Table of Contents

Capitalization and Indebtedness

Not applicable

Reasons for the Offer and Use of Proceeds

Not applicable

Risk Factors

RISKS RELATED TO OUR FINANCIAL RESTRUCTURING

We are discussing with our stakeholders a financial restructuring to provide us with a level of indebtedness and cost of debt that is substantially reduced and sustainably adapted to our cash flows.

On January 5, 2017 and March 3, 2017, we communicated that with a market environment expected to remain similar in 2017 to 2016 and continuing to weigh on our revenues, we consider that our debt level is too high. We do not expect our performance to generate sufficient cash flow to service our current level of debt over the years to come. We have therefore commenced discussions with certain stakeholders from various jurisdictions in order to achieve a financial restructuring. The President of the Commercial Court of Paris (*Tribunal de Commerce de Paris*) on February 27, 2017 appointed an 'ad hoc representative' (*Mandataire ad hoc*) in order to facilitate the discussions in a manner intended to respect the best interests of all of our stakeholders. The objective of this restructuring is to provide us with a level of indebtedness and cost of debt that is substantially reduced and sustainably adapted to our cash flows. The proposed debt reduction would involve the conversion of unsecured debt into equity and the extension of the secured debt maturities. See "Our Business — Recent Developments — Financial restructuring discussions" for more information on the status of the discussions. No assurance can be given as to the outcome of the discussions, any such restructuring and its implementation.

A restructuring plan may provide for CGG SA to equitize part of its debt and potentially raise additional capital, which could significantly dilute shareholders and holders of our American Depositary Shares through the issuance of a large number of shares and other equity securities.

We currently face uncertainties related to our business, the market for our goods and services and our future financial condition, as well as risks and costs associated with our financial restructuring process. As a result, our restructuring discussion with creditors and shareholders may lead to a restructuring plan that provides for CGG SA to equitize part of its debt and potentially raise additional capital to continue the group's operations and meet our funding needs. Depending on the restructuring plan that might be agreed by us and our stakeholders, any such new money could be provided by existing shareholders, holders of our convertible bonds, holders of our Seniors Notes, lenders under our US revolving facility, French revolving facility and 2019 secured term loans and/or the public and could take the form of the issuance of a large number of shares and other equity and/or equity-linked securities. The issuance of new shares could be carried out at prices substantially below the market price of our common stock and could significantly dilute the ownership of our shareholders and holders of our American Depositary Shares. The future exercise or conversion of equity or equity-linked instruments could further dilute shareholders and holders of our American Depositary Shares, and the existence of such potential dilution would adversely affect the trading price of our shares and American Depositary Shares.

We may seek the protection of the bankruptcy court in connection with a negotiated restructuring or otherwise, which may harm our business and place common shareholders and holders of our American Depositary Shares at significant risk of losing substantially all of their interests in us.

As a result of the impact on our financial position from the challenging market conditions which persist with weak volumes and the debt level that we consider too high, we are discussing with stakeholders, under a French *mandat ad hoc* process, various strategic alternatives to address our liquidity and capital structure, including strategic and refinancing alternatives, which may include, but not be limited to, seeking a restructuring, amendment or refinancing of existing debt through a *sauvegarde* proceeding in France and/or Chapter 11 and/or Chapter 15 of the U.S. Bankruptcy Code and/or other proceedings.

Seeking bankruptcy court protection could have a material adverse effect on our business, reputation, financial condition and results of operations. So long as a court process continues, our senior management will be required to spend a significant amount of time and effort dealing with the reorganization instead of focusing exclusively on our business operations. Bankruptcy court protection also might make it more difficult to retain management and other key personnel necessary to the success and growth of our business. In addition, the longer a court process continues, the more likely it is that our customers and suppliers could lose confidence in our ability to reorganize our business successfully and could seek to establish alternative commercial relationships.

If our ongoing negotiations with our stakeholders, including our creditors, result in an agreed restructuring that equitizes certain of our indebtedness, our common shareholders and holders of our American Depositary Shares would experience significant dilution. In the absence of such an agreed restructuring, we have a significant amount of indebtedness that is senior to our existing common shares in our capital structure, and we believe that seeking bankruptcy court protection could place our common shareholders and holders of our American Depositary Shares at significant risk of losing substantially all of their interests us.

If we are unable to comply with the financial covenants governing our indebtedness or timely obtain necessary consents or waivers of any defaults that occur with respect to our indebtedness or achieve specific steps to conserve liquidity and/or secure additional capital, we may be unable to continue as a going concern.

Our substantial level of indebtedness, and the terms of the agreements that govern such indebtedness, require us and our subsidiaries to use a substantial portion of our cash flow from operations to pay interest and principal on the debt, which reduces the funds available for working capital, capital expenditures and other general corporate purposes and limits our ability to obtain additional financing.

Our Credit Facilities contain financial covenants that we are required to test on a quarterly basis. We obtained, in December 2016, consent from the requisite majority of the lenders under the French and US revolving facilities and the Nordic credit facility for the disapplication of the testing of the Total Leverage Ratio and the Interest Cover Ratio in respect of the Relevant Period ended on December 31, 2016 and we obtained a further consent from such lenders and for the lenders under the 2019 secured term loans for the Relevant Period ended March 31, 2017.

While we will endeavor to take appropriate mitigating actions to refinance or renegotiate our indebtedness prior to its maturity and to remediate any potential defaults, there is no assurance that any particular actions with respect to refinancing or renegotiation of existing indebtedness or remediating potential defaults in our existing and future debt agreements will be successful. The uncertainty associated with our ability to respect our financial covenants and meet future payment obligations could raise significant doubt about our ability to continue as a going concern. See note 1.3 to the Company’s Consolidated Financial Statements included this annual report.

We continue to evaluate our financial and strategic alternatives, which include a financial restructuring of our existing indebtedness under a *sauvegarde* proceeding in France under the provisions of Articles L.620-1 et seq. of the *Code de commerce* (French Commercial Code) and/or Chapter 11 and/or Chapter 15 of the U.S. Bankruptcy Code and/or other procedures in these and other jurisdictions. We are currently negotiating with our stakeholders, under a French *mandat ad hoc* process, in order to achieve, among others, an extension of our debt maturities and/or a restructuring that equitizes certain of our indebtedness. However, we cannot provide assurance that we will be successful in completing a refinancing or restructuring of our existing indebtedness consensually or otherwise.

The uncertainties surrounding the duration and the outcome of the ongoing financial restructuring could have a negative effect on our working capital needs.

We can no longer obtain financing at normal market conditions and our needs must be entirely met by our own available funds. As of March 2, 2017, in light of the Group's cash flow projections based on current operations and in the absence of any acceleration of the Group's financial debt, as described below, the CGG board of directors judged that we had enough cash liquidity to fund our operations until at least December 31, 2017, provided that certain planned specific actions, which were subject to negotiation with other parties, were successfully implemented during the period. As of April 27, 2017, we had successfully implemented certain of such actions, namely the proactive management of vessel charter contract costs and the fleet ownership changes (see note 30 to our consolidated financial statements included herein). However, the other specific planned actions may not occur, which could reduce our liquidity. In addition, the uncertainties created by our financial situation may have a negative effect on our working capital needs. For example, our relationships with suppliers could deteriorate, as they could demand more restrictive payment terms. Further, our inability to obtain financing at normal market conditions adversely and materially affects our ability to fund additional working capital demands.

