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CGG S.A.

US$500,000,000 8.75% Senior Secured Notes due 2027
€585,000,000 7.75% Senior Secured Notes due 2027
Guaranteed on a senior basis by certain of its subsidiaries

We are offering (the "Offering") US$500,000,000 aggregate principal amount of our 8.75% senior secured notes due 2027 (the "Dollar Notes") and €585,000,000 aggregate principal amount of our 7.75% senior secured notes due 2027 (the "Euro Notes" and, together with the Dollar Notes, the "Notes"), issued by CGG S.A. (the "Issuer") and guaranteed on a senior secured basis by certain of our subsidiaries. We intend to use the net proceeds from this offering, together with cash on hand, to (i) repurchase the Existing First Lien Notes by way of the Tender Offer, (ii) with respect to the Existing First Lien Notes that are not repurchased in the Tender Offer, satisfy and discharge and subsequently redeem in full the remaining Existing First Lien Notes, and (iii) satisfy and discharge and subsequently redeem in full the Existing Second Lien Notes (each as defined herein). See "*Use of Proceeds*".

The Notes will be issued pursuant to an indenture (the "Indenture") to be dated as of the Issue Date, among, inter alios, the Issuer and BNY Mellon Corporate Trustee Services Limited, as trustee (the "Trustee") and The Bank of New York Mellon, London Branch, as security agent (the "Security Agent"). The Notes will mature on April 1, 2027. We will pay interest on the Notes semi-annually in arrears on each April 15 and October 15, commencing on October 15, 2021. We may redeem all or part of the Notes at any time on or after April 1, 2024 at the redemption prices described in this offering memorandum, in each case plus accrued and unpaid interest, if any. At any time prior to April 1, 2024, we may redeem all or part of the Notes at a redemption price equal to 100% of the principal amount of the Notes, plus accrued and unpaid interest, if any, and the applicable make-whole premium described in this offering memorandum. In addition, at any time prior to April 1, 2024, we may, during any 12-month period commencing from the Issue Date (as defined herein), redeem up to 10% of the aggregate principal amount of the Notes (calculated after giving effect to the issuance of any additional Notes) at a redemption price equal to 103% of the principal amount of the Notes, plus accrued and unpaid interest, if any. Prior to April 1, 2024, we may also redeem up to 40% of the original aggregate principal amount of each of the Dollar Notes and the Euro Notes (including the principal amount of any additional Dollar Notes or Euro Notes issued) with the net cash proceeds from certain equity offerings at the redemption prices specified in this offering memorandum. We may also redeem all, but not less than all, of the Notes at a redemption price equal to 100% of the principal amount of the Notes in the event of certain changes in tax laws. If we undergo a change of control, each holder may require us to repurchase all or a portion of the Notes at 101% of the principal amount thereof, plus accrued and unpaid interest, if any. See "*Description of the Notes—Optional Redemption*".

The Notes will be our senior secured obligations. On the Issue Date, the Notes will be guaranteed on a senior secured basis (the "Issue Date Guarantees") by CGG Holding (U.S.) Inc., CGG Services (U.S.) Inc. and CGG Land (U.S.) Inc. (the "Issue Date Guarantors") and, on a date (the "Post-Issue Date") occurring not later than 90 days after the Issue Date, the Notes will additionally be guaranteed on a senior secured basis (the "Post-Issue Date Guarantees") by CGG Holding B.V., Sercel-GRC Corp., Sercel Inc., CGG Services (UK) Limited, CGG Services (Norway) AS and CGG do Brasil Participações (the "Post-Issue Date Guarantors"). On the Issue Date, the Notes and the Issue Date Guarantees will be secured by the Issue Date Collateral (as defined herein) and, on the Post-Issue Date, the Notes and the Guarantees (as defined herein) will be additionally secured by the Post-Issue Date Collateral (as defined herein). The Guarantees will be senior obligations of the Guarantors (as defined herein) and will rank equally in right of payment to all of the Guarantors' existing and future senior indebtedness and will rank senior to all of the Guarantors' future indebtedness that is subordinated in right of payment to the Guarantees. The Collateral (as defined herein) will also secure the Revolving Credit Facility (as defined herein) on a super senior basis pursuant to the Intercreditor Agreement (as defined herein). The Revolving Credit Facility will also be guaranteed by the Guarantors. In the event of an enforcement of the Collateral, the holders of the Notes will receive proceeds from such Collateral only after the lenders under the Revolving Credit Facility and holders of other indebtedness that is permitted to be secured on a super priority basis have been repaid in full. The validity and enforceability of the Guarantees and the security interests and the liability of each Guarantor will be subject to significant limitations as described in "*Limitations on Validity and Enforceability of the Security Interests and Guarantees and Certain Insolvency Law Considerations*".

The Notes will be represented on issuance by one or more global notes. See "Book-entry, Delivery and Form". The Euro Notes are expected to be delivered in book-entry form through Euroclear Bank SA/NV ("Euroclear") and Clearstream Banking S.A. ("Clearstream"), and the Dollar Notes are expected to be delivered in book-entry form through The Depository Trust Company ("DTC"), in each case on or about April 1, 2021 (the "Issue Date").

There is currently no public market for the notes. Application has been made to admit the notes to listing on the Official List of the Luxembourg Stock Exchange and to trading on the Euro MTF market ("Euro MTF"). This offering memorandum constitutes a prospectus for the purpose of Part IV of the Luxembourg law for securities dated 16 July 2019.

Investing in the Notes involves risks. See "*Risk Factors*" beginning on page 20.

The Notes and the Guarantees have not been and will not be registered under the U.S. Securities Act of 1933, as amended (the "Securities Act"), or the laws of any other jurisdiction, and may not be offered or sold within the United States or to, or for the account or benefit of, U.S. persons (as defined in Regulation S under the Securities Act) except pursuant to an exemption from, or in a transaction not subject to, the registration requirements of the Securities Act. In the United States, the offering is being made only to "qualified institutional buyers" (as defined in Rule 144A under the Securities Act) in compliance with Rule 144A under the Securities Act. You are hereby notified that the Initial Purchasers of the notes may be relying on the exemption from the provisions of Section 5 of the Securities Act provided by Rule 144A thereunder. Outside the United States, the offering is being made to non-U.S. persons in reliance on Regulation S under the Securities Act. See "*Notice to Investors*" and "*Transfer and Selling Restrictions*" for additional information about eligible offerees and transfer restrictions.

Issue Price for the Dollar Notes: 100.000%
Issue Price for the Euro Notes: 100.000%
plus accrued interest, if any, from the Issue Date.

Global Coordinators and Joint Physical Bookrunners

Goldman Sachs **Morgan Stanley**

Global Coordinators and Joint Bookrunners

Barclays **J.P. Morgan**

The date of this offering memorandum is March 18, 2021

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You should rely only on the information contained or incorporated by reference in this document or to which we have referred you. We have not authorized anyone to provide you with information that is different. This document may only be used where it is legal to sell these securities and may only be used for the purposes for which it has been published. The information in this document may only be accurate on the date of this document.

In connection with the Offering, Morgan Stanley & Co. LLC (in respect of the Dollar Notes) and Goldman Sachs Bank Europe SE (in respect of the Euro Notes) (together, the "Stabilizing Managers") may over-allot or effect transactions for a limited period of time with a view to supporting the market price of the Notes at a level higher than that which might otherwise prevail. However, the Stabilizing Managers are not obliged to do this. Such stabilizing, if commenced, may be discontinued at any time, and must be brought to an end after a limited period.

NOTICE TO INVESTORS

The Issuer, having made all reasonable inquiries, confirms to the best of its knowledge, information and belief that the information contained in this offering memorandum with respect to the Issuer and its consolidated subsidiaries and affiliates taken as a whole and the Notes offered hereby is true and accurate in all material respects and is not misleading, that the opinions and intentions expressed in this document are honestly held and that there are no other facts the omission of which would make this offering memorandum as a whole misleading in any material respect. Subject to the following paragraphs, the Issuer accepts responsibility for the information contained in this offering memorandum.

We are providing this offering memorandum only to prospective purchasers of the Notes. You should read this offering memorandum before making a decision whether to purchase any Notes. You must not use this offering memorandum for any other purpose or disclose any information in this offering memorandum to any other person.

This offering memorandum does not constitute an offer to sell or an invitation to subscribe for or purchase any of the Notes in any jurisdiction in which such offer or invitation is not authorized or to any person to whom it is unlawful to make such an offer or invitation. No action has been, or will be, taken to permit a public offering in any jurisdiction where action would be required for that purpose. Accordingly, the Notes may not be offered or sold, directly or indirectly, and this offering memorandum may not be distributed in any jurisdiction except in accordance with the legal requirements applicable to such jurisdiction. You must comply with all laws that apply to you in any place in which you buy, offer or sell any Notes or possess this offering memorandum. You must also obtain any consents or approvals that you need in order to purchase, offer or sell any Notes or possess or distribute this offering memorandum. We and the Initial Purchasers are not responsible for your compliance with any of the foregoing legal requirements.

We are relying on exemptions from registration under the Securities Act for offers and sales of securities that do not involve a public offering. By purchasing Notes, you will be deemed to have acknowledged that:

- you have reviewed this offering memorandum;
- you have made the acknowledgments, representations, warranties and agreements set forth under "*Transfer and Selling Restrictions*" in this offering memorandum;
- you have had an opportunity to request, receive and review additional information that you need from the Issuer; and
- the Initial Purchasers named in this offering memorandum make no representation or warranty, express or implied, as to the accuracy or completeness of such information, and nothing contained in this offering memorandum is, or shall be relied upon as, a promise or representation by the Initial Purchasers with respect to the Notes as to the past or the future.

We are not, the Initial Purchasers are not, and none of our or the Initial Purchasers' respective representatives are, making an offer to sell the Notes in any jurisdiction except where an offer or sale is permitted. You should understand that you will be required to bear the financial risks of your investment for an indefinite period of time. This offering memorandum is being furnished by us in connection with an offering exempt from registration under the Securities Act solely for the purpose of enabling a prospective investor to consider the purchase of the Notes. This offering memorandum is based on information provided by us and by other sources that we believe are reliable. We cannot assure you that this information is accurate or complete.

None of BNY Mellon Corporate Trustee Services Limited, The Bank of New York Mellon, London Branch, The Bank of New York Mellon SA/NV, Dublin Branch, The Bank of New York Mellon SA/NV, Paris Branch nor The Bank of New York Mellon SA/NV, Luxembourg Branch in any of their capacities have participated in the preparation of this offering memorandum or assumes any responsibility for its content.

The information contained in this offering memorandum speaks as of the date hereof. Neither the delivery of this offering memorandum at any time after the date of publication nor any subsequent commitment to purchase the Notes shall, under any circumstances, create an implication that there has been no change in the information set forth in this offering memorandum or in our business since the date of this offering memorandum.

We are not, the Initial Purchasers are not, and none of our or the Initial Purchasers' respective representatives are, making any representation to you regarding the legality of an investment in the Notes by you under any

legal, investment or similar laws or regulations. You should not consider any information in this offering memorandum to be legal, financial, business, tax or other advice. You should consult your own attorney, business advisor and tax advisor for legal, financial, business and tax and related aspects of an investment in the Notes. You are responsible for making your own examination of us and our business and your own assessment of the merits and risks of investing in the Notes.

You should contact the Initial Purchasers with any questions about this offering or if you require additional information to verify the information contained in this offering memorandum.

The Notes have not been approved or disapproved by the U.S. Securities and Exchange Commission (the "Commission" or the "SEC"), any state securities commission in the United States or any other U.S. regulatory authority, nor have any of these authorities passed upon or endorsed the merits of this offering or the accuracy or adequacy of this offering memorandum. Any representation to the contrary is a criminal offense in the United States.

Interests in the Notes will be available initially in book-entry form. We expect that the Notes sold will be issued in the form of one or more global notes. The global notes representing the Dollar Notes sold in reliance on Regulation S under the Securities Act ("Regulation S") will be represented by one or more global notes in registered form without interest coupons attached (the "Dollar Regulation S Global Notes") and the global notes representing the Euro Notes sold in reliance on Regulation S will be represented by one or more global notes in registered form without interest coupons attached (the "Euro Regulation S Global Notes" and, together with the Dollar Regulation S Global Notes, the "Regulation S Global Notes"). The global notes representing the Dollar Notes sold in reliance on Rule 144A under the Securities Act ("Rule 144A") will be represented by one or more global notes in registered form without interest coupons attached (the "Dollar Rule 144A Global Notes" and, together with the Dollar Regulation S Global Notes, the "Dollar Global Notes") and the global notes representing the Euro Notes sold in reliance on Rule 144A will be represented by one or more global notes in registered form without interest coupons attached (the "Euro Rule 144A Global Notes" and, together with the Euro Regulation S Global Notes, the "Euro Global Notes"; the Euro Rule 144A Global Notes together with the Dollar Rule 144A Global Notes, the "Rule 144A Global Notes"; the Rule 144A Global Notes and the Regulation S Global Notes together, the "Global Notes"). The Euro Global Notes will be deposited, on the Issue Date, with, or on behalf of, a common depositary for the accounts of Euroclear and Clearstream and registered in the name of the nominee of the common depositary. The Dollar Global Notes will be deposited, on the Issue Date, with the custodian for DTC and registered in the name of Cede & Co., as nominee of DTC. Transfers of interests in the Global Notes will be effected through records maintained by Euroclear, Clearstream and DTC and their respective participants. The Notes will not be issued in definitive registered form except under the circumstances described in "*Book-Entry, Delivery and Form*".

This offering memorandum sets out the procedures of Euroclear, Clearstream and DTC in order to facilitate the original issue and subsequent transfers of interests in the Notes among participants of Euroclear, Clearstream and DTC. However, none of Euroclear, Clearstream or DTC is under any obligation to perform or continue to perform such procedures and such procedures may be modified or discontinued by any of them at any time. Neither we nor any of our agents will have responsibility for the performance of the respective obligations of Euroclear, Clearstream, DTC or their respective participants under the rules and procedures governing their operations, nor will we or our agents have any responsibility or liability for any aspect of the records relating to, or payments made on account of, book-entry interests held through the facilities of any clearing system or for maintaining, supervising or reviewing any records relating to these book-entry interests. Investors wishing to use these clearing systems are advised to confirm the continued applicability of their rules, regulations and procedures.

We reserve the right to withdraw this offering of the Notes at any time. We and the Initial Purchasers also reserve the right to reject any offer to purchase the Notes in whole or in part for any reason or no reason and to allot to any prospective purchaser less than the full amount of the Notes sought by it. The Initial Purchasers and certain of their respective related entities may acquire, for their own accounts, a portion of the Notes.

This offering memorandum has not received the approval of the French *Autorité des Marchés Financiers*.

We have not published a prospectus in relation to the Notes pursuant to Regulation (EU) 2017/1129, as amended (together with any applicable implementing measures in any Member State of the European Economic Area ("EEA") or in the United Kingdom (each, a "Relevant State"), the "Prospectus Regulation") and are offering the Notes only in those Relevant States to qualified investors as defined in Article 2(e) of the Prospectus Regulation.

Neither we nor the Initial Purchasers have authorized, nor do they authorize, the making of any offer of Notes through any financial intermediary, other than offers made by the Initial Purchasers which constitute the final placement of Notes contemplated in this offering memorandum.

Singapore SFA Product Classification: In connection with Section 309B of the Securities and Futures Act (Chapter 289) of Singapore (the "SFA") and the Securities and Futures (Capital Markets Products) Regulations 2018 of Singapore (the "CMP Regulations 2018"), we have determined, and hereby notify all relevant persons (as defined in Section 309A(1) of the SFA), that the Notes are capital markets products other than 'prescribed capital markets products' (as defined in the CMP Regulations 2018) and Specified Investment Products (as defined in MAS Notice SFA 04-N12: Notice on the Sale of Investment Products and MAS Notice FAA-N16: Notice on Recommendations on Investment Products).

AVAILABLE INFORMATION

Each purchaser of the Notes from the Initial Purchasers will be furnished with a copy of this offering memorandum and any related amendments or supplements. While any of the Notes remain outstanding, we will make available, upon request, to any holder and any prospective purchaser thereof, the information required by Rule 144A(d)(4) under the Securities Act during any period in which we are not subject to the information reporting requirements of the Exchange Act or exempt pursuant to Rule 12g3-2(b) under the Exchange Act. You may request this information by writing or telephoning us at the following address: CGG, 27 avenue Carnot, 91300 Massy, France, Attention: Investor Relations Officer, Telephone: +33 (0) 1 64 47 45 00.

Copies of this offering memorandum, the Issuer's annual reports for the 2018, 2019 and 2020 fiscal years, the current constitutive documents of the Issuer and the Guarantors, the indenture governing the Notes, the Guarantees and copies of the most recently published annual report and consolidated and non-consolidated financial statements of the Issuer will, for so long as the Notes are listed on the Luxembourg Stock Exchange, be available free of charge during usual business hours on any weekday (except Saturdays, Sundays and public holidays) at the specified offices of the listing agent in Luxembourg. We publish a quarterly consolidated statement of operations, statement of cash flow and balance sheet, each of which will be delivered to, and copies of which may be obtained free of charge from, the specified offices of the listing agent in Luxembourg. We do not publish interim non-consolidated financial statements. All published interim financial statements are unaudited.

PRESENTATION OF INFORMATION

In this offering memorandum, references to "United States" or "U.S." are to the United States of America, references to "US dollars", "dollars", "$" or "US$" are to United States dollars, references to "France" are to the Republic of France, and references to "euro" or "€" are to the single currency introduced at the start of the third stage of European Economic and Monetary Union pursuant to the Treaty establishing the European Union.

As used in this offering memorandum, the "Issuer" and the "Company" refer to CGG S.A., the "Group" refers to the Issuer and its subsidiaries and "we", "us" and "our" refer to the Group or, if the context so requires, the Issuer individually.

In addition:

- "Collateral" has the meaning ascribed to it under "*Description of the Notes*"
- "Existing First Lien Notes" refers to US$300,000,000 and €280,000,000 first lien senior secured notes due 2023 issued on April 24, 2018 by the Existing First Lien Notes Issuer and guaranteed by the Issuer and certain of its subsidiaries under the Existing First Lien Notes Indenture;
- "Existing First Lien Notes Indenture" refers to the indenture governing the Existing First Lien Notes dated as of April 24, 2018 by, and among, *inter alios*, the Existing First Lien Notes Issuer, the Issuer and certain of its subsidiaries;
- "Existing First Lien Notes Issuer" refers to CGG Holding (U.S.) Inc.;
- "Existing Notes" refers to the Existing First Lien Notes and the Existing Second Lien Notes;
- "Existing Second Lien Notes" refers to the US$355,141,000 and €80,372,000 initial principal amount of second lien senior secured notes due 2024 issued on February 21, 2018 as part of the Financial Restructuring by the Issuer and guaranteed by certain of its subsidiaries under the Existing Second Lien Notes Indenture, plus US$123.4 million (equivalent) of accrued PIK interest (consisting of US$96.6 million and €21.9 million), as of December 31, 2020;
- "Existing Second Lien Notes Indenture" refers to the indenture governing the Existing Second Lien Notes dated as of February 21, 2018 by, and among, *inter alios*, the Issuer and certain of its subsidiaries;
- "Financial Restructuring" refers to the balance sheet restructuring transactions of the Issuer and certain of its subsidiaries, effective February 21, 2018;
- "Guarantees" refers to the guarantees of the Notes granted by the Guarantors;
- "Guarantors" has the meaning ascribed to it under "*Description of the Notes*";
- "Initial Purchasers" refers collectively to Barclays Bank Ireland PLC, Goldman Sachs Bank Europe SE, J.P. Morgan AG, Morgan Stanley Europe SE (in respect of the Euro Notes) and Morgan Stanley & Co. LLC (in respect of the Dollar Notes);
- "Issue Date" refers to April 1, 2021, the date of issuance of the Notes in this Offering;
- "Post-Issue Date" refers to a date occurring no later than 90 days after the Issue Date;
- "Refinancing" refers to the Offering and issuance of the Notes, the entering into of the Revolving Credit Facility, the Security Documents, the Indenture and the Intercreditor Agreement, and the application of proceeds from the issuance of the Notes as described under *"Use of Proceeds*", including (i) the Tender Offer launched by the Existing First Lien Notes Issuer for the Existing First Lien Notes, (ii) the settlement of the Tender Offer on or about the Issue Date, (iii) the satisfaction and discharge and subsequent redemption of (a) any of the remaining Existing First Lien Notes not tendered and accepted in the Tender Offer on the Issue Date and (b) the Existing Second Lien Notes, (iv) the release of the collateral securing the Existing Notes and (v) the payment of all fees and expenses in connection with the foregoing;
- "Revolving Credit Facility" refers to the senior secured revolving credit facility established under the Revolving Credit Facility Agreement to be dated on or about the Issue Date, which is described in more detail in "*Description of Certain Financing Arrangements—The Revolving Credit Facility Agreement*";
- "Revolving Credit Facility Agreement" has the meaning ascribed to it under *Description of Certain Financing Arrangements—The Revolving Credit Facility Agreement*";
- "Security Documents" refers to the: (i) French law-governed pledge of receivables agreement between, *inter alia*, the Issuer, as pledgor, and the Security Agent; (ii) French law-governed financial securities account

pledge agreement in relation to shares in CGG Services SAS, Sercel SAS and Sercel Holding SAS held by the Issuer, between, *inter alia*, the Issuer, as pledgor, and the Security Agent; (iii) Dutch law-governed deed of pledge over registered shares in CGG Holding B.V. between, *inter alia*, the Issuer, CGG Holding B.V. and the Security Agent; (iv) Norwegian law-governed share pledge agreement between CGG Holding B.V., as pledgor, and the Security Agent, in relation to the pledgor's shares in CGG Services (Norway) AS; (v) English law-governed charge over shares in CGG Services (UK) Limited between CGG Holding B.V., as chargor, and the Security Agent; (vi) New York law-governed first lien note pledge and security agreement (U.S.) by and among, *inter alia*, the Issuer, as pledgor, and the Security Agent; (vii) New York law-governed first lien pledge and security agreement (U.S.) by and among, *inter alia*, the U.S. Guarantors, as pledgors, and the Security Agent; (viii) New York law-governed first lien holding pledge agreement (U.S.) in relation to shares in CGG Holding (U.S.) Inc. held by the pledgor, between CGG Holding B.V. as pledgor and the Security Agent; (ix) New York law-governed first lien copyright security agreement by and among, *inter alia*, certain of the U.S. Guarantors, as pledgors, and the Security Agent; (x) New York law-governed first lien patent security agreement by and among, *inter alia*, certain of the U.S. Guarantors, as pledgors, and the Security Agent; and (xi) New York law-governed first lien trademark security agreement by and among, *inter alia*, certain of the U.S. Guarantors, as pledgors, and the Security Agent; in each case, as amended, supplemented or otherwise modified from time to time.

- "Tender Offer" refers to the Existing First Lien Notes Issuer's offer to purchase for cash the Existing First Lien Notes; and
- "U.S. Guarantors" refers to CGG Holding (U.S.) Inc., CGG Services (U.S.) Inc., CGG Land (U.S.) Inc., Sercel Inc. and Sercel-GRC Corp.

Unless otherwise indicated, statements in this offering memorandum relating to market share, ranking and data are derived from management estimates based, in part, on independent industry publications, reports by market research firms or other published independent sources. Any discrepancies in any table between totals and the sums of the amounts listed in such table are due to rounding.

The data and information provided by Wood Mackenzie, indicated as such in this offering memorandum, should not be interpreted as advice and you should not rely on it for any purpose. You may not copy or use such data or information except as expressly permitted by Wood Mackenzie in writing. To the fullest extent permitted by law, Wood Mackenzie accepts no responsibility for your use of such data and information, except if specified in a written agreement you have entered into with Wood Mackenzie for the provision of such data or information.

This offering memorandum includes extracts from information and data, including industry and market data, released by publicly available sources or otherwise published by third parties. While we accept responsibility for accurately extracting and summarizing such information and data, none of us, the Initial Purchasers, the Trustee or the Agents has independently verified the accuracy of such information and data, and none of us, the Initial Purchasers, the Trustee or the Agents accepts any further responsibility in respect thereof.

The information set out in relation to sections of this offering memorandum describing clearing and settlement arrangements, including the sections entitled "*Description of the Notes*" and "*Book-Entry, Delivery and Form*", is subject to any change or reinterpretation of the rules, regulations and procedures of Euroclear, Clearstream and DTC currently in effect. While we accept responsibility for accurately summarizing the information concerning Euroclear, Clearstream and DTC, we accept no further responsibility in respect of such information.

In addition, this offering memorandum contains summaries believed to be accurate with respect to certain documents, but reference is made to the actual documents for complete information. All such summaries are qualified in their entirety by such reference. Copies of documents referred to herein will be made available to prospective investors upon request to us.

PRESENTATION OF FINANCIAL INFORMATION

The consolidated financial information with respect to the Group presented in this offering memorandum as of and for the years ended December 31, 2018, 2019 and 2020 has been derived from the Issuer's consolidated financial statements (collectively referred to as the "Consolidated Financial Statements" and respectively, the "2018 Consolidated Financial Statements", the "2019 Consolidated Financial Statements" and the "2020 Consolidated Financial Statements"), which were prepared in accordance with IFRS, as adopted by the European Union ("IFRS"), an English-language translation of which is included elsewhere in this offering memorandum. The Issuer's Consolidated Financial Statements included herein have been audited by Ernst & Young et Autres and Mazars, independent statutory auditors of the Issuer as set forth in their audit reports included therein.

Non-IFRS Measures

This offering memorandum contains information regarding our Segment data, EBIT, Segment EBIT, EBITDAs, Segment EBITDAs, gross financial debt, net financial debt and certain other financial measures and ratios which are not recognized measurements under IFRS ("Non-IFRS Measures"). We define the following Non-IFRS Measures as follows:

- "Segment" figures are presented before IFRS 15 in accordance with the Group's previous method for recognizing Multi-Client prefunding revenues based on percentage of completion. In 2018, in addition to IFRS 15 impacts, Segment figures also excluded Sercel inventories provision and restructuring costs related to the Transformation Plan corresponding to the costs related to the industrial transformation of the Group and the Financial Restructuring, including personnel costs, site closure costs and fees and expenses related to the Financial Restructuring;
- "EBIT" as operating income plus our share of income in companies accounted for under the equity method;
- "Segment EBIT" as operating income plus our share of income in companies accounted for under the equity method before IFRS 15, in accordance with the Group's previous method for recognizing Multi-Client prefunding revenues based on percentage of completion. In 2018, in addition to IFRS 15 impacts, Segment EBIT excluded multi-client data library impairment, Sercel inventories provision and impairment and restructuring costs related to the Transformation Plan corresponding to the costs related to the industrial transformation of the Group and the Financial Restructuring, including personnel costs, site closure costs and fees and expenses related to the Financial Restructuring.;
- "EBITDAs" as earnings before interest, tax, income from equity affiliates, depreciation, amortization net of amortization costs capitalized to multi-client surveys and share-based compensation cost;
- "Segment EBITDAs" as earnings before interest, tax, income from equity affiliates, depreciation, amortization net of amortization costs capitalized to multi-client surveys and share-based compensation cost before IFRS 15, in accordance with the Group's previous method for recognizing Multi-Client prefunding revenues based on percentage of completion. In 2018, in addition to IFRS 15 impacts, Segment EBITDAs excluded Sercel inventories provision and restructuring costs related to the Transformation Plan corresponding to the costs related to the industrial transformation of the Group and the Financial Restructuring, including personnel costs, site closure costs and fees and expenses related to the Financial Restructuring;
- "Gross financial debt" as financial debt, including lease liabilities, current maturities and bank overdrafts; and
- "Net financial debt" as gross financial debt less cash and cash equivalents.

We reconcile these Non-IFRS Measures to the most comparable IFRS measures in "*Operating and Financial Review*". For more information on these and other Non-IFRS Measures, see "*Summary Financial Information*", "*Selected Financial Information*" and "*Operating and Financial Review*".

The Non-IFRS Measures we present may also be defined differently than the corresponding terms under the Indenture. The Non-IFRS measures have limitations as an analytical tool, and should not be considered in isolation, or as an alternative to, or a substitute for, profit/(loss) for the period or other financial statement data presented in our Consolidated Financial Statements as indicators of financial performance. Some of the limitations of these Non-IFRS measures are that:

- they do not reflect our cash expenditures or future requirements for capital expenditures or contractual commitments;

- they do not reflect changes in, or cash requirements for, our working capital needs;
- they do not reflect the significant interest expense, or the cash requirements necessary, to service interest or principal payments on our debt;
- they do not reflect our tax expenses or the cash that we may be required to pay our taxes;
- they are not adjusted for all non-cash income or expense items that are reflected in our statements of cash flows;
- they do not reflect the impact of earnings or charges resulting from certain matters we consider not to be indicative of our ongoing operations; and
- other companies in our industry may calculate these measures differently than we do, limiting their usefulness as comparative measures.

You should not consider the items that are not recognized measures under IFRS as alternatives to the applicable IFRS measures. In particular, you should not consider these measures of our financial performance or liquidity as an alternative to net income, operating income or any other performance measures derived in accordance with generally accepted accounting principles or as an alternative to cash flow from operating activities as a measure of our liquidity. Other companies may present these measures differently than we do.

We have included these measures because we believe they are important indicators of our underlying historical performance.

FORWARD-LOOKING STATEMENTS

This offering memorandum includes "forward-looking statements" within the meaning of the U.S. federal securities laws, which involve risks and uncertainties, including, without limitation, certain statements made in the sections entitled "*Our Business*" and "*Operating and Financial Review*". You can identify forward-looking statements because they contain words such as "believes", "expects", "may", "should", "seeks", "approximately", "intends", "plans", "estimates", or "anticipates" or similar expressions that relate to our strategy, plans or intentions. These forward-looking statements are subject to risks and uncertainties that may change at any time, and, therefore, our actual results may differ materially from those that we expected. We have based these forward-looking statements on our current views and assumptions about future events. While we believe that our assumptions are reasonable, we caution that it is very difficult to predict the impact of known factors, and, of course, it is impossible for us to anticipate all factors that could affect our actual results. All forward-looking statements are based upon information available to us on the date of this offering memorandum.

Important factors that could cause actual results to differ materially from our expectations ("cautionary statements") are disclosed under "*Risk Factors*" and elsewhere in this offering memorandum, including, without limitation, in conjunction with the forward-looking statements included in this offering memorandum. All forward-looking information in this offering memorandum and subsequent written and oral forward-looking statements attributable to us, or persons acting on our behalf, are expressly qualified in their entirety by the cautionary statements. Some of the factors that we believe could affect our actual results include:

- the level of capital expenditures of our clients and by the oil and gas industry in general;
- the effects of competition;
- the social, geopolitical and economic risks and other risks of our global operations;
- the ability of our strategic partners to perform their obligations;
- disruptions in our supply chain and third-party suppliers;
- the impact of the current uncertain economic environment and the volatility of oil and natural gas prices;
- the reduction in the consumption of carbon-based energy products;
- the loss or destruction of key assets;
- any impairment of goodwill on our balance sheet;
- our ability to deliver projects in line with our clients' expectations;
- liability or loss of reputation in case of failure or malfunction of our products;
- difficulties and costs in protecting intellectual property rights and exposure to infringement claims by others;
- the risks related to our information technology, including cyber security risks and risks of hardware and software failures;
- our ability to attract and retain qualified employees and senior management;
- exposure of our employees to safety risks;
- our ability to maintain data governance standards required by our clients or applicable regulations;
- risks related to liquidity needs and substantial indebtedness;
- exposure to exchange rate fluctuations;
- difficulties in generating sufficient cash to meet our debt service obligations, or our obligations under other financing agreements;
- our high level of fixed costs regardless of the level of business activity;
- the risk of regulatory changes in the countries in which we operate, including changes as a result of Brexit;
- legal proceedings in the various jurisdictions arising out of our ability to comply with complex laws and governmental regulations;
- the penalties and reputational damage arising out of the risk of payment, supplier and other types of fraud;
- our indebtedness and the restrictive covenants in our financing agreements;

- our ability to generate sufficient cash to meet our debt service obligations, or our obligations under other financing agreements;
- exposure to interest rate risk in our financing agreements; and
- our success at managing the foregoing risks.

We undertake no obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise. We caution you that the foregoing list of important factors may not contain all of the material factors that are important to you. In addition, in light of these risks, uncertainties and assumptions, the forward-looking events discussed in this offering memorandum might not occur. When considering forward-looking statements, you should keep in mind the risk factors and other cautionary statements included in this offering memorandum, including those described in the "*Risk Factors*" section of this offering memorandum.

OFFERING MEMORANDUM SUMMARY

This offering memorandum summary highlights selected information from this offering memorandum to help you understand our business and the terms of the Notes. You should carefully read all of this offering memorandum, including the Consolidated Financial Statements and related notes, to understand fully our business and the terms of the Notes, as well as some of the other considerations that may be important to you in making your investment decision. You should pay special attention to the "Risk Factors" section of this offering memorandum to determine whether an investment in the Notes is appropriate for you.

Overview

We are a global geoscience technology leader. We employ approximately 3,900 people worldwide and provide a comprehensive range of data, products, services and equipment that support the discovery and responsible management of the Earth's natural resources.

CGG S.A. is the parent holding company of the CGG Group, which is comprised of 67 consolidated subsidiaries as of December 31, 2020 (62 abroad and five in France).

Geoscience

As recognized leaders in advanced subsurface imaging, our experts bring a collaborative approach to problem-solving. Our global network of 23 data imaging centers provides region-specific expertise, outstanding service and remarkable technology in every image.

We provide integrated reservoir characterization services and innovative solutions for complex exploration and production ("E&P") challenges. Our comprehensive portfolio of geoscience services brings valuable insight to all aspects of natural resource exploration and development, helping to reduce drilling risk and build better reservoir models.

We develop sophisticated algorithms and intuitive interfaces to deliver powerful reservoir answers from geophysical data at every stage from exploration to production. Since 2018, we have typically committed, on average, approximately 10 per cent. of our yearly revenues in research and development activities ("R&D"). We believe this contributes to our differentiation within the industry and has a positive impact on our market share.

Multi-Client

We invest in a portfolio of geographical opportunities to build a geoscience database and strive to achieve a high prefunding for our new projects.

We typically invest in the range of $200 million per year in our surveys. At the end of 2020, we had over 1.1 million square kilometers of high-end offshore, and over 100,000 square kilometers of high-end onshore, unconventional seismic data in some of the most prolific basins around the world. We own marketing rights to such data for a period of time and sell licenses to use this data to specific clients who generally use it for reservoir exploration and development.

Equipment

Through our subsidiary Sercel, we offer a full spectrum of systems, sensors and sources for seismic acquisition and downhole monitoring. Sercel sells its equipment and offers customer support services including training, on a worldwide basis. Sercel manufactures in its six seismic equipment manufacturing facilities a wide range of geophysical equipment for land and marine seismic data acquisition, including seismic recording equipment, software and seismic sources. Based on our own estimations, Sercel is the market leader in seismic equipment design, engineering, manufacturing and support as of December 31, 2020.

Operating Revenues Data

Revenues by Activity

The following table sets forth our consolidated operating revenues by activity in millions of dollars for the periods indicated:

	2020	2019	2018
	In millions of US$		
Multi-Client data	340	575	517
Geoscience	328	385	396
Geology, Geophysics & Reservoir (“GGR”) segment revenues	668	960	913
Equipment segment revenues	291	452	351
Eliminated revenues and others	(4)	(11)	(37)
IFRS 15 impact on multi-client pre-commitments	(69)	(45)	(34)
Consolidated revenues	886	1,356	1,194

Revenues by Region

The following table sets forth our consolidated operating revenues by region (based on the location of our customers) in millions of dollars, and the percentage of total consolidated operating revenues represented thereby, for the periods indicated:

	2020		2019		2018	
	In millions of US$, except percentages					
North America	153	17%	375	28%	244	21%
Latin America	141	16%	180	13%	268	22%
Europe, Africa and the Middle East	410	46%	489	36%	447	37%
Asia Pacific	182	21%	312	23%	235	20%
Total	**886**	**100%**	**1,356**	**100%**	**1,194**	**100%**

Our Strengths

Leading people, data, and technology company

We have market-leading positions across our three core segments: Geoscience, Multi-Client (together known as GGR) and Equipment. Through our Geoscience division, we provide data imaging and processing services; our Multi-Client division comprises a comprehensive seismic data library with a large footprint in strategic locations in Europe, Africa, the Middle East, Asia Pacific, North America and Latin America; and our Equipment division provides leading high-tech land, marine, ocean bottom seismic and downhole equipment.

We believe we are one of the established leaders in subsurface imaging, geology and geoscience software, and we utilize modern technologies, advanced seismic interpretation, proprietary software and sophisticated algorithms to map challenging geologies. Our Geosciences division generated external revenues of $328 million for the year ended December 31, 2020.

Our multi-client data library, which we license to our clients on a non-exclusive basis, covers over 1.2 million square kilometres as of December 31, 2020. We believe it is particularly developed in some of the industry’s key mature and secure basins (including, in particular, the Gulf of Mexico, Brazil, the North Sea and the Permian Basin). Our multi-client business generated segment revenues of $340 million for the year ended December 31, 2020.

Finally, our equipment division, Sercel, is one of the leading worldwide equipment providers. We have the largest installed base in the industry as of December 31, 2020 comprising an offering of land, marine, ocean bottom and downhole equipment. Sercel generated external revenues of $287 million for the year ended December 31, 2020.

We believe that our exposure to reservoir development and production and near field exploration provides resilience through the cycles, particularly as we expect clients to retrench into their core areas and prioritize capital expenditure on projects with lower risks or higher returns and to focus on higher efficiency and productivity. We also benefit from a well-balanced exposure within our GGR segment to different types of clients (with oil majors, international oil companies and national oil companies contributing 30%, 39% and 31%, respectively, to revenues of our GGR segment for the year ended December 31, 2020).

Strong focus on technology and providing value to clients

Our propriety technology allows us to provide value to our clients. We recognize the importance of technological leadership in enabling our customers to obtain new insights into mature exploration and production areas and more accurately understand and predict reservoir parameters.

In our Geoscience division, we believe that our imaging algorithms and processing software are industry-leading. They are supported by strong data processing capabilities: our 272 PetaFlops of high performance computing ("HPC") power is on par with leading global technology companies. This technology allows us to process data accurately and rapidly and to deliver it seamlessly into our clients' systems. Our Geoscience activity also benefits from long-term contracts and as of January 1, 2021 had a backlog of more than six months of forward activity. This is complemented by long-term (2-3 year) contracts for our dedicated centers and by recurring maintenance revenue from our GeoSoftware business.

In our multi-client business, our technology enables us to provide our clients with quick access to our high-quality seismic data. Likewise, in our equipment division, Sercel, we believe we offer a leading technology portfolio of modern equipment with strong product reliability and a focus on customer support. We believe we are at the forefront of the digitalization trends in the industry and have integrated analytics and machine learning technologies that have enhanced the value of our services and products, systematized quality control functions, and optimized our operations.

Multi-client library positioned in mature and stable core basins generating attractive returns and reducing financial volatility through pre-funding

We own a large and geographically diverse multi-client library comprising more than 1.2 million square kilometres of high-quality 3D seismic data. Our data library is particularly developed in mature and stable core basins such as Brazil, the North Sea (both UK and Norway) and the Gulf of Mexico. The map below shows the geographic breakdown of our multi-client libraries as of December 31, 2020.

We seek to mitigate cost-recovery risks associated with acquiring multi-client data through pre-funding of acquisition costs and we have a long track record of achieving our target prefunding levels of over 75%. For the year ended December 31, 2020, we achieved a cash pre-funding rate of 89% on multi-client capital expenditures of $239 million. Segment revenues from our multi-client business increased by 23% from 2017 to 2019. Additionally, we have seen an increasing percentage of such revenues deriving from after-sales in each of the three years, though these revenues decreased significantly in 2020 given the approximately 30% reduction in E&P spending in the industry globally.

Large global subsurface imaging footprint

We have a large and geographically-diversified subsurface imaging footprint, comprising a combination of open and dedicated (client-specific) centers on six continents focused on data production. Our 23 centers are staffed with more than 1,300 employees and are focused primarily on production, operations, and research and development. This infrastructