includes natural gas and liquids exploration and extraction, and the operation of upstream and midstream infrastructure that delivers gas and liquids to market. It markets and trades natural gas, LNG, electricity and carbon-emission rights, and markets and sells LNG as a fuel for heavy-duty vehicles and marine vessels. In the near-term, we could invest on average \$4 billion each year in our Integrated Gas business. This amount is in addition to the expected \$2-3 bln investment on average in Renewables and Energy Solutions business in the same timeframe.

Comment

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Identifier

Opp4: Carbon capture (utilisation) and storage (CCS/CCUS)

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Products and services

Primary climate-related opportunity driver

Development of new products or services through R&D and innovation

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

Opportunity4: Carbon capture (utilisation) and storage (CCS/CCUS)

The majority of climate change scenarios produced by organisations such as IEA, IPCC and Shell require a large component of CCS in order to achieve the goals of the Paris Agreement. Shell's climate targets are being put into operation through portfolio changes, the use of nature-based solutions, the development of carbon capture (utilisation) and storage, and carbon abatement programmes at operated facilities. We invest in projects to capture and store carbon dioxide (CO₂) and we are exploring new ways of using CO₂ once it has been captured.

CCS facilities around the world can capture and store around 40 million tonnes per annum (mtpa) of CO₂. Today, Shell is involved in seven of the 51 large-scale CCS projects globally, listed in 2019 by the Global CCS Institute. These seven projects store around 5 mtpa of CO₂, or around 12.5% of global CCS capacity. We seek to have access to an additional 25 million tonnes a year of CCS capacity by 2035 – equal to 25 CCS facilities the size of our Quest CCS project in Canada (Shell interest 10%), or around 20% of the capacity of all CCS projects being studied around the world today.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure – minimum (currency)

700,000,000

Potential financial impact figure – maximum (currency)

2,800,000,000

Explanation of financial impact figure

The estimated range of savings in regulatory carbon costs for Shell and its customers, due to the CCS opportunity, is \$0.7-2.8 bln in the year 2035.

It is important to note that the above aspiration of having access to an additional 25 million tonnes per year CCS capacity by 2035 is only an illustration of the scale of the change to come as Shell progresses towards its net zero emissions target, how we change our business will depend on our customers' needs.

Real-terms carbon cost country specific estimates - which range from \$5 to \$110 per tonne of GHG emissions in 2030 - and, by 2050, our real-terms carbon cost estimates for all countries are expected to increase to at least \$100 per tonne of GHG emissions. This exposure also takes into account the estimated impact of free allowances as relevant to assets based on their location. The regulatory carbon cost estimate is refreshed on an annual basis as part of the development of our business plan.

Shell's operating plan, outlook and budgets are forecasted for a ten-year period and are updated every year. They reflect the current economic environment and what we can reasonably expect to see over the next ten years. Accordingly, Shell's operating plans, outlooks, budgets and pricing assumptions do not reflect our net-zero emissions target.

In the future, as society moves towards net-zero emissions, we expect Shell's operating plans, outlooks, budgets and pricing assumptions to reflect this movement.

Cost to realize opportunity

70,000,000

Strategy to realize opportunity and explanation of cost calculation

In 2020, we refreshed our CCS strategy. We placed greater emphasis on how CCS could enable the energy transition for low-carbon fuels and power, and for industrial hub developments where CO₂ from different industrial sources is routed to a single storage location.

During project development, we consider ways to reduce GHG emissions and whether to include them in the design. The measures considered and adopted include, among other things, building CCS capabilities. The Athabasca Oil Sands Project (AOSP) in Canada includes the Albian Sands mining and extraction operations, the Scotford upgrader and the Quest CCS project. By the end of 2020, our Quest CCS project (Shell interest 10%) had captured and safely stored more than 5.5 million tonnes of CO₂ since it began operating in 2015. Quest CCS was designed to capture about 1 million tonnes of CO₂ each year. The storage reservoir proved to have a significant capacity for CO₂ injection and strong capture reliability with less than 1% downtime annually. This means the facility could exceed its target and reduce estimated costs. In the Netherlands, we have signed a joint-development agreement to assess the potential to export CO₂ from our Pernis refinery to a Rotterdam-based CO₂ transport and storage provider. In some other regions, we are pursuing opportunities which are currently in early development phases. We are a member of the Oil and Gas Climate Initiative (OGCI) which is taking steps to unlock large-scale investment in carbon capture, utilisation and storage with a focus on decarbonising industrial hubs around the world, including in Canada, China, Norway, the Netherlands, the UK and the USA.

Case study: In Norway, we are working with Equinor, Total and the Norwegian government to create a market across Europe for industry to capture and safely store CO₂. In 2020, the government approved the final investment decision for the Northern Lights CCS project, which will transport CO₂ from industrial sites by ship to a plant on Norway's west coast. CO₂ will then be piped to a reservoir around 3,000 metres below the seabed to be safely and permanently stored.

Comment

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C3. Business Strategy

(C3.1) Have climate-related risks and opportunities influenced your organization's strategy and/or financial planning?

Yes, and we have developed a low-carbon transition plan

(C3.1a) Is your organization's low-carbon transition plan a scheduled resolution item at Annual General Meetings (AGMs)?

Is your low-carbon transition plan a scheduled resolution item at AGMs?	Comment
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Yes	<p>18 May 2021: Notice of Annual General Meeting (www.shell.com/agm)</p> <p>The Shell Energy Transition Strategy publication describes Shell's energy transition strategy as we work to become a net-zero emissions energy business by 2050, in step with society's progress towards the goal of the UN Paris Agreement on climate change. It aims to help investors and wider society gain a better understanding of how Shell is addressing the risks and opportunities of the energy transition. It shows how we will navigate the transition profitably and in line with our purpose – to power progress together with more and cleaner energy solutions. The decision to seek an advisory vote on our energy transition strategy follows our continuing engagement with shareholders, including with Climate Action 100+, which represents investors with assets of around \$54 trillion. We have based the structure of this publication around the net-zero disclosure standard developed by Climate Action 100+ for the oil and gas industry.</p> <p>We have prepared this Energy Transition Strategy publication for submission to a shareholder advisory vote at the Annual General Meeting of Royal Dutch Shell, on May 18, 2021. We will publish an update of the Shell Energy Transition Strategy Report every three years until 2050. Every year, starting in 2022, we will also seek an advisory vote on our progress towards our plans and targets. The vote is purely advisory and will not be binding on shareholders. We are not asking shareholders to take responsibility for formally approving or objecting to Shell's energy transition strategy. That legal responsibility lies with the Board and Executive Committee.</p> <p>AGM 2021 outcome: Shareholder support is critical as our business changes and we work towards our target to become a net-zero emissions energy business by 2050, in step with society. This shareholder vote on our Energy Transition Strategy (Shareholder Resolution #20) is a first for an energy company. We are pleased shareholders demonstrated their strong endorsement with more than 88% of votes cast in favour of our strategy. We also note the outcome of the vote on Shareholder Resolution #21 by Follow This. We will seek to fully understand the reason why shareholders voted as they did, particularly those who voted both 'For' Shell's strategy and 'For' Resolution #21, and we will formally report back to investors within six months.</p>
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(C3.2) Does your organization use climate-related scenario analysis to inform its strategy?

Yes, qualitative and quantitative

(C3.2a) Provide details of your organization's use of climate-related scenario analysis.

Climate-related scenarios and models applied	Details
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<p>Other, please specify</p> <p>New Shell scenarios (Waves, Islands and Sky 1.5) https://www.shell.com/energy-and-innovation/the-energy-future/scenarios/the-energy-transformation-scenarios.html#iframe=L3dIYmFwcHMvU2NlbnFyaW9zX2xvbmdfaG9yaXpvbnMv</p>	<p>New Shell scenarios</p> <p>Shell has recently published its new Energy Transformation Scenarios – Waves, Islands and Sky 1.5. These scenarios are a part of an ongoing process used for over 40 years to challenge executives' perspectives on the future business environment. They are designed to stretch management to consider even events that may only be remotely possible.</p> <p>Waves and Islands are traditional scenarios in that they explore future possible worlds without any specific focus on creating a desired outcome. On the other hand, Sky 1.5 scenario is normative, meaning we assumed that society achieves the 1.5°C stretch goal of the Paris Agreement, and we worked back in designing how this could occur. Shell scenarios, including these scenarios, are not the Shell strategy or business plan.</p> <p>In Waves, the initial response to the crises of 2020 is to repair the economy. Other underlying societal and environmental pressures receive less attention initially until their relative neglect provokes backlash reactions. Then, moving quickly, but starting later than required to meet the goal of the Paris Agreement, global society achieves an energy system with net-zero emissions – late, but fast, decarbonisation. By the end of this century, the world must face long-term higher temperatures of around 2.3°C above pre-industrial levels.</p> <p>In Islands, governments and societies decide to focus on their own security, with a new emphasis on nationalism threatening to unravel the post-war geopolitical order. Although the normal course of equipment and infrastructure replacement and the deployment of cleaner technologies bring progress and eventually net-zero emissions, the world overshoots the timeline and does not achieve the goal of the Paris agreement – late and slow decarbonisation. Atmospheric CO2 levels are consistent with an average temperature around 2.5°C above pre-industrial levels by 2100, and still rising slowly.</p> <p>In Sky 1.5, the initial response to the crises of 2020 is to focus on responding to the pandemic and related challenges to public well-being. Lessons learned from shared best practices, alignments of diverse interests and institutional improvements help create a pathway to the health not only of people and society, but also of the environment, including meeting the stretch goal of the Paris Agreement – accelerated decarbonisation now. By 2050, in leading economies, the journey that was accelerated by the global pandemic shock reaches net-zero CO2 emissions. Globally, the world is proceeding</p>
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	<p>towards achieving the stretch Paris ambition – temporarily rising above and then limiting average global warming to 1.5°C above pre-industrial levels before the end of this century.</p> <p>Use of scenario analysis for our strategy and business planning</p> <p>Our portfolio and strategy have been assessed against a wide range of outlooks. Our latest set of Shell scenarios – Waves, Islands and Sky 1.5 – was one of the many variables used in guiding the updated strategy which we announced in February 2021.</p> <p>The annual business plan is our way of putting the strategy into effect. Our annual planning cycle and periodic portfolio reviews aim to ensure that our levels of capital investment and operating expenses are appropriate in the context of an uncertain and changing external environment. One of the key aspects that underpin Shell's financial statements are the oil and gas price and refining margin assumptions. These price assumptions are developed with input from our scenarios and other factors. Also, GHG elements in the business plans consist of a GHG emissions forecast, GHG abatement plan and GHG costs. The process for developing our GHG cost estimates uses short-term policy outlooks and long-term scenario forecasts, both of which reflect the current nationally determined contributions (NDCs) submitted by countries as part of the Paris Agreement, and evolving national policy developments.</p>
<p>Other, please specify</p> <p>IPCC Special Report 1.5°C (SR1.5) scenarios https://data.ene.iiasa.ac.at/iamc-1.5c-explorer/#/login</p>	<p>IPCC Special Report 1.5°C (SR1.5) scenarios</p> <p>We fully support the Paris Agreement's goal to keep the rise in global average temperature this century to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5°C. In pursuit of this goal, we also support the vision of a transition towards a net-zero emissions energy system.</p> <p>We have set a long-term climate target to be a net-zero emissions energy business by 2050, in step with society's progress towards achieving the goal of the UN Paris Agreement on climate change. This target supports the most ambitious goal of the Paris Agreement on climate change to limit the global temperature rise to 1.5°C. There is no established standard for aligning an energy supplier's decarbonisation targets with the temperature limit goal of the Paris Agreement. In the absence of a broadly accepted standard, we developed our own approach to demonstrate Paris alignment by setting carbon intensity targets using a pathway derived from the IPCC scenarios aligned with the Paris goal. We referred to the database developed for the IPCC special report Global Warming of 1.5°C while setting this target. The scenarios in this database are categorised according to their temperature outcome and degree of overshoot (refers to the extent to which a scenario exceeds an emissions budget and subsequently relies on sinks to</p>

	<p>compensate for the excess emissions). We started with all the 1.5°C scenarios and then selected the scenarios which focused on earlier action and placed less reliance on the use of carbon sinks to produce the 1.5°C pathway we have used for target setting. By using the benchmark range produced by this approach to set our targets, we aligned them with the necessary reduction in carbon intensity shown in the 1.5°C scenarios.</p> <p>Until 2035, our calculation of the total net emissions of each scenario includes only the expected mitigation actions by Shell such as carbon capture and storage and offsetting using natural sinks, including any use of offsets included in the carbon-neutral energy products we offer our customers. After that date, we also include mitigation actions taken separately by our customers. The time horizon considered in this exercise extends in the long-term. As Shell wants to move forward in alignment with the Paris goals, having this long-term horizon in our consideration is important as it helps to stretch management thinking.</p> <p>Shell's operating plan, outlook and budgets are forecasted for a ten-year period and are updated every year. They reflect the current economic environment and what we can reasonably expect to see over the next ten years. Accordingly, Shell's operating plans, outlooks, budgets and pricing assumptions do not reflect our net-zero emissions target. In the future, as society moves towards net-zero emissions, we expect Shell's operating plans, outlooks, budgets and pricing assumptions to reflect this movement.</p>
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(C3.3) Describe where and how climate-related risks and opportunities have influenced your strategy.

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	<p>We expect to reduce our carbon intensity primarily through altering our product mix as customer (Scope 3) emissions represent the largest component of our carbon intensity. We aim to grow our business in areas that will be essential in the energy transition, and where we see growth in demand over the next decade.</p> <p>We believe our Upstream oil production peaked in 2019, and we expect our total oil production to decline by 1-2% a year until 2030. By the same time, we expect the percentage of total gas production in our portfolio to gradually rise to</p>

		<p>around 55% or more. In Downstream business, we will reduce our production of traditional fuels by 55% by 2030, from around 100 mtpa to 45 mtpa.</p> <p>We aim to sell some 560 terawatt hours of electricity a year by 2030, which is twice as much electricity as we sell today. Also, our global ambition is that by 2025, we are operating more than half a million electric-vehicle charging points for businesses, fleets and customers, at our retail sites and people's homes. We aim to increase low-carbon fuels sales (biofuels and hydrogen) to >10% of transport fuels (up from 3% in 2020). In line with our approach of avoid, reduce and only then mitigate, we expect to offer our customers nature-based solutions to offset around 120 million tonnes per annum of our Scope 3 emissions by 2030.</p> <p>Example of a strategic decision influenced by climate-related risks and opportunities</p> <p>We are exploring several integrated hydrogen projects including electrolyzers for industrial and mobility demand in China, Germany and the Netherlands, to help demonstrate that it is possible to produce large-scale green hydrogen using renewable energy. In 2020, we announced one of the largest green hydrogen projects in Europe, NorthH2, in a consortium with Gasunie, Groningen Seaports, Equinor and RWE. The project aims to build large wind farms in the North Sea to generate sufficient renewable energy for green hydrogen production for a range of industrial customers.</p>
Supply chain and/or value chain	Yes	<p>We can only meet our net-zero target as part of a world that is also heading to net zero. So Shell, as a supplier, must work with customers on a sector-by-sector basis, to develop the right pathways to transition each sector from carbon-based energy to low-carbon solutions. We are redesigning Shell to put customers at the centre. That means organising ourselves to help economic sectors to decarbonise, by providing integrated, lower-carbon energy solutions, sector by sector. We are partnering with customers, businesses and governments to address the energy transition and reduce emissions sector by sector. This includes in sectors that are harder to decarbonise, such as aviation, shipping, commercial road freight, power, heating and certain parts of industry. We also support government policies to reduce carbon emissions in the economy, sector by sector.</p> <p>We also continue to work with our suppliers to find ways to reduce greenhouse gas emissions across our supply chains. In 2020, we worked with them to jointly identify the best-performing lower-carbon equipment available and call attention to these products in the catalogues Shell employees use to place orders for projects. We also designed a new interactive tool for suppliers to set a target and track, among other things, their emissions performance against other suppliers to Shell in their industry.</p>

		<p>Example of strategic decision influenced by climate-related risks and opportunities</p> <p>Our strategy instead is to work with partners – including aircraft manufacturers, airlines, airports, major airline users and governments – to stimulate and accelerate demand for sustainable aviation fuel. For example, through its air cargo fleet, Amazon also has a growing interest in aviation. In 2020, we signed a deal with Amazon Air to supply up to six million gallons of sustainable aviation fuel. This biofuel, produced by the company World Energy using agricultural waste fats and oils, has significantly lower life-cycle carbon emissions than conventional jet fuel.</p>
Investment in R&D	Yes	<p>A significant proportion of Shell's technology contributes to Shell's New Energies portfolio and Net Carbon Footprint target, and is built around key relationships with leading academic research institutes and universities. We also benefit from working with start-ups. In our Shell GameChanger programme, we help companies to mature early-stage technologies. In our Shell Ventures scheme, we invest in and partner with start-ups and small and medium-sized enterprises that are in the early stages of developing new technologies. In 2020, we started work on 124 R&D projects with universities, which is less than half that of last year due to the disruptions caused by COVID-19. Many of these projects focus on areas that are crucial for low-carbon energy systems, such as energy storage, fuel cells and greenhouse gas emissions.</p> <p>We seek to help reduce global GHG emissions by developing carbon capture and storage (CCS), developing new fuels for transport such as advanced biofuels and hydrogen, and working with nature-based solutions. For example, we are investing in new facilities that are able to produce sustainable low-carbon fuel suitable for use as aviation, road transport and shipping fuels or chemical feedstock for liquid crackers. Shell's hydro-processed esters and fatty acids (HEFA) technology yields up to 65% low-carbon fuels compared to fossil diesel and aviation equivalent. We are working on a project to add a HEFA facility at our Pernis refinery in the Netherlands. The proposed facility could convert waste fats and oils and other sources into sustainable low carbon vehicle and aviation fuels. A final investment decision has not yet been taken.</p> <p>Example of strategic decision influenced by climate-related risks and opportunities</p> <p>In 2020, our scientists demonstrated how to produce 500 litres of synthetic kerosene aviation fuel from carbon dioxide, water and renewable energy to replace conventional hydrocarbon feedstocks. In a world first, the synthetic kerosene was blended with conventional jet fuel to power a KLM airlines passenger flight from Amsterdam to Madrid in early 2021.</p>

Operations	Yes	<p>Shell's target is to be a net-zero emissions energy business by 2050, in step with society. One element of our target is to achieve net-zero emissions from all our operations, as well as from the energy we need to power them. Shell's operating plan, outlook and budgets are forecasted for a ten-year period and are updated every year. They reflect the current economic environment and what we can reasonably expect to see over the next ten years. Accordingly, Shell's operating plans, outlooks, budgets and pricing assumptions do not reflect our net-zero emissions target. In the future, as society moves towards net-zero emissions, we expect Shell's operating plans, outlooks, budgets and pricing assumptions to reflect this movement.</p> <p>We are already taking steps to cut emissions from our existing oil and gas operations, and to avoid generating more in the future. We are focusing on value over volume by simplifying Upstream to nine significant core positions. We are transforming our refining portfolio from the current 13 sites into five (Deer Park Refining Limited Partnership, USA: sale of interest expected to be closed in Q4, 2021) high-value energy and chemicals parks, integrated with Chemicals. Improving the energy efficiency of our facilities is one of the ways to help us reduce GHG emissions from our operations. By 2030, we will end routine flaring of gas, which generates carbon emissions, from the assets we operate. In 2020, we invested in new furnaces for our Moerdijk petrochemicals complex in the Netherlands to reduce energy consumption and GHG emissions by around 10% compared with 2019. We aim to eliminate the GHG emissions that are generated from the electricity we buy to power our operations. We are also developing a carbon management framework to guide decision-making on investments in assets and businesses that align with our climate target.</p> <p>Example of strategic decision influenced by climate-related risks and opportunities</p> <p>In November 2020, we announced that we had begun transforming our Shell Pulau Bukom manufacturing site in Singapore into an energy and chemicals park. This is part of our strategy to integrate our refining portfolio with Chemicals, resulting in approximately six high-value energy and chemicals parks, of which Bukom will be one. Bukom will switch from a crude-oil, fuels-based product slate towards new low-carbon value chains.</p>
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(C3.4) Describe where and how climate-related risks and opportunities have influenced your financial planning.

Financial planning elements that have been influenced	Description of influence
<ul style="list-style-type: none"> • Direct costs • Capital expenditures • Capital allocation • Acquisitions and divestments • Access to capital • Assets 	<p>Our financial planning processes</p> <p>On February 11, 2021, we announced Powering Progress, our new strategy. It is our strategy to accelerate progress to net-zero emissions, purposefully and profitably. The annual business plan is our way of putting the strategy into effect. Shell's operating plan, outlook and budgets are forecasted for a ten-year period and are updated every year. They reflect the current economic environment and what we can reasonably expect to see over the next ten years. Accordingly, Shell's operating plans, outlooks, budgets and pricing assumptions do not reflect our net-zero emissions target. In the future, as society moves towards net-zero emissions, we expect Shell's operating plans, outlooks, budgets and pricing assumptions to reflect this movement.</p> <p>Direct costs</p> <p>Achieving our target to become net zero on all emissions from our operations will result in additional cost. Moreover, we expect that a growing share of our GHG emissions will be subject to regulation, resulting in increased compliance costs and operational restrictions. To assess the resilience of new projects, we consider the potential costs associated with operational GHG emissions. We have developed country-specific short-, medium- and long-term estimates of future carbon costs which are reviewed and updated annually. The process for developing our cost of carbon estimates uses short-term policy outlooks and long-term scenario forecasts, both of which reflect the current NDCs submitted by countries as part of the Paris Agreement and evolving national policy developments. We expect to update our estimates as countries update their NDCs and climate policies. We continue to test the robustness of our projects with a material GHG footprint by using long-term carbon cost estimates that are consistent with limiting the rise in global average temperature to well below 2°C.</p> <p>Capital expenditures</p> <p>We are shifting capital from our Upstream business to our Transition and Growth businesses as the energy transition accelerates and we sell more low-carbon energy products. We aim to find the right balance between managing our Upstream assets – which will produce the returns needed to help us fund the transition – and investing in our Transition and Growth businesses. We will be setting carbon budgets for all our businesses and these will help to drive investment decisions which will in turn drive down our emissions. By assessing our investments and resources on the basis of our financial performance and on the carbon intensity of our revenues, we will decide what changes to make to our business portfolio.</p>

	<p>Capital allocation</p> <p>Once we have reduced net debt to \$65 billion, we will look to further increase total shareholder distributions. We will also seek to increase capital spending in a disciplined way. With this approach we expect that we will:</p> <ul style="list-style-type: none"> • Limit our investments in Upstream: Our planned capital investment of ~\$8 billion in our Upstream business in the near term is well below the investment level required to offset the natural decline in production of our oil and gas reservoirs and will not sustain current levels of production. • Maintain our investments in our Transition businesses: Our Transition pillar comprises Integrated Gas, and our Chemicals and Products business, and it makes the products needed to enable the energy transition. We plan to invest ~\$4 billion in Integrated Gas and \$4-5 billion in Chemicals and Products each year, in the near term. • Increase investments in our Growth businesses to build material low-carbon businesses of significant scale by the early 2030s: Our Growth pillar includes our Marketing and Renewables and Energy Solutions business. We plan to invest ~\$3 billion in Marketing and \$2-3 billion in Renewables and Energy Solutions each year, in the near term. <p>Access to capital</p> <p>Some groups are putting pressure on certain investors to divest their investments in fossil fuel companies. If this were to continue, it could have a large adverse effect on the price of our securities and our ability to access capital markets. Groups are also putting pressure on commercial and investment banks to stop financing fossil fuel companies. Accordingly, our ability to use financing for these types of future projects may be adversely affected. The Financial Stability Board established TCFD to develop recommendations for more effective climate-related disclosures that could promote more informed investment, credit and insurance underwriting decisions. We continue to support the TCFD recommendations and apply them to our reporting.</p> <p>Assets</p> <p>We are exposed to macroeconomic risks including fluctuating prices of crude oil, natural gas, oil products and chemicals. Prolonged periods of low oil and gas prices, or rising costs, have resulted and could continue to result in projects being delayed or cancelled. Assets have been impaired in the past, (including in 2020), and there could be impairments in the future. We had non-cash impairments of \$28.1 bln in 2020. We maintain a diversified portfolio to mitigate the impact of price volatility. We test the resilience of our projects and other opportunities against a range of prices and costs for crude oil, natural gas, oil products and chemicals.</p>
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	<p>Acquisitions and divestments</p> <p>We assess our portfolio decisions, including investments and divestments, against the potential impacts of the energy transition to the use of lower-carbon energy. Below is an example of the acquisitions influenced by various factors including climate related risks and opportunities.</p> <p>Case study on influence of climate change on acquisitions: Our Raízen joint venture in Brazil is one of the world's largest biofuel producers, with one of the lowest-CO2 biofuels available today. Raízen produced around 2.5 billion litres of ethanol and around 4.4 million tonnes of sugar from sugar cane in 2020. In February 2021, Raízen joint venture (Shell interest 50%, not Shell-operated) announced the acquisition of Biosev, adding an additional 50% of production capacity in low-carbon fuels. It will allow to increase Raízen's bioethanol production capacity to a 3.75 billion litres a year. The transaction contributes to Shell's target to be a net-zero emissions energy business by 2050, in step with society.</p>
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(C3.4a) Provide any additional information on how climate-related risks and opportunities have influenced your strategy and financial planning (optional).

C4. Targets and performance

(C4.1) Did you have an emissions target that was active in the reporting year?

Both absolute and intensity targets

(C4.1a) Provide details of your absolute emissions target(s) and progress made against those targets.

Target reference number

Abs 1 - CCS Quest

Year target was set

2014

Target coverage

Site/facility

Scope(s) (or Scope 3 category)

Scope 1

Base year

2015

Covered emissions in base year (metric tons CO2e)

3,400,000

Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)

4.7

Target year

2025

Targeted reduction from base year (%)

25

Covered emissions in target year (metric tons CO2e) [auto-calculated]

2,550,000

Covered emissions in reporting year (metric tons CO2e)

2,537,752

% of target achieved [auto-calculated]

101.4409411764706

Target status in reporting year

Achieved

Is this a science-based target?

No, but we are reporting another target that is science-based

Target ambition

-

Please explain (including target coverage)

Abs1 - CCS Quest

The Quest Carbon Capture and Storage (CCS) facility captures and stores about one third of the CO₂ emissions from the Shell-operated Scotford Upgrader near Fort Saskatchewan, Alberta, Canada which turns oil sands bitumen into synthetic crude that can be refined into fuel and other products. The CO₂ is transported through a 65-kilometre pipeline and injected more than two kilometres underground below multiple layers of impermeable rock formations. It is designed to capture, transport and store over one million tonnes of CO₂ annually. Shell operates the Quest CCS project (Shell interest 10%) which captured and safely stored more than 0,94 million tonnes of carbon dioxide from the Scotford Upgrader in 2020. The target year 2025 is based on a 10-year contract starting at the time of the project launch in 2015. We have put 100% of target achieved as the facility is storing close to one million tonnes of CO₂ annually. Quest has a robust measurement, monitoring and verification programme verified by a third party (Det Norske Veritas (DNV)) to ensure the CO₂ is permanently stored. By the end of 2020, for example, our Quest CCS project in Canada (Shell interest 10%) had captured and safely stored more than 5.5 million tonnes of CO₂ since it began operating in 2015.

Target reference number

Abs 2 - World Bank Zero Routine Flaring by 2030 initiative

Year target was set

2015

Target coverage

Company-wide

Scope(s) (or Scope 3 category)

Scope 1

Base year

2015

Covered emissions in base year (metric tons CO2e)

7,400,000

Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)

10.28

Target year

2030

Targeted reduction from base year (%)

100

Covered emissions in target year (metric tons CO2e) [auto-calculated]

0

Covered emissions in reporting year (metric tons CO2e)

1,200,000

% of target achieved [auto-calculated]

83.78378378378378

Target status in reporting year

Underway

Is this a science-based target?

No, but we are reporting another target that is science-based

Target ambition

-

Please explain (including target coverage)

Abs2 - World Bank Zero Routine Flaring by 2030 initiative

(Annual Report 2020, p106) In 2015, we signed up to the World Bank's Zero Routine Flaring by 2030 initiative. This seeks to ensure that all stakeholders, including governments and companies, work together to address routine flaring. The only routine flaring in 2020 occurred in assets operated by the Shell Petroleum Development Company of Nigeria Limited (SPDC).

Flaring, or burning off, of gas in our Upstream and Integrated Gas businesses contributed around 6% of our overall direct GHG emissions in 2020. Around 35% of this flaring occurred at facilities where there was no infrastructure to capture the gas produced with oil, known as associated gas.

Around 45% of flaring in our Upstream and Integrated Gas facilities in 2020 occurred in assets operated by the Shell Petroleum Development Company of Nigeria Limited (SPDC). Flaring from SPDC-operated facilities decreased by around 15% in 2020 compared with 2019.

The level of flaring in our Upstream and Integrated Gas businesses combined decreased by around 35% compared with 2019. In 2019, our Prelude floating LNG facility in Australia had experienced an unanticipated spike in flaring during its start-up. In February 2020, we had to shut down Prelude which resulted in a decrease of its GHG emissions by around 80% compared with 2019.

Target reference number

Abs 3 – Net-zero Scope 1 and Scope 2 emissions from our operations (manufacture of all products) by 2050, in step with society

Year target was set

2020

Target coverage

Company-wide

Scope(s) (or Scope 3 category)

Scope 1+2 (market-based)

Base year

2016

Covered emissions in base year (metric tons CO2e)

83,000,000

Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)

100

Target year

2050

Targeted reduction from base year (%)

100

Covered emissions in target year (metric tons CO2e) [auto-calculated]

0

Covered emissions in reporting year (metric tons CO2e)

72,000,000

% of target achieved [auto-calculated]

13.2530120482

Target status in reporting year

Underway

Is this a science-based target?

Yes, we consider this a science-based target, but it has not been approved by the Science-Based Targets initiative

Target ambition

1.5°C aligned

Please explain (including target coverage)

Abs3 – Net-zero Scope 1 and Scope 2 emissions from our operations (manufacture of all products) by 2050, in step with society

Shell aims to be net-zero on all the emissions from the manufacture of all our products, including non-energy products. That includes our operational emissions (Scope 1) and the emissions associated with the energy we consume through those operations (Scope 2). Shell will track

and report on progress towards achieving net-zero emissions from its operations. We will reduce emissions from our own operations, including the production of oil and gas, by increasing energy efficiency and capturing or offsetting any remaining emissions.

Note: The methodology for assessing Science-Based Targets for the oil and gas industry does not exist yet. Shell is part of the technical working group for its development.

Shell's operating plans, outlooks and budgets are forecasted for a 10-year period and are updated every year. They reflect the current economic environment and how we can reasonably expect our business to develop over the next 10 years. Our short-term targets are aligned with our current operating plans.

Target reference number

Abs 4 - Net-zero Scope 3 emissions from the energy products we sell

Year target was set

2020

Target coverage

Company-wide

Scope(s) (or Scope 3 category)

Scope 3 (upstream & downstream)

Base year

2016

Covered emissions in base year (metric tons CO₂e)

1,545,000,000

Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)

100

Target year

2050

Targeted reduction from base year (%)

100

Covered emissions in target year (metric tons CO2e) [auto-calculated]

0

Covered emissions in reporting year (metric tons CO2e)

1,305,000,000

% of target achieved [auto-calculated]

15.5339805825

Target status in reporting year

Underway

Is this a science-based target?

Yes, we consider this a science-based target, but it has not been approved by the Science-Based Targets initiative

Target ambition

1.5°C aligned

Please explain (including target coverage)

Abs4 - Net-zero Scope 3 emissions from the energy products we sell

Our Scope 3 emissions include our customers' emissions from the energy products we produce and sell as well as the life-cycle emissions of the energy products produced by other companies that we resell to our customers. This means that our target covers all the energy we sell, not just the oil and gas we produce and refine ourselves. We will work with our customers to address the emissions created when they use products bought from us (Scope 3) and help them find ways to reduce their emissions and overall carbon footprint to net zero by 2050.

Retail sales volumes from markets where Shell operates under trademark licensing agreements are excluded from the scope of Shell's carbon intensity metric. Emissions associated with the manufacturing and use of non-energy products are excluded.

Shell's operating plans, outlooks and budgets are forecasted for a 10-year period and are updated every year. They reflect the current economic

environment and how we can reasonably expect our business to develop over the next 10 years. Our short-term targets are aligned with our current operating plans.

(C4.1b) Provide details of your emissions intensity target(s) and progress made against those target(s).

Target reference number

Int 1 - Net Carbon Footprint (NCF) target 2021

Year target was set

2019

Target coverage

Company-wide

Scope(s) (or Scope 3 category)

Scope 1+2 (market-based) + 3 (upstream and downstream)

Intensity metric

Other, please specify: Grams of CO2 equivalent per megajoule

Base year

2016

Intensity figure in base year (metric tons CO2e per unit of activity)

79

% of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure

100

Target year

2021

Targeted reduction from base year (%)

2

Intensity figure in target year (metric tons CO2e per unit of activity) [auto-calculated]

77.42

% change anticipated in absolute Scope 1+2 emissions

0

% change anticipated in absolute Scope 3 emissions

0

Intensity figure in reporting year (metric tons CO2e per unit of activity)

75

% of target achieved [auto-calculated]

253.164556962

Target status in reporting year

Underway

Is this a science-based target?

Yes, we consider this a science-based target, but it has not been approved by the Science Based Targets initiative

Target ambition

1.5°C aligned

Please explain (including target coverage)

Int1 - Net Carbon Footprint (NCF) target 2021

Intensity metric: Grams CO2e per megajoule consumed

We measure our carbon intensity with our Net Carbon Footprint methodology which calculates the carbon intensity of the portfolio of energy products sold by Shell expressed as grams of CO2 equivalent (gCO2e) per megajoule (MJ) of energy delivered to, and consumed by, our customers.

We have set specific carbon intensity reduction targets for the following years. These targets are compared with 2016 and linked to the remuneration of around 16,500 Shell employees: 2-3% by 2021, 3-4% by 2022, 6-8% by 2023.

Until 2035, our calculation of the total net emissions of each scenario includes only the expected mitigation actions by Shell such as carbon capture and storage and offsetting using natural sinks, including any use of offsets included in the carbon-neutral energy products we offer our customers. After that date, we also include mitigation actions taken separately by our customers.

A detailed description of Shell's NCF methodology is available on our website:

<https://www.shell.com/energy-and-innovation/the-energy-future/what-is-shells-net-carbon-footprint-ambition/faq>

LRQA Assurance statement:

For the reporting year 2020, with NCF at 75 gCO₂/MJ, carbon offsets equivalent to 3,9 million tonnes CO₂ were included in the 2020 NCF calculation. Estimated GHG emissions covered by the NCF calculation in 2020: 1,384 million tonnes CO₂e, the estimated offset proportion of the 2020 NCF outcome is $3,9/1,384 = 0.28\%$ (AR, p105).

Target reference number

Int 2 - Net Carbon Footprint (NCF) target 2022

Year target was set

2020

Target coverage

Company-wide

Scope(s) (or Scope 3 category)

Scope 1+2 (location-based) + 3 (upstream and downstream)

Intensity metric

Other, please specify: Grams of CO₂e per megajoule

Base year

2016

Intensity figure in base year (metric tons CO2e per unit of activity)

79

% of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure

100

Target year

2022

Targeted reduction from base year (%)

3

Intensity figure in target year (metric tons CO2e per unit of activity) [auto-calculated]

76.63

% change anticipated in absolute Scope 1+2 emissions

0

% change anticipated in absolute Scope 3 emissions

0

Intensity figure in reporting year (metric tons CO2e per unit of activity)

75

% of target achieved [auto-calculated]

168.776371308

Target status in reporting year

Underway

Is this a science-based target?

Yes, we consider this a science-based target, but it has not been approved by the Science Based Targets initiative

Target ambition

1.5°C aligned

Please explain (including target coverage)

Int2 - Net Carbon Footprint (NCF) target 2022

We measure our carbon intensity with our Net Carbon Footprint methodology which calculates the carbon intensity of the portfolio of energy products sold by Shell expressed as grams of CO₂ equivalent (gCO₂e) per megajoule (MJ) of energy delivered to, and consumed by, our customers.

We have set specific carbon intensity reduction targets for the following years. These targets are compared with 2016 and linked to the remuneration of around 16,500 Shell employees: 2-3% by 2021, 3-4% by 2022, 6-8% by 2023.

Until 2035, our calculation of the total net emissions of each scenario includes only the expected mitigation actions by Shell such as carbon capture and storage and offsetting using natural sinks, including any use of offsets included in the carbon-neutral energy products we offer our customers. After that date, we also include mitigation actions taken separately by our customers.

Target reference number

Int 3 - Net Carbon Footprint (NCF) target 2023

Year target was set

2021

Target coverage

Company-wide

Scope(s) (or Scope 3 category)

Scope 1+2 (market-based) + 3 (upstream and downstream)

Intensity metric

Other, please specify: Grams of CO₂e per megajoule

Base year

2016

Intensity figure in base year (metric tons CO2e per unit of activity)

79

% of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure

100

Target year

2023

Targeted reduction from base year (%)

6

Intensity figure in target year (metric tons CO2e per unit of activity) [auto-calculated]

74.26

% change anticipated in absolute Scope 1+2 emissions

0

% change anticipated in absolute Scope 3 emissions

0

Intensity figure in reporting year (metric tons CO2e per unit of activity)

75

% of target achieved [auto-calculated]

84.388185654

Target status in reporting year

Underway

Is this a science-based target?

Yes, we consider this a science-based target, but it has not been approved by the Science Based Targets initiative

Target ambition

1.5°C aligned

Please explain (including target coverage)

Int3 - Net Carbon Footprint (NCF) target 2023

We measure our carbon intensity with our Net Carbon Footprint methodology which calculates the carbon intensity of the portfolio of energy products sold by Shell expressed as grams of CO₂ equivalent (gCO₂e) per megajoule (MJ) of energy delivered to, and consumed by, our customers.

We have set specific carbon intensity reduction targets for the following years. These targets are compared with 2016 and linked to the remuneration of around 16,500 Shell employees: 2-3% by 2021, 3-4% by 2022, 6-8% by 2023.

Until 2035, our calculation of the total net emissions of each scenario includes only the expected mitigation actions by Shell such as carbon capture and storage and offsetting using natural sinks, including any use of offsets included in the carbon-neutral energy products we offer our customers. After that date, we also include mitigation actions taken separately by our customers.

Target reference number

Int4 - Net Carbon Footprint (NCF) target 2030

Year target was set

2021

Target coverage

Company-wide

Scope(s) (or Scope 3 category)

Scope 1+2 (market-based) + 3 (upstream and downstream)

Intensity metric

Other, please specify: Grams of CO₂e per megajoule

Base year

2016

Intensity figure in base year (metric tons CO2e per unit of activity)

79

% of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure

100

Target year

2030

Targeted reduction from base year (%)

20

Intensity figure in target year (metric tons CO2e per unit of activity) [auto-calculated]

63.2

% change anticipated in absolute Scope 1+2 emissions

0

% change anticipated in absolute Scope 3 emissions

0

Intensity figure in reporting year (metric tons CO2e per unit of activity)

75

% of target achieved [auto-calculated]

25.3164556962

Target status in reporting year

Underway

Is this a science-based target?

Yes, we consider this a science-based target, but it has not been approved by the Science Based Targets initiative

Target ambition

1.5°C aligned

Please explain (including target coverage)

Int4 - Net Carbon Footprint (NCF) target 2030

We measure our carbon intensity with our Net Carbon Footprint methodology which calculates the carbon intensity of the portfolio of energy products sold by Shell expressed as grams of CO₂ equivalent (gCO₂e) per megajoule (MJ) of energy delivered to, and consumed by, our customers. We have set medium and long- term specific carbon intensity reduction targets. These targets are compared with 2016 and, in step with society: 20% by 2030.

Until 2035, our calculation of the total net emissions of each scenario includes only the expected mitigation actions by Shell such as carbon capture and storage and offsetting using natural sinks, including any use of offsets included in the carbon-neutral energy products we offer our customers. After that date, we also include mitigation actions taken separately by our customers.

Target reference number

Int 5 - Net Carbon Footprint (NCF) target 2035

Year target was set

2020

Target coverage

Company-wide

Scope(s) (or Scope 3 category)

Scope 1+2 (market-based) + 3 (upstream and downstream)

Intensity metric

Other, please specify: Grams of CO₂e per megajoule

Base year

2016

Intensity figure in base year (metric tons CO2e per unit of activity)

79

% of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure

100

Target year

2035

Targeted reduction from base year (%)

45

Intensity figure in target year (metric tons CO2e per unit of activity) [auto-calculated]

43.45

% change anticipated in absolute Scope 1+2 emissions

0

% change anticipated in absolute Scope 3 emissions

0

Intensity figure in reporting year (metric tons CO2e per unit of activity)

75

% of target achieved [auto-calculated]

11.2517580872

Target status in reporting year

Underway

Is this a science-based target?

Yes, we consider this a science-based target, but it has not been approved by the Science Based Targets initiative

Target ambition

1.5°C aligned

Please explain (including target coverage)

Int5 - Net Carbon Footprint (NCF) target 2035

We measure our carbon intensity with our Net Carbon Footprint methodology which calculates the carbon intensity of the portfolio of energy products sold by Shell expressed as grams of CO₂ equivalent (gCO₂e) per megajoule (MJ) of energy delivered to, and consumed by, our customers. We have set medium and long- term specific carbon intensity reduction targets. These targets are compared with 2016 and, in step with society: 45% by 2035, 100% by 2050.

These targets include mitigation actions by our customers such as carbon capture and storage and nature-based offsets.

Target reference number

Int 6 - Net Carbon Footprint (NCF) target 2050

Year target was set

2020

Target coverage

Company-wide

Scope(s) (or Scope 3 category)

Scope 1+2 (market-based) + 3 (upstream and downstream)

Intensity metric

Other, please specify: Grams of CO₂e per megajoule

Base year

2016

Intensity figure in base year (metric tons CO2e per unit of activity)

79

% of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure

100

Target year

2050

Targeted reduction from base year (%)

100

Intensity figure in target year (metric tons CO2e per unit of activity) [auto-calculated]

0

% change anticipated in absolute Scope 1+2 emissions

100

% change anticipated in absolute Scope 3 emissions

100

Intensity figure in reporting year (metric tons CO2e per unit of activity)

75

% of target achieved [auto-calculated]

5.0632911392

Target status in reporting year

Underway

Is this a science-based target?

Yes, we consider this a science-based target, but it has not been approved by the Science Based Targets initiative

Target ambition

1.5°C aligned

Please explain (including target coverage)

Int6 - Net Carbon Footprint (NCF) target 2050

We measure our carbon intensity with our Net Carbon Footprint methodology which calculates the carbon intensity of the portfolio of energy products sold by Shell expressed as grams of CO₂ equivalent (gCO₂e) per megajoule (MJ) of energy delivered to, and consumed by, our customers. We have set medium and long- term specific carbon intensity reduction targets. These targets are compared with 2016 and, in step with society: 45% by 2035, 100% by 2050.

These targets include mitigation actions by our customers such as carbon capture and storage and nature-based offsets.

Target reference number

Int 7 – Refineries intensity

Year target was set

2020

Target coverage

Business activity

Scope(s) (or Scope 3 category)

Scope 1+2 (market-based)

Intensity metric

Other, please specify: Tonnes of CO₂ equivalent per Solomon's Utilised Equivalent Distillation Capacity (UEDC)

Base year

2019

Intensity figure in base year (metric tons CO2e per unit of activity)

1.06

% of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure

38.25

Target year

2020

Targeted reduction from base year (%)

3.7

Intensity figure in target year (metric tons CO2e per unit of activity) [auto-calculated]

1.02078

% change anticipated in absolute Scope 1+2 emissions

-9.45

% change anticipated in absolute Scope 3 emissions

-

Intensity figure in reporting year (metric tons CO2e per unit of activity)

1.05

% of target achieved [auto-calculated]

25.49719530851606

Target status in reporting year

Expired

Is this a science-based target?

No, but we are reporting another target that is science-based

Target ambition

-

Please explain (including target coverage)

Int7 – Refineries intensity

UEDC™ (Utilised Equivalent Distillation Capacity) is a proprietary metric of Solomon Associates. It is a complexity-weighted normalisation parameter that reflects the operating cost intensity of a refinery based on size and configuration of its particular mix of process and non-process facilities.

For our refineries, our target was to reduce GHG intensity to 1.02 tonnes or below of CO2 equivalent per Solomon's Utilised Equivalent Distillation Capacity (UEDC™). Refinery GHG intensity in 2020 was 1.05 tonnes CO2e per UEDC compared with 1.06 in 2019.

Target reference number

Int 8 - Chemicals intensity

Year target was set

2020

Target coverage

Business division

Scope(s) (or Scope 3 category)

Scope 1+2 (market-based)

Intensity metric

Other, please specify: Tonnes CO2 equivalent per tonne of petrochemicals produced

Base year

2019

Intensity figure in base year (metric tons CO2e per unit of activity)

1.04

% of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure

8.63

Target year

2020

Targeted reduction from base year (%)

7.6

Intensity figure in target year (metric tons CO2e per unit of activity) [auto-calculated]

0.96096

% change anticipated in absolute Scope 1+2 emissions

12.2

% change anticipated in absolute Scope 3 emissions

-

Intensity figure in reporting year (metric tons CO2e per unit of activity)

0.98

% of target achieved [auto-calculated]

75.91093117408907

Target status in reporting year

Expired

Is this a science-based target?

No, but we are reporting another target that is science-based

Target ambition

-

Please explain (including target coverage)

Int8 – Chemicals intensity

High-value chemicals include olefin products (ethylene and propylene) plus the contained butadiene, benzene, acetylene, and high-purity hydrogen production.

For our chemical plants, our target was to reduce GHG intensity to 0.96 tonnes or below of CO2 equivalent per tonne of high-value petrochemicals produced. Chemical GHG intensity was 0.98 tonnes CO2 equivalent per tonne of high-value chemicals produced in 2020 compared with 1.04 in 2019.

Target reference number

Int 9 - Upstream / Integrated Gas intensity

Year target was set

2020

Target coverage

Business activity

Scope(s) (or Scope 3 category)

Scope 1+2 (market-based)

Intensity metric

Other, please specify: Tonnes CO2 equivalent per tonnes of GHG emissions (Scope 1+2) per tonne of oil and gas available for sale, liquefied natural gas and gas-to-liquids production

Base year

2019

Intensity figure in base year (metric tons CO2e per unit of activity)

0.168

% of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure

39.88

Target year

2020

Targeted reduction from base year (%)

3.55

Intensity figure in target year (metric tons CO2e per unit of activity) [auto-calculated]

0.162036

% change anticipated in absolute Scope 1+2 emissions

-1.9

% change anticipated in absolute Scope 3 emissions

-

Intensity figure in reporting year (metric tons CO2e per unit of activity)

0.159

% of target achieved [auto-calculated]

150.9054325955734

Target status in reporting year

Achieved

Is this a science-based target?

No, but we are reporting another target that is science-based

Target ambition

-

Please explain (including target coverage)

Int9 – Upstream / Integrated Gas intensity

For our Upstream and Integrated Gas facilities, our target was to achieve a GHG intensity of 0.162 tonnes or below of CO2 equivalent per tonne of hydrocarbon production available for sale.

Our Upstream and Integrated Gas GHG intensity was 0.159 tonnes CO2 equivalent per tonne of hydrocarbon production available for sale in 2020 compared with 0.168 in 2019.

(C4.2) Did you have any other climate-related targets that were active in the reporting year?

Target(s) to reduce methane emissions

Net-zero target(s)

Other climate-related target(s)

(C4.2b) Provide details of any other climate-related targets, including methane reduction targets.

Target reference number

Oth 1: Methane emissions intensity

Year target was set

2018

Target coverage

Business activity

Target type: absolute or intensity

Intensity

Target type: category & Metric (target numerator if reporting an intensity target)

Methane reduction target

Total methane emissions in m3

Target denominator (intensity targets only)

Other, please specify: Gas available for sale in m³

Base year

2018

Figure or percentage in base year

0.08

Target year

2025

Figure or percentage in target year

0.2

Figure or percentage in reporting year

0.06

% of target achieved [auto-calculated]

-16.6666666667

Target status in reporting year

Underway

Is this target part of an emissions target?

n.a.

Is this target part of an overarching initiative?

Other, please specify:

The target is not part of a particular initiative but based on the work of an industry coalition which developed the Methane Guiding Principles and is aligned with the Oil and Gas Climate Initiative methane intensity target.

Please explain (including target coverage)

Methane emissions intensity

Annual Report 2020, p101: In 2018, Shell announced an industry-leading target of keeping its methane emissions intensity below 0.2% by 2025. This target covers all the Shell-operated oil and gas facilities in our Upstream and Integrated Gas businesses. The baseline and target intensities are expressed as percentage figures, representing estimated methane emissions from Shell-operated oil and gas facilities as a percentage of the total amount of gas marketed, or the quantity of marketed oil and condensate where facilities have no marketed gas (for example, those that re-inject produced gas). Methane emissions include those from unintentional leaks, venting and incomplete combustion, for example, in flares and turbines.

In 2020, our overall methane intensity was 0.06% for facilities with marketed gas and 0.01% for facilities without marketed gas. Intensities at facility level ranged from below 0.01% to 0.6%. We believe our methane emissions are calculated using the best methods currently available: a combination of industry-standard emission factors (established emission rates per throughput or per piece of equipment), engineering calculations and some actual measurements.

There are still uncertainties associated with quantifying methane emissions with the available methodologies. To reduce these uncertainties, our Upstream and Integrated Gas businesses are rolling out methane improvement programmes to further improve data quality and reporting. The improvement programmes will also continue leak detection and repair initiatives, and make use of methane abatement opportunities. By 2025, all Shell-operated facilities are expected to have implemented more robust quantification methodologies. Externally, we continue to work on new technologies and improved quantification methods through partnerships and other initiatives such as the OGCI.

(C4.2c) Provide details of your net-zero target(s).

Target reference number

NZ1 - Net-zero emissions energy business target

Target coverage

Company-wide

Absolute/intensity emission target(s) linked to this net-zero target

Abs3, Abs4, Int1, Int2, Int3, Int4, Int5, Int6

Target year for achieving net zero

2050

Is this a science-based target?

Yes, but we have not committed to seek validation of this target by the Science Based Targets initiative in the next 2 years

Please explain (including target coverage)

(AR 2020, p94; SET21)

We announced a long-term target to become a net-zero emissions energy business by 2050, in step with society. This includes a target to be net zero on all emissions from the manufacture of all our products – (our Scope 1 and 2 emissions) – by 2050, and also net zero from the end use of all the energy products we sell (Scope 3 emissions). We aim to reduce the net carbon intensity of energy sold by 6-8% by 2023, 20% by 2030, 45% by 2035 and 100% by 2050, in comparison with 2016.

More than 90% of our emissions come from the use of the fuels and other energy products we sell, so we must also work with our customers to reduce their emissions when that energy is used. That means offering them the low-carbon products and services they need such as renewable electricity, biofuels, hydrogen, carbon capture and storage and nature-based offsets.

Importantly, our target includes emissions not only from the energy we produce and process ourselves, including oil and gas, but also from all the energy products that other companies produce and we sell. This is significant because we sell more than three times the energy we produce ourselves.

In summary, our targets include all emissions from the energy we sell, and the majority of the emissions we include in our targets are not related to our own oil and gas production.

Shell will reduce the carbon intensity of our energy products by working with our customers, sector by sector, to help them navigate the energy transition. As we do so, we intend to build even deeper relationships with our customers and meet more of their energy needs. We will start by adding more low-carbon products, such as biofuels and electricity, to the mix of energy products we sell. Eventually, low-carbon products will replace the higher carbon products that we sell today. This transformation of our business will require a fundamental change to energy-related infrastructure and assets across economies.

(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.

Yes

(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	146	-
To be implemented	88	674,306
Implementation commenced	52	593,886
Implemented	132	1,301,690
Not to be implemented	31	101,323

(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.

Initiative category & Initiative type

Energy efficiency in production processes

Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)

27,400

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

5,990,000

Investment required (unit currency – as specified in C0.4)

34,530,000

Payback period

4-10 years

Estimated lifetime of the initiative

16-20 years

Comment

Downstream

Heat recovery project which reduced consumption of steam.

Initiative category & Initiative type

Energy efficiency in production processes

Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)

32,800

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

1,000,000

Investment required (unit currency – as specified in C0.4)

20,000

Payback period

<1 year

Estimated lifetime of the initiative

16-20 years

Comment

Downstream
Flare efficiency improvements.

Initiative category & Initiative type

Waste reduction and material circularity
Other, please specify

Estimated annual CO2e savings (metric tonnes CO2e)

142,000

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

-

Investment required (unit currency – as specified in C0.4)

23,605,195

Payback period

No payback

Estimated lifetime of the initiative

11-15 years

Comment

Integrated Gas

Changed procedures to target zero flaring during turnarounds and well workovers.

Initiative category & Initiative type

Waste reduction and material circularity

Remanufacturing

Estimated annual CO2e savings (metric tonnes CO2e)

31,900

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

-

Investment required (unit currency – as specified in C0.4)

5,302,857

Payback period

No payback

Estimated lifetime of the initiative

21-30 years

Comment

Integrated Gas

Operational emissions reductions opportunities.

Initiative category & Initiative type

Waste reduction and material circularity
Product/component/material reuse

Estimated annual CO2e savings (metric tonnes CO2e)

21,500

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

-

Investment required (unit currency – as specified in C0.4)

4,450,500

Payback period

No payback

Estimated lifetime of the initiative

16-20 years

Comment

Integrated Gas
A suite of minor projects and operational excellence improvements.

Initiative category & Initiative type

Waste reduction and material circularity

Remanufacturing

Estimated annual CO2e savings (metric tonnes CO2e)

12,750

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

-

Investment required (unit currency – as specified in C0.4)

400,000

Payback period

No payback

Estimated lifetime of the initiative

16-20 years

Comment

Integrated Gas

Project to optimise performance of furnace.

Initiative category & Initiative type

Fugitive emissions reductions

Oil/natural gas methane leak capture/prevention

Estimated annual CO2e savings (metric tonnes CO2e)

11,470

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

-

Investment required (unit currency – as specified in C0.4)

200,000

Payback period

<1 year

Estimated lifetime of the initiative

11-15 years

Comment

Integrated Gas

Redirect waste gas stream to flare.

Initiative category & Initiative type

Energy efficiency in production processes

Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)

5,250

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

-

Investment required (unit currency – as specified in C0.4)

-

Payback period

No payback

Estimated lifetime of the initiative

1-2 years

Comment

Upstream

Improved compressor reliability.

Initiative category & Initiative type

Fugitive emissions reductions

Oil/natural gas methane leak capture/prevention

Estimated annual CO2e savings (metric tonnes CO2e)

12,790

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

Investment required (unit currency – as specified in C0.4)

3,200,000

Payback period

No payback

Estimated lifetime of the initiative

21-30 years

Comment

Upstream

Methane emissions reductions.

Initiative category & Initiative type

Fugitive emissions reductions

Oil/natural gas methane leak capture/prevention

Estimated annual CO2e savings (metric tonnes CO2e)

42,110

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

3,825,000

Investment required (unit currency – as specified in C0.4)

8,000,000

Payback period

1-3 years

Estimated lifetime of the initiative

16-20 years

Comment

Upstream
Redirect of a vent to flare.

Initiative category & Initiative type

Fugitive emissions reductions
Oil/natural gas methane leak capture/prevention

Estimated annual CO2e savings (metric tonnes CO2e)

22,200

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

-

Investment required (unit currency – as specified in C0.4)

14,800,000

Payback period

No payback

Estimated lifetime of the initiative

6-10 years

Comment

Upstream

Methane venting reductions.

Initiative category & Initiative type

Energy efficiency in production processes

Other, please specify

Reduction emissions

Estimated annual CO2e savings (metric tonnes CO2e)

5,960

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

44,444

Investment required (unit currency – as specified in C0.4)

11,000,000

Payback period

>25 years

Estimated lifetime of the initiative

6-10 years

Comment

Upstream

Energy efficiency improvements and venting and flaring reductions.

Initiative category & Initiative type

Energy efficiency in production processes

Other, please specify

Reduction flaring

Estimated annual CO2e savings (metric tonnes CO2e)

428,460

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

315,789

Investment required (unit currency – as specified in C0.4)

1,800,000

Payback period

4-10 years

Estimated lifetime of the initiative

16-20 years

Comment

Upstream
Flaring reduction project.

Initiative category & Initiative type

Energy efficiency in production processes
Other, please specify
Reduction flaring

Estimated annual CO2e savings (metric tonnes CO2e)

250,430

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

16,242,105

Investment required (unit currency – as specified in C0.4)

533,000,000

Payback period

>25 years

Estimated lifetime of the initiative

16-20 years

Comment

Upstream

Flaring reduction project.

Initiative category & Initiative type

Energy efficiency in production processes

Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)

50,960

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

600,000

Investment required (unit currency – as specified in C0.4)

1,100,000

Payback period

1-3 years

Estimated lifetime of the initiative

11-15 years

Comment

Upstream
Compressor optimisation.

Initiative category & Initiative type

Energy efficiency in production processes
Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)

15,076

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

364,286

Investment required (unit currency – as specified in C0.4)

-

Payback period

<1 year

Estimated lifetime of the initiative

21-30 years

Comment

Upstream
Energy efficiency improvement.

Initiative category & Initiative type

Energy efficiency in production processes
Other, please specify: Reduce emissions, increase operational efficiency

Estimated annual CO2e savings (metric tonnes CO2e)

12,224

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

1,320,000

Investment required (unit currency – as specified in C0.4)

9,000,000

Payback period

4-10 years

Estimated lifetime of the initiative

6-10 years

Comment

Upstream

Suite of projects to reduce flaring, increase operational efficiency and reduce methane emissions.

Initiative category & Initiative type

Other, please specify

Other, please specify

Reduce flaring

Estimated annual CO2e savings (metric tonnes CO2e)

34,000

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

1,275,862

Investment required (unit currency – as specified in C0.4)

10,000,000

Payback period

4-10 years

Estimated lifetime of the initiative

21-30 years

Comment

Upstream
Flaring reduction project.

Initiative category & Initiative type

Other, please specify
Other, please specify: Reduce flaring

Estimated annual CO2e savings (metric tonnes CO2e)

21,800

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

-

Investment required (unit currency – as specified in C0.4)

-

Payback period

No payback

Estimated lifetime of the initiative

3-5 years

Comment

Upstream
Various projects to reduce flaring.

Initiative category & Initiative type

Fugitive emissions reductions

Other, please specify: Reduce venting

Estimated annual CO2e savings (metric tonnes CO2e)

15,060

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

457,143

Investment required (unit currency – as specified in C0.4)

1,000,000

Payback period

1-3 years

Estimated lifetime of the initiative

11-15 years

Comment

Upstream

Projects to reduce venting emissions including replacing pneumatics.

Initiative category & Initiative type

Energy efficiency in production processes

Other, please specify: Various energy improvement items

Estimated annual CO2e savings (metric tonnes CO2e)

105,550

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

-

Investment required (unit currency – as specified in C0.4)

-

Payback period

No payback

Estimated lifetime of the initiative

Ongoing

Comment

Integrated Gas

A number of smaller projects that have been bundled together which are largely part of energy efficiency improvement.

(C4.3c) What methods do you use to drive investment in emissions reduction activities?

Method	Comment
--------	---------

Compliance with regulatory requirements/standards	For Shell, the most significant carbon pricing mechanisms are established in the EU, Canada, Singapore and the USA.
Internal price on carbon	(Annual Report 2020, p99) GHG elements in the business plans consist of a GHG-emissions forecast, GHG-abatement plan and GHG costs. To assess the resilience of new projects, we consider the potential costs associated with operational GHG emissions. We have developed country-specific short-, medium- and long-term estimates of future carbon costs which are reviewed and updated annually. By 2050, our real-terms carbon cost estimates for all countries are expected to increase to at least \$100 per tonne of GHG emissions.
Internal incentives/recognition programs	<p>(Shell Energy Transition Strategy 2021) Scorecard: Starting in 2021, we are increasing the weight associated with GHG emissions management in the annual scorecard, which helps determine the annual bonus levels for all our employees, including members of the Executive Committee. The GHG emissions intensity metric and its weight (10%) will remain unaltered, but we will add a new metric that measures the execution of GHG-abatement projects with a weight of 5%.</p> <p>(Annual Report 2020, p96) Performance Share Plan (PSP): The energy transition condition was included again in the 2020 LTIP awards for Executive Directors and senior executives and was also incorporated into the Performance Share Plan awards made to around 16,500 employees globally.</p> <p>For 2021 awards made under the PSP the weighting of the energy transition condition has doubled from 5% to 10%.</p> <p>(Annual Report 2020, p170) Long term Incentive Plan: We have significantly raised our net carbon intensity target in step with achieving a 1.5 °C future. We will measure this using our NCF metric. Meaningful carbon intensity reductions will require significant business transformations with longer timescales and are therefore best reflected in the LTIP. We are increasing the weighting of the energy transition condition to account for 20% of the LTIP (up from 10%), putting it on the same level as the financial measures (TSR, CFFO, FCF and ROACE), which will each account for 20% of the LTIP.</p>
Partnering with governments on technology development	<p>(Shell Energy Transition Strategy 2021) All parts of society including energy producers, consumers and policymakers will need to take action. That is why Shell's strategy is based on working with our customers and others to accelerate the transition of the energy system. This includes supporting government policies that will help the world achieve net-zero emissions by 2050.</p> <p>Accelerating the pace of CCS deployment requires continued collaboration between governments, industry and</p>

	investors, among others, to help unlock financing capacity, accelerate technology development and encourage public support. In Norway, Shell, our project partners and the Norwegian government have taken the final investment decision on the Northern Lights CCS project. This transformative project aims to become the first carbon storage facility with capacity to transport and store CO2 from industrial facilities in Norway and potentially from across Europe.
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(C4.5) Do you classify any of your existing goods and/or services as low-carbon products or do they enable a third party to avoid GHG emissions?

Yes

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products or that enable a third party to avoid GHG emissions.

Level of aggregation

Group of products

Description of product/Group of products

Integrated Gas business

In 2020, gas accounted for around 47% of Shell's total production. We are a leading producer, marketer and trader of liquefied natural gas (LNG) and gas-to-liquids (GTL) products. In our new strategy, launched in February 2021, one of the energy transition milestones by 2030 is that we expect the percentage of total gas production in our portfolio to gradually rise to around 55% or more. (Annual Report 2020, p46)

Are these low-carbon product(s) or do they enable avoided emissions?

Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify

Shell Net Carbon Footprint model (quantification and tracking of GHG emissions from entire life cycle of energy products including produced by Shell but also sold by Shell, including those sourced from 3rd parties, see link in comment box)

% revenue from low carbon product(s) in the reporting year

20.32

Comment

Note: calculation basis for “% revenue from low carbon product(s) in the reporting year”:

(Annual Report 2020, p17, Segmental Reporting)

Total revenue across all segments: \$180,543 million.

Revenue from Integrated Gas, including inter-segment sales: \$36,697 million.

= Revenue %, based on the above is about 20.32%.

Sustainability Report 2020, p45

Natural gas emits 45-55% fewer greenhouse gas emissions than coal when used to generate electricity, according to IEA data. Increasing the role that gas plays in the energy mix is one way countries can take action as the world moves to a low-carbon future.

Gas will help us achieve our target, in step with society’s progress towards meeting the Paris Agreement goal, to become a net-zero emissions energy business by 2050.

Find more information on Shell’s Net Carbon Footprint model: The Net Carbon Footprint Model: Methodology

(https://www.shell.com/energy-and-innovation/the-energy-future/what-is-shells-net-carbon-footprint-ambition/_jcr_content/par/expandablelist_copy_/expandablesection_49667105.stream/1586968094020/863276ce89c1204cc35997c56925b8f97818b458/the-ncf-methodology-rev.pdf)

Level of aggregation

Group of products

Description of product/Group of products

(Annual Report 2020, p50) Renewables and Energy Solutions includes power generation, trading and supply, hydrogen and nature-based solutions.

The Renewables and Energy Solutions portfolio is being built through organic growth and acquisitions. Most of these opportunities are in sectors that are different from Shell’s existing oil and gas businesses but have some similarities and/or adjacencies to our downstream and gas and power trading businesses.

Sustainability Report 2020, p48-50

Renewable electricity: We supply 100% certified renewable electricity to more than 900,000 homes in Great Britain through Shell Energy Retail. There we recently launched a range of carbon-neutral energy tariffs to meet growing interest from households for energy with a lower-carbon footprint. The Go Further tariffs offset the life-cycle CO₂-equivalent emissions associated with the production, distribution and use of renewable electricity and gas in the home.

Wind: We are expanding our wind power activities to make more renewable electricity available to our customers. At the end of 2020, the Shell share of total installed capacity combined from onshore and offshore wind was 290 megawatts (MW), with a further Shell share of 2,861 MW in development. We have wind power interests in several countries, including off the coasts of the Netherlands and the USA, as well as onshore USA.

Solar: We are expanding our solar power generation capability by investing in the development and operation of long-term commercial and industrial solar projects, including at our own sites.

At the end of 2020, our share of installed solar power capacity was 674 megawatts (MW), with 1,053 MW in development.

Hydrogen: E.g., 10-megawatt electrolyser at our Rheinland refinery/Germany; exploring several integrated hydrogen projects including electrolysers for industrial and mobility demand in China, Germany and the Netherlands.

Biofuels: In 2020, around 9.5 billion litres of biofuels went into Shell's petrol and diesel worldwide. This helped us to make progress towards achieving our climate ambition while complying with applicable mandates and targets in the markets where we operate.

Are these low-carbon product(s) or do they enable avoided emissions?

Low-carbon product and avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify

Shell Net Carbon Footprint model (quantification and tracking of GHG emissions from entire life cycle of energy products including produced by Shell but also sold by Shell, including those sourced from 3rd parties, see link in comment box)

% revenue from low carbon product(s) in the reporting year

1.45

Comment

Note: The calculation basis for the "% revenue from low carbon product(s) in the reporting year" is reflected by Shell's "cash flow from operations" figures as disclosed through:

Strategy Day 2021 presentation / Cash flow from operating activities: Renewables and Energy Solutions: (2020) \$493 million (of \$34,105 million overall, results in about 1.45%).

(C-OG4.6) Describe your organization's efforts to reduce methane emissions from your activities.

Introduction

We use a range of methods and technologies to limit leaks of methane from our oil and gas operations, including implementing leak detection and repair programmes. We use the best existing technologies and invest increasingly in emerging technologies, such as drones and other aircraft equipped with optical gas imaging cameras, and satellites to detect leaks.

Collaboration

We encourage industry-wide action on methane emissions reduction by participating in voluntary initiatives. In 2020, we:

- were a founding signatory to the Oil and Gas Methane Partnership 2.0, which is designed to enhance methane emissions reporting and transparency and encourage greater participation across the industry;
- proposed recommendations to the European Commission on reducing methane emissions in the oil and gas industry, alongside BP, the Environmental Defense Fund, Eni, Equinor, the Florence School of Regulation, Repsol, the Rocky Mountain Institute, Total and Wintershall Dea; and
- advocated a return to the direct regulation of methane under the Clean Air Act in the USA.

We also participate in the Methane Guiding Principles coalition, which we initiated in 2017; the Oil and Gas Climate Initiative (OGCI) where methane is a focus area; and the Oil and Gas Methane Partnerships - a multi-stakeholder partnership focusing on improved methane emissions reporting and abatement.

Performance

Our target is to maintain methane emissions intensity below 0.20% by 2025. This target covers all Upstream and Integrated Gas oil and gas assets for which Shell is the operator. In 2020, our methane intensity averaged 0.06% for assets with marketed gas and 0.01% for assets without marketed gas. Shell's methane emissions intensity in 2020 ranged from below 0.01% to 0.6%.

In 2020, our total methane emissions were 67 thousand tonnes compared with 91 thousand tonnes in 2019, in part driven by divestments (for example, in Canada and the USA) and decreased flaring. Methane emissions were less than 5% of Shell's GHG emissions on a CO2-equivalent basis. More than 60% of our reported methane emissions in 2020 came from flaring and venting in our upstream and midstream (for example, storage and processing) operations.

(C-OG4.7) Does your organization conduct leak detection and repair (LDAR) or use other methods to find and fix fugitive methane emissions from oil and gas production activities?

Yes

(C-OG4.7a) Describe the protocol through which methane leak detection and repair or other leak detection methods, are conducted for oil and gas production activities, including predominant frequency of inspections, estimates of assets covered, and methodologies employed.

Introduction

Efforts to address climate change therefore require the industry to reduce both deliberate and unintended methane emissions from production to the final consumer. It is important that the gas industry continues to monitor and reduce methane emissions. This includes wider implementation of leak detection and repair programmes which use infrared cameras.

LDAR Recommended Practice

We updated our recommended practice for LDAR in 2019 to support our assets in improving the identification, quantification and repair of methane emissions from leaks and abnormally operating equipment. It was redesigned to reflect evolving approaches, our methane commitments and to help LDAR practitioners within our assets find the tools and gain the knowledge they need to successfully reduce methane leaks with their methane improvement programmes.

We use LDAR programmes across Shell, with varying levels of maturity and complexity. In 2020, approximately 75% of fugitive emissions in our Upstream and Integrated Gas businesses were covered by LDAR programmes. We also have risk-based fit-for-purpose leak detection programmes in place in our refineries and chemical plants. LDAR programme improvements continue to be featured in business and asset-specific greenhouse gas improvement programs to help achieve our methane, and broader greenhouse gas, aspirations and commitments.

Shell action

Before methane leaks can be stopped, the sources must first be identified. To do this, we use a broad range of methods and technologies. These include implementing leak detection and repair programmes and using the best available technologies – like optical gas imaging cameras – to reduce methane emissions at our sites. Since 2018, a full leak source inventory has been conducted to improve detection and reporting at five facilities including:

1. Pearl Gas to Liquids (GTL), Qatar
2. Shell Middle Distillate Synthesis (SMDS), Malaysia
3. Trinidad and Tobago, Upstream
4. Gasnor LNG, Norway
5. Oman LNG (OLNG) - a non-operated venture

For example, at Pearl GTL in Qatar we scanned 33,000 components and detected 48 leaks, most could be repaired almost immediately.

Shell's Appalachia gas operations have been using an optical gas imaging (OGI) camera to identify methane emission leaks since 2012. More than 400 wells and around 143,000 individual components were inspected during 800 trips to individual wells between 2012 and 2019. This leak inspection programme has not only identified leaks as they occur but has led to less methane leakages over time, with no leaks identified on the last four visits. In 2020, in the Permian Basin, USA, where we have more than 400 sites, we deployed drones with specialised cameras and laser detection technology to detect methane emissions. This enables us to repair leaks and reduce emissions faster and more efficiently by reducing the time inspection teams need to spend at sites.

Fugitive methane emissions contributed ~18% to our total methane emissions in 2020. They decreased by about 20% in 2020 (12kt) compared to 2019 (15kt) (all businesses).

(C-OG4.8) If flaring is relevant to your oil and gas production activities, describe your organization's efforts to reduce flaring, including any flaring reduction targets.

Introduction

We are working to reduce flaring, which contributes to climate change and wastes valuable resources.

Gas routinely produced with oil, known as associated gas, may also be flared. As a signatory to the World Bank's Zero Routine Flaring by 2030 initiative, we continue to pursue our 2015 commitment to eliminate associated gas flaring at our facilities.

Performance

Flaring of gas in our Upstream and Integrated Gas businesses contributed around 6% to our overall direct greenhouse gas (GHG) emissions in 2020. Around 35% of this flaring occurred at facilities where there was no infrastructure to capture the gas produced with oil, known as associated gas. Overall flaring decreased to 3.8 million tonnes of carbon dioxide equivalent in 2020 from 5.9 million tonnes of carbon dioxide equivalent in 2019.

Shell action

The most significant reduction for upstream flaring emissions in 2020 was due to the extended shutdown of the Prelude floating liquefied natural gas facility in Australia, a significant contributor to Shell flaring in 2019.

Also in Australia, Shell affiliate QGC Pty Limited's upstream coal-seam gas facilities reduced flaring by about 65% in 2020 compared with 2019. In the USA, flare reduction continued at our Permian unconventional oil facilities, while in Qatar our Pearl gas-to-liquids plant reduced its GHG emissions from flaring by more than 15% in 2020 compared with 2019.

In Nigeria, the Southern Swamp Associated Gas Solutions project captures gas produced alongside oil in the Niger Delta to help reduce flaring. The Shell Petroleum Development Company of Nigeria Ltd (SPDC) Joint Venture reported a 17% decrease in routine flaring in 2020.

C5. Emissions methodology

(C5.1) Provide your base year and base year emissions (Scopes 1 and 2).

Scope 1

Base year start

January 1, 2019

Base year end

December 31, 2019

Base year emissions (metric tons CO₂e)

70,000,000

Comment

For the reporting year 2020, our base year was 2019.

Our 2019 base year Scope 1 GHG emissions did not change by more than 5% in 2020; therefore, the base year has not been recalculated.

Scope 2 (location-based)

Base year start

-

Base year end

-

Base year emissions (metric tons CO2e)

-

Comment

We use the market-based method for the base year; therefore, we have not recalculated our base year using the location-based method.

Scope 2 (market-based)

Base year start

January 1, 2019

Base year end

December 31, 2019

Base year emissions (metric tons CO2e)

10,000,000

Comment

For the 2020 reporting year, our base year was 2019.

Our 2019 base year Scope 2 GHG emissions (using market-based method) did not change by more than 5% in 2020; therefore, the base year has not been recalculated.

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.

- American Petroleum Institute Compendium of Greenhouse Gas Emissions Methodologies for the Oil and Natural Gas Industry, 2009
- Australia - National Greenhouse and Energy Reporting Act
- ISO 14064-1
- The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)
- The Greenhouse Gas Protocol: Scope 2 Guidance
- US EPA Mandatory Greenhouse Gas Reporting Rule
- Other, please specify: Shell's internal Performance Monitoring and Reporting Specification

(C5.2a) Provide details of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.

Shell assets are required to comply with Shell's Performance Monitoring and Reporting Specification, which sets out the scope of what is to be reported. This is part of our HSSE & SP (Health, Safety, Security, Environment & Social Performance) Control Framework. It requires assets to use local regulated methods for calculating GHG emissions (where they exist). Where there are no local regulated methods, assets use the 2009 API Compendium. The following provides examples of the requirements in the province of Alberta, Canada, and the USA.

Alberta, Canada: What needs to be reported and how GHG emissions are to be calculated is outlined in the Carbon Competitiveness Incentive Regulation (Alberta regulation 255/2017) as amended.

USA: The Code of Federal Regulations Title 40 Chapter I Subchapter C Part 98 contains the requirements. There are several subparts to the rule that apply to our facilities. Examples that apply to our assets are:

- Subpart A General Provisions
- Subpart C General Stationary Fuel Combustion Sources
- Subpart P Hydrogen Production
- Subpart W Petroleum and Natural Gas Systems
- Subpart X Petrochemical Production
- Subpart Y Petroleum Refineries

C6. Emissions data

(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO₂e?

Reporting year

Gross global Scope 1 emissions (metric tons CO₂e)

63,000,000

Start date

January 1, 2020

End date

December 31, 2020

Comment

Emissions have been rounded to the nearest million tonnes CO2 equivalents.

(C6.2) Describe your organization's approach to reporting Scope 2 emissions.

Scope 2, location-based

We are reporting a Scope 2, location-based figure.

Scope 2, market-based

We are reporting a Scope 2, market-based figure.

Comment

We track and report our Scope 2 emissions using both location-based and market-based methods.

(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO2e?

Reporting year

Scope 2, location-based

11,000,000

Scope 2, market-based (if applicable)

9,000,000

Start date

January 1, 2020

End date

December 31, 2020

Comment

Emissions have been rounded to the nearest million tonnes CO2 equivalent.

(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?

Yes

(C6.4a) Provide details of the sources of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure.

Source

Some non-material sources

Relevance of Scope 1 emissions from this source

Emissions are not relevant

Relevance of location-based Scope 2 emissions from this source

No emissions excluded

Relevance of market-based Scope 2 emissions from this source (if applicable)

No emissions excluded

Explain why this source is excluded

We have reported emissions for all businesses including offices. Some non-material sources have not been included. For example, a materiality assessment for our industrial sources has shown the industrial sources to be non-material; therefore, we do not collect the fugitive emissions from domestic scale air conditioning units.

We continue to report the emissions of HFCs and PFCs but we use a single Global Warming Potential (GWP) factor for these gases.

The emissions from some maintenance activities like welding are not included for all operations.

We also do not estimate the fugitive emissions of CO₂ from CO₂ fire extinguishers in all operations.

Source

Country grid factors

Relevance of Scope 1 emissions from this source

No emissions excluded

Relevance of location-based Scope 2 emissions from this source

Emissions are not relevant

Relevance of market-based Scope 2 emissions from this source (if applicable)

Emissions are not relevant

Explain why this source is excluded

Some country electricity grid factors are only available in CO2 and not CO2 equivalents. Where both are available, the difference between them is immaterial (about 1%).

(C6.5) Account for your organization's gross global Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

Evaluation status

Relevant, calculated

Metric tonnes CO2e

147,000,000

Emissions calculation methodology

This value shows estimated well-to-tank emissions from purchased third-party refined oil products, natural gas, LNG, crude oil and biofuels emissions included in our Net Carbon Footprint. It does not include emissions from other purchased goods and services, which are estimated separately (see "Please Explain" box below).

Please explain

We have also estimated the emissions from other purchased goods and services; however, because these emissions were estimated using the operational control boundary, we have not included them in this table.

Please see: www.shell.com/ghg.

Capital goods

Evaluation status

Relevant, not yet calculated

Please explain

We estimated our Scope 3 emissions from capital goods in 2020 to be 4,000,000 tonnes based on the r operational control boundary.

These emissions are published on our website: www.shell.com/ghg.

We have not yet estimated category 2 emissions on equity boundary.

Fuel-and-energy-related activities (not included in Scope 1 or 2)

Evaluation status

Relevant, calculated

Metric tonnes CO2e

104,500,000

Emissions calculation methodology

This value shows estimated well-to-tank emissions from generation of purchased third-party power included in our Net Carbon Footprint (103 million tonnes) and well-to-tank emissions from purchased electricity, steam and heat consumed by our assets (1.5 million tonnes).

Emissions were estimated using a market-based method.

Upstream transportation and distribution

Evaluation status

Not relevant, explanation provided

Please explain

Some emissions from transportation and distribution are already captured under Scope 1 (e.g., emissions from contractor transport operating under contract modes 1 or 2).

Emissions included in category 1 above for purchased third party products include emissions from transportation - we have not estimated them separately.

For information, we separately estimated Scope 3 emissions from upstream transportation and distribution under operational control.

These emissions are published on our website: www.shell.com/ghg.

Waste generated in operations

Evaluation status

Not relevant, explanation provided

Please explain

We have not estimated Scope 3 emissions from waste generated in operations on equity basis. Our assessment of emissions in this category for operated assets shows that these emissions will be immaterial compared to category 11. See: www.shell.com/ghg.

Business travel

Evaluation status

Not relevant, explanation provided

Please explain

We have not estimated Scope 3 emissions from business travel on equity basis. Our assessment of emissions in this category for operated assets shows that these emissions will be immaterial compared to category 11. See: www.shell.com/ghg.

Employee commuting

Evaluation status

Not relevant, calculated

Metric tonnes CO₂e

250,000

Emissions calculation methodology

Estimated maximum emissions from commuting by Shell employees in subsidiaries, joint operations, seconded to non-Shell operated joint operations, joint ventures and associates, assuming each employee travelled 50 km/day. The assessment for 2020 did not include the impact of COVID-19, which resulted in a significant number of employees working from home; therefore, we believe our assessment is conservative.

Upstream leased assets

Evaluation status

Not relevant, explanation provided

Please explain

In line with the International Finance Reporting Standard (IFRS) 16 Leases (adopted by Shell with effect from 1 January 2019), GHG emissions from relevant lease contracts have been included in our 2020 Scope 1 and 2 equity inventory.

Downstream transportation and distribution

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

12,000,000

Emissions calculation methodology

Estimated emissions from transportation and distribution of oil products, LNG, GTL, natural gas, chemicals and lubricants not included in our Scope 1 emissions.

Processing of sold products

Evaluation status

Not relevant, explanation provided

Please explain

We do not track the destination of sold products that undergo further processing; due to diverse application of sold products, it is difficult to obtain reliable figures.

Use of sold products

Evaluation status

Relevant, calculated

Metric tonnes CO2e

1,054,300,000

Emissions calculation methodology

This category includes estimated emissions from sales volumes of oil products, natural gas, LNG, GTL and biofuels. The activity data was taken from Shell's Annual Report or internal financial systems, while the emission factors were taken from the 2009 API Compendium. This category also includes metered amount of CO2 that was captured and transferred to a 3rd party (e.g. sold or given for free) as product or feedstock.

End of life treatment of sold products

Evaluation status

Relevant, calculated

Metric tonnes CO2e

19,000,000

Emissions calculation methodology

Estimated from the amount of chemical and lubricant products sold, their carbon content and assumptions taken from reports such as the ICCA's 2009 Innovations for Greenhouse Gas Reductions.

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Please explain

We have not identified any downstream leased assets in 2020.

Franchises

Evaluation status

Relevant, calculated

Metric tonnes CO2e

2,200,000

Emissions calculation methodology

This number includes the indirect emissions from the operation of Shell branded sites excluding those that are company-owned and -operated or company-owned and dealer-operated. The average electricity data was collected from survey data in several countries. The average CO2/CO2e electricity grid factors were used based on the number of sites in each country.

Investments

Evaluation status

Not relevant, calculated

Metric tonnes CO2e

300,000

Emissions calculation methodology

The data are collected via our investments in major facilities and reflects these facilities' Scope 1 and 2 GHG emissions. These are typically investments that are reported under the cost dividend accounting method and therefore not included in our equity Scope 1 and 2 GHG emissions. The numbers are either reported to us by the facilities or estimated.

(C6.7) Are carbon dioxide emissions from biogenic carbon relevant to your organization?

Yes

(C6.7a) Provide the emissions from biogenic carbon relevant to your organization in metric tons CO2.

CO2 emissions from biogenic carbon (metric tons CO2)	Comment
270	This number reflects biogenic CO2 from direct sources.

(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Intensity figure

0.00059

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)

107,000,000

Metric denominator

unit total revenue

Metric denominator: Unit total

180,543,000,000

Scope 2 figure used

Market-based

% change from previous year

76

Direction of change

Increased

Reason for change

GHG intensity increased in 2020 due to lower revenue (down 48% compared with 2019).

NOTE: Shell does not report emissions intensity in relation to financial performance. In our view, such measures potentially risk misleading readers because:

- a) Emission volumes and financial performance (for example, revenue, EBITDA or net income) are not necessarily reported on the same basis - particularly where emission volumes are reported on the basis of operational control - therefore measures that combine them do not compare like with like in the ratio. It is not possible to report revenue on an operated basis. The ratio shown above was determined using verified direct and energy indirect equity emissions. If operated GHG data were used, the result would be 0.00040 tonne/\$ revenue and a 72% increase from 2019.
- b) Even where emission volumes and financial performance are reported on a consistent basis (for example, on the basis of financial control), the different factors underlying emission volumes and financial performance are often unrelated. A key driver for revenue, for example, is the

price of oil and gas which fluctuates regardless of an entity's volume of emissions. The oil and gas price changed by more than 5% from 2019 to 2020. In 2020, oil markets also experienced unprecedented developments in demand driven by the COVID-19 pandemic. At the start of 2020, global oil demand for the year was expected to grow by 1.2 million barrels per day (b/d). Averaged for the full year, oil demand contracted by around 9 million b/d, or 9%. EBITDA and net income additionally reflect the financial effects of activities that have no impact on emission volumes.

We believe that only activity-related GHG intensity measures provide readers with relevant and reliable information.

(C-OG6.12) Provide the intensity figures for Scope 1 emissions (metric tons CO2e) per unit of hydrocarbon category.

Unit of hydrocarbon category (denominator)

Other, please specify: Tonnes hydrocarbon production available for sale

Metric tons CO2e from hydrocarbon category per unit specified

0.16

% change from previous year

5

Direction of change

Decreased

Reason for change

The Upstream and Integrated Gas GHG intensity – measured in tonnes of CO2 equivalent per tonne of hydrocarbon production available for sale – decreased from 0.168 in 2019 to 0.159 in 2020. This was partly because of our Prelude FLNG asset being shut down in February 2020.

Comment

GHG emissions used to calculate upstream and midstream GHG intensity comprise Scope 1 and 2 emissions. We do not calculate intensity for Scope 1 GHG emissions only.

Unit of hydrocarbon category (denominator)

Other, please specify: Solomon's UEDC™

Metric tons CO2e from hydrocarbon category per unit specified

1.05

% change from previous year

1

Direction of change

Decreased

Reason for change

The Refining GHG intensity – measured in tonnes of CO2 equivalent per Solomon's Utilised Equivalent Distillation Capacity (UEDC™) – decreased from 1.06 in 2019 to 1.05 in 2020. This was mainly driven by divestment of our Martinez refinery in the USA.

Comment

GHG emissions used to calculate upstream and midstream GHG intensity comprise Scope 1 and 2 emissions. We do not calculate intensity for Scope 1 GHG emissions only.

Unit of hydrocarbon category (denominator)

Other, please specify: Tonne of high value chemicals

Metric tons CO2e from hydrocarbon category per unit specified

0.98

% change from previous year

6

Direction of change

Decreased

Reason for change

The Chemicals GHG intensity – measured in tonnes of CO₂ equivalent per tonne of high value chemicals – decreased from 1.04 in 2019 to 0.98 in 2020. This was mainly because of increased utilisation following turnarounds on three of our sites in 2019.

Comment

GHG emissions used to calculate upstream and midstream GHG intensity comprise Scope 1 and 2 emissions. We do not calculate intensity for Scope 1 GHG emissions only.

(C-OG6.13) Report your methane emissions as percentages of natural gas and hydrocarbon production or throughput.

Oil and gas business division

Upstream, Midstream

Estimated total methane emitted expressed as % of natural gas production or throughput at given division

0.06

Estimated total methane emitted expressed as % of total hydrocarbon production or throughput at given division

0.04

Comment

The methane emissions intensity (0.06%) represents the estimated amount of methane emissions for Shell's operated gas and oil assets as a percentage of the amount of the total gas marketed. In 2020, our overall methane intensity was 0.06% for assets with marketed gas and 0.01% for assets without marketed gas (for the assets that have no marketed gas, we used the amount of marketed oil and condensate (e.g., assets that re-inject produced gas)).

Intensities at facility level ranged from below 0.01% to 0.6%. We believe our methane emissions are calculated using the best methods currently available: a combination of industry-standard emission factors (established emission rates per throughput or per piece of equipment), engineering calculations and some actual measurements. There are still uncertainties associated with quantifying methane emissions with the available methodologies. To reduce these uncertainties, our Upstream and Integrated Gas businesses are rolling out methane improvement programmes to further improve data quality and reporting. The improvement programmes will also continue leak detection and repair initiatives, and make use of methane abatement opportunities. By 2025, all Shell-operated facilities are expected to have implemented more robust quantification methodologies. Externally, we continue to work on new technologies and improved quantification methods through partnerships and other initiatives such as the OGCI.

The estimated total methane emitted as a % of total hydrocarbon production (0.04%) reflects the total methane emissions per total hydrocarbon production available for sale in our Upstream and Integrated Gas businesses.

C7. Emissions breakdowns

(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?

Yes

(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).

Greenhouse gas	Scope 1 emissions (metric tons of CO ₂ e)	GWP Reference
CO ₂	61,000,000	IPCC Fourth Assessment Report (AR4 - 100 year) ¹
CH ₄	1,700,000	IPCC Fourth Assessment Report (AR4 - 100 year) ²
N ₂ O	250,000	IPCC Fourth Assessment Report (AR4 - 100 year) ³
HFCs	42,000	IPCC Fourth Assessment Report (AR4 - 100 year) ⁴
PFCs	0	IPCC Fourth Assessment Report (AR4 - 100 year)
SF ₆	200	IPCC Fourth Assessment Report (AR4 - 100 year) ⁵
NF ₃	0	IPCC Fourth Assessment Report (AR4 - 100 year)

¹⁻⁵The number is rounded to the nearest million tonnes CO₂ equivalent.

(C-OG7.1b) Break down your total gross global Scope 1 emissions from oil and gas value chain production activities by greenhouse gas type.

Emissions category

Combustion (excluding flaring)

Value chain

Upstream, Midstream

Product

Unable to disaggregate

Gross Scope 1 CO2 emissions (metric tons CO2)

21,500,000

Gross Scope 1 methane emissions (metric tons CH4)

7,000

Total gross Scope 1 emissions (metric tons CO2e)

21,600,000

Comment

The total gross Scope 1 emissions field above only includes CO2 and CH4 emissions. Other GHG emissions are shown separately. The numbers have been rounded.

Emissions category

Flaring

Value chain

Upstream, Midstream

Product

Unable to disaggregate

Gross Scope 1 CO2 emissions (metric tons CO2)

3,400,000

Gross Scope 1 methane emissions (metric tons CH4)

13,000

Total gross Scope 1 emissions (metric tons CO2e)

3,800,000

Comment

The total gross Scope 1 emissions field above only includes CO2 and CH4 emissions. Other GHG emissions are shown separately. The numbers have been rounded.

Emissions category

Venting

Value chain

Upstream, Midstream

Product

Unable to disaggregate

Gross Scope 1 CO2 emissions (metric tons CO2)

340,000

Gross Scope 1 methane emissions (metric tons CH4)

23,000

Total gross Scope 1 emissions (metric tons CO2e)

900,000

Comment

The total gross Scope 1 emissions field above only includes CO2 and CH4 emissions. Other GHG emissions are shown separately. The numbers have been rounded.

Emissions category

Fugitives

Value chain

Upstream, Midstream

Product

Unable to disaggregate

Gross Scope 1 CO2 emissions (metric tons CO2)

16,000

Gross Scope 1 methane emissions (metric tons CH4)

11,000

Total gross Scope 1 emissions (metric tons CO2e)

300,000

Comment

The total gross Scope 1 emissions field above only includes CO2 and CH4 emissions. Other GHG emissions are shown separately. The numbers have been rounded.

Emissions category

Process (feedstock) emissions

Value chain

Upstream, Midstream

Product

Unable to disaggregate

Gross Scope 1 CO2 emissions (metric tons CO2)

2,000

Gross Scope 1 methane emissions (metric tons CH4)

5,000

Total gross Scope 1 emissions (metric tons CO2e)

100,000

Comment

The total gross Scope 1 emissions field above only includes CO2 and CH4 emissions. Other GHG emissions are shown separately. The numbers have been rounded.

Emissions category

Combustion (excluding flaring), Flaring, Venting, Fugitives, Process (feedstock) emissions

Value chain

Upstream, Midstream

Product

Unable to disaggregate

Gross Scope 1 CO2 emissions (metric tons CO2)

0

Gross Scope 1 methane emissions (metric tons CH4)

0

Total gross Scope 1 emissions (metric tons CO2e)

200,000

Comment

Includes total N2O, HCF and SF6 emissions in CO2 equivalents. The numbers have been rounded.

Emissions category

Combustion (excluding flaring)

Value chain

Downstream

Product

Unable to disaggregate

Gross Scope 1 CO2 emissions (metric tons CO2)

28,700,000

Gross Scope 1 methane emissions (metric tons CH4)

4,000

Total gross Scope 1 emissions (metric tons CO2e)

28,800,000

Comment

The total gross Scope 1 emissions field above only includes CO2 and CH4 emissions. Other GHG emissions are shown separately. The numbers have been rounded.

Emissions category

Flaring

Value chain

Downstream

Product

Unable to disaggregate

Gross Scope 1 CO2 emissions (metric tons CO2)

970,000

Gross Scope 1 methane emissions (metric tons CH4)

2,000

Total gross Scope 1 emissions (metric tons CO2e)

1,000,000

Comment

The total gross Scope 1 emissions field above only includes CO2 and CH4 emissions. Other GHG emissions are shown separately. The numbers have been rounded.

Emissions category

Venting

Value chain

Downstream

Product

Unable to disaggregate

Gross Scope 1 CO2 emissions (metric tons CO2)

3,000

Gross Scope 1 methane emissions (metric tons CH4)

200

Total gross Scope 1 emissions (metric tons CO2e)

10,000

Comment

The total gross Scope 1 emissions field above only includes CO2 and CH4 emissions. Other GHG emissions are shown separately. The numbers have been rounded.

Emissions category

Fugitives

Value chain

Downstream

Product

Unable to disaggregate

Gross Scope 1 CO2 emissions (metric tons CO2)

4,000

Gross Scope 1 methane emissions (metric tons CH4)

1,000

Total gross Scope 1 emissions (metric tons CO2e)

40,000

Comment

The total gross Scope 1 emissions field above only includes CO2 and CH4 emissions. Other GHG emissions are shown separately. The numbers have been rounded.

Emissions category

Process (feedstock) emissions

Value chain

Downstream

Product

Unable to disaggregate

Gross Scope 1 CO2 emissions (metric tons CO2)

5,600,000

Gross Scope 1 methane emissions (metric tons CH4)

400

Total gross Scope 1 emissions (metric tons CO2e)

5,700,000

Comment

The total gross Scope 1 emissions field above only includes CO2 and CH4 emissions. Other GHG emissions are shown separately. The numbers have been rounded.

Emissions category

Combustion (excluding flaring), Flaring, Venting, Fugitives, Process (feedstock) emissions

Value chain

Downstream

Product

Unable to disaggregate

Gross Scope 1 CO2 emissions (metric tons CO2)

0

Gross Scope 1 methane emissions (metric tons CH4)

0

Total gross Scope 1 emissions (metric tons CO2e)

100,000

Comment

Includes total N2O, HCF and SF6 emissions in CO2 equivalents. The numbers have been rounded.

(C7.2) Break down your total gross global Scope 1 emissions by country/region.

Country/Region	Scope 1 emissions (metric tons CO2e)
United States of America ¹	16,000,000
Middle East ²	9,000,000
Netherlands ³	7,000,000
Canada ⁴	5,000,000
Singapore ⁵	6,000,000
Nigeria ⁶	5,000,000
Germany ⁷	3,000,000
Malaysia ⁸	3,000,000
Australia ⁹	4,000,000

United Kingdom of Great Britain and Northern Ireland ¹⁰	2,000,000
Other, please specify: International Waters ¹¹	1,000,000
Other, please specify: Rest of World ¹²	3,000,000

¹⁻¹²Emissions have been rounded.

(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.

By business division

(C7.3a) Break down your total gross global Scope 1 emissions by business division.

Business division	Scope 1 emissions (metric ton CO2e)
Upstream	12,800,000
Integrated Gas	14,100,000
Downstream	35,700,000

(C-OG7.4) Break down your organization's total gross global Scope 1 emissions by sector production activity in metric tons CO2e.

	Gross Scope 1 emissions, metric tons CO2e	Comment
Oil and gas production activities (upstream)	26,900,000	Includes Upstream and Integrated Gas businesses
Oil and gas production activities (midstream)		
Oil and gas production activities (downstream)	35,700,000	

(C7.5) Break down your total gross global Scope 2 emissions by country/region.

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted for in Scope 2 market-based approach (MWh)
United States of America ¹	3,100,000	3,100,000	13,800,000	60,000

Canada ²	1,900,000	1,800,000	6,700,000	0
Australia ³	2,600,000	1,400,000	4,700,000	1,390,000
Netherlands ⁴	1,800,000	1,800,000	6,600,000	30,000
Germany ⁵	300,000	300,000	1,200,000	10,000
Singapore ⁶	500,000	500,000	2,400,000	0
Other, please specify: Rest of World ⁷	400,000	300,000	3,100,000	340,000

¹⁻⁷Emissions have been rounded.

(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.

By business division

(C7.6a) Break down your total gross global Scope 2 emissions by business division.

Business division	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Upstream	600,000	600,000
Integrated Gas	2,600,000	1,500,000
Downstream	7,200,000	7,000,000

(C-OG7.7) Break down your organization's total gross global Scope 2 emissions by sector production activity in metric tons CO2e.

	Scope 2, location-based, metric tons CO2e	Scope 2, market-based (if applicable), metric tons CO2e	Comment
Oil and gas production activities (upstream)	3,200,000	2,100,000	Includes Upstream and Integrated Gas businesses
Oil and gas production activities (midstream)	-	-	-

Oil and gas production activities (downstream)	7,200,000	7,000,000	Includes Downstream business (including Shipping)
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(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?

Decreased

(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined), and for each of them specify how your emissions compare to the previous year.

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	80,000	Decreased	0.1	In 2020, our energy indirect GHG emissions decreased by around 0.08 million tonnes CO2e due to renewable energy consumption, which translates to a reduction of 0.1% of our total Scope 1 and 2 GHG emissions in 2019 (80 million tonnes). We arrived at 0.1% through $(0.08/80)*100$.
Other emissions reduction activities	1,300,000	Decreased	1.7	In 2020, our emissions decreased by around 1.3 million tonnes of GHG due to our emission reduction projects, which translates to a reduction of 1.7% of our total Scope 1 and 2 GHG emissions in 2019 (80 million tonnes CO2e). We arrived at 1.7% through $(1.3 / 80)*100$. Note that this number does NOT include 0.94 million tonnes of CO2 captured and sequestered by the Quest CCS project in Canada in 2020.
Divestment	4,800,000	Decreased	6	In 2020, our emissions decreased by around 4.8 million tonnes of GHG due to divestments (e.g. in USA, Bolivia and India), which translates to a decrease of 6.0% of our total Scope 1 and 2 GHG emissions in 2019 (80 million tonnes CO2e). We arrived at 6.0% through $(4.8/80)*100$.

Acquisitions	240,000	Increased	0.3	In 2020, our emissions increased by around 0.24 million tonnes of GHG due to acquisitions of ERM Power (Neerabup and Oakey) in November 2019 and Tejas (USA) in 2019.
Mergers	0	No change		
Change in output	3,200,000	Decreased	4	In 2020, our emissions decreased by around 3.2 million tonnes of CO2 equivalents due to a change in output, which translates to a decrease of 4.0% of our total Scope 1 and 2 GHG emissions in 2019 (80 million tonnes CO2e). We arrived at 4.0% through $(3.2/80)*100$.
Change in methodology	60,000	Decreased	0.1	In 2020, our emissions decreased by around 0.06 million tonnes of CO2 equivalents due to changes in methodology, which translates to a decrease of 0.1% of our total Scope 1 and 2 GHG emissions in 2019 (80 million tonnes CO2e). We arrived at 0.1% through $(0.06/80)*100$.
Change in boundary	1,000,000	Increased	1.3	In 2020, our emissions increased by around 1 million tonnes of CO2 equivalents due to changes in boundary, which translates to an increase of 1.3% of our total Scope 1 and 2 GHG emissions for 2019 (80 million tonnes CO2e). We arrived at 1.3% through $(1/80)*100$.
Change in physical operating conditions	0	No change	0	-
Unidentified	0	No change	0	-
Other	350,000	Increased	0.4	In 2020, our emissions increased by around 0.35 million tonnes of CO2 equivalents due to other reasons, which translates to an increase of 0.4% of our total Scope 1 and 2 GHG emissions in 2019 (80 million tonnes CO2e). We arrived at 0.2% through $(0.35/80)*100$.

(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Market-based

C8. Energy

(C8.1) What percentage of your total operational spend in the reporting year was on energy?

More than 5% but less than or equal to 10%

(C8.2) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertook this energy-related activity in the reporting year
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	No
Consumption of purchased or acquired steam	Yes
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	Yes

(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	LHV (lower heating value)	0	201,600,000	201,600,000
Consumption of purchased or acquired electricity		1,800,000	20,100,000	21,900,000
Consumption of purchased or acquired steam		0	16,500,000	16,500,000

Consumption of self-generated non-fuel renewable energy		10,000		10,000
Total energy consumption		1,800,000	238,200,000	240,000,000

(C8.2b) Select the applications of your organization's consumption of fuel.

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	Yes
Consumption of fuel for the generation of heat	No
Consumption of fuel for the generation of steam	Yes
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	Yes

(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.**Fuels (excluding feedstocks)****Natural Gas****Heating value**

LHV (lower heating value)

Total fuel MWh consumed by the organization

25,000,000

MWh fuel consumed for self-generation of electricity

25,000,000

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-cogeneration or self-trigeneration

0

Emission factor

0.059

Unit

metric tons CO₂e per million Btu

Emissions factor source

2009 API Compendium, table 4-3

The above emission factor is provided for illustrative purposes. Shell assets are required to comply with Shell's Performance Monitoring and Reporting Specification, which sets out the scope of what is to be reported. This Specification is part of our HSSE&SP (Health, Safety, Security, Environment & Social Performance) Control Framework. It requires assets to use local regulated methods and factors where they exist. Where there are no local regulated methods in place, assets are required to use the highest practicable tier when it comes to the choice of emission factors with the lowest tier using default/standard emission factors from the 2009 API Compendium.

Comment

We do not track fuel consumption by application at global level. The number included under MWh fuel consumed for self-generation of electricity includes generation of electricity, steam and heat for internal use and export because we are unable to split them. Numbers have been rounded.

Fuels (excluding feedstocks)

Other, please specify: Own energy

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

170,000,000

MWh fuel consumed for self-generation of electricity

170,000,000

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-cogeneration or self-trigeneration

0

Emission factor

0.0607

Unit

metric tons CO₂e per million Btu

Emissions factor source

2009 API Compendium, table 4-3

The above emission factor is provided for illustrative purposes. Shell assets are required to comply with Shell's Performance Monitoring and Reporting Specification, which sets out the scope of what is to be reported. This Specification is part of our HSSE&SP (Health, Safety, Security, Environment & Social Performance) Control Framework. It requires assets to use local regulated methods and factors where they exist. Where there are no local regulated methods in place, assets are required to use the highest practicable tier when it comes to the choice of emission factors with the lowest tier using default/standard emission factors from the 2009 API Compendium.

Comment

We do not track fuel consumption by application at global level. The number included under MWh fuel consumed for self-generation of electricity includes generation of electricity, steam and heat for internal use and export because we are unable to split them. Numbers have been rounded.

Fuels (excluding feedstocks)

Other, please specify: Marine Transport

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

6,000,000

MWh fuel consumed for self-generation of electricity

6,000,000

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-cogeneration or self-trigeneration

0

Emission factor

0.0871

Unit

metric tons CO2 per million Btu

Emissions factor source

2009 API Compendium, table 4-3 for motor gasoline (petrol)

The above emission factor is provided for illustrative purposes. Shell assets are required to comply with Shell's Performance Monitoring and Reporting Specification, which sets out the scope of what is to be reported. This Specification is part of our HSSE&SP (Health, Safety, Security, Environment & Social Performance) Control Framework. It requires assets to use local regulated methods and factors where they exist. Where

there are no local regulated methods, assets are required to use the highest practicable tier when it comes to the choice of emission factors with the lowest tier using default/standard emission factors from the 2009 API Compendium.

Comment

We do not track fuel consumption by application at global level. The number included under MWh fuel consumed for self-generation of electricity includes generation of electricity, steam and heat for internal use. Numbers have been rounded.

Fuels (excluding feedstocks)

Other, please specify: Road Transport Fuel

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

70,000

MWh fuel consumed for self-generation of electricity

70,000

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-cogeneration or self-trigeneration

0

Emission factor

0.0746

Unit

metric tons CO2 per million Btu

Emissions factor source

2009 API Compendium, table 4-3 for motor gasoline (petrol)

The above emission factor is provided for illustrative purposes. Shell assets are required to comply with Shell's Performance Monitoring and Reporting Specification, which sets out the scope of what is to be reported. This is part of our HSSE&SP (Health, Safety, Security, Environment & Social Performance) Control Framework. It requires assets to use local regulated methods and factors where they exist. Where there are no local regulated methods, assets are required to use the highest practicable tier when it comes to the choice of emission factors with the lowest tier using default/standard emission factors from the 2009 API Compendium.

Comment

Energy consumption data reflect primary (thermal) energy (e.g. the energy content of fuels used to generate electricity, steam, heat, mechanical energy etc.). Numbers have been rounded.

(C8.2d) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed in the reporting year.

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity			370,000	10,000
Heat				
Steam				
Cooling				

(C8.2e) Provide details on the electricity, heat, steam, and/or cooling amounts that were accounted for at a zero-emission factor in the market-based Scope 2 figure reported in C6.3.

Sourcing method

Unbundled energy attribute certificates, Renewable Energy Certificates (RECs)

Low-carbon technology type

Low-carbon energy mix

Country/area of consumption of low-carbon electricity, heat, steam or cooling

Australia

MWh consumed accounted for at a zero-emission factor

1,390,000

Comment

Numbers have been rounded.

Sourcing method

Unbundled energy attribute certificates, Renewable Energy Certificates (RECs)

Low-carbon technology type

Low-carbon energy mix

Country/area of consumption of low-carbon electricity, heat, steam or cooling

Germany

MWh consumed accounted for at a zero-emission factor

10,000

Comment

Numbers have been rounded.

Sourcing method

Unbundled energy attribute certificates, Renewable Energy Certificates (RECs)

Low-carbon technology type

Low-carbon energy mix

Country/area of consumption of low-carbon electricity, heat, steam or cooling

Netherlands

MWh consumed accounted for at a zero-emission factor

30,000

Comment

Numbers have been rounded.

Sourcing method

Unbundled energy attribute certificates, Renewable Energy Certificates (RECs)

Low-carbon technology type

Low-carbon energy mix

Country/area of consumption of low-carbon electricity, heat, steam or cooling

United States of America

MWh consumed accounted for at a zero-emission factor

60,000

Comment

Numbers have been rounded.

Sourcing method

Unbundled energy attribute certificates, Renewable Energy Certificates (RECs)

Low-carbon technology type

Low-carbon energy mix

Country/area of consumption of low-carbon electricity, heat, steam or cooling

-

MWh consumed accounted for at a zero-emission factor

340,000

Comment

We have left the country/area of consumption blank because disaggregated “by country” data is not available. Numbers have been rounded.

C9. Additional metrics

(C9.1) Provide any additional climate-related metrics relevant to your business.

-

(C-OG9.2a) Disclose your net liquid and gas hydrocarbon production (total of subsidiaries and equity-accounted entities).

	In-year net production	Comment
Crude oil and condensate, million barrels	641	Shell Annual Report and Accounts 2020, p66 Please note that we report the sum of crude oil and natural gas liquids.
Natural gas liquids, million barrels	641	Shell Annual Report and Accounts 2020, p66 Please note that we report the sum of crude oil and natural gas liquids.
Oil sands, million barrels (includes bitumen and synthetic crude)	19	Shell Annual Report and Accounts 2020, p66
Natural gas, billion cubic feet	3,360	Shell Annual Report and Accounts 2020, p67

(C-OG9.2b) Explain which listing requirements or other methodologies you use to report reserves data. If your organization cannot provide data due to legal restrictions on reporting reserves figures in certain countries, please explain this.

See Shell Annual Report and Accounts 2020 pages 61-69 and pages 265-282. Key extracts:

PROVED RESERVES

Proved reserves estimates are calculated pursuant to the US Securities and Exchange Commission (SEC) Rules and the FASB's Topic 932. Proved reserves can be either developed or undeveloped. The definitions used are in accordance with the SEC Rule 4–10 (a) of Regulation S-X. We include proved reserves associated with future production that will be consumed in operations. Proved reserves shown are net of any quantities of crude oil or natural gas that are expected to be (or could be) taken as royalties in kind. Proved reserves outside North America include quantities that will be settled as royalties in cash. Proved reserves include certain quantities of crude oil or natural gas that will be produced under arrangements that involve Shell subsidiaries, joint ventures and associates in risks and rewards but do not transfer title of the product to those entities. Subsidiaries' proved reserves at December 31, 2020, were divided into 85% developed and 15% undeveloped on a barrel of oil equivalent basis. For the Shell share of joint ventures and associates, the proved reserves at December 31, 2020, were divided into 88% developed and 12% undeveloped on a barrel of oil equivalent basis. Proved reserves are recognised under various forms of contractual agreements. Shell's proved reserves volumes at December 31, 2020, present in agreements such as production-sharing contracts (PSC), tax/ variable royalty contracts or other forms of economic entitlement contracts, where the Shell share of reserves can vary with commodity prices, were 2,044 million barrels of crude oil and natural gas liquids, and 12,133 thousand million standard cubic feet (scf) of natural gas. Proved reserves cannot be measured exactly because estimation of reserves involves subjective judgement (see "Risk factors" on page 31 and our "Proved reserves assurance process" below). These estimates remain subject to revision and are unaudited supplementary information.

PROVED RESERVES ASSURANCE PROCESS

A central group of reserves experts, who on average have around 25 years' experience in the oil and gas industry, undertake the primary assurance of the proved reserves bookings. This group of experts is part of the Resources Assurance and Reporting (RAR) organisation within Shell. A Vice President with 35 years' experience in the oil and gas industry currently heads the RAR organisation. He is a member of the Society of Petroleum Engineers, Society of Petroleum Evaluation Engineers and holds a BA in mathematics from Oxford University and an MEng in Petroleum Engineering from Heriot-Watt University. The RAR organisation reports directly to an Executive Vice President of Finance, who is a member of the Upstream Reserves Committee (URC). The URC is a multidisciplinary committee consisting of senior representatives from the Finance, Legal, Projects & Technology and Upstream organisations. The URC reviews and endorses all major (larger than 20 million barrels of oil equivalent) proved reserves bookings and de-bookings and endorses the total aggregated proved reserves. Final approval of all proved reserves bookings remains with Shell's Executive Committee, and all proved reserves bookings are reviewed by Shell's Audit Committee. The Internal Audit function also provides secondary assurance through audits of the control framework.

(C-OG9.2c) Disclose your estimated total net reserves and resource base (million boe), including the total associated with subsidiaries and equity-accounted entities.

Estimated total net proved + probable reserves (2P) (million BOE)	Estimated total net proved + probable + possible reserves (3P) (million BOE)	Estimated net total resource base (million BOE)	Comment
9,124			Only proved reserves are reported. See Shell Annual Report and Accounts 2020 pages 61-69 and pages 265-282 for full details.

(C-OG9.2d) Provide an indicative percentage split for 2P, 3P reserves, and total resource base by hydrocarbon categories.

	Net proved + probable reserves (2P) (%)	Net proved + probable + possible reserves (3P) (%)	Net total resource base (%)	Comment
Crude oil/ condensate/ natural gas liquids				Only proved reserves are reported. See Shell Annual Report and Accounts 2020 pages 61-69 and pages 265-282 for full details. See page 63 for a summary of proved reserves.
Natural gas				Only proved reserves are reported. See Shell Annual Report and Accounts 2020 pages 61-69 and pages 265-282 for full details. See page 63 for a summary of proved reserves.
Oil sands (includes bitumen and synthetic crude)				Only proved reserves are reported. See Shell Annual Report and Accounts 2020 pages 61-69 and pages 265-282 for full details. See page 63 for a summary of proved reserves.

(C-OG9.2e) Provide an indicative percentage split for production, 1P, 2P, 3P reserves, and total resource base by development types.

-

(C-OG9.3a) Disclose your total refinery throughput capacity in the reporting year in thousand barrels per day.

Total refinery throughput capacity (Thousand barrels per day)

Capacity	2,750
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(C-OG9.3b) Disclose feedstocks processed in the reporting year in million barrels per year.

	Throughput (Million barrels)	Comment
Oil	687	Refinery processing intake page 75 of Shell Annual Report and Accounts 2020. Crude oil = 1,876 thousand barrels/day = 1,876 x 366 days = 686,616
Other feedstocks	68	Refinery processing intake page 75 of Shell Annual Report and Accounts 2020. Feedstocks = 187 thousand barrels/day = 187 x 366 days = 68,442
Total	755	Refinery processing intake page 75 of Shell Annual Report and Accounts 2020. Feedstocks = 2,063 thousand barrels/day = 2,063 x 366 days = 68,442

(C-OG9.3c) Are you able to break down your refinery products and net production?

Yes

(C-OG9.3d) Disclose your refinery products and net production in the reporting year in million barrels per year.

Product produced	Refinery net production (Million barrels) *not including products used/consumed on site
Gasolines	282.18
Kerosenes	57.82
Other, please specify: gas / diesel oils	283.28
Fuel oils	51.24
Other, please specify: other	102.11

(C-OG9.3e) Please disclose your chemicals production in the reporting year in thousand metric tons.

Product	Production, Thousand metric tons	Capacity, Thousand metric tons
Other, please specify Ethylene (Annual Report 2020, p79)		6,499

Other, please specify Styrene monomer (Annual Report 2020, p79)		3,009
Other, please specify Ethylene glycol (Annual Report 2020, p79)		2,675
Other, please specify Higher olefins (Annual Report 2020, p79)		1,390
Other, please specify For above data points, note: in scope are our major chemical plants; more information: Shell Annual Report 2020: p77: Chemical plants utilisation; p79: additional products (aromatics, lower olefins, intermediates, polyethylene, polypropylene, other)		

(C-OG9.6) Does your organization invest in research and development (R&D) of low-carbon products or services related to your sector activities?

Investment in low-carbon R&D	Comment
Yes	<p>Annual Report 2020, p16/17</p> <p>Our organisation (extract):</p> <p>In New Energies, which was rebranded to Renewables and Energy Solutions in 2021, we are exploring emerging opportunities and investing in those where we believe sufficient commercial value is available. We focus on new fuels for transport, such as advanced biofuels, hydrogen and charging for battery-electric vehicles; and power, including from natural gas and low-carbon sources such as wind and solar.</p> <p>...</p> <p>Technology and innovation are essential to our efforts to meet the world's energy needs in a competitive way. If we do not develop the right technology, do not have access to it or do not deploy it effectively, this could have a material adverse effect on the delivery of our strategy and our licence to operate (see Annual Report 2020, "Risk factors" p28-37).</p> <p>We continually look for technologies and innovations of potential relevance to our business. Our Chief Technology Officer oversees the development and deployment of new and differentiating technologies and innovations across Shell, seeking to align business and</p>

	<p>technology requirements throughout our technology maturation process.</p> <p>In 2020, research and development expenses were \$907 million, compared with \$962 million in 2019, and \$986 million in 2018. Our main technology centres are in India, the Netherlands and the USA, with other centres in Brazil, China, Germany, Oman, and Qatar. A strong patent portfolio underlies the technology that we employ in our various businesses. In total, we have around 8,480 granted patents and pending patent applications.</p>
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(C-OG9.6a) Provide details of your organization's investments in low-carbon R&D for your sector activities over the last three years.

Technology area	Stage of development in the reporting year	Average % of total R&D investment over the last 3 years	R&D investment figure in the reporting year (optional)	Comment
<p>Other, please specify</p> <p>Various technology areas: covering work for low carbon as well as any other technology categories across all our businesses Upstream, Downstream, Integrated Gas/New Energies.</p>			907,000,000	<p>Sustainability Report 2020, p53</p> <p>In 2020, we spent \$907 million on research and development (R&D), compared with \$962 million in 2019.</p> <p>Our R&D projects often involve collaborations with public or private entities, including universities, government laboratories, technology start-ups and incubators. This collaborative approach to innovation with partners inside and beyond the energy sector helps spark new ideas and accelerates their development and deployment.</p> <p>In 2020, we started work on 124 R&D projects with universities, which is less than half that of last year due to the disruptions caused by COVID-19. Many of these projects focus on areas that are crucial for low-carbon energy systems, such as energy storage, fuel cells and greenhouse gas emissions.</p>

Renewable energy				<p>Sustainability Report 2020, p53</p> <p>Lower-carbon aviation fuel</p> <p>In 2020, our scientists demonstrated how to produce 500 litres of synthetic kerosene aviation fuel from carbon dioxide, water and renewable energy to replace conventional hydrocarbon feedstocks. In a world first, the synthetic kerosene was blended with conventional jet fuel to power a KLM airlines passenger flight from Amsterdam to Madrid in early 2021.</p> <p>The method can use carbon dioxide from any source, such as waste carbon dioxide from a refinery or biogas facility. We already supply airlines with sustainable aviation fuel refined from waste fats and oils.</p> <p>We are now planning to test the technology at larger scale and use the same process to make chemical feedstocks.</p>
				<p>Sustainability Report 2020, p53</p> <p>High-performance fluids for electric vehicles</p> <p>In 2020, we developed a range of e-fluids specially for battery-electric and fuel-cell electric vans and goods vehicles to help reduce emissions in the commercial road transport sector.</p> <p>Electric and hybrid vehicles require special transmission fluids to lubricate the gearbox, thermal fluids to cool the battery and electric motor, and greases to lubricate electric motor components working at much higher revolutions than internal combustion engines.</p>

				<p>We develop the fluids and greases, in collaboration with our customers, at our Shell Technology Centres worldwide. Read more in e-mobility.</p> <p>We are also using technology to help reduce energy use at data centres).</p>
				<p>Sustainability Report 2020, p53</p> <p>Blockchain for a lower-carbon world</p> <p>We are investing in blockchain, a system in which a record of transactions is stored across a network of computers, as a way of proving the credentials of low-carbon technologies and products. Blockchain provides a secure, transparent and tamper-proof record as no single party controls the computing system supporting it. Changes to the data in one computer must be validated by all computers in the network.</p> <p>Blockchain can make it possible to track low-carbon energy and certificates from their origin through every stage and transaction.</p> <p>We are exploring blockchain as a way of verifying if hydrogen is produced using renewable power and whether carbon credits actually represent the removal of carbon from the atmosphere.</p> <p>For example, by tracking the progress and effectiveness of nature-based solutions for carbon capture or avoided emissions, blockchain could identify and avoid double</p>

				<p>counting of carbon credits and help to maintain the quality of forestry or conservation projects.</p> <p>We have started using this approach in a pilot project that creates digital passports for equipment, so it can be tracked throughout its life cycle. This approach is more efficient and significantly reduces paperwork associated with conventional audit trails.</p> <p>Shell believes blockchain could transform the way companies collaborate and interact to accelerate development of lower-carbon energy.</p>
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(C-OG9.7) Disclose the breakeven price (US\$/BOE) required for cash neutrality during the reporting year, i.e. where cash flow from operations covers CAPEX and dividends paid/ share buybacks.

-

(C-OG9.8) Is your organization involved in the sequestration of CO2?

Yes

(C-OG9.8a) Provide, in metric tons CO2, gross masses of CO2 transferred in and out of the reporting organization (as defined by the consolidation basis).

	CO2 transferred – reporting year (metric tons CO2)
CO2 transferred in	0
CO2 transferred out	304,000

(C-OG9.8b) Provide gross masses of CO2 injected and stored for the purposes of CCS during the reporting year according to the injection and storage pathway.

Injection and storage pathway	Injected CO2 (metric tons CO2)	Percentage of injected CO2 intended for long-term (>100 year) storage	Year in which injection began	Cumulative CO2 injected and stored (metric tons CO2)
CO2 injected into a geological formation or saline formation for long-term storage	940,000	100	August 23, 2015	5,750,000

(C-OG9.8c) Provide clarification on any other relevant information pertaining to your activities related to transfer and sequestration of CO2.

(Sustainability Report 2020, p43)

We invest in projects to capture and store carbon dioxide (CO2) and we are exploring new ways of using CO2 once it has been captured. Carbon capture and storage (CCS) technology is necessary to achieve the goals of the Paris Agreement, according to the majority of climate change scenarios produced by the IEA, IPCC and Shell.

Shell is involved in seven of the 51 large-scale CCS projects globally, listed in 2019 by the Global CCS Institute. Accelerating the pace of CCS deployment requires continued collaboration between governments, industry and investors, among others, to help unlock financing capacity, accelerate technology development and encourage public support. We recognise the scale of the challenge in developing CCS globally as quickly and as widely as needed.

In 2020, Shell invested around \$70 million in CCS. This included progressing opportunities and operating costs for CCS assets in which Shell has an interest. We seek to have access to an additional 25 million tonnes a year of CCS capacity by 2035 – equal to 25 CCS facilities the size of our Quest CCS project in Canada (Shell interest 10%).

We are a member of the Oil and Gas Climate Initiative (OGCI), which is taking steps to unlock large-scale investment in carbon capture, utilisation and storage with a focus on decarbonising industrial hubs around the world, including in Canada, China, Norway, the Netherlands, the UK and the USA. In Norway, we are working with Equinor, Total and the Norwegian government to create a market across Europe for industry to capture and safely store CO2. In 2020, the government approved the final investment decision for the Northern Lights CCS project, which will transport CO2 from industrial sites by ship to a plant on Norway's west coast. CO2 will then be piped to a reservoir around 3,000 metres below the seabed to be safely and permanently stored.

Using ships to transport the captured CO2 enables more sectors to take advantage of CCS technology, for example, industrial companies based far from a pipeline or suitable CO2 reservoir.

We are also part of an industry partnership with BP, Eni, Equinor and Total that in 2020 took ownership of the Net Zero Teesside project, which was launched by the OGCI to build the UK's first zero-carbon industrial cluster. The BP-operated project will build a transportation and storage system to gather industrial CO2, compress it and store it safely in a reservoir under the seabed.

By the end of 2020, our Quest CCS project had captured and safely stored more than 5.5 million tonnes of CO₂ since it began operating in 2015. In Australia, the Chevron-operated Gorgon CCS project (Shell interest 25%), which started operating in August 2019, had stored more than 4 million tonnes of CO₂ by the end of 2020. At point of reporting, Gorgon was the largest CCS operation in the world.

C10. Verification

(C10.1) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	Third-party verification or assurance process in place

(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 emissions and attach the relevant statements.

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

 LRQ4004543_Shell_Int_Group_14064_2020_Op_C_ASt_Feb21_ASRAuthorized.pdf

Page/ section reference

The attachment is a 2-page standalone assurance statement for GHG emissions by Lloyd's Register (LR). The tonnes assured match C6.1 and cover 100% of the inventory. The assertion confirms that the verification covers direct (Scope 1) emissions for 2020. The section "LR's approach" on page 1 references the standard and level of assurance. The opinion is on page 2.

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

(C10.1b) Provide further details of the verification/assurance undertaken for your Scope 2 emissions and attach the relevant statements.

Scope 2 approach

Scope 2 location-based

Verification or assurance cycle in place

Annual process


Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

 LRQ4004543_Shell_Int_Group_14064_2020_Op_C_ASt_Feb21_ASRAuthorized.pdf

Page/ section reference

The attachment is a 2-page standalone assurance statement for GHG emissions by LR. The tonnes assured match C6.3 and cover 100% of the inventory. The assertion confirms that the verification covers energy indirect (Scope 2) emissions (location-based and market-based figures) for 2020. The section "LR's approach" on page 1 references the standard and level of assurance. The opinion is on page 2.

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

Scope 2 approach

Scope 2 market-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

 LRQ4004543_Shell_Int_Group_14064_2020_Op_C_ASt_Feb21_ASRAuthorized.pdf

Page/ section reference

The attachment is a 2-page standalone assurance statement for GHG emissions by LR. The tonnes assured match C6.3 and cover 100% of the inventory. The assertion confirms that the verification covers energy indirect (Scope 2) emissions (location-based and market-based figures) for 2020. The section “LR’s approach” on page 1 references the standard and level of assurance. The opinion is on page 2.

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

(C10.1c) Provide further details of the verification/assurance undertaken for your Scope 3 emissions and attach the relevant statements.

Scope 3 category

Scope 3: Use of sold products

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

 LRQ4004543_Shell_Int_Group_14064_2020_Scope3.pdf

Page/section reference

The attachment is a 2-page standalone assurance statement for part of our Scope 3 GHG emissions. The section “LR’s approach” on page 1 references the level of assurance and the relevant standard. The opinion is on page 2.

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

Scope 3 category

Scope 3: Purchased goods and services

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

 LRQ4004543_Shell_Int_Group_14064_2020_Scope3.pdf

Page/section reference

The attachment is a 2-page standalone assurance statement for part of our Scope 3 GHG emissions. The section “LR's approach” on page 1 references the level of assurance and the relevant standard. The opinion is on page 2.

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

Scope 3 category

Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2)

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

 LRQ4004543_Shell_Int_Group_14064_2020_Scope3.pdf

Page/section reference

The attachment is a 2-page standalone assurance statement for part of our Scope 3 GHG emissions. The section “LR’s approach” on page 1 references the level of assurance and the relevant standard. The opinion is on page 2.

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100


(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?


Yes

(C10.2a) Which data points within your CDP disclosure have been verified, and which verification standards were used?

Disclosure module verification relates to	Data verified	Verification standard	Please explain
C4. Targets and performance	Other, please specify: Shell's 2020 Net Carbon Footprint	The Net Carbon Footprint (NCF) is determined by first estimating the emissions intensity for each of the energy product supply chains in Shell’s portfolio; this is done using established lifecycle analysis principles and includes both the emissions associated with the production and processing	Limited assurance of Shell's 2020 Net Carbon Footprint NOTE: Our assurance statements

		<p>of energy products and the emissions associated with their use. The individual intensities are then aggregated into a single value, with the weighting for each product determined by its sales volume, emissions captured in sinks are deducted to give the final net value.</p> <p>Shell's Net Carbon Footprint values for 2020 are shown in the assurance statements below. We express our Net Carbon Footprint as the grams of CO2 equivalent per megajoule (gCO2e/MJ) produced for each unit of energy delivered to, and used by, a consumer.</p> <p>We undertake external verification of our Net Carbon Footprint values to a level of limited assurance at the Shell Group level.</p>	<p>can be found on our webpage: www.shell.com/ghg - tab "NET CARBON FOOTPRINT ASSURANCE"</p>
C5. Emissions performance	Change in Scope 1 emissions against a base year (not target related)	ISO 14064-3	<p>Our assurance statement also covers the base year.</p> <p>NOTE: Our assurance statements can be found on our webpage: www.shell.com/ghg - tab "ASSURANCE"</p>
C5. Emissions performance	Change in Scope 2 emissions against a base year (not target related)	ISO 14064-3	<p>Our assurance statement also covers the base year.</p> <p>NOTE: Our assurance statements can be found on our webpage: www.shell.com/ghg - tab "ASSURANCE"</p>

 ¹LRQ4004543_Shell NCF_2020_ASt-ASRauthorized.pdf

 ²LRQ4004543_Shell_Int_Group_14064_2020_Op_C_ASt_Feb21_ASRAuthorized.pdf

C11. Carbon pricing

(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?

Yes

(C11.1a) Select the carbon pricing regulation(s) which impacts your operations.

Alberta Carbon Competitive Incentive Regulation (CCIR) – ETS

EU ETS

NOTE: These are only two of the regulations that impact our operations by way of example.

(C11.1b) Complete the following table for each of the emissions trading schemes you are regulated by.

Alberta Carbon Competitive Incentive Regulation (CCIR) – ETS

% of Scope 1 emissions covered by the ETS

8

% of Scope 2 emissions covered by the ETS

0

Period start date

January 1, 2020

Period end date

December 31, 2020

Allowances allocated

5,122,476

Allowances purchased

43,470

Verified Scope 1 emissions in metric tons CO2e

4,862,524

Verified Scope 2 emissions in metric tons CO2e

0

Details of ownership

Other, please specify: Facilities we operate

Comment

The above numbers reflect emissions and allowances under the Alberta Carbon Competitiveness Incentive Regulation (CCIR).

Allowances allocated = output-based allocations.

Verified emissions = total regulated emissions.

“Allowances purchased” numbers reflect the total amount of fund credits purchased.

EU ETS

% of Scope 1 emissions covered by the ETS

20

% of Scope 2 emissions covered by the ETS

0

Period start date

January 1, 2020

Period end date

December 31, 2020

Allowances allocated

9,638,431

Allowances purchased

2,849,148

Verified Scope 1 emissions in metric tons CO₂e

12,487,579

Verified Scope 2 emissions in metric tons CO₂e

0

Details of ownership

Other, please specify: Facilities we operate

Comment

The amount of allowances purchased was calculated as a difference between the allowances allocated and verified emissions.

(C11.1d) What is your strategy for complying with the systems you are regulated by or anticipate being regulated by?

Shell subsidiaries provide compliance balancing services to all Shell companies who have obligations under the above emissions trading systems.

We proactively support emissions trading as a mechanism to deliver a price on CO₂ which allows installations to manage emission levels down in an economically efficient manner.

Improving the energy efficiency of our facilities is one of the ways to help us reduce GHG emissions from our operations. We achieve this by replacing old machinery with more energy-efficient equipment, among other things. We will work to ensure that any GHG emissions from making our products that cannot be avoided will be captured or offset using technology and nature.

To assess the resilience of new projects, we consider the potential costs associated with operational GHG emissions. We have developed country-specific short-, medium- and long-term estimates of future carbon costs which are reviewed and updated annually. We continue to test the robustness of our projects with a material GHG footprint by using long-term carbon cost estimates that are consistent with limiting the rise in global average temperature to well below 2°C.

We review our portfolio annually to identify emerging risks from changes in GHG emissions regulations and changing physical conditions. Shell's Group Carbon team provides management with strategic insights on Shell's exposures, risks and opportunities, and recommends actions for Shell to take. Each of Shell's businesses and functions has an assurance committee that considers this risk on a regular basis and coordinates the applicable assurance activities.

Some governments have introduced carbon pricing mechanisms, which we believe can be an effective way to reduce GHG emissions across the economy at the lowest overall cost to society. We expect more governments to follow. Shell is encouraging carbon pricing mechanisms so that businesses and consumers are further incentivised to improve energy efficiency, provide and switch to lower-carbon options, and reduce carbon emissions. Such mechanisms can also help encourage projects such as CCS facilities and nature-based solutions like the planting of forests. Shell continues to work with governments to produce effective transition plans and policies.

(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?

Yes

(C11.2a) Provide details of the project-based carbon credits originated or purchased by your organization in the reporting period.

Credit origination or credit purchase

Credit origination

Project type

Other, please specify: Carbon Capture and Storage (CCS)

☞ The amount of credits shown above reflects base credits generated between January 1 and December 31, 2020

Project identification

The purpose of this offset project is to quantify emission reductions generated under the Alberta Offset System from Shell Canada Limited's (Shell) Quest CCS Project (Quest). The Quest CCS project captures approximately one third of greenhouse gas emissions at the Scotford Upgrader located at Scotford Complex, northeast of Edmonton, Alberta. The opportunity for generating carbon offsets with this project arises from the direct greenhouse gas emission reductions resulting from the geological sequestration of CO₂ in saline aquifers located approximately 2 km under the surface in the Basal Cambrian Sands Formation. This activity is considered a permanent sequestration of CO₂.

Verified to which standard

Other, please specify: Alberta Carbon Offset System Standards

Number of credits (metric tonnes CO₂e)

679,072

Number of credits (metric tonnes CO₂e): Risk adjusted volume

679,072

Credits cancelled

No

Purpose, e.g. compliance

Compliance

Credit origination or credit purchase

Credit purchase

Project type

Forests

☞ These project-based carbon credits are examples of carbon credits retired for 2020. These carbon credits reduced Shell's GHG emissions as reported for the Net Carbon Footprint (NCF), because these carbon credits directly offset Shell's GHG emissions under NCF.

Project identification

Cordillera Azul National Park REDD Project

Verified to which standard

VCS (Verified Carbon Standard)

Number of credits (metric tonnes CO₂e)

1,535,316

Number of credits (metric tonnes CO₂e): Risk adjusted volume

1,535,316

Credits cancelled

No

Purpose, e.g. compliance

Voluntary Offsetting

Credit origination or credit purchase

Credit purchase

Project type

Forests

💬 These project-based carbon credits are examples of carbon credits retired for 2020. These carbon credits reduced Shell's GHG emissions as reported for the Net Carbon Footprint (NCF), because these carbon credits directly offset Shell's GHG emissions under NCF.

Project identification

Katingan Peatland Restoration and Conservation Project

Verified to which standard

VCS (Verified Carbon Standard)

Number of credits (metric tonnes CO2e)

942,478

Number of credits (metric tonnes CO2e): Risk adjusted volume

942,478

Credits cancelled

No

Purpose, e.g. compliance

Voluntary Offsetting

Credit origination or credit purchase

Credit purchase

Project type

Forests

These project-based carbon credits are examples of carbon credits retired for 2020. These carbon credits reduced Shell's GHG emissions as reported for the Net Carbon Footprint (NCF), because these carbon credits directly offset Shell's GHG emissions under NCF.

Project identification

Saihanba Jixielin Carbon Sink Afforestation Project

Verified to which standard

Other, please specify: Chinese Certified Emission Reduction (CCER)

Number of credits (metric tonnes CO₂e)

36,859

Number of credits (metric tonnes CO₂e): Risk adjusted volume

36,859

Credits cancelled

No

Purpose, e.g. compliance

Voluntary Offsetting

Credit origination or credit purchase

Credit purchase

Project type

Forests

These project-based carbon credits are examples of carbon credits retired for 2020. These carbon credits reduced Shell's GHG emissions as reported for the Net Carbon Footprint (NCF), because these carbon credits directly offset Shell's GHG emissions under NCF.

Project identification

Jiangxi Fenglin Carbon Sink Afforestation

Verified to which standard

Other, please specify: Chinese Certified Emission Reduction (CCER)

Number of credits (metric tonnes CO₂e)

10,606

Number of credits (metric tonnes CO₂e): Risk adjusted volume

10,606

Credits cancelled

No

Purpose, e.g. compliance

Voluntary Offsetting

Credit origination or credit purchase

Credit purchase

Project type

Forests

These project-based carbon credits are examples of carbon credits retired for 2020. These carbon credits reduced Shell's GHG emissions as reported for the Net Carbon Footprint (NCF), because these carbon credits directly offset Shell's GHG emissions under NCF.

Project identification

Qinghai Afforestation Project

Verified to which standard

VCS (Verified Carbon Standard)

Number of credits (metric tonnes CO2e)

40,848

Number of credits (metric tonnes CO2e): Risk adjusted volume

40,848

Credits cancelled

No

Purpose, e.g. compliance

Voluntary Offsetting

Credit origination or credit purchase

Credit purchase

Project type

Forests

💬 These project-based carbon credits are examples of carbon credits retired for 2020. These carbon credits reduced Shell's GHG emissions as reported for the Net Carbon Footprint (NCF), because these carbon credits directly offset Shell's GHG emissions under NCF.

Project identification

Reforestation of Degraded Forest Reserves in Ghana

Verified to which standard

VCS (Verified Carbon Standard)

Number of credits (metric tonnes CO2e)

42,211

Number of credits (metric tonnes CO2e): Risk adjusted volume

42,211

Credits cancelled

No

Purpose, e.g. compliance

Voluntary Offsetting

Credit origination or credit purchase

Credit purchase

Project type

Forests

💬 These project-based carbon credits are examples of carbon credits retired for 2020. These carbon credits reduced Shell's GHG emissions as reported for the Net Carbon Footprint (NCF), because these carbon credits directly offset Shell's GHG emissions under NCF.

Project identification

XinJiang Makit County Afforestation Carbon Sequestration Project

Verified to which standard

VCS (Verified Carbon Standard)

Number of credits (metric tonnes CO2e)

263,819

Number of credits (metric tonnes CO2e): Risk adjusted volume

263,819

Credits cancelled

No

Purpose, e.g. compliance

Voluntary Offsetting

Credit origination or credit purchase

Credit purchase

Project type

Forests

💬 These project-based carbon credits are examples of carbon credits retired for 2020. These carbon credits reduced Shell's GHG emissions as reported for the Net Carbon Footprint (NCF), because these carbon credits directly offset Shell's GHG emissions under NCF.

Project identification

Forest Management to Reduce Deforestation and Degradation in Shipibo Conibo and Cacataibo Indigenous Communities of Ucayali Region - Peru

Verified to which standard

VCS (Verified Carbon Standard)

Number of credits (metric tonnes CO2e)

131,997

Number of credits (metric tonnes CO2e): Risk adjusted volume

131,997

Credits cancelled

No

Purpose, e.g. compliance

Voluntary Offsetting

Credit origination or credit purchase

Credit purchase

Project type

Forests

These project-based carbon credits are examples of carbon credits retired for 2020. These carbon credits reduced Shell's GHG emissions as reported for the Net Carbon Footprint (NCF), because these carbon credits directly offset Shell's GHG emissions under NCF.

Project identification

Reduction of deforestation and degradation in Tambopata National Reserve and Bahuaja-Sonene National Park within the area of Madre de Dios region – Peru

Verified to which standard

VCS (Verified Carbon Standard)

Number of credits (metric tonnes CO2e)

299,451

Number of credits (metric tonnes CO2e): Risk adjusted volume

299,451

Credits cancelled

No

Purpose, e.g. compliance

Voluntary Offsetting

Credit origination or credit purchase

Credit purchase

Project type

Forests

🗨 These project-based carbon credits are examples of carbon credits retired for 2020. These carbon credits reduced Shell's GHG emissions as reported for the Net Carbon Footprint (NCF), because these carbon credits directly offset Shell's GHG emissions under NCF.

Project identification

REDD+ Project for Caribbean Guatemala: The Conservation Coast

Verified to which standard

VCS (Verified Carbon Standard)

Number of credits (metric tonnes CO2e)

379,692

Number of credits (metric tonnes CO2e): Risk adjusted volume

379,692

Credits cancelled

No

Purpose, e.g. compliance

Voluntary Offsetting

Credit origination or credit purchase

Credit purchase

Project type

Forests

These project-based carbon credits are examples of carbon credits retired for 2020. These carbon credits reduced Shell's GHG emissions as reported for the Net Carbon Footprint (NCF), because these carbon credits directly offset Shell's GHG emissions under NCF.

Project identification

GreenTrees ACRE (Advanced Carbon Restored Ecosystem)

Verified to which standard

ACR (American Carbon Registry)

Number of credits (metric tonnes CO2e)

9,882

Number of credits (metric tonnes CO2e): Risk adjusted volume

9,882

Credits cancelled

No

Purpose, e.g. compliance

Voluntary Offsetting

Credit origination or credit purchase

Credit purchase

Project type

Forests

These project-based carbon credits are examples of carbon credits retired for 2020. These carbon credits reduced Shell's GHG emissions as reported for the Net Carbon Footprint (NCF), because these carbon credits directly offset Shell's GHG emissions under NCF.

Project identification

Darkwoods Forest Carbon Project

Verified to which standard

VCS (Verified Carbon Standard)

Number of credits (metric tonnes CO2e)

1,636

Number of credits (metric tonnes CO2e): Risk adjusted volume

1,636

Credits cancelled

No

Purpose, e.g. compliance

Voluntary Offsetting

Credit origination or credit purchase

Credit purchase

Project type

Forests

These project-based carbon credits are examples of carbon credits retired for 2020. These carbon credits reduced Shell's GHG emissions as reported for the Net Carbon Footprint (NCF), because these carbon credits directly offset Shell's GHG emissions under NCF.

Project identification

Haidong Afforestation Project

Verified to which standard

VCS (Verified Carbon Standard)

Number of credits (metric tonnes CO2e)

7,535

Number of credits (metric tonnes CO2e): Risk adjusted volume

7,535

Credits cancelled

No

Purpose, e.g. compliance

Voluntary Offsetting

Credit origination or credit purchase

Credit purchase

Project type

Forests

💬 These project-based carbon credits are examples of carbon credits retired for 2020. These carbon credits reduced Shell's GHG emissions as reported for the Net Carbon Footprint (NCF), because these carbon credits directly offset Shell's GHG emissions under NCF.

Project identification

Puzhen Afforestation Project in Guizhou Province

Verified to which standard

VCS (Verified Carbon Standard)

Number of credits (metric tonnes CO2e)

70,715

Number of credits (metric tonnes CO2e): Risk adjusted volume

70,715

Credits cancelled

No

Purpose, e.g. compliance

Voluntary Offsetting

Credit origination or credit purchase

Credit purchase

Project type

Forests

💬 These project-based carbon credits are examples of carbon credits retired for 2020. These carbon credits reduced Shell's GHG emissions as reported for the Net Carbon Footprint (NCF), because these carbon credits directly offset Shell's GHG emissions under NCF.

Project identification

Xiguan Afforestation Project in Guizhou Province

Verified to which standard

VCS (Verified Carbon Standard)

Number of credits (metric tonnes CO2e)

87,432

Number of credits (metric tonnes CO2e): Risk adjusted volume

87,432

Credits cancelled

No

Purpose, e.g. compliance

Voluntary Offsetting

Credit origination or credit purchase

Credit purchase

Project type

Forests

💬 These project-based carbon credits are examples of carbon credits retired for 2020. These carbon credits reduced Shell's GHG emissions as reported for the Net Carbon Footprint (NCF), because these carbon credits directly offset Shell's GHG emissions under NCF.

Project identification

Afforestation Project in Xining City

Verified to which standard

VCS (Verified Carbon Standard)

Number of credits (metric tonnes CO2e)

43,792

Number of credits (metric tonnes CO2e): Risk adjusted volume

43,792

Credits cancelled

No

Purpose, e.g. compliance

Voluntary Offsetting

(C11.3) Does your organization use an internal price on carbon?

Yes

(C11.3a) Provide details of how your organization uses an internal price on carbon.

Objective for implementing an internal carbon price

Drive low-carbon investment

Stress test investments

Identify and seize low-carbon opportunities

GHG Scope

Scope 1

Scope 2

Application

(Annual Report 2020, p99)

Shell's company-wide process for business planning includes assumptions about internal and external parameters.

Some of the key assumptions relate to:

- commodity prices;
- production levels and product demand;
- exchange rates;
- future carbon costs;
- the schedules of growth programmes; and
- risks and opportunities that may have material impacts on free cash flow.

The annual business plan is our way of putting the strategy into effect. A business plan is created, which is then approved by the Board. Projects under development that are expected to have a material GHG footprint must meet our internal carbon performance standards or industry benchmarks. This indicates that they will be able to compete and prosper in a future where society aims to limit overall GHG emissions. These project assessments can lead to projects being stopped or designs being changed.

Actual price(s) used (Currency /metric ton)

100

Variance of price(s) used

(Annual Report 2020, p99)

The process for developing our cost of carbon estimates uses short-term policy outlooks and long-term scenario forecasts, both of which reflect the current nationally determined contributions (NDCs) submitted by countries as part of the Paris Agreement and evolving national policy developments.

NDCs under the Paris Agreement are subject to revisions every five years.

The United Nations estimate that the current NDCs are consistent with limiting the rise in global average temperature to around three degrees Celsius above pre-industrial levels. In the coming decades, we expect countries to tighten their NDCs to meet the goals of the Paris Agreement. We expect to update our estimates as countries update their NDCs and climate policies. Accordingly, we believe our estimates appropriately reflect society's current implementation of the Paris Agreement. We continue to test the robustness of our projects with a material GHG footprint by using long-term carbon cost estimates that are consistent with limiting the rise in global average temperature to well below 2°C.

Type of internal carbon price

Other, please specify: Shadow price, country and time varied (Annual Report 2020, p99)

Impact & implication

(Annual Report 2020, p99)

Shell's annual carbon cost exposure is expected to increase over the next decade because of evolving carbon regulations. This expected increase is based on forecasts of Shell's equity share of emissions from operated and non-operated assets, and real-terms carbon cost estimates which range from \$5 to \$110 per tonne of GHG emissions in 2030. This exposure also takes into account the estimated impact of free allowances as relevant to assets based on their location. The regulatory carbon cost estimate is refreshed on an annual basis as part of the development of our business plan.

By 2050, our real-terms carbon cost estimates for all countries are expected to increase to at least \$100 per tonne of GHG emissions.

Example of impact:

In 2020, Shell's emission and related cost for compliance with ETS and related schemes, as recognised in Shell's consolidated statement of income for 2020, was \$150 mln. It includes the cost of emission certificates that were allocated free of charge, with an equivalent fair value at grant date of \$377 mln.

Implication:

We assess our portfolio decisions, including investments and divestments, against the potential impacts of the energy transition to the use of lower-carbon energy. These include higher regulatory costs linked to carbon emissions and lower demand for oil and gas.

Projects under development that are expected to have a material GHG footprint must meet our internal carbon performance standards or industry benchmarks. This indicates that they will be able to compete and prosper in a future where society aims to limit overall GHG emissions.

We estimate the GHG emissions of facilities in two ways. We apply the performance standards, and we consider the GHG emissions from the use of the products that are manufactured. We assess GHG emissions' impacts alongside economic and technical design factors.

These assessments can lead to projects being stopped or designs being changed.

C12. Engagement

(C12.1) Do you engage with your value chain on climate-related issues?

Yes, our suppliers

Yes, our customers

Yes, other partners in the value chain

(C12.1a) Provide details of your climate-related supplier engagement strategy.

Type of engagement

Compliance & onboarding

Details of engagement

Included climate change in supplier selection / management mechanism

% of suppliers by number

1

% total procurement spend (direct and indirect)

15

% of supplier-related Scope 3 emissions as reported in C6.5

35

Rationale for the coverage of your engagement

Shell aims to work with contractors and suppliers that behave in an economically, environmentally and socially responsible manner. Our approach to suppliers and contractors is set out in our Shell General Business Principles and Shell Supplier Principles.

Through our Shell Supplier Principles, we expect that: “Contractors and suppliers have a systematic approach to HSSE management, designed to ensure compliance with all applicable laws and regulations and to achieve continuous performance improvement. Contractors and suppliers:

- are committed to protect the environment in compliance with all applicable environmental laws and regulations;
- use energy and natural resources efficiently;
- continually look for ways to minimise waste, emissions and discharge of their operations, products and services.”

Find more information visit our webpage: <https://www.shell.com/business-customers/shell-for-suppliers/supplier-principles.html>

Shell’s Contracting & Procurement team is responsible for nearly everything that Shell buys across the full scope of activities in Upstream, Downstream, and Projects & Technology. Our set of policies and assurance processes define how we aim to operate in socially and environmentally responsible ways. Same performance and compliance expectations apply to all suppliers by applying our Category Management and Contracting Process. In our model procurement contracts, contractors and suppliers agree to adhere to the Shell General Business Principles and the Shell Supplier Principles.

For more info visit our webpage: <https://reports.shell.com/sustainability-report/2020/powering-lives/working-with-our-suppliers.html?tabc=1e1>

In 2020, Shell spent \$39.3 billion on goods and services from around 29,000 suppliers globally. (SR, p66)

We continually work with our suppliers to find ways to reduce greenhouse gas emissions across our supply chains. For making lower carbon choices, we are focusing priorities in our supply chains towards:

- lower-carbon equipment, products and services;
- using lower-carbon power sources; and
- tools to help our suppliers decarbonise.

Impact of engagement, including measures of success

We continue to work with our contractors and suppliers to find ways for them to build lower-carbon solutions into our supply chains. At present, the Shell Supplier Principles, that are embedded in contracts, are the tool we use for all suppliers for qualification on emissions. In addition, we are providing examples across the CMCP how to embed the Energy Transition into Contracting & Procurement (CP) ways of working while building on existing best practices across the CP community. While we did not yet implement a separate climate selection mechanism focussed on priority supplier categories, we use priority supplier categories that are implementing the management mechanism to reduce emissions. We are using new equipment and advanced technology for greater efficiency in our oil and gas operations, for example, by choosing more energy-efficient electrical motors rather than older steam turbine technology at a refinery. We are exploring ways to reduce, reuse and recycle packaging across our supply chains and introduce sustainable packaging solutions. These include large recyclable plastic liner bags for bag-in-box lubricant packaging, which reduce plastic use by more than 80% and carbon dioxide (CO₂)-equivalent emissions by more than 60%, compared with traditional single-use plastic bottles. Performance of our suppliers is measured at individual levels within the asset that the contract supports. We do not aggregate data as requested by CDP on a global level on this topic because we do not find it meaningful, e.g., in context of differing local environments.

Type of engagement

Information collection (understanding supplier behavior)

Details of engagement

Collect climate change and carbon information at least annually from suppliers

% of suppliers by number

1

% total procurement spend (direct and indirect)

20

% of supplier-related Scope 3 emissions as reported in C6.5

25

Rationale for the coverage of your engagement

The most important lever of Shell's net zero energy business ambition is partnering for decarbonisation of energy use. In this context, it means partnering with our suppliers. So, we designed a new interactive tool for suppliers to set a target and track, among other things, their emissions performance against other suppliers to Shell in their industry. In focus are suppliers that are in the purchase categories with the highest CO2 emissions as that is where we believe the greatest opportunity for impact lies. And, we work to establish relations with them which allow us to share our respective expertise and build on innovative thinking.

Impact of engagement, including measures of success

The Shell Supplier Energy Transition Hub was created in collaboration with 50 of our major suppliers, who began trialling it in 2020. We expect to roll it out to other suppliers starting in 2021. We use CDP data to identify those companies in our supply chain that report CO2 emissions. We assume that companies that already report to CDP are likely to be the first ones to be able to track changes in their emissions. Our supplier engagements include discussions on pathways to measure and reduce supplier CO2 emissions. The impacts are reported per supplier, establishing emission baselines, setting ambitions and sharing plans to achieve these. As an example of the impact of this engagement, suppliers are maintaining programmes that support joint sustainability objectives, including but not limited to a reduction in CO2 intensity.

Type of engagement

Engagement & incentivization (changing supplier behavior)

Details of engagement

Offer financial incentives for suppliers who reduce your operational emissions (Scopes 1 &2)

% of suppliers by number

1

% total procurement spend (direct and indirect)

20

% of supplier-related Scope 3 emissions as reported in C6.5

25

Rationale for the coverage of your engagement

We use our greenhouse gas (GHG) and energy management manual to evaluate options to improve our GHG intensity performance. Our planning process helps to guide our decisions on technology and whether to move ahead with a project. Our HSSE & SP Control Framework requires projects and facilities that produce more than 50,000 tonnes of GHG emissions a year to have a GHG and energy management plan. To assess the long-term financial viability of proposed projects or potential alternatives, we also consider potential costs associated with operational GHG emissions (see Greenhouse gas emissions). Hence, the need to build strong relationships with our contractors and suppliers, which is essential to delivering new projects and running our operations. We target high impact categories which are likely to affect our own Scope 1 and 2 emissions, such as equipment (rotating/electrical), pumps/valves, logistics, energy, rigs, wells.

Impact of engagement, including measures of success

Suppliers' contributions to reducing our operational emissions (Scope 1 and 2) include, for example: technologies upgrading the equipment; sustainable site design and construction; increasing the use of sustainable raw materials; reduction, reuse and recycling of packaging across our supply chains; increasing availability of renewable energy at our sites; and continuous focus on maintenance measures to enhance the reliability of equipment and reduce emissions through leaks. We worked with suppliers to jointly identify the best-performing lower-carbon equipment available and call attention to these products in the catalogues Shell employees use to place orders for projects. The aim is to make it easier to choose products that can drive sustainability deeper into our projects and facilities. For example, we invested in new furnaces for our Moerdijk petrochemicals complex in the Netherlands to reduce energy consumption and GHG emissions by around 10% compared with 2019 (see Energy efficiency in our operations, p38). And, we are using drones in the Permian Basin, USA, to detect methane emissions and improve energy efficiency:

<https://www.shell.com/energy-and-innovation/shale-oil-and-gas/drone-development-permian-basin.html>.

Performance of suppliers is measured at individual levels within the asset that the contract support. Data as requested by CDP, are not aggregated on this topic on a global level because we do not find it meaningful, e.g., in context of differing local environments.

Type of engagement

Innovation & collaboration (changing markets)

Details of engagement

Other, please specify: The Shell Supplier Energy Transition Hub, a collaborative digital platform to help suppliers reduce their emissions.

% of suppliers by number

0.2

% total procurement spend (direct and indirect)

4

% of supplier-related Scope 3 emissions as reported in C6.5

5

Rationale for the coverage of your engagement

Building strong and resilient companies during the energy transition, will require a conscious development of collaborative relationships that will actively drive transformation. As a partner for change, Shell is working with others to help address greenhouse gas (GHG) emissions across different sectors:

- We have developed and deployed advanced energy-efficiency technologies, such as software that helps guide a vessel's position in the water to cut fuel consumption and lower emissions, as well as advanced engine lubricants that also boost efficiency:

- o KONGSBERG and Shell sign JAWS agreement

- Many industrial processes require high temperatures, chemical reactions, or dense energy storage. These are not easy to electrify and account for a significant share of global CO2 emissions.

- o Linde and Shell team up to commercialise lower-carbon technology for ethylene ; technology could lead to lower carbon emissions, offers a catalytic alternative to steam cracking.

- o Dow and Shell team up to develop electric cracking technology; technology could lead to lower carbon emissions, provide a path to decarbonization as the grid becomes increasingly renewables led.

- o Capturing, reusing or safely storing carbon emissions from plants and factories – carbon capture, utilisation and storage, or CCUS – also helps to decarbonise industry. For examples, see the exclusive Alliance with Shell CANSOLV® since 2012 for Post Combustion CO2 Capture solutions in Power Generation industry

- We are also working with the road freight industry to help reduce vehicle emissions: <https://www.shell.com/energy-and-innovation/the-energy-future/decarbonising-road-freight.html>

- Shell is a founding member of Clean Skies for Tomorrow, a coalition of leading airlines, airports, manufacturers, and fuel providers, to align on a transition to sustainable aviation fuels as part of a meaningful and proactive pathway for the industry to achieve carbon-neutral flying.

To help suppliers meet their emissions reduction ambitions, the Hub allows Shell's partners in the supply chain to share their data and work together on lowering their carbon emissions. The collaborative theme underpins the Hub's architecture and is at the heart of its operational core.

Impact of engagement, including measures of success

The platform will facilitate Shell working together with its suppliers to provide alternative low-carbon energy solutions, as well as jointly develop innovative responses to accelerate energy transition. It was influenced by a group of 50 Shell suppliers, who took part in a pilot and shared their thoughts and ideas on the Hub with the design team over the past six months. The Hub's primary focus is on the reduction of Shell's Scope 3 emissions, which is critical as emissions from the end use of Shell's energy products account for over 90% of its total emissions. The Hub's design lends itself to further imbed Shell's collaborative approach to lowering further suppliers' Scope 3 emissions, by allowing its supply chain to invite their suppliers to join the platform. The Hub's evolutionary nature and focus on innovation should allow it to address current and future decarbonisation needs, through several potential energy solutions. This is just the beginning of our journey, as the Hub was designed to allow it grow and evolve, as it applies a learner mindset to continually remain relevant in the fast paced, constantly changing and highly sophisticated business ecosystem, which needs relevant solutions to decarbonise. For Shell to realise its goal of achieving net-zero emissions, in step with society, digital platforms such as the Hub will play an important role, in accelerating the energy transition journey.

(C12.1b) Give details of your climate-related engagement strategy with your customers.

Type of engagement

Collaboration & innovation

Details of engagement

Other, please specify

Member of "Clean Skies for Tomorrow Coalition": collaboration across the aviation value chain aiming for achieving carbon-neutral flying

% of customers by number

% of customer - related Scope 3 emissions as reported in C6.5

Please explain the rationale for selecting this group of customers and scope of engagement

Group of customers: aviation industry

Shell Aviation operates one of the most extensive refuelling networks in the world supplying fuel, lubricants, and sustainable solutions in over 60

countries.

(Annual Report 2020, p75, table) In 2020, of the total "refinery processing outturn" (excluding own use and products acquired for blending purposes) of 2,122 thousand barrel per day, kerosines made 158 thousand barrels per day.

(<https://www.weforum.org/projects/clean-skies-for-tomorrow-coalition>)

The Clean Skies for Tomorrow Coalition provides a crucial global mechanism for top executives and public leaders, across and beyond the aviation value chain, to align on a transition to sustainable aviation fuels as part of a meaningful and proactive pathway for the industry to achieve carbon-neutral flying.

Stakeholders will work together to address the chicken-and-egg scenario whereby producers and consumers are both either unwilling or unable to carry the initial cost burden of investing in new technologies to reach a scale where they are competitive with existing fossil fuel-derived options.

Champions of the Clean Skies for Tomorrow Coalition will advance co-developed initiatives to break this impasse, to advance the commercial scale of viable production of sustainable low-carbon aviation fuels (bio and synthetic) for broad adoption in the industry by 2030. Initiatives include a mechanism for aggregating demand for carbon-neutral flying, a co-investment vehicle and geographically specific value-chain pilots. The Clean Skies for Tomorrow Coalition is led by the World Economic Forum in collaboration with the Rocky Mountain Institute and the Energy Transitions Commission. It is advanced through close consultation with advisory partner, the Air Transport Action Group.

Founding champions include: Airbus Group, Heathrow Airport, KLM Royal Dutch Airlines, Royal Schiphol Group, Shell, SkyNRG, SpiceJet and The Boeing Company.

Impact of engagement, including measures of success

Scope of business:

(Annual Report 2020, p75, table) In 2020, of the total "refinery processing outturn" (excluding own use and products acquired for blending purposes) of 2,122 thousand barrel per day, kerosines made 158 thousand barrels per day.

(Annual Report 2020, p73) Shell Aviation provides aviation fuel, lubricants and low-carbon solutions globally. In 2020, Shell collaborated with many organisations to develop a scalable supply of sustainable aviation fuel made from renewable raw materials and waste products. In partnership with World Energy, Shell Aviation has agreed to supply up to 6 million gallons of sustainable aviation fuel to Amazon Air.

(C12.1d) Give details of your climate-related engagement strategy with other partners in the value chain.

Climate-related engagement strategy Powering Progress - extract: Achieving net-zero emissions

We are partnering with customers, businesses and others to address emissions, including in sectors that are difficult to decarbonise, such as aviation, shipping, road freight and industry. Partnering with others includes supporting government policies to reduce carbon emissions, sector by sector.

Partner in the value chain: companies that we partner with to develop new approaches, processes, products, including peer companies in the energy industry.

(Sustainability Report, p37)

Partnering with others involves supporting government policies to reduce carbon emissions, sector by sector. This includes sectors that are difficult to decarbonise, such as aviation, shipping, road freight and industry.

For example, we have agreed a deal with Amazon Air to supply up to six million gallons of sustainable aviation fuel. This biofuel, produced by the company World Energy using agricultural waste fats and oils, has significantly lower life-cycle carbon emissions than conventional jet fuel.

We also formed a strategic alliance with Microsoft in 2020. Shell will help supply Microsoft as the technology company works towards its goal of using 100% renewable energy by 2025. Both companies will develop digital tools to help Shell's customers decarbonise.

We are working on more of these strategic relationships, generating value while helping sectors to reduce their carbon emissions.

In shipping, we have also developed and deployed advanced energy-efficiency technologies, such as software that helps guide a vessel's position in the water to cut fuel consumption and lower emissions, as well as advanced engine lubricants that also boost efficiency. We outlined the actions we are taking to help accelerate progress towards net-zero emissions in the shipping sector in our report Setting Shell's Course.

In the road freight sector, we offer nature-based carbon credits to business customers operating heavy- and light-duty fleets in 10 countries across Europe and Asia (see Nature-based solutions). Together with Daimler Truck AG, IVECO, OMV, and the Volvo Group, we will also help create the conditions for the mass-market roll-out of hydrogen trucks in Europe (see Hydrogen).

Partner: citizens in neighbourhoods where Shell operates

(SR, p73)

Improving access to jobs and economic opportunities

In Eastern Africa, we supported the Employment and Skills for Eastern Africa (or E4D/SOGA) programme in partnership with the German, British and Norwegian governments, the European Union and several companies.

The programme aims to improve access to jobs and economic opportunities for local people in natural-resource-based industries and related sectors.

In 2020, through the partnership, 15,643 additional people received training and 11,229 additional people secured employment as a result of E4D/SOGA activities across the four partner countries Kenya, Mozambique, Tanzania and Uganda.

Since 2015 when the programme started, 70,649 people have received training and 26,851 people have secured employment. More than 59,689 people increased their income by at least 10%. Overall, 33,321 local enterprises were supported. Of those who secured sustainable employment, 30.7% were women.

Partner: companies working on new technologies that may contribute to improve opportunities of our business

(<https://www.shell.com/energy-and-innovation/entrepreneurs-and-start-ups>)

The GameChanger approach

Disruptive ideas that could help accelerate the energy transition can exist anywhere. We evaluate and mature early-stage technologies that companies are working on, to help de-risk, move towards a proof of concept and increase the chances of their success.

Through an established approach, GameChanger evaluates technologies to check for a match with the programme. We assess against four key criteria:

1. Novelty: is your technology fundamentally different and unproven?
2. Value: could your technology create substantial new value if it works?
3. “Why Shell?”: is your technology relevant to Shell and the energy future?
4. Testing: can the concept be proven quickly and affordably? Is the right team in place to deliver this?

Partner: universities and students as potential business partners and/or future employees

(<https://www.makethefuture.shell/en-gb/shell-eco-marathon>)

Shell Eco-marathon

Shell Eco-marathon is a global academic programme focused on energy optimisation. It is one of the world's leading student engineering competitions.

Over the past 35 years, the programme has consistently brought to life Shell's mission of powering progress together by providing more and cleaner energy solutions. The global academic programme brings together Science, Technology, Engineering and Maths (STEM) students from across the globe to design, build and operate some of the world's most energy-efficient vehicles. All in the name of collaboration and innovation, as students' bright ideas help to shape a lower carbon future for all.

(C12.3) Do you engage in activities that could either directly or indirectly influence public policy on climate-related issues through any of the following?

- Direct engagement with policy makers
- Trade associations
- Funding research organizations
- Other

(C12.3a) On what issues have you been engaging directly with policy makers?

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
Cap and trade	Support	<p>Shell provided input into the UK government's consultation on carbon emission tax in September 2020, setting out our view of carbon emissions trading as a preferred approach to a carbon emissions tax along with certain design considerations if a carbon emissions tax was to be introduced.</p> <p>Shell is active in both compliance and voluntary markets globally through our four regional desks in London, San Diego, Singapore and Shanghai. We manage the global CO2 compliance obligations for all assets owned by the Royal Dutch Shell Group, which covers over 50 installations worldwide and provides us with an understanding of the challenges faced by our customers and the opportunities that the markets afford them. Shell completed the first trade on the European Union Emissions Trading Scheme (EU ETS) in 2003 and has been an active participant in the European CO2 market for the past 16 years. With a focus on supporting the development of emerging markets, Shell Energy (China) Limited was one of the first foreign companies to trade allowances in the Chinese pilots. Shell is active in the EU ETS, Western Climate Initiative (WCI), Regional Greenhouse Gas Initiative (RGGI), the Chinese pilot markets in Shanghai, Beijing & Guangdong, South Korean ETS, New Zealand ETS, and the Australian Safeguard Mechanism.</p>	<p>Introduction of a broad-based carbon pricing mechanism as a first-best regulatory approach for governments to deliver their emission reduction goals including the goal established under the Paris Agreement.</p> <p>With the following design considerations:</p> <ul style="list-style-type: none"> - avoidance of overlapping policies which could undermine the establishment of the carbon price signal needed to support investments in low-carbon technology R&D and conversion of energy systems; - consideration on how to reinvest revenues to increase broad political resilience (impacts on low-income households and displaced workers), to promote innovation, and to increase the availability of affordable low-carbon energy options for the public and businesses; and - protection of industry competitiveness and prevention of carbon emissions leakage that can undermine climate objectives.

Other, please specify Global Carbon Market	Support	<p>Shell provided detailed input to IETA's proposals for developing the rules and procedures for implementation of Article 6 of the Paris Agreement.</p> <p>We also set out Shell's views on how Article 6 of the Paris Agreement could work and key considerations for it to be effective in support of advocacy for agreement at COP26, prior to its postponement to 2021.</p>	Linked carbon markets through development of internationally traded mitigation outcomes (ITMOs) and emissions mitigation mechanisms (EMM) (Paris Agreement; Article 6).
Other, please specify Carbon Capture, Utilisation & Storage	Support	<p>In our response to public consultation on the proposal for a Regulation on the European Climate Law in May 2020, and the 2030 Climate Target Plan in June 2020 we highlighted that removal technologies, including NBS and CCUS, should be supported so that they can scale up to the level required to balance unavoidable emissions. For example, the upcoming reform of the EU ETS could deliver incentives to ensure that CCUS can be ready for commercial deployment in the next decade. CCUS can play a key role to decarbonise industry whilst maintaining competitiveness.</p> <p>Working through various associations including Zero Emissions Platform, Carbon Capture & Storage Association, the WBCSD, the Oil & Gas Climate Initiative, and Global Carbon Capture & Storage Institute to see CCUS deployed more widely and recognised in countries' Nationally Determined Contributions.</p>	<ul style="list-style-type: none"> - Help develop the necessary market conditions for CCUS; - Facilitate large-scale commercial investment in CCUS; and - Bring economies of scale by sharing transport and storage infrastructure.
Other, please specify EU Climate Policy	Support	In a submission to the European Commission's consultation on the Climate Law, Shell expressed support for the 2050 climate neutrality target, showing a possible, although challenging, pathway to net-zero emissions in the energy system based on Shell's Scenario Sketch "A climate-neutral	<p>Success in reaching net zero by 2050 would, of course, rest on progress made on several key enabling policies and the EU should rapidly move to make them happen.</p> <p>We focus investors, companies and cities on taking urgent action to build a truly sustainable economy by measuring</p>

		<p>EU by 2050”.</p> <p>In a submission to the European Commission’s consultation on the 2030 Climate Target Plan, Shell outlined how a sectoral approach could be placed at the core of the Green Deal implementation by making it a legislative requirement for hard-to-abate sectors to have pathways to Net Zero Emissions. A sectoral approach should consist of policy measures to accelerate and synchronise demand and supply for low carbon energies, such as renewable power, clean hydrogen, and biofuels. Policies should incorporate support for infrastructure to transport and deliver low carbon energies at scale.</p> <p>In September 2020, Shell expressed support for the European Commission’s proposal for a 55% reduction in greenhouse gas emissions by 2030.</p> <p>Shell also responded to the European Commission’s consultation on the reform of the Energy Tax Directive. Stressing that to accelerate the deployment of the low-carbon technologies needed to achieve climate neutrality, industry needs clear goals and predictable policies to provide the business case for investment. The revision of the Energy Taxation Directive is an opportunity to contribute to this. Energy taxation is an important part of the coherent, credible, and cost-effective policy framework needed to incentivise action to help the EU achieve climate neutrality by 2050.</p>	<p>and understanding their environmental impact</p> <p>The advances the EU has made with the Emissions Trading System have been very encouraging. But the world needs greater international co-operation. And the progress made to establish a global emissions trading system, as described by Article 6 of the Paris Agreement, has simply not been enough.</p> <p>Another key area where policy can make a difference is in encouraging the greater integration of renewable power and investment in lower-carbon gases, notably hydrogen. And policy will be needed to ensure both nature-based solutions and carbon capture and storage are able to scale up to the level required. To balance unavoidable emissions, while maintaining industrial competitiveness.</p>
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Regulation of methane emissions	Support	<p>In October 2020, we reiterated our support for direct regulation of methane in the USA and opposition to the proposed methane regulatory rollback.</p> <p>In Texas, Shell, jointly with BP, called on the Texas Railroad Commission to support an ambition of zero routine flaring in Texas.</p> <p>Shell, non-governmental organisations and other companies developed recommendations for policies to reduce methane emissions within the context of the European Green Deal to reach climate neutrality by 2050.</p> <p>In a submission to the European Commission's consultation on the Methane Strategy, Shell expressed support for expedited and ambitious methane regulation involving monitoring, reporting and verification standards, rapid progress on leak detection, repair and targets.</p>	<p>Methane is a potent greenhouse gas (GHG) for which its direct regulation is appropriate and necessary in order to address the many challenges of global climate change while further supporting the benefits of the increased use of natural gas for reducing GHG emissions throughout the economy of the USA. Based on these considerations, Shell supports the direct regulation of methane as long as those regulatory control requirements are implemented in an efficient and effective manner that encourages innovation. We believe that such an approach is critically important for ensuring natural gas plays a vital role in transitioning to a low-carbon energy future and economy.</p> <p>In Texas, USA, we offer four guiding principles, that the Railroad Commission could consider as a policy framework to support the achievement of zero routine flaring. These principles include: (1) Incentivizing continuous improvement efforts that link ambitions to real outcomes by measuring</p>

			<p>interim and long-term progress. (2) Improving flaring data per the recommendations of the TMFC to enhance transparency and inform progress. (3) Enhancing regulatory oversight through standards and regulatory mechanisms that incorporate assurances to reduce flaring. (4) Facilitating collaboration with midstream entities that fosters collaborative action, which is essential to ensure sufficient midstream infrastructure is in place and available.</p> <p>Shell believes that an ambitious and expedited EU policy approach to reducing methane emissions across the natural gas supply chain is necessary as part of the EU's Green Deal. It is important, in our view, that EU methane policy addresses methane emissions along the full natural gas supply chain, including imports, in order that a comprehensive and global solution can be achieved. In this context, international cooperation with other global gas producing and consuming regions and countries will be important, including through structured energy dialogues. Improvement of MRV coupled with targets aiming for continual reductions of emissions, will ensure a higher impact across the natural gas supply chain, for a more sustainable European gas system.</p>
Other, please specify USA: transportation and regulation	Support with minor exceptions	Shell commented on The Georgetown Transportation and Climate Initiative's (TCI) draft Memorandum of Understanding, specifically on structuring the compliance period and designing stability mechanisms for managing uncertainties regarding future emissions and allowance prices (February 2020).	Shell supports inclusion of flexibility and cost containment mechanisms. Compliance flexibility allows businesses to select strategies that best suit their unique needs and evolving circumstances, while delivering real emission reductions more efficiently and at less cost than rigid measures.

			<p>Linking with other programmes and promoting a TCI programme that covers as broad a geography as possible can add flexibility and contain costs.</p> <p>It is important for the programme to allow obligated entities to meet a portion of their obligation with offsets, such as credits from the use of carbon capture and sequestration or nature based solutions to sequester carbon, while at the same time maintaining a sufficient price signal to support investments to reduce emission.</p> <p>While a multiyear compliance period does provide flexibility, it also introduces some risk to the environmental integrity of the programme. To avoid such an outcome, we suggest that the TCI jurisdictions consider the approach taken in California where every year covered entities are required to turn in allowances and offsets for 30 % of the previous year's emissions.</p> <p>The programme should include adequate enforcement provisions to ensure the integrity of the programme and remove any economic benefits of noncompliance.</p>
Other, please specify UK Transport Policy	Support	Shell UK supported the UK government's increased ambition in the deployment of electric vehicles (EVs) in the UK, and believes that the phase out date for sales of new internal combustion engines (ICE) in the light duty vehicle segment could be brought forward to 2030.	Setting a date for any ICE sale phase out must also be supported with a robust and comprehensive package of enabling policy measures to ensure industry and businesses can prepare to deliver the necessary power and infrastructure needed to support fully electrification of light duty vehicles. Strong incentives are equally needed to help

		consumers to choose EVs. So while setting a date for the phase out sales of new ICE-powered light duty vehicles is an important first step and sends a strong signal, it will only deliver the ambition of passenger car decarbonisation through a robust plan to make the transition fair and deliverable. Shell believes that the enabling policy support should focus on the system (vehicles, power and infrastructure) and on meeting customer needs.
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(C12.3b) Are you on the board of any trade associations or do you provide funding beyond membership?

Yes

(C12.3c) Enter the details of those trade associations that are likely to take a position on climate change legislation.

Trade association

American Chemistry Council (ACC)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

- THE PARIS AGREEMENT: ACC has stated support for the goals of the Paris Agreement.
- NET-ZERO EMISSIONS: ACC has not stated a position on net-zero emissions.
- CARBON PRICING: ACC has stated support for carbon pricing.
- ADDITIONAL POLICIES: ACC has stated positions that support additional policies, calling for the US government to reward investments in combined heat and power, energy efficiency, demand response, renewable energy and the development of innovations that use chemistry to reduce greenhouse gas emissions. ACC has stated support for the use of legislation to promote research and development in low-carbon manufacturing and other initiatives like the use of recycled plastics in new packaging and other plastic products. In Pennsylvania in 2020, ACC and Shell stated support for a proposed bill to encourage the conversion of plastic waste into feedstock that can be used to make new chemicals.
- THE ENERGY TRANSITION: ACC has stated positions that recognise the role of natural gas in the energy transition. ACC does not currently

have a position on whether there should be direct regulation of methane emissions. ACC has stated support for a comprehensive energy policy that draws on diverse energy supplies, including renewables and energy recovery from plastics.

- CARBON SINKS: ACC has stated support for carbon capture, utilisation and storage. ACC has not stated a position on nature-based solutions.

Please also refer to Shell's Industry Associations Climate Review, April 2021 available on https://www.shell.com/promos/sustainability/industry-associations-climate-review-2021/_jcr_content.stream/1617784370604/bbe8a29c319bef3c08424184b21543dc6c032239/shell-industry-associations-report-2021.pdf

Please also refer to the organisation's own disclosures such as their website.

How have you influenced, or are you attempting to influence their position?

Shell seeks to influence ACC through our membership, including positions on ACC's executive committee, board of directors and climate committee.

We will continue to engage ACC on climate-related topics and will track alignment between its climate-related policy positions and our own.

We will continue to be actively involved in ACC's work to reduce greenhouse gas emissions in the chemical sector and the policies that will be needed to support this.

Trade association

American Petroleum Institute (API)

Is your position on climate change consistent with theirs?

Mixed

Please explain the trade association's position

- THE PARIS AGREEMENT: API's CEO has stated that API supports the ambitions of the Paris Agreement.
- NET-ZERO EMISSIONS: API has not stated a position in support of net-zero emissions.
- CARBON PRICING: API has stated support for carbon pricing.
- ADDITIONAL POLICIES: API has stated support for the development of cost-effective technologies to reduce emissions, including through government-backed research and development in areas such as sustainable and efficient fuels. It advocates a fuel and technology-neutral

approach but does not state support for mandates or tax subsidies and credits. API states support for federal funding for low-carbon research, development and deployment. API has stated support for elements of the Transportation and Climate Initiative of the north-east and mid-Atlantic states and remains constructively engaged in the development design process. On alternative transport fuels, API and Shell differ on their respective stated positions regarding the Renewable Fuel Standard. However, API and Shell have a similar advocacy approach to reforming the standard. While API has stated positions critical of an order by the governor of California to ban internal combustion engine (ICE) vehicles by 2035, Shell responded to the order by highlighting its willingness to continue to help build cleaner transport infrastructure, including for electric and hydrogen vehicles.

- THE ENERGY TRANSITION: API has stated positions in support of the role of natural gas in the energy transition and the importance of addressing methane emissions. API has stated support for the direct regulation of methane emissions at “new and existing sources”.
- CARBON SINKS: API has stated support for carbon capture, utilisation and storage. It has also stated support for the use of carbon offsets, but has not stated a position in support of nature-based solutions.

Please also refer to Shell’s Industry Associations Climate Review, April 2021 available on https://www.shell.com/promos/sustainability/industry-associations-climate-review-2021/_jcr_content.stream/1617784370604/bbe8a29c319bef3c08424184b21543dc6c032239/shell-industry-associations-report-2021.pdf

Please also refer to the organisation’s own disclosures such as their website.

How have you influenced, or are you attempting to influence their position?

Shell seeks to influence API through our membership, including our positions on API’s board of directors and executive committee.

We believe these roles helped us to shape key policy decisions, including API’s 2021 statements in support of the Paris Agreement, carbon pricing and the direct regulation of methane emissions. We were closely involved in the development of API’s Climate Action Framework, published in March 2021.

We will continue to track alignment between API’s climate-related policy positions and our own, and will be transparent about where we find differences.

We will continue to engage the association in areas where we have different views. Shell continues to urge API to take a more proactive and constructive approach to climate-related policy and advocacy, in line with the goal of the Paris Agreement.

Trade association

National Association of Manufacturers (NAM)

Is your position on climate change consistent with theirs?

Mixed

Please explain the trade association's position

- THE PARIS AGREEMENT: NAM has stated support for the objectives of the Paris Agreement.
- NET-ZERO EMISSIONS: NAM has not stated a position on net-zero emissions.
- CARBON PRICING: NAM has not stated a position on carbon pricing. NAM's climate policy principles call for market signals to be adopted to reduce greenhouse gas emissions; NAM has stated support for economy-wide policy options that use market-based options.
- ADDITIONAL POLICIES: NAM has stated support for additional policies, including the need for policymakers to prioritise immediate investment in energy efficiency, climate and clean energy R&D programmes and the development of a smart power grid.
- THE ENERGY TRANSITION: NAM has stated support for the role of natural gas in the energy system. NAM does not state a position on regulating methane emissions. NAM states there is the need to modernise the power grid to allow for better integration of low-carbon power generation.
- CARBON SINKS: NAM has stated support for incentives for carbon capture, utilisation and storage (CCUS), including tax credits and policies to support research, development and demonstration of CCUS technology. NAM advocates policies that promote sustainable climate-smart land use and carbon offsets that achieve verifiable, permanent and effective emission reductions.

Please also refer to Shell's Industry Associations Climate Review, April 2021 available on https://www.shell.com/promos/sustainability/industry-associations-climate-review-2021/_jcr_content.stream/1617784370604/bbe8a29c319bef3c08424184b21543dc6c032239/shell-industry-associations-report-2021.pdf

Please also refer to the organisation's own disclosures such as their website.

How have you influenced, or are you attempting to influence their position?

Shell seeks to influence NAM through our membership, including our position on NAM's board of directors.

Shell contributed to NAM's energy and environmental policy, published in 2020, and its programme for climate action "The Promise Ahead" in 2021.

We will continue to track alignment between NAM's climate-related policy positions and our own, and will be transparent about where we find differences. We will continue to engage the association in areas where we have different views. Shell urges NAM to state explicit support for carbon pricing.

Trade association**US Chamber of Commerce (USC)****Is your position on climate change consistent with theirs?**

Mixed

Please explain the trade association's position

- THE PARIS AGREEMENT: USC has stated support for US participation in the Paris Agreement and in January 2021 welcomed President Biden's executive decision to rejoin the Paris Agreement.
- NET-ZERO EMISSIONS: USC has not stated a position on net-zero emissions.
- CARBON PRICING: USC has not explicitly stated a position in support of carbon pricing. It has stated that it supports a market-based approach to accelerate greenhouse gas emission reductions across the US economy.
- ADDITIONAL POLICIES: USC has stated that it supports additional policies. It calls for technology-neutral policies to deliver cost-effective, achievable and meaningful reductions in greenhouse gas emissions. It highlights the importance of energy efficiency and in developing technologies such as largescale renewables, energy storage and batteries, with support from the public and private sectors. On transport, the USC's stated support for reform of the vehicle fuel economy standards is not consistent with Shell's position.
- THE ENERGY TRANSITION: Shell and USC are aligned on the role of natural gas in the energy system. In January 2021, USC stated support for the direct regulation of methane emissions. USC has stated support for the increased use of renewables.
- CARBON SINKS: USC has stated support for carbon capture, utilisation and storage, but has not stated a position on nature-based solutions.

Please also refer to Shell's Industry Associations Climate Review, April 2021 available on https://www.shell.com/promos/sustainability/industry-associations-climate-review-2021/_jcr_content.stream/1617784370604/bbe8a29c319bef3c08424184b21543dc6c032239/shell-industry-associations-report-2021.pdf

Please also refer to the organisation's own disclosures such as their website.

How have you influenced, or are you attempting to influence their position?

Shell seeks to influence USC through our membership, including our positions on USC's board.

Shell is a member of USC's task force on climate actions aims to inform USC's climate policy positions and played a strong role in moving the USC to support the direct federal regulation of methane emissions in January 2021.

We will continue to track alignment between USC's climate actions which aims to inform USC's climate policy positions and played a strong role in moving the USC to support the direct federal regulation of methane emissions in January 2021.

We will continue to track alignment between USC's climate-related policy positions and our own, and will be transparent about where we find differences.

We will continue to engage the association in areas where we have different views. Shell urges USC to explicitly state support for carbon pricing and the direct regulation of methane emissions in its climate change position and advocacy.

Trade association

Western States Petroleum Association (WSPA)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

- THE PARIS AGREEMENT: WSPA's president stated that WSPA supports the goals of the Paris Agreement.
- NET-ZERO EMISSIONS: WSPA has not stated a position on net-zero emissions.
- CARBON PRICING WSPA has stated support for carbon pricing, including market-based approaches such as cap-and-trade programmes and carbon taxes. In May 2020, WSPA publicly stated support for the California Cap-and-Trade Program.
- ADDITIONAL POLICIES: WSPA has stated support for additional technology-neutral policies that encourage a wide variety of low-carbon solutions. Its stated positions highlight the role of energy efficiency and the progress its members are making on advancing renewable energy and fuels.
- THE ENERGY TRANSITION: WSPA has stated support for the role of natural gas in the energy system. It has highlighted the role of the industry in advancing renewable energy.
- CARBON SINKS: WSPA has stated support for carbon capture and storage. WSPA has not stated a position on nature-based solutions.

Please also refer to Shell's Industry Associations Climate Review, April 2021 available on https://www.shell.com/promos/sustainability/industry-associations-climate-review-2021/_jcr_content.stream/1617784370604/bbe8a29c319bef3c08424184b21543dc6c032239/shell-industry-associations-report-2021.pdf

Please also refer to the organisation's own disclosures such as their website.

How have you influenced, or are you attempting to influence their position?

Shell seeks to influence WSPA through our membership, including our position on WSPA's board of directors.

We will continue to engage WSPA on climate-related topics and will track alignment between its climate-related policy positions and our own.

Trade association

Electric Power Supply Association (EPSA)

Is your position on climate change consistent with theirs?

Mixed

Please explain the trade association's position

- THE PARIS AGREEMENT: EPSA does not state a position on the goal of the Paris Agreement. EPSA states that it supports efforts to combat climate change.
- NET-ZERO EMISSIONS: EPSA has not stated a position on net-zero emissions.
- CARBON PRICING: EPSA has stated it supports carbon pricing.
- ADDITIONAL POLICIES: EPSA has stated support for policies to increase electrification and to encourage low-cost emission reductions from all sectors including, buildings and transport.
- THE ENERGY TRANSITION: EPSA has stated that competitive markets, properly structured, can deliver cleaner, more affordable power to consumers. It states that natural gas is the most cost-effective resource to support power grid reliability in a lower-carbon future, and states support for its members' efforts to deliver lower-carbon electricity by investing in battery storage and wind power.
- CARBON SINKS: Although EPSA has not stated a position on the role of carbon sinks or nature-based solutions, it has highlighted the importance of carbon capture and storage in delivering climate goals.

Please also refer to Shell's Industry Associations Climate Review, April 2021 available on https://www.shell.com/promos/sustainability/industry-associations-climate-review-2021/_jcr_content.stream/1617784370604/bbe8a29c319bef3c08424184b21543dc6c032239/shell-industry-associations-report-2021.pdf

Please also refer to the organisation's own disclosures such as their website.

How have you influenced, or are you attempting to influence their position?

Shell seeks to influence EPSA through our membership, including our position on EPSA's board of directors.

We will continue to track alignment between EPSA's climate-related policy positions and our own, and will be transparent about where we find differences.

Shell urges EPSA to state support for the goal of the Paris Agreement.

Trade association

Texas Oil & Gas Association (TXOGA)

Is your position on climate change consistent with theirs?

Mixed

Please explain the trade association's position

- THE PARIS AGREEMENT: TXOGA has not stated a position on the Paris Agreement. The association does state that it recognises that action is required on climate change.
- NET-ZERO EMISSIONS: TXOGA has not stated a position on net-zero emissions.
- CARBON PRICING: TXOGA has not stated a position on carbon pricing.
- ADDITIONAL POLICIES: TXOGA has not stated a position on additional policies. TXOGA highlights that oil and natural gas companies are making their operations more efficient, developing cleaner fuels, and investing in renewables like wind and solar and in technologies that capture, reuse and store carbon dioxide.
- THE ENERGY TRANSITION: TXOGA has stated support for the role of natural gas in the energy system, including the use of gas as a lower-carbon partner for renewables. TXOGA has stated support for the Texas Emissions Reduction Plan (TERP) and using TERP's funds to reduce pollution and improve air quality in the state. TXOGA has stated support for zero routine flaring and has advocated this through the Texas Methane & Flaring Coalition, which has set the goal of ending routine flaring by 2030. TXOGA is promoting operational and environmental practices to minimise flaring and methane emissions in Texas.
- CARBON SINKS: TXOGA has stated support for carbon capture and storage. TXOGA has not stated a position on nature-based solutions.

Please also refer to Shell's Industry Associations Climate Review, April 2021 available on https://www.shell.com/promos/sustainability/industry-associations-climate-review-2021/_jcr_content.stream/1617784370604/bbe8a29c319bef3c08424184b21543dc6c032239/shell-industry-

associations-report-2021.pdf

Please also refer to the organisation's own disclosures such as their website.

How have you influenced, or are you attempting to influence their position?

Shell seeks to influence TXOGA through our membership, including our position on TXOGA's board of directors.

We will continue to track alignment between TXOGA's climate-related policy positions and our own, and will be transparent about where we find differences.

We will continue to engage the association in areas where we have different views. Shell urges TXOGA to develop and publish a climate policy that includes stating support for the goal of the Paris Agreement and carbon pricing.

Trade association

Cefic (European Chemical Industry Council)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

- THE PARIS AGREEMENT: Cefic has stated support for the goal of the Paris Agreement.
- NET-ZERO EMISSIONS: Cefic has stated support for the EU Green Deal's target to achieve climate neutrality by 2050.
- CARBON PRICING: Cefic has stated support for carbon pricing mechanisms and advocates reform of the EU Emissions Trading System to enable the most efficient companies to manufacture and grow in Europe.
- ADDITIONAL POLICIES: Cefic has stated support for electricity market reform and collaboration across industrial sectors, as well as a resource-efficient, circular and low-carbon economy. Cefic has stated support for policies on electrification, energy efficiency and low-carbon technologies.
- THE ENERGY TRANSITION: Cefic has stated support for the use of natural gas to help the transition to renewable energies and low-carbon electrification. Cefic has stated positions that advocate the use of lower-carbon gases, including hydrogen and biomethane. Cefic has stated support for policies to reduce methane emissions to reach the EU's climate targets and contribute to the EU's zero-pollution ambition.
- CARBON SINKS: Cefic has stated support for recycling carbon from carbon dioxide and industrial waste gases as a means for the chemical industry to reduce the environmental footprint of chemicals and polymers. This is aligned with Shell's position on the role of carbon capture,

utilisation and storage. Cefic has stated support for access to natural sinks as a way for the chemical industry to mitigate its emissions, accompanied by solid accounting systems.

Please also refer to Shell's Industry Associations Climate Review, April 2021 available on https://www.shell.com/promos/sustainability/industry-associations-climate-review-2021/_jcr_content.stream/1617784370604/bbe8a29c319bef3c08424184b21543dc6c032239/shell-industry-associations-report-2021.pdf

Please also refer to the organisation's own disclosures such as their website.

How have you influenced, or are you attempting to influence their position?

Shell seeks to influence Cefic through our membership, including our position on Cefic's board of directors and executive committee.

We will continue to engage Cefic on climate-related topics and will track alignment between its climate-related policy positions and our own.

Trade association

Fuels Europe (part of European Petroleum Refiners Associations - EPRA)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

- THE PARIS AGREEMENT: FuelsEurope has stated support for the goal of the Paris Agreement.
- NET-ZERO EMISSIONS: FuelsEurope has stated support for the EU Green Deal's target to achieve climate neutrality by 2050.
- CARBON PRICING: FuelsEurope has stated a position that recognises the EU Emissions Trading System as a "cost-effective market mechanism for emissions reduction in the power and energy sector".
- ADDITIONAL POLICIES: FuelsEurope has stated support for energy efficiency and targeted policy support for pre-commercial low-carbon fuels.
- THE ENERGY TRANSITION: FuelsEurope focuses on the refining sector. It has not stated a position on natural gas in the energy system or on methane emissions regulation. FuelsEurope has stated support for the EU's hydrogen strategy.
- CARBON SINKS: FuelsEurope has stated support for a role for "carbon sinks technologies such as carbon capture, storage and utilisation as important contributors to a climate-neutral energy system". FuelsEurope has not stated a position on nature-based solutions.

Please also refer to Shell's Industry Associations Climate Review, April 2021 available on https://www.shell.com/promos/sustainability/industry-associations-climate-review-2021/_jcr_content.stream/1617784370604/bbe8a29c319bef3c08424184b21543dc6c032239/shell-industry-associations-report-2021.pdf

Please also refer to the organisation's own disclosures such as their website.

How have you influenced, or are you attempting to influence their position?

Shell seeks to influence FuelsEurope through our membership of the European Petroleum Refiners Association (EPRA), including our position on EPRA's board of directors.

We will continue to engage FuelsEurope on climate-related topics and will track alignment between its climate-related policy positions and our own.

Trade association

WindEurope

Is your position on climate change consistent with theirs?

Mixed

Please explain the trade association's position

- THE PARIS AGREEMENT: WindEurope has stated support for the goal of the Paris Agreement.
- NET-ZERO EMISSIONS: WindEurope has stated support for the EU Green Deal's target to achieve climate neutrality by 2050. WindEurope has also stated support for the European Commission's proposed target to reduce greenhouse gas emissions by 55% by 2030, which Shell also supports.
- CARBON PRICING: WindEurope has stated support for the EU Emissions Trading System, which it describes as a pillar of the EU's fight against climate change.
- ADDITIONAL POLICIES: WindEurope has stated support for policy frameworks that improve energy efficiency and increase electrification, including the harder-to-abate transport and industrial sectors. WindEurope has also stated positions advocating for a "higher renewable energy target" as part of the revision of the EU's Renewable Energy Directive, which Shell also supports.
- THE ENERGY TRANSITION: WindEurope has stated support for policies to foster renewable hydrogen in hard-to-abate sectors, which Shell

also supports. WindEurope has stated support for a long-term goal of 100% renewable energy. It has stated positions advocating the direct use of renewable electricity whenever it is available and wherever possible across all sectors of the economy. WindEurope has not stated a position on methane emissions regulation.

- **CARBON SINKS:** WindEurope has stated support for the deployment of renewables and the expansion of power grid infrastructure and green hydrogen. In this context, WindEurope has stated that the transition to net-zero emissions should not be based on strong assumptions about the role of carbon capture and storage, land use, land use change and forestry or other carbon sinks which Shell considers crucial to balance emissions in the hard-to-abate sectors. The finding of “Mixed” (“some misalignment” in our 2021 Shell Industry Associations Climate Review) reflects this difference in our position.

Please also refer to Shell’s Industry Associations Climate Review, April 2021 available on https://www.shell.com/promos/sustainability/industry-associations-climate-review-2021/_jcr_content.stream/1617784370604/bbe8a29c319bef3c08424184b21543dc6c032239/shell-industry-associations-report-2021.pdf

Please also refer to the organisation’s own disclosures such as their website.

How have you influenced, or are you attempting to influence their position?

Shell seeks to influence WindEurope through our membership including our position on WindEurope’s board and climate committee.

We will continue to engage WindEurope on climate-related topics and will track alignment between its climate-related policy positions and our own.

Trade association

Oil & Gas UK (OGUK)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association’s position

- **THE PARIS AGREEMENT:** OGUK has stated support for the UK net-zero emissions by 2050 target, which was set in line with the Paris Agreement goal.
- **NET-ZERO EMISSIONS:** OGUK has stated support for the UK net-zero emissions by 2050 target.

- CARBON PRICING: OGUK has stated support for carbon pricing.
- ADDITIONAL POLICIES: OGUK has stated positions that advocate additional policy support for decarbonisation and government support for offshore facility electrification, hydrogen production and carbon transport and storage infrastructure.
- THE ENERGY TRANSITION: OGUK has set out a 2050 net-zero emissions pathway for the UK oil and gas sector. OGUK has stated that the energy transition will require growth in renewables. OGUK has stated support for the role of natural gas and hydrogen in the energy transition. OGUK has stated support for the World Bank's Zero Routine Flaring by 2030 initiative.
- CARBON SINKS: OGUK has stated support for carbon capture, utilisation and storage. OGUK has not stated a position on nature-based solutions.

Please also refer to Shell's Industry Associations Climate Review, April 2021 available on https://www.shell.com/promos/sustainability/industry-associations-climate-review-2021/_jcr_content.stream/1617784370604/bbe8a29c319bef3c08424184b21543dc6c032239/shell-industry-associations-report-2021.pdf

Please also refer to the organisation's own disclosures such as their website.

How have you influenced, or are you attempting to influence their position?

Shell seeks to influence OGUK through our membership, including our position on OGUK's board.

We will continue to engage OGUK on climate-related topics and will track alignment between its climate-related policy positions and our own.

Trade association

Australian Petroleum Production & Exploration Association (APPEA)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

- THE PARIS AGREEMENT: APPEA has stated support for the goal of the Paris Agreement.
- NET-ZERO EMISSIONS: APPEA has stated support for policies that seek to achieve emission reductions consistent with net-zero emissions across the Australian economy by 2050.
- CARBON PRICING: APPEA's climate policy principles state that Australia should seek to deliver low-cost greenhouse gas emissions

abatement through an appropriately designed price mechanism. The mechanism should provide an economy-wide transparent signal to shape business and consumer plans and investments.

- **ADDITIONAL POLICIES:** APPEA has stated support for the development and deployment of new and emerging low-emission technologies, such as carbon capture, utilisation and storage.
- **THE ENERGY TRANSITION:** APPEA has stated support for a key role for natural gas in the energy transition, as a partner to renewables and as a replacement for coal in power generation. APPEA states that reducing methane emissions across the natural gas value chain is a priority for the natural gas industry.
- **CARBON SINKS:** APPEA has stated support for carbon capture and storage and carbon capture, utilisation and storage. APPEA does not take a position on nature-based solutions, but has stated support for policies that allow the widest range of credible domestic and international offsets.

Please also refer to Shell's Industry Associations Climate Review, April 2021 available on https://www.shell.com/promos/sustainability/industry-associations-climate-review-2021/_jcr_content.stream/1617784370604/bbe8a29c319bef3c08424184b21543dc6c032239/shell-industry-associations-report-2021.pdf

Please also refer to the organisation's own disclosures such as their website.

How have you influenced, or are you attempting to influence their position?

Shell seeks to influence APPEA through our membership, including our position on APPEA's board of directors.

We will continue to engage APPEA on climate-related topics and will encourage APPEA to state an explicit position in support of carbon pricing and to support the direct regulation and reduction of methane emissions throughout the natural gas supply chain.

We will continue to track alignment between its climate-related policy positions and our own.

Trade association

Queensland Resources Council (QRC)

Is your position on climate change consistent with theirs?

Inconsistent

Please explain the trade association's position

- **THE PARIS AGREEMENT:** QRC supports global action on climate change. QRC updated its position on energy and climate change in March 2021 to state: “An orderly transition to a low emission economy will require an integrated set of national policies, which are technology neutral. These policies must encompass Australia’s participation in global agreements, including the Paris Agreement”.
- **NET-ZERO EMISSIONS:** QRC has not stated a position on the Queensland state government’s net-zero emissions goal.
- **CARBON PRICING:** QRC has stated support for “an integrated national suite of stable market-based policies that prioritise least cost abatement of greenhouse gas emissions” and “deliver a clear, predictable and long-term price signal to enable investment”. QRC’s stated positions do not explicitly advocate carbon pricing.
- **ADDITIONAL POLICIES:** QRC has not stated positions in support of policies to improve energy efficiency, deliver low-carbon electrification of the energy system or time-limited policy support for low-carbon technologies and fuels. QRC has stated support for “technology neutrality” and “a sustained investment programme to research and deploy the full range of low and zero emissions technologies”. QRC has also stated support for efforts by its members to improve energy efficiency and use renewable energy.
- **THE ENERGY TRANSITION:** QRC has stated support for a role for coal and gas in the energy mix, alongside renewable energy. QRC has indicated support for Queensland to become a significant producer of clean energy to meet growing world energy needs. QRC has stated positions in support of new investment in coal-fired power generation and thermal coal exploration and mining. QRC has not stated a position on methane emissions management in the natural gas supply chain.
- **CARBON SINKS:** QRC has stated support for a role for carbon capture and storage in coal- and gas-fired power generation. QRC has not stated a position in support of nature-based solutions.

Please also refer to Shell’s Industry Associations Climate Review, April 2021 available on https://www.shell.com/promos/sustainability/industry-associations-climate-review-2021/_jcr_content.stream/1617784370604/bbe8a29c319bef3c08424184b21543dc6c032239/shell-industry-associations-report-2021.pdf

Please also refer to the organisation’s own disclosures such as their website.

How have you influenced, or are you attempting to influence their position?

We are not a member of QRC’s governing body.

We are reassessing our membership of QRC.

We are engaging QRC to urge it to update its position on energy and climate change to: explicitly support the goal of the Paris Agreement; explicitly support carbon pricing; explicitly support policies to encourage fuel-switching to lower-emissions energy sources in power generation; and include a position that it will not advocate any new unabated coal-fired power generation.

We also encourage QRC to state support for the direct regulation of methane emissions and reductions in methane emissions throughout the

natural gas supply chain, as well as framing its support for carbon capture and storage in the context of support for the goal of the Paris Agreement and net-zero emissions.

Trade association

Chamber of Minerals and Energy of Western Australia (CME)

Is your position on climate change consistent with theirs?

Mixed

Please explain the trade association's position

- THE PARIS AGREEMENT: CME has stated support for the goal of the Paris Agreement.
- NET-ZERO EMISSIONS: CME has not stated a position on net-zero emissions.
- CARBON PRICING: CME has stated support for the adoption of “market-based mechanisms across the whole economy to achieve abatement at the lowest cost”, but does not explicitly advocate putting a price on carbon.
- ADDITIONAL POLICIES: CME has stated support for electrification of the energy system and development of Western Australia's hydrogen economy. CME has not stated a position on energy efficiency policies.
- THE ENERGY TRANSITION: CME has stated support for Australia's liquefied natural gas industry and for the Western Australia government's Renewable Hydrogen Strategy. CME has not stated a position on methane emissions management.
- CARBON SINKS: CME has stated support for carbon capture and storage and carbon farming to help reduce emissions. It also advocates the creation of international markets for trading certified and credible carbon offsets and initiatives.

Please also refer to Shell's Industry Associations Climate Review, April 2021 available on https://www.shell.com/promos/sustainability/industry-associations-climate-review-2021/_jcr_content.stream/1617784370604/bbe8a29c319bef3c08424184b21543dc6c032239/shell-industry-associations-report-2021.pdf

Please also refer to the organisation's own disclosures such as their website.

How have you influenced, or are you attempting to influence their position?

Shell seeks to influence CME through our membership, including our position on CME's executive council (which has a consultative role).

We urge CME to publish climate policy principles on the climate policy section of its website, and to explicitly state its support of carbon pricing.

We also encourage CME to state its support for the direct regulation and reduction of methane emissions throughout the natural gas supply chain. We will continue to engage CME on climate-related topics and will track alignment between its climate-related policy positions and our own.

Trade association

International Association of Oil & Gas Producers (IOGP)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

- THE PARIS AGREEMENT: IOGP has stated support for the goal of the Paris Agreement.
- NET-ZERO EMISSIONS: IOGP has stated support for the EU Green Deal's target to achieve climate neutrality by 2050.
- CARBON PRICING: IOGP has stated support for carbon pricing mechanisms.
- ADDITIONAL POLICIES: IOGP has stated support for additional policies, including energy efficiency and low-carbon liquids (biofuels and synthetic fuels).
- THE ENERGY TRANSITION: IOGP has stated support for the role of natural gas in the energy transition and the importance of addressing methane emissions. IOGP is a supporting organisation of the Methane Guiding Principles, of which Shell was a founding signatory. IOGP has also stated support for the role of renewable and low-carbon gases such as hydrogen in the energy transition. IOGP's stated positions highlight the role of the oil and gas sector in providing cleaner energy solutions and the investments its member companies are making in renewable energies.
- CARBON SINKS: IOGP has stated support for enabling policies for carbon capture, (use) and storage at scale and nature-based solutions.

Please also refer to Shell's Industry Associations Climate Review, April 2021 available on https://www.shell.com/promos/sustainability/industry-associations-climate-review-2021/_jcr_content.stream/1617784370604/bbe8a29c319bef3c08424184b21543dc6c032239/shell-industry-associations-report-2021.pdf

Please also refer to the organisation's own disclosures such as their website.

How have you influenced, or are you attempting to influence their position?

Shell seeks to influence IOGP through our membership, including our position on IOGP's management committee.

We will continue to engage IOGP on climate-related topics and will track alignment between its climate-related policy positions and our own.

Trade association

IPIECA - The global oil and gas industry association for advancing environmental and social performance.

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

- THE PARIS AGREEMENT: IPIECA has stated support for the goal of the Paris Agreement.
- NET-ZERO EMISSIONS: IPIECA has not stated a position on net-zero emissions in specific countries or regions. However, it is setting up a new net-zero emissions task force in 2021, which will help IPIECA members contribute to the policies and approaches being established by governments.
- CARBON PRICING: IPIECA has stated a position recognising the importance of carbon pricing. IPIECA and Shell are aligned on key elements of policy design.
- ADDITIONAL POLICIES: IPIECA has stated positions in support of additional policies, including its members' efforts to increase energy efficiency and invest in low-carbon technologies and fuels.
- THE ENERGY TRANSITION: IPIECA has stated support for the role of natural gas in the energy transition and the management of methane emissions. It is a supporting organisation of the Methane Guiding Principles, of which Shell was a founding signatory. IPIECA's stated positions recognise the role of renewables in the energy transition.
- CARBON SINKS: IPIECA has stated support for the role of carbon capture and storage and nature-based solutions in the energy transition.

Please also refer to Shell's Industry Associations Climate Review, April 2021 available on https://www.shell.com/promos/sustainability/industry-associations-climate-review-2021/_jcr_content.stream/1617784370604/bbe8a29c319bef3c08424184b21543dc6c032239/shell-industry-associations-report-2021.pdf

Please also refer to the organisation's own disclosures such as their website.

How have you influenced, or are you attempting to influence their position?

Shell seeks to influence IPIECA through our membership, including our position on IPIECA's executive committee.

We will continue to engage IPIECA on climate-related topics and will track alignment between its climate-related policy positions and our own.

Trade association

Oil and Gas Climate Initiative (OGCI)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

- THE PARIS AGREEMENT: OGCI has stated support for the goal of the Paris Agreement.
- NET-ZERO EMISSIONS: OGCI has not stated a position on net-zero emissions, although it highlights member companies' announcements of their net-zero emissions ambitions.
- CARBON PRICING: OGCI has stated support for carbon pricing.
- ADDITIONAL POLICIES: OGCI has stated support for additional policies, including those that accelerate the reduction of operational emissions and the uptake of decarbonisation solutions in sectors such as industry, transport and buildings. OGCI is currently focused on reducing transport sector emissions by using its industry expertise to develop a portfolio of solutions, including for heavy-duty trucks, shipping and long-haul aviation. OGCI has stated support for the development of pre-commercial low-carbon technologies. For example, its KickStarter initiative is designed to facilitate large-scale commercial investment in carbon capture, utilisation and storage and identify policy options to accelerate its deployment.
- THE ENERGY TRANSITION: OGCI has stated support for the role of natural gas in the energy transition and the importance of addressing methane emissions. It is a supporting organisation of the Methane Guiding Principles, of which Shell was a founding signatory. OGCI members set a collective methane emissions target in 2018 and a collective upstream carbon intensity target in 2020. OGCI shares case studies of where its member companies have integrated investments in renewable energy into their operations.
- CARBON SINKS: OGCI has stated support for carbon capture, utilisation and storage and nature-based solutions.

Please also refer to Shell's Industry Associations Climate Review, April 2021 available on https://www.shell.com/promos/sustainability/industry-associations-climate-review-2021/_jcr_content.stream/1617784370604/bbe8a29c319bef3c08424184b21543dc6c032239/shell-industry-

associations-report-2021.pdf

Please also refer to the organisation's own disclosures such as their website.

How have you influenced, or are you attempting to influence their position?

Shell seeks to influence OGCI through our membership, including our position on OGCI's executive committee.

We will continue to engage OGCI on climate-related topics and will track alignment between its climate-related policy positions and our own.

(C12.3d) Do you publicly disclose a list of all research organizations that you fund?

No

(C12.3e) Provide details of the other engagement activities that you undertake.

Annual Report 2020, p95/96

TRANSPARENCY AND COLLABORATION

We support efforts to increase transparency and investors' understanding of companies' strategies for responding to the risks and opportunities of climate change. We do this through engagement with external stakeholders such as industry associations, standard setters, non-governmental organisations (NGOs), investors, and initiatives on different topics including climate change. With publications such as our 2020 Sustainability Report, our 2021 Industry Associations Climate Review update, and 2021 Corporate Political Engagement Statement we aim to provide additional information to address requests and recommendations from different reporting frameworks and standards. Some examples of those frameworks and engagements are described below.

- We continue to support the Task Force on Climate-related Financial Disclosures (TCFD) recommendations and apply them to our reporting. We aim to address the recommendations with this Report and other Shell publications such as the 2020 Sustainability Report and 2021 Industry Associations Climate Review, and our latest scenarios Islands, Waves, and Sky 1.5.
- As a member of the Oil and Gas Climate Initiative (OGCI) we are one of a group of 12 national and international energy companies that focus on action that has real impact now and delivers on decarbonisation in the coming decades (see Methane initiatives and collaborations, page 102).
- In December 2020, eight leading energy companies including Shell announced that they had jointly developed and agreed to apply six Energy Transition Principles. These principles aim to support the collective industry acceleration to contribute to the Paris Agreement objectives by delivering progress on reducing GHG emissions, the role of carbon sinks, and the importance of transparency and alignment on climate change with trade associations. The companies are building further on this collaboration to drive more consistency and transparency in greenhouse gas reporting, and in measurement of the emissions which may occur at different points in the value chain.
- We continue to engage with the Science Based Targets initiative (SBTi), and we are a member of its Technical Working Group that is currently working to define the methodology for the oil, gas and integrated energy sector.

- Some governments have introduced carbon pricing mechanisms, which we believe can be an effective way to reduce GHG emissions across the economy at the lowest overall cost to society. We expect more governments to follow. Shell is encouraging carbon pricing mechanisms so that businesses and consumers are further incentivised to improve energy efficiency, provide and switch to lower-carbon options, and reduce carbon emissions. Such mechanisms can also help encourage projects such as CCS facilities and nature-based solutions like the planting of forests. Shell continues to work with governments to produce effective transition plans and policies.

(C12.3f) What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

We provide our statement on Corporate Political Engagement on our website (see https://www.shell.com/promos/sustainability/political-engagement-statement/_jcr_content.stream/1611074483913/26cf11a209cf2d3cdcf3172b62dc4e3544d5158c/cpe-final-January-21-2021.pdf). This includes our principles for responsible lobbying that apply to all staff.

We believe that our expertise can help shape comprehensive and effective policy, legislation, and regulation. Shell engages governments, regulators and policymakers directly and indirectly, for example through industry associations or advocacy coalitions. We advocate on public policy issues in line with the Shell General Business Principles and based on our advocacy priorities, which are aligned with our business strategy across lines of business and geographies. Shell senior executives approve our advocacy priorities each year.

We publish our global climate-related policy positions on our website (see www.shell.com/advocacy). These are global principles that guide the positions Shell takes on global and country-specific policies. For example, our global positions that state that we advocate the direct regulation of methane emissions as a risk to the climate system and support reductions in methane emissions throughout the natural gas supply chain. In 2020, we continued to call for the direct regulation of methane emissions under the US Clean Air Act; we also set out methane policy recommendations for the EU (see <https://www.shell.com/sustainability/transparency/advocacy-and-political-activity/advocacy-releases.html>).

Shell's global climate-related policy positions are also the basis for reviewing our industry associations. The alignment of industry associations with these principles is assessed on a case-by-case basis, recognising that associations vary in terms of the profile of their members and scope of activities.

Shell published its latest Industry Associations Climate Review in April 2021 (see https://www.shell.com/promos/sustainability/industry-associations-climate-review-2021/_jcr_content.stream/1617784370604/bbe8a29c319bef3c08424184b21543dc6c032239/shell-industry-associations-report-2021.pdf). This report features 36 associations and reviews alignment between the positions the associations support and the climate-related policy positions that Shell published in 2020. Of the 36, we found “material misalignment” with one association, “some misalignment” with seven associations and “alignment” with 28 associations.

The information provided in section C12.3c relates to 17 of the associations featured in the Industry Associations Climate Review 2021, where Shell payments to the association were \$500,000 or more and/or the association was found to have “some misalignment” or “material misalignment” with

Shell's positions. We have indicated "consistent" where Shell found "alignment", "inconsistent" when Shell found "material misalignment" and "mixed" where Shell found "some misalignment".

We plan to publish updated policy positions ahead of the UN Climate Change Conference (COP 26) in November 2021. These positions will outline the policies we think are needed to help decarbonise the energy system, in line with our Powering Progress strategy and increasing societal expectations. They will guide our advocacy and form the basis of our assessments in our next industry associations review. By evolving our policy positions, and sharing these with industry associations and other stakeholders, we aim to increase collaboration around the climate policy frameworks needed to help the world to achieve net-zero emissions by 2050.

(C12.4) Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).


Publication

In mainstream reports, incorporating the TCFD recommendations

Status

Complete

Attach the document

 2020 Shell Annual Report.pdf

Page/Section reference

Annual Report and Accounts 2020: <https://reports.shell.com/annual-report/2020/>

Across the document, e.g., in sections: OUR STRATEGY, p18ff; OUTLOOK FOR 2021 AND BEYOND, p21; RISK FACTORS, p29; PERFORMANCE INDICATORS - SAFETY AND ENVIRONMENT, p45; CLIMATE CHANGE AND ENERGY TRANSITION, p94-107; GOVERNANCE FRAMEWORK, p128ff; DIRECTORS' REMUNERATION REPORT, 153ff.

Content elements

Governance

Strategy

Risks & opportunities

Emissions figures

Emission targets

Other metrics

Publication

In voluntary sustainability report

Status

Complete

Attach the document

 2020 Shell Sustainability Report.pdf

Page/Section reference

Sustainability Report 2020: <https://reports.shell.com/sustainability-report/2020/>

Across the document, e.g., in sections: OUR CLIMATE TARGET, p32ff; PROVIDING ACCESS TO ENERGY, p65; OUR POWERING PROGRESS TARGETS, p88; OUR PERFORMANCE DATA, p89ff.

Content elements

Governance

Strategy

Risks & opportunities

Emissions figures

Emission targets

Other metrics


Publication

In voluntary communications

Status

Complete

Attach the document

 2021 Shell Energy Transition Strategy.pdf

Page/Section reference

Shell Energy Transition Strategy: https://www.shell.com/investors/annual-general-meeting/_jcr_content/par/textimage_d70a_copy.stream/1618407326759/7c3d5b317351891d2383b3e9f1e511997e516639/shell-energy-transition-strategy-2021.pdf

Whole document on energy transition strategy.

Content elements

Governance

Strategy

Risks & opportunities


Publication

In voluntary communications

Status

Complete

Attach the document

 2021 Shell Industry Associations Report 2021.pdf

Page/Section reference

Shell Industry Associations Climate Review 2021: https://www.shell.com/promos/sustainability/industry-associations-climate-review-2021/_jcr_content.stream/1617784370604/bbe8a29c319bef3c08424184b21543dc6c032239/shell-industry-associations-report-2021.pdf
Whole document on industry associations climate positions.

Content elements

Governance

Strategy

Other, please specify: Policy engagement

Publication

In voluntary communications

Status

Complete

Attach the document

 2021 Shell Strategy Day 11 Feb slides.pdf

Page/Section reference

Strategy Day 2021 materials: <https://www.shell.com/investors/investor-presentations/2021-investor-presentations/strategy-day-2021.html>

Slide pack: https://www.shell.com/investors/investor-presentations/2021-investor-presentations/strategy-day-2021/_jcr_content/par/textimage_1038086377.stream/1613410966913/8cd4fe1b174147fa20b33d1c189349dd36a9017d/strategy-day-2021-slides.pdf

Content elements

Governance

Strategy

Risks & opportunities

Emission targets

Other metrics

Publication

In voluntary communications

Status

Complete

Attach the document

 2021 The Energy Transformation Scenarios report.pdf

Page/Section reference

The energy transformation scenarios: https://www.shell.com/promos/energy-and-innovation/download-full-report/_jcr_content.stream/1612814283728/d14d37b7dd060d78b65bfee3c7654520e10381aa/shell-energy-transformation-scenarios-report.pdf

Content elements

Other, please specify: Energy transformation scenarios

C15. Signoff

(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

Definitions and cautionary note

The companies in which Royal Dutch Shell plc directly and indirectly owns investments are separate legal entities. In this report “Shell”, “Shell Group” and “Group” are sometimes used for convenience where references are made to Royal Dutch Shell plc and its subsidiaries in general. Likewise, the words “we”, “us” and “our” are also used to refer to Royal Dutch Shell plc and its subsidiaries in general or to those who work for them. These terms are also used where no useful purpose is served by identifying the particular entity or entities. “Subsidiaries”, “Shell subsidiaries” and “Shell companies” as used in this report refer to entities over which Royal Dutch Shell plc either directly or indirectly has control. Entities and unincorporated arrangements over which Shell has joint control are generally referred to as “joint ventures” and “joint operations”, respectively. Entities over which Shell has

significant influence but neither control nor joint control are referred to as “associates”. The term “Shell interest” is used for convenience to indicate the direct and/or indirect ownership interest held by Shell in an entity or unincorporated joint arrangement, after exclusion of all third-party interest.

Also, in this report we may refer to Shell’s “Net Carbon Footprint”, which includes Shell’s carbon emissions from the production of our energy products, our suppliers’ carbon emissions in supplying energy for that production and our customers’ carbon emissions associated with their use of the energy products we sell. Shell only controls its own emissions. But, to support society in achieving the Paris Agreement goals, we aim to help such suppliers and consumers to likewise lower their emissions. The use of the term Shell’s “Net Carbon Footprint” is for convenience only and not intended to suggest these emissions are those of Shell or its subsidiaries.

Shell’s operating plan, outlook and budgets are forecasted for a ten-year period and are updated every year. They reflect the current economic environment and what we can reasonably expect to see over the next ten years. Accordingly, Shell’s operating plans, outlooks, budgets and pricing assumptions do not reflect our net-zero emissions target. In the future, as society moves towards net-zero emissions, we expect Shell’s operating plans, outlooks, budgets and pricing assumptions to reflect this movement. This report contains forward-looking statements (within the meaning of the U.S. Private Securities Litigation Reform Act of 1995) concerning the financial condition, results of operations and businesses of Shell. All statements other than statements of historical fact are, or may be deemed to be, forward-looking statements. Forward-looking statements are statements of future expectations that are based on management’s current expectations and assumptions and involve known and unknown risks and uncertainties that could cause actual results, performance or events to differ materially from those expressed or implied in these statements. Forward-looking statements include, among other things, statements concerning the potential exposure of Shell to market risks and statements expressing management’s expectations, beliefs, estimates, forecasts, projections and assumptions. These forward-looking statements are identified by their use of terms and phrases such as “aim”, “ambition”, “anticipate”, “believe”, “could”, “estimate”, “expect”, “goals”, “intend”, “may”, “objectives”, “outlook”, “plan”, “probably”, “project”, “risks”, “schedule”, “seek”, “should”, “target”, “will” and similar terms and phrases. There are a number of factors that could affect the future operations of Shell and could cause those results to differ materially from those expressed in the forward-looking statements included in this report, including (without limitation): (a) price fluctuations in crude oil and natural gas; (b) changes in demand for Shell’s products; (c) currency fluctuations; (d) drilling and production results; (e) reserves estimates; (f) loss of market share and industry competition; (g) environmental and physical risks; (h) risks associated with the identification of suitable potential acquisition properties and targets, and successful negotiation and completion of such transactions; (i) the risk of doing business in developing countries and countries subject to international sanctions; (j) legislative, fiscal and regulatory developments including regulatory measures addressing climate change; (k) economic and financial market conditions in various countries and regions; (l) political risks, including the risks of expropriation and renegotiation of the terms of contracts with governmental entities, delays or advancements in the approval of projects and delays in the reimbursement for shared costs; and (m) risks associated with the impact of pandemics, such as the COVID-19 (coronavirus) outbreak; and (n) changes in trading conditions. No assurance is provided that future dividend payments will match or exceed previous dividend payments. All forward-looking statements contained in this report are expressly qualified in their entirety by the cautionary statements contained or referred to in this section. Readers should not place undue reliance on forward-looking statements. Additional risk

factors that may affect future results are contained in Royal Dutch Shell plc's Form 20-F for the year ended December 31, 2020 (available at www.shell.com/investor and www.sec.gov). These risk factors also expressly qualify all forward-looking statements contained in this report and should be considered by the reader. Each forward-looking statement speaks only as of the date of this report, August 03rd, 2021. Neither Royal Dutch Shell plc nor any of its subsidiaries undertake any obligation to publicly update or revise any forward-looking statement as a result of new information, future events or other information. In light of these risks, results could differ materially from those stated, implied or inferred from the forward-looking statements contained in this report.

We may have used certain terms, such as resources, in this report that the United States Securities and Exchange Commission (SEC) strictly prohibits us from including in our filings with the SEC. U.S. investors are urged to consider closely the disclosure in our Form 20-F, File No 1-32575, available on the SEC website www.sec.gov.

This CDP Climate Change response contains data and analysis from Shell's Sky 1.5 scenario. Shell Scenarios are not intended to be projections or forecasts of the future. Shell scenarios including the scenarios contained in this CDP Climate Change response are not Shell's strategy or business plan. When developing Shell's strategy, our scenarios are one of many variables that we consider. Ultimately, whether society meets its goals to decarbonize is not within Shell's control. While we intend to travel this journey in step with society, only governments can create the framework for success. The Sky 1.5 scenario starts with data from Shell's Sky scenario, but there are important updates. First, the outlook uses the most recent modelling for the impact and recovery from COVID-19 consistent with a Sky 1.5 scenario narrative. Second, it blends this projection into existing Sky (2018) energy system data by around 2030. Third, the extensive scaleup of nature-based solutions is brought into the core scenario, which benefits from extensive new modelling of that scale-up. (In 2018, nature-based solutions required to achieve 1.5°C above pre-industrial levels by the end of this century were analysed as a sensitivity to Sky. This analysis was also reviewed and included in the IPCC Special Report on Global Warming of 1.5°C (SR15).) Fourth, our new oil and natural gas supply modelling, with an outlook consistent with the Sky 1.5 narrative and demand, is presented for the first time. Fifth, the Sky 1.5 scenario draws on the latest historical data and estimates to 2020 from various sources, particularly the extensive International Energy Agency energy statistics. As with Sky, this scenario assumes that society achieves the 1.5°C stretch goal of the Paris Agreement. It is rooted in stretching but realistic development dynamics today but explores a goal-oriented way to achieve that ambition. We worked back in designing how this could occur, considering the realities of the situation today and taking into account realistic timescales for change. Of course, there is a range of possible paths in detail that society could take to achieve this goal. Although achieving the goal of the Paris Agreement and the future depicted in Sky 1.5 while maintaining a growing global economy will be extremely challenging, today it is still a technically possible path. Shell's operating plan, outlook and budgets are forecasted for a ten-year period and are updated every year. They reflect the current economic environment and what we can reasonably expect to see over the next ten years. Accordingly, Shell's operating plans, outlooks, budgets and pricing assumptions do not reflect our net-zero emissions target. In the future, as society moves towards net-zero emissions, we expect Shell's operating plans, outlooks, budgets and pricing assumptions to reflect this movement.

Documents on display

The SEC maintains an Internet site that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC. All of the SEC filings made electronically by Shell are available to the public on the SEC website at www.sec.gov (commission file number 001-32575). This Report is also available, free of charge, at www.shell.com/annualreport or at the offices of Shell in The Hague, the Netherlands, and London, United Kingdom. Copies of this Report also may be obtained, free of charge, by mail.

(C15.1) Provide details for the person that has signed off (approved) your CDP climate change response.

Job title	Corresponding job category
Chief Executive Officer (CEO)	Chief Executive Officer (CEO)