For further important risks related to our indebtedness and liquidity, see "Risks Related to Our Indebtedness" below.

RISKS RELATED TO OUR BUSINESS

Current economic uncertainty and the volatility of oil and natural gas prices could have a significant adverse effect on us.

Global market and economic conditions are uncertain and volatile. In recent periods, economic contractions and uncertainty have weakened demand for oil and natural gas while the introduction of new production capacities have increased supply, resulting in lower prices, and consequently a reduction in the levels of exploration for hydrocarbons and demand for our products and services. These developments have had a significant adverse effect on our business, revenue and liquidity. The price of Brent decreased from US$110.80 per barrel as of December 31, 2013 to US$57.33 per barrel as of December 31, 2014 to US$37.28 per barrel as of December 31, 2015 and rose to US$56.82 as of December 31, 2016. It is difficult to predict how long the current economic conditions and imbalance between supply and demand will persist, whether oil prices will remain at a low level, whether the current market conditions will deteriorate further, and which of our products and services may be adversely affected. Nonetheless, the reduction in demand for our products and services and the resulting pressure on pricing in our industry could continue to negatively affect our business, results of operations, financial condition and cash flows.

We have had in the past and may have in the future impairment losses as events or changes in circumstances occur that reduce the fair value of an asset below its book value. We may also have write-offs and non-recurring charges. For 2014, 2015 and 2016, such asset impairments, write-offs and non-recurring charges totaled US$939 million, US$1,177 million and US$184 million, respectively. These losses and changes could have a material adverse effect on our results of operations and financial condition.

Uncertainty about the general economic situation and/or the mid-term level of hydrocarbons prices has had and is likely to continue to have a significant adverse impact on the commercial performance and financial condition of many companies, which may affect some of our customers and suppliers. The current economic and oil industry climate may lead customers to cancel or delay orders or leave suppliers unable to provide goods and services as agreed. Our government clients may face budget deficits that prohibit them from funding proposed and existing projects or that cause them to exercise their right to terminate our contracts with little or no prior notice. If our suppliers, vendors, subcontractors or other counterparties are unable to perform their obligations to us or our customers, we may be required to provide additional services or make alternate arrangements on less favorable terms with other parties to ensure adequate performance and delivery of service to our customers.

These circumstances could also lead to disputes and litigation with our partners or customers, which could have a material adverse impact on our reputation, business, financial condition and results of operations.

Turmoil in the credit markets, such as has been experienced in prior periods, could also adversely affect us and our customers. Limited access to external funding has in the past caused some companies to reduce their capital spending to levels supported by their internal cash flow. Some companies have found their access to liquidity constrained or subject to more onerous terms. In this context, our customers may not be able to borrow money on reasonable terms or at all, which could have a negative impact on their demand for our products, and impair their ability to pay us for our products and services on a timely basis, or at all.

In addition, the potential impact on the liquidity of major financial institutions may limit our ability to fund our business strategy through borrowings under either existing or new debt facilities in the public or private markets and on terms we believe to be reasonable. Persistent volatility in the financial markets could have a material adverse effect on our ability to refinance all or a portion of our indebtedness and to otherwise fund our operational requirements. We cannot be certain that additional funds will be available if needed to make future investments in certain projects, take advantage of acquisitions or other opportunities or respond to competitive pressures. If additional funds are not available, or are not available on terms satisfactory to us, there could be a material adverse impact on our business and financial performance.

We are subject to risks related to our international operations.

With operations worldwide, including in emerging markets, our business and results of operations are subject to various risks inherent in international operations. These risks include:

- instability of foreign economies and governments, which can cause investment in capital projects by our potential clients to be withdrawn or delayed, reducing or eliminating the viability of some markets for our services;
- risks of war, terrorism, riots and uprisings, which can make it unsafe to continue operations, adversely affect budgets and schedules and expose us to losses;
- risk of piracy, which may result in delays carrying out customer contracts in affected areas or their termination;
- seizure, expropriation, nationalization or detention of assets, or renegotiation or nullification of existing contracts;
- foreign exchange restrictions, import/export quotas, sanctions and other laws and policies affecting taxation, trade and investment; and
- availability of suitable personnel and equipment, which can be affected by government policy, or changes in policy, that limit the movement of qualified crew members or specialized equipment to areas where local resources are insufficient.

We are exposed to these risks in all of our international operations to some degree, particularly in emerging markets where the political and legal environment is less stable. We are subject to the risk of adverse developments with respect to certain international operations and any insurance coverage we have may not be adequate to compensate us for any losses arising from such risks.

Revenue generating activities in certain foreign countries may require prior United States government and/or European Union authorities’ approval in the form of an export license and may otherwise be subject to tariffs and import/export restrictions. These laws can change over time and may result in limitations on our ability to compete globally. Thus, in the case of the U.S. legislation, non-U.S. persons employed by our separately incorporated non-U.S. entities may conduct business in some foreign jurisdictions that are subject to U.S. trade embargoes and sanctions by the U.S. Office of Foreign Assets Control (“OFAC”), including countries that have been designated by the U.S. government as state sponsors of terrorism. We have typically generated revenue in some of these countries through the performance of marine surveys, the provision of data processing and reservoir consulting services, the sale of software licenses and software maintenance and the sale of Sercel equipment. We have current and ongoing relationships with customers in these countries. We have procedures in place to conduct these operations in compliance with applicable U.S. and European laws. However, failure to comply with U.S. or European laws on equipment and services exports could result in material fines and penalties, damage our reputation, and negatively affect the market price of our securities. In addition, our presence in these countries could reduce demand for our securities among certain investors.

Certain of our clients and certain tax, social security or customs authorities may request that we or certain of our subsidiaries or affiliates post performance bonds or guarantees issued by financial institutions, including in the form of standby letters of credit, in order to guarantee our legal or contractual obligations. We cannot assure you that we will be able to provide these bonds or guarantees in the amounts or durations required or for the benefit of the necessary parties. Our failure to comply with these requests could reduce our capacity to conduct business or perform our contracts. In addition, if we do provide these bonds or guarantees, our clients or the relevant authorities may call them under circumstances that we believe to be improper, and we may not be able to challenge such actions effectively in local courts.

We and certain of our subsidiaries and affiliated entities also conduct business in countries where there is government corruption. We are committed to doing business in accordance with all applicable laws and our codes of ethics, but there is a risk that we, our subsidiaries or affiliates or their respective officers, Directors, employees or agents may act in violation of our codes and applicable laws, including the Foreign Corrupt Practices Act of 1977. Any such violations could result in substantial civil and criminal penalties and might materially adversely affect our business and results of operations, financial condition or reputation.

We are subject to certain risks related to acquisitions.

In the past we have grown by acquisitions, some of which, such as the merger with Veritas in 2007, the acquisition of Wavefield in 2008 or the acquisition of Fugro Geoscience Division in 2013, were quite significant. Such transactions, whether completed, pending or likely to be completed in the future, present various financial and management-related risks that can be material, such as integration of the acquired businesses in a cost-effective manner; implementation of a combined business strategy; diversion of management’s attention; outstanding or unforeseen legal, regulatory, contractual, labor or other issues arising from the acquisitions; additional capital expenditure requirements; retention of customers; combination of different company and management cultures; operations in new geographic markets; the need for more extensive management coordination; and retention, hiring and training of key personnel. Should any of these risks associated with acquisitions materialize, they could have a material adverse effect on our business, financial condition and results of operations.

We have transferred our Seabed business to a joint venture company that is controlled by a third party.

In connection with the Geoscience Acquisition, we transferred our shallow water, ocean bottom cable and ocean bottom node activities to a company in which Fugro holds a 60% majority interest and we hold a minority interest. As a result, we no longer have full control over the management and operations of these activities. While we have certain customary rights with respect to certain key decisions relating to the joint venture’s activities, this is not the same as the right to determine the strategy and policies of this business. In addition, our shares in the joint venture company are subject to restrictions on transfer, as well as to Fugro’s right to require us to sell our shares in certain circumstances.

We may need to write down goodwill from our balance sheet.

We have been involved in a number of business combinations in the past, leading to the recognition of large amounts of goodwill on our balance sheet. Goodwill on our balance sheet totaled US$1,229 million as of

December 31, 2015 and US$1,223 millions of dollars as of December 31, 2016 due to exchange rate variations. Goodwill is allocated to cash generating units ("CGUs") as described in note 11 to our consolidated financial statements for the year ended December 31, 2016. The recoverable amount of a CGU is estimated at each balance sheet date and is generally determined on the basis of a group-wide estimate of future cash flows expected from the CGU in question. The estimate takes into account, in particular, the removal from service of certain assets used in our business (such as decommissioning or coldstacking vessels), or change in purpose of a given asset (such as the use of a seismic vessel as a source-vessel), or any significant underperformance in cash generation relative to previously-expected results, which may arise, for example, from the underperformance of certain assets, a deterioration in industry conditions or a decline in the economic environment. At each balance sheet date, if we expect that a CGU's recoverable amount will fall below the amount of capital employed recorded on the balance sheet, we may write down some value on given assets and/or the goodwill in part or in whole. Such a write-down would not in itself have an impact on cash flow, but could have a substantial negative impact on our operating income and net income, and as a result, on our shareholders' equity and net debt/equity ratio. We wrote down US$415 million of goodwill in our marine acquisition activity as of December 31, 2014 as a result of the deterioration in market conditions. Furthermore, as of December 31, 2015, in response to the continuing deterioration of market conditions and the drastic reduction of our fleet, we wrote down US$365 million of goodwill in our marine acquisition activity and US$439 million of goodwill in our Geology, Geophysics & Reservoir ("GGR") activity, for a total of US$804 million for 2015. In 2016, we did not write down any goodwill. The only movement in goodwill is linked to exchange rate variations. Particularly in light of our financial condition and difficult market dynamics, no assurance can be given that we will not be required to make future potentially significant goodwill write downs.

We invest significant amounts of money in acquiring and processing seismic data for multi-client surveys without knowing precisely how much of the data we will be able to sell or when and at what price we will be able to sell the data.

We invest significant amounts of money in acquiring and processing seismic data that we own. By making such investments, we are exposed to the following risks:

- We may not fully recover the costs of acquiring and processing the data through future sales. The amounts of these data sales are uncertain and depend on a variety of factors, many of which are beyond our control. In addition, the timing of these sales is unpredictable, and sales can vary greatly from period to period. Each of our individual surveys has a limited book life based on its location, so a particular survey may be subject to significant amortization even though sales of licenses associated with that survey are weak or non-existent, thus reducing our net income.
- Technological or regulatory changes or other developments could also materially adversely affect the value of the data. For example, regulatory changes such as limitations on drilling could affect the ability of our customers to develop exploration programs, either generally or in a specific location where we have acquired seismic data, and technological changes could make existing data obsolete.
- The value of our multi-client data could be significantly adversely affected if any adverse change occurs in the general prospects for oil and gas exploration, development and production activities in the areas where we acquire multi-client data or more generally.
- Any reduction in the economic value of such data will require us to write down its recorded value, which could have a material adverse effect on our results of operations. We wrote down the value of our multi-client data library by US$97 million in the year 2016.

Our results of operations may be significantly affected by currency fluctuations.

We derive a substantial portion of our revenues from international sales, subjecting us to risks relating to fluctuations in currency exchange rates. Our revenues and expenses are mainly denominated in US dollars, and to a significantly lesser extent, in euros, Canadian dollars, Brazilian reais, Australian dollars, Norwegian kroner, British pounds and Chinese renminbi-yuan. Historically, a significant portion of our revenues that were invoiced in currencies other than US dollars related to contracts that were effectively priced in US dollars, as the US dollar often serves as the reference currency when bidding for contracts to provide geophysical services.

Fluctuations in the exchange rate of other currencies, particularly the euro, against the U.S. dollar, have had in the past and will have in the future a significant effect upon our results of operations. We attempt to reduce the risks associated with such exchange rate fluctuations through our hedging policy. We cannot assure you that fluctuations in the values of the currencies in which we operate will not materially adversely affect our future results of operations. As of December 31, 2016, we estimate our annual fixed needs in euros to be approximately €400 million and as a result, an unfavorable variation of US$0.20 in the average yearly exchange rate between the US dollar and the euro would reduce our operating income and our shareholders' equity by approximately US$80 million. See *"— Market and Other Risks — We are exposed to exchange rates fluctuations."*

Our working capital needs are difficult to forecast and may vary significantly, which could result in additional financing requirements that we may not be able to meet on satisfactory terms, or at all.

It is difficult for us to predict with certainty our working capital needs. This difficulty is due primarily to working capital requirements related to the marine seismic acquisition business, multi-client projects and the development and introduction of new lines of geophysical equipment products. For example, under specific circumstances, we may have to extend the length of payment terms we grant to customers or may increase our inventories substantially. We may therefore be subject to significant and rapid increases in our working capital needs that we may have difficulty financing on satisfactory terms, or at all, due notably to limitations in our debt agreements or market conditions. See "*— Risks Related to Our Financial Restructuring — The uncertainties surrounding the duration and the outcome of the ongoing financial restructuring could have a negative effect on our working capital needs*."

Our results of operations may be affected by fluctuations in fuel costs.

Our marine acquisition business, with the fleet described in Item 4 of this report incurs significant fuel costs, which were approximately US$50 million in 2016, compared to approximately US$96 million in 2015. Fuel costs can vary depending on the supply location, local regulations and the price of crude oil at a given time. Only a portion of this variation can be contractually charged to or negotiated with the client. We therefore estimate that, by reference to a resized fleet of five operational vessels an increase of 10% of the average annual price of crude oil could increase our fuel costs and have a maximum negative effect of less than US$5 million on our cash flow.

Our results of operations may be affected by the weight of intra-group production.

We dedicate a significant part of our production capacity to intra-group sales. For example, the Marine, Land and Multi-Physics Acquisition Business Lines may purchase Sercel equipment as well as acquire multi-client data, to be processed by the Subsurface Imaging Business Line. The relative size of our intra-group sales and our external sales has a significant impact both on our revenues and our operating results. With respect to intra-group sales, we capitalize only the direct production costs, and we treat the corresponding general and administrative costs as expenses in our income statement, which decreases operating profit for the period when the sales occur.

Technological changes and new products and services are frequently introduced in the market, and our technology could be rendered obsolete by these introductions, or we may not be able to develop and produce new and enhanced products on a cost-effective and timely basis.

Technology changes rapidly in the seismic industry and new and enhanced products are frequently introduced in the market in which we operate, particularly in the equipment manufacturing and data processing and geoscience sectors. Our success depends to a significant extent upon our ability to develop and produce new and enhanced products and services on a cost-effective and timely basis in accordance with industry demands. While we commit substantial resources to research and development, we may encounter resource constraints or technical or other difficulties that could delay the introduction of new and enhanced products and services in the future. In addition, the continuing development of new products risks making our older products obsolete. New and enhanced products and services, if introduced, may not gain market acceptance and may be materially adversely affected by technological changes or introductions of other new products or services by one of our competitors.

We depend on proprietary technology and are exposed to risks associated with the misappropriation or infringement of that technology.

Our ability to maintain or increase prices for our products (such as Sercel equipment and GGR software) and services depends in part on our ability to differentiate the value delivered by our products and services from those delivered by our competitors. Our proprietary technology plays an important role in this differentiation. We rely on a combination of patents, trademarks and trade secret laws to establish and protect our proprietary technology. Patents last up to 20 years, depending on the date of filing and the protection accorded by each country. In addition, we enter into confidentiality and license agreements with our employees, customers and potential customers which limit access to and distribution of our technology. However, actions that we take to protect our proprietary rights may not be adequate to deter the misappropriation or independent third-party development of our technology. In addition, we may have lawsuits filed against us claiming that certain of our products, services, and technologies infringe the intellectual property rights of others. Although we do not have any current litigation involving our intellectual property rights or the intellectual rights of others which may have an impact on us, such litigation may take place in the future. In addition, the laws of certain foreign countries do not protect proprietary rights to the same extent as, in particular, the laws of France or the United States, which may limit our ability to pursue third parties that misappropriate our proprietary technology.

Our failure to attract and retain qualified employees may adversely affect our future business and operations.

Our future results of operations will depend in part upon our ability to retain certain of our highly skilled employees and to attract new ones. A number of our employees are highly skilled scientists and technicians. We compete with other seismic products and services companies and, to a lesser extent, companies in the oil industry for skilled geophysical and seismic personnel, particularly in times when demand for seismic services is relatively high. A limited number of such skilled personnel is available, and demand from other companies may limit our ability to fill our human resources needs. If we are unable to hire and retain a sufficient number of qualified employees, this could impair our ability to compete in the geophysical services industry and to develop and protect our know-how. Our success also depends to a significant extent upon the abilities and efforts of members of our senior management, the loss of whom could materially adversely affect our business and results of operations.

We have had losses in the past and there is no assurance we will be able to restore profitability in the coming years.

We have experienced losses in the past. In 2014, 2015 and 2016, we recorded a net loss attributable to shareholders of US$1,146.6 million, US$1,446.2 million and US$576.6million, respectively. There is no assurance that we will be able to restore profitability in the coming years.

We are exposed to commercial risk and counter-party risk.

Our receivables and investments do not represent a significant concentration of credit risk due to the wide variety of customers and markets in which we sell our services and products and our presence in many geographic areas. We seek to reduce commercial risk by monitoring our customer credit profile. In 2016, the

Group’s two most significant customers accounted for 6.7% and 6.4% of the Group’s consolidated revenues, compared with 5.0% and 4.9% in 2015 and 7.1% and 5.2% in 2014.

RISKS RELATED TO OUR INDUSTRY

The volume of our business depends on the level of capital expenditures by the oil and gas industry, and reductions in such expenditures may have a material adverse effect on our business.

Demand for our products and services has historically been dependent upon the level of capital expenditures by oil and gas companies for exploration, production and development activities. These expenditures are significantly influenced by oil and gas prices and by expectations regarding future hydrocarbon prices, which may fluctuate based on relatively minor changes in the supply of and demand for oil and gas, expectations regarding such changes and other factors beyond our control. Lower or volatile hydrocarbon prices tend to limit the demand for seismic services and products. In 2015 and 2016, oil and gas companies reduced their planned exploration and production spending due notably to falling oil prices, affecting demand for our products and services. We expect exploration and production spendings to remain at a low level in 2017, in the light of the uncertainties concerning the oil price recovery.

Factors affecting prices and, consequently, demand for our products and services, include:

- demand for hydrocarbons;
- worldwide political, military and economic conditions, including political developments in the Middle East and North Africa, the Ukraine crisis, economic sanctions, economic growth levels, the availability of financing and the ability of OPEC to set and maintain production levels and prices for oil;
- laws or regulations restricting the use of fossil fuels or taxing such fuels and governmental policies regarding atmospheric emissions and use of alternative energy;
- technological developments increasing oil and gas extraction capacity or reducing costs;
- levels of oil and gas production, changes in those levels and the estimated current and future level of excess production capacity;
- the rate of depletion of existing oil and gas reserves and delays in the development of new reserves;
- more appetite for onshore activities while offshore activities usually have a higher break-even level;
- the pressure imposed by equity markets on oil and gas companies to maintain a dividend distribution policy which could lead them to significantly reduce their capital expenditure plans in the short term;
- oil and gas inventory levels;
- the price and availability of alternative fuels;
- policies of governments regarding the exploration for and production and development of oil and gas reserves in their territories; and
- general weather conditions, with warmer temperatures decreasing demand for products such as heating oil and extreme weather events potentially disrupting oil and gas exploration or production operations over a wide area.

Increases in oil and natural gas prices may not increase demand for our products and services or otherwise have a positive effect on our financial condition or results of operations. Forecasted trends in oil and gas exploration and development activities may not materialize and demand for our products and services may not reflect the level of activity in the industry. In particular, with respect to the marine acquisition market, prices remain very dependent upon the balance between supply and demand. They can thus fluctuate only slightly or even decline, even as demand increases if, at the same time, the available production capacity in the market increases to a greater degree.

Our backlog includes contracts that can be unilaterally delayed or terminated at the client’s option.

In accordance with industry practice, contracts for the provision of seismic services typically can be delayed or terminated at the sole discretion of the client without payment of significant cancellation costs to the service provider. As a result, even if contracts are recorded in backlog, there can be no assurance that such contracts will be wholly executed by us and generate actual revenue, or even that the total costs already borne by us in connection with the contract would be covered in full pursuant to any cancellation clause. Furthermore, there can be no assurance that contracts in backlog will be performed in line with their original timetable and any possible delay could result in operating losses as most of our costs are fixed.

We are subject to intense competition in the markets where we carry out our operations, which could limit our ability to maintain or increase our market share or maintain our prices at profitable levels.

Most of our contracts are obtained through a competitive bidding process, which is standard for our industry. Competitive factors in recent years have included price, crew availability, technological expertise and reputation for quality, safety and dependability. While no single company competes with us in all of our segments, we are subject to intense competition in each of our segments. We compete with large, international companies as well as smaller, local companies. In addition, we compete with major service providers and government-sponsored enterprises and affiliates. Some of our competitors operate more crews than we do and have greater financial and other resources than we do. These and other competitors may be better positioned to withstand and adjust more quickly to volatile market conditions, such as fluctuations in oil and gas prices and production levels, as well as changes in government regulations. In addition, if geophysical service competitors increase their capacity (or do not reduce capacity if demand decreases), the excess supply in the seismic services market could apply further downward pressure on prices. The negative effects of the competitive environment in which we operate could have a material adverse effect on our results of operations.

We have taken significant measures to adapt our fleet to changes in the seismic market, and depending on the seismic market in the future, we may make further adjustments that could impose exceptional charges.

Our fleet of marine seismic acquisition vessels has evolved in the past mainly in reaction to changes in the seismic contractual market and our marine strategy. In February 2014, we announced our intention to reduce the fleet from 18 to 13 3D high-end vessels before the end of 2016 and decided in mid-2014 to accelerate the implementation of this plan to have it completed by the end of 2014. Consequently, we stopped operating the *Symphony*, the *Princess*, the *Viking II* and the *Vantage* in 2014. The *Viking II* and the *Vantage* were returned to their owner at the end of their leasing period. The *Viking* and the *Geowave Voyager* have been converted into source vessels.

In February 2015, as the market environment deteriorated further, we announced our intention to reduce our operated fleet from 13 to 11 3D high-end vessels. Then in November 2015, when we announced the next step of our Transformation Plan, we stated our objective to reduce our operated fleet to five vessels, principally dedicated to multi-client production. As of December 31, 2015, our operational fleet was composed of eight 3D high-capacity vessels (12 or more streamers), one source vessel and one 3D/2D lower capacity vessel. We ceased operating the *CGG Alizé* and the *Geo Celtic* in early 2016 and the *Vision* in fall 2016. As of December 31, 2016, the fleet was operating five high-end vessels as targeted. In April 2017, we carried out certain transactions in order to change the ownership structure of our marine fleet and restructure the related financial obligations under the Nordic credit facility related thereto. See “Item 4: Information on the Company — Recent developments — Fleet ownership changes” for more information.

Past fleet reductions have generated, and we expect that the current and any future reductions will generate, non-recurring charges and could hinder our operational scope in marine acquisition activity. Restructuring charges and fixed assets impairments related to fleet reduction amounted to US$288 million in 2015 and US$34 million in 2016.

We have high levels of fixed costs that are incurred regardless of our level of business activity, including in relation to bareboat charters.

We have high fixed costs and seismic data acquisition activities that require substantial capital expenditures and long-term contractual commitments. As a result, downtime or decreased productivity due to reduced demand, weather interruptions, equipment failures, permit delays or other circumstances that affect our ability to generate revenue could result in significant operating losses.

We have implemented our Transformation Plan in an effort to reduce our high fixed costs in light of the difficult market environment, with a focus on high value-added activities and a reduction of our fleet to five vessels principally dedicated to multi-client activity, as well as cost saving actions and a reduction in investments. However, we cannot assure you that this plan will be sufficient to respond to market pressures, which could have a material adverse effect on our results, financial position and prospects.

After the implementation of the Transformation Plan, we continue to operate certain of our marine acquisition vessels under long-term bareboat charters, which generate significant fixed costs that cannot easily be reduced during the term of the charters. In 2016, we operated six vessels until the fall and five vessels from October 2016 to December 2016 under bareboat charters for a fixed cost of US$77 million. As of December 31, 2016, the aggregate amount of our off balance sheet commitment for bareboat charters for our fleet was US$387.1 million. Of this amount, US$264.4 million corresponded to the five seismic vessels and the two source vessels operated in 2016 and beyond and US$100.4 million corresponded to vessels that we have already coldstacked. In 2017, we have taken steps to reduce our annual charter costs, as described in "Item 4: Information on the Company — Recent developments — Fleet ownership changes". While we believe that these steps will make our marine acquisition activity more competitive, we will continue to have high levels of fixed costs in a market with historically low levels of demand and pricing, which could have a material adverse effect on our results, financial position and prospects.

The revenues we derive from marine seismic data acquisition vary significantly during the year.

Our seismic data acquisition revenues, in particular in the marine market, are partially seasonal in nature. In the marine market notably, certain basins can be very active and absorb higher capacity during a limited period of the year (such as the North Sea between April and September), triggering significant volatility in demand and price in their geographical markets throughout the year. The marine data acquisition business is, by its nature, exposed to unproductive interim periods due to vessel maintenance and repairs or transit time from one operational zone to another during which revenue is not recognized. Other factors that cause variations from quarter to quarter include the effects of weather conditions in a given operating area, the internal budgeting process of some important clients for their exploration expenses, and the time needed to mobilize production means or obtain the administrative authorizations necessary to commence data acquisition contracts.

Our business and that of our customers are subject to governmental regulations, which may adversely affect our operations or demand for our products in the future.

Our operations are subject to a variety of international, federal, regional, national, foreign and local laws and regulations, including flight clearances (for airborne activities), environmental, health and safety and labor laws. We invest financial and managerial resources to comply with these laws and related permit requirements. Our failure to do so could result in fines, enforcement actions, claims for personal injury or property damages, or obligations to investigate and/or remediate contamination. Failure to obtain the required permits on a timely basis may also prevent us from operating in some cases, resulting in increased crew downtime and operating losses. Moreover, if applicable laws and regulations, including environmental, health and safety requirements, or the interpretation or enforcement thereof, become more stringent in the future, we could incur capital or operating costs beyond those currently anticipated. The adoption of laws and regulations that directly or indirectly curtail exploration by oil and gas companies could also adversely affect our operations by reducing the demand for our geophysical products and services.

In the United States, new regulations governing oil and gas exploration were put in place following the Deepwater Horizon platform disaster in the Gulf of Mexico. These new regulations may have a significant financial impact on oil and gas companies that wish to carry out exploration projects in deep-water Gulf of Mexico. Our client mix could be altered with the disappearance of small and medium sized players, which could decrease our sales of multi-client data.

We are exposed to environmental risks.

We are subject to various laws and regulations in the countries where we operate, particularly with respect to the environment. These laws and regulations may require Group companies to obtain licenses or permits prior to signing a contract. Our management believes that we comply with applicable environmental laws; however, frequent changes in such laws and regulations make it difficult to predict their cost or impact on our future operations. We are not implicated in any legal proceedings relating to environmental matters and are not aware of any claim or any potential liability in this area that could have a significant effect on our business or financial position.

Furthermore, we may be affected by new laws or regulations intended to limit or reduce emissions of gases, such as carbon dioxide and methane, which may be contributing to climate change, and these laws or regulations may affect our operations or, more generally, the production and demand for fossil fuels such as oil and gas. The European Union has already established greenhouse gas regulations, and many other countries, including the United States, may do so in the future. This could impose additional direct or indirect costs on us as our suppliers incur additional costs that get passed on to us or reduce our customers' demand for our products or services.

RISKS RELATED TO OUR INDEBTEDNESS

Our debt agreements contain restrictive covenants that may limit our ability to respond to changes in market conditions or pursue business opportunities.

The agreements governing our borrowings (including the 2019 secured term loans) and our US and French revolving facilities contain restrictive covenants that limit our ability and the ability of certain of our subsidiaries to, among other things:

- incur or guarantee additional indebtedness or issue preferred shares;
- pay dividends or make other distributions;
- purchase equity interests or reimburse subordinated debt prior to its maturity;
- create or incur certain liens;
- enter into transactions with affiliates;
- issue or sell capital stock of subsidiaries;
- engage in sale-and-leaseback transactions; and
- sell assets or merge or consolidate with another company.

Complying with the restrictions contained in some of these agreements requires us to meet certain ratios and tests, relating notably, to consolidated interest coverage and net indebtedness, and to maintain our liquidity at a certain level. See "*— Our substantial debt adversely affects our financial health and poses risks to our liquidity*" below. The requirement that we comply with these provisions may adversely affect our ability to react to changes in market conditions, take advantage of business opportunities we believe to be desirable, obtain future financing, sell assets, fund capital expenditures, or withstand a continuing or future downturn in our business.

Detailed information relating to our debt and the restrictions provided for in our borrowing agreements are set forth in note 13 to our 2016 consolidated financial statements included herein.

If we are unable to comply with the restrictions and covenants in the indentures governing our Senior Notes, the agreements governing our Credit Facilities and other current and future debt agreements, there could be a default under the terms of these indentures and agreements, which could result in an acceleration of repayment.

If we are unable to comply with the restrictions and covenants in the indentures governing our Senior Notes or in other current or future debt agreements, including those governing our Credit Facilities, there could be a default under the terms of these indentures and agreements. Our ability to comply with these restrictions and covenants, including meeting financial ratios and tests, may be affected by events beyond our control. As a result, we cannot assure you that we will be able to comply with these restrictions and covenants or meet such financial ratios and tests. In certain events of default under these agreements, lenders could terminate their commitments to lend or accelerate the loans or bonds and declare all amounts outstanding due and payable. Borrowings under other debt instruments that contain cross-acceleration or cross-default provisions may also be accelerated and become due and payable. If any of these events occur, our assets might not be sufficient to repay in full all of our outstanding indebtedness and we may be unable to find alternative financing. Even if we could obtain alternative financing, it might not be on terms that are favorable or acceptable to us.

The deterioration of market conditions in 2016, which we expect to continue in 2017, has negatively affected our ability to respect the financial covenants in certain of our Credit Facilities and the Nordic credit facility. To face this situation, we obtained, in December 2016, consent from the requisite majority of lenders under (i) the French and US revolving facilities and (ii) the Nordic credit facility for the disapplication of the testing of the Total Leverage Ratio and the Interest Cover Ratio in respect of the Relevant Period ended on December 31, 2016 and we obtained a further consent from such lenders and the 2019 secured term loan lenders for the Relevant Period ended March 31, 2017.

Our French revolving facility and US revolving facility require that we meet a minimum liquidity amount (cash and cash equivalents plus certain undrawn credit facilities) of US$175 million. As of December 31, 2016, we had a total liquidity of US$539 million available. See “*Risks Related to Our Financial Restructuring*”.

We and our subsidiaries may incur additional debt.

We and our subsidiaries may incur additional debt (including secured debt) in the future. The terms of the indentures governing our Senior Notes and the agreements governing our Credit Facilities and our other existing senior indebtedness limit, but do not prohibit, us and our subsidiaries from doing so.

As of December 31, 2016, we had no long term confirmed and undrawn credit lines.

If new debt is added to our current debt levels, the related risks for us could intensify. See “*Risks Related to Our Financial Restructuring*” and “*— Our substantial debt adversely affects our financial health and poses risks to our liquidity*”.

To service and/or refinance our indebtedness and make capital expenditures, we require a significant amount of cash or will have to implement a debt restructuring plan, and our ability to generate cash or implement such plan will depend on many factors beyond our control.

Our ability to make payments on and to refinance our indebtedness, and to fund planned capital expenditures, depends in part on our ability to generate cash in the future and our ability to implement a debt restructuring plan (see “Item 4: Information on the Company — Recent developments — Financial restructuring discussions”). This ability is, to a certain extent, subject to general economic, financial, competitive, legislative, regulatory and other factors that are beyond our control.

In light of our 2016 fourth quarter results and given the challenging market conditions which persist, we expect 2017 operating results to be in line with 2016; however, we expect downward pressure on cash flow generation in 2017 compared to 2016. In this environment and given delays in market recovery, we do not expect our performance to generate sufficient cash flow to service our current level of debt over the years to come. Given the likelihood that we will be unable to satisfy our debt obligations through cash flow generation, if we cannot implement a debt restructuring plan, we may have to undertake alternative financing plans, such as refinancing or restructuring our indebtedness, selling assets, reducing or delaying capital investments or seeking to raise additional capital. Our ability and the conditions under which we may borrow fund to refinance existing debt or finance our operations depend on many factors, including conditions in credit markets, perceptions of our business and the ratings attributed to us by rating agencies. We cannot assure you that any refinancing or debt restructuring would be possible, that any assets could be sold or that, if sold, the timing of the sales and the amount of proceeds realized from those sales would be favorable to us or that additional financing could be obtained on acceptable terms. Any disruptions in the capital and credit markets could adversely affect our ability to meet our liquidity needs or to refinance our indebtedness, including our ability to draw on our existing credit facilities or enter into new credit facilities. Banks that are party to our existing credit facilities may not be able to meet their funding commitments to us if they experience shortages of capital and liquidity or if they experience excessive volumes of borrowing requests from us and other borrowers within a short period of time. Furthermore, changes in the monetary policies of the US Federal Reserve and the European Central Bank may increase our financing costs and consequently adversely impact our ability to refinance our indebtedness.

Our substantial debt adversely affects our financial health and poses risks to our liquidity.

We have an amount of debt that we consider to be too high given the difficult market environment impacting our volume of business, which we expect to continue in 2017. We do not expect our performance to generate sufficient cash flow to service our current level of debt over the years to come. We have therefore commenced discussions with certain stakeholders from various jurisdictions in order to achieve a financial restructuring. The objective of this restructuring is to provide us with a level of indebtedness and cost of debt that is substantially reduced and sustainably adapted to our cash flows. See the risk factors above under the heading “Risks Related to Our Financial Restructuring.”

As of December 31, 2016, our net financial debt (which we define as gross financial debt less cash and cash equivalents) amounted to US$2,312 million out of a total capital employed of US$3,468 million, with US$2,850 million of gross financial debt (based on the closing exchange rate of US$1.0541 per euro), including €316 million related to the debt component, according to IFRS, of the convertible bonds due 2019 and 2020, and including US$36 million of bank overdrafts and accrued interest. As of December 31, 2016, our available financial resources amounted to US$443 million (including cash, cash equivalents and marketable securities and excluding trapped cash). As of that date, we had a debt reimbursable in cash or shares amounting to US$2,319 million, which corresponds to net financial debt less financial leases, and before IFRS accounting adjustments related to convertible bonds and issuing fees.

Our substantial debt could have important consequences. In particular, it could:

- increase our vulnerability to general adverse economic and industry conditions;
- require us to dedicate a substantial portion of our cash flow from operations to payments on our indebtedness, thereby reducing the availability of our cash flow to fund capital expenditures and other general corporate purposes;
- limit our ability to plan for, or react to, changes in our businesses and the industries in which we operate;
- place us at a competitive disadvantage compared to competitors that have less debt;
- limit our ability to issue bonds and guarantees and entering into hedging contracts; and
- increase the risk that a change in laws or regulations may materially impact us.

Our ability to service or refinance all or a portion of our indebtedness is currently limited. Moreover, continued difficult conditions in the markets where we operate or volatility in the financial markets could have a material adverse effect on our ability to otherwise fund our operational requirements. We cannot be certain that additional funds will be available if needed to make future investments in certain projects, take advantage of acquisitions or other opportunities or respond to competitive pressures. If additional funds are not available, or are not available on terms satisfactory to us, there could be a material adverse impact on our business and financial performance. As at December 31, 2016, the Group liquidity (cash and cash equivalents) was US$539 million.

In the context of a difficult market environment, which started for the seismic industry in the second semester of 2013 with a significant reduction of capital expenditures by our clients outside of North America and intensified with the sharp decline in oil prices since the fall of 2014, we confront a reduction in demand for our products and services and the resulting pricing pressure in our industry. In 2016, our operating income amounted to a loss of US$397 million, compared to an operating loss of US$1,158 million (or a gain of US$19 million, excluding depreciation of goodwill, assets and restructuring costs) for 2015. It is difficult to predict how long the current economic conditions and imbalance between supply and demand will persist, whether oil prices will remain at their current low levels, or whether current market conditions will deteriorate further.

Depending on the evolution of our financial performance and cash flow generation, as well as our financial restructuring negotiations, we may have to undertake alternative financing plans, including selling assets, reducing or delaying capital investments or other expenses, in addition to restructuring our debt. We cannot assure you that any assets will be able to be sold or, if sold, as to the timing of the sales or the amount of proceeds realized from those sales. Reductions in capital investments or other expenses could adversely affect our ability to generate future revenues. The outcome of our restructuring discussions is uncertain, and we may not be able to obtain alternative financing on acceptable terms or at all.

As of December 31, 2016, our financial debt consisted primarily of:

- US$8.3 million outstanding principal amount of our 7.75% Senior Notes due 2017, €400 million outstanding principal amount of our 5.875% Senior Notes due 2020, US$605 million outstanding principal amount of our 6.50% Senior Notes due 2021, and US$420 million outstanding principal amount of our 6.875% Senior Notes due 2022;
- €360 million outstanding principal amount of our convertible bonds (bonds convertible into or exchangeable for new or existing shares) of which €35 million of our 1.25% convertible bonds due 2019 and €325 million of our 1.75% convertible bonds are due 2020;
- our US$300 million French revolving facility, of which €122 million and US$166 million were drawn as of December 31, 2016;
- our US$165 million US revolving facility, of which US$165 million was drawn as of December 31, 2016;
- our US$190 million Nordic credit facility, of which US$100 million was drawn under the US$100 million authorized revolving amount and US$90 million was outstanding under the term loan as of December 31, 2016;
- US$339 million under the 2019 secured term loans; and
- a total of US$5 million under various credit lines held by several of our subsidiaries.

Table of Contents

The breakdown of our financial liabilities as of December 31, 2016 is presented in the table below:

In millions of US$	12/31/2016	N+1		N+2 to N+4		N+5 and >		Total	
		Principal	Interest	Principal	Interest	Principal	Interest	Principal	Interest
Senior Notes & Convertible bonds	1,788	9	100	755	282	1,024	63	1,788	445
Bank borrowings	651	56	45	595	33	—	—	651	78
Financial leases	76	9	4	25	8	42	3	76	15
Banks overdrafts	—	—	—	—	—	—	—	—	—
Other financial debts	341	6	26	335	30	—	—	341	56
Derivative instruments	—	—	—	—	—	—	—	—	—
Cash	(539)	—	—	—	—	—	—	(539)	—
Total net financial liabilities	**2,317**	**80**	**175**	**1,710**	**353**	**1,066**	**66**	**2,317**	**594**

Note: For the purposes of the table above, the various components of the financial debt are presented at their normal maturities even though these debts — except finance lease debt — are presented entirely as current due to the application of IAS 1 (see note 13 to our consolidated financial statements, included elsewhere in this document).

- *Excluding accrued interest, IFRS adjustments and issue premium.*

The Senior Notes and the Credit Facilities contain certain restrictive covenants, including covenants that require compliance with certain financial ratios.

We receive from the credit agencies a rating outlook, which assesses the potential direction of credit rating over time. In determining a ratings outlook, consideration is given to any changes in the economic and/or fundamental business conditions of a company. Our ratings, and any changes to them, can materially affect the conditions under which we may borrow funds and our access to borrowings more generally.

We are exposed to interest rate risk.

We may be required to obtain a portion of our borrowings from financial institutions at variable interest rates indexed to drawing periods ranging from one to 12 months. As a result, our interest expenses on this debt vary in line with movements in short-term interest rates. However, a significant portion of our debt consists of fixed-rate bonds, as well as a number of fixed-rate finance leases and fixed-rate medium-term bank credit facilities with variable maturities (see note 14 “Financial Instruments” to our consolidated financial statements, included elsewhere in this document). This debt is not exposed to interest rate fluctuations.

Net exposure to interest rate risk before and after hedging:

The following table shows our variable interest rate exposure by maturity as of December 31, 2016.

12.31.2016	Financial assets(*) (a)		Financial liabilities(*) (b)		Net position before hedging (c) = (a) - (b)		Off-balance sheet position (d)		Net position after hedging (e) = (c) + (d)	
In millions US$	Fix rate	Variable rate	Fix rate	Variable rate	Fix rate	Variable rate	Fix rate	Variable rate	Fix rate	Variable rate
Overnight to 1 year	136	267	52	29	84	238	—	—	(84)	238
1 to 2 years	16	1	174	807	(158)	(806)	—	—	(158)	(806)
3 to 5 years	—	—	1,794	—	(1,794)	—	—	—	(1,794)	—
More than 5 years	—	—	1	—	(1)	—	—	—	(1)	—
Total	**152**	**268**	**2,021**	**836**	**(1,869)**	**(568)**	**—**	**—**	**(1,869)**	**(568)**

Note: For the purposes of the table above, the various components of the financial debt are presented at their normal maturities even though these debts — except finance lease debt — are presented entirely as current due to the application of IAS 1 (see note 13 to our consolidated financial statements, included elsewhere in this document).

(*) *Excluding bank overdrafts, accrued interest, IFRS adjustments and issue premium.*

As of December 31, 2016, our variable-rate assets (net of liabilities) maturing in less than one year totaled US$238 million.

The following table shows our variable interest rate exposure on our financial assets and liabilities as of December 31, 2016:

	12.31.2016	
(In millions of US$)	Impact on result before tax	Impact on shareholders' equity before tax
Impact of an interest rate variation of +1%	(5.7)	(5.7)
Impact of an interest rate variation of -1%	5.7	5.7

Our variable interest rate indebtedness carried an average interest rate of 5.1% in 2016, and our investments and other financial assets earned interest at an average rate of 0.8%.

MARKET AND OTHER RISKS

We are exposed to exchange rates fluctuations.

Our financial debt is partly denominated in euro and converted in US dollars at the closing exchange rate. As of December 31, 2016, our US$2,312 million of net debt included a part of debt denominated in euro of €862 million based on the closing exchange rate of US$1.0541.

From one year end closing to another, a variation of US$0.10 in the closing exchange rate between the US dollar and the euro would impact our net debt by approximately US$86 million.

The following table shows our exchange rate exposure as of December 31, 2016:

	12.31.2016					
	Assets	Liabilities	Currency commitments	Net position before hedging	Off-balance sheet positions	Net position after hedging
(Converted in millions of US$)	(a)	(b)	(c)	(d) = (a) – (b) ± (c)	(e)	(f) = (d) + (e)
US$[(1)]	1,794.5	1,853.8	—	(59.3)	0.0	(59.3)

(1) US$-denominated assets and liabilities in the entities whose functional currency is the euro.

	12.31.2016					
	Assets	Liabilities	Currency commitments	Net position before hedging	Off-balance sheet positions	Net position after hedging
(In millions of US$)	(a)	(b)	(c)	(d) = (a) – (b) ± (c)	(e)	(f) = (d) + (e)
EUR[(1)]	45.0	107.7	—	(62.7)		(62.7)

(1) Euro-denominated assets and liabilities in the entities whose functional currency is the US$.

Our net foreign-exchange exposure is principally linked to the euro. We seek to reduce our foreign-exchange position by selling the future receivables surplus over euro costs of our Equipment division as soon as they enter the backlog and taking out dollar-denominated loans supported by long-term assets. Although we attempt to reduce the risks associated with exchange rate fluctuations, we cannot assure you that fluctuations in the values of the currencies in which we operate will not materially adversely affect our future results of operations. Our annual fixed expenses in euros are equal to approximately €400 million and as a consequence, an unfavorable variation of US$0.20 in the average yearly exchange rate between the US dollar and the euro would reduce our operating income and our shareholders' equity by approximately US$80 million.

Table of Contents

Sensitivity Analysis Table

Impact of US$ variation in expenses in euros

	Impact on result before taxes		Impact on shareholders' equity before taxes	
	Increase of 20 cents	Decrease of 20 cents	Increase of 20 cents	Decrease of 20 cents
In millions of US$	80	(80)	80	(80)
Total	**80**	**(80)**	**80**	**(80)**

We monitor our balance sheet exposure by maintaining a balance between our assets and liabilities denominated in foreign currencies and adjusting any discrepancies through either spot sales or capital operations.

With respect to exchange rate risk related to investments in operating subsidiaries, we consider such risk to be low, since the functional currency of the majority of operating entities is the US dollar.

We are exposed to risk related to equities and financial instruments.

We are exposed to risk of fluctuations in the value of equities and other financial instruments we may hold.

Any transactions involving our own shares are decided by management in accordance with applicable regulations.

As of December 31, 2016, we owned 25,000 of our own shares with a balance sheet value at CGG SA's level of €0.4 million (US$0.4 million). Those shares are not valued in the consolidated financial statements of the Group.

Our investment policy does not authorize short term investment in the equities of other companies.

The fair value of the own shares as of December 31, 2016 is as follows:

12.31.2016	At fair value	Available for sales	Held to maturity	Derivatives	Total
Shares	US$0.4 million	—	—	—	US$0.4 million
Total	**US$0.4 million**	**—**	**—**	**—**	**US$0.4 million**

We are subject to risks that are not fully insured.

The nature of our business involves ongoing and significant operating risks for which we are not always insured, and in respect of which we may not be able to obtain adequate insurance at commercially reasonable rates, if at all.

- Our seismic data acquisition activities, particularly in deepwater marine areas, are often conducted under harsh weather and other hazardous operating conditions, including the detonation of dynamite. These operations are subject to the risk of downtime or reduced productivity, as well as to the risks of loss to property and injury to personnel resulting from fires, accidental explosions, mechanical failures, spills, collisions, stranding, ice floes, high seas and natural disasters. In addition to losses caused by human errors and accidents, we may also be subject to losses resulting from, among other things, war, terrorist activities, piracy, political instability, business interruption, strikes and weather events.
- Our extensive range of seismic products and services expose us to litigation and legal proceedings including those related to product liability, personal injury and contract liability.
- We produce and sell highly complex products and we cannot assure you that our extensive product development, manufacturing controls and testing will be adequate and sufficient to detect all defects, errors, failures, and quality issues that could affect our customers and result in claims against us, order cancellations or delays in market acceptance.

We have put in place insurance coverage against operating hazards, including product liability claims and personal injury claims, damage, destruction or business interruption of data processing centers, manufacturing centers and other facilities, in amounts we consider appropriate in accordance with industry practice. Our risk coverage policy reflects our objective of covering major claims that could affect our facilities and equipment, as well as third-party liability claims that we may be exposed to as a result of our activities. We review the adequacy of insurance coverage for risks we face periodically.

Whenever possible, we obtain agreements from customers that limit our liability.

However, we cannot assure you that our insurance coverage will be sufficient to fully indemnify us against liabilities arising from pending and future claims or that our insurance coverage will be adequate in all circumstances or against all hazards, or that we will be able to maintain adequate insurance coverage in the future at commercially reasonable rates or on acceptable terms.

We are subject to disruptions in our supply chain and third party suppliers.

Disruptions to our supply chain and other outsourcing risks may adversely affect our ability to deliver our products and services to our customers.

Our supply chain is a complex network of internal and external organizations responsible for the supply, manufacture and logistics supporting our products and services around the world. We are vulnerable to disruptions in this supply chain from changes in government regulations, tax and currency changes, strikes, boycotts and other disruptive events as well as from unavailability of critical resources. These disruptions may have an adverse impact on our ability to deliver products and services to our customers.

Within our Group, Sercel makes particular use of subcontracting. Our French manufacturing sites outsource part of their production to local third-party companies selected according to certain criteria, including quality and financial soundness. Outsourced operations are distributed among several entities, each having a small proportion of aggregate outsourced activity in order to limit risk related to the failure of any one of our subcontractors. For our services business, our policy is not to rely on outsourcing for any of our activities, except in special cases where there is a lack of available capacity.

If our suppliers, vendors, subcontractors or other counterparties are unable to perform their obligations to us or our customers, we may be required to provide additional services or make alternate arrangements on less favorable terms with other parties to ensure adequate performance and delivery of service to our customers. These circumstances could also lead to disputes and litigation with our partners or customers, which could have a material adverse impact on our reputation, business, financial condition and results of operations.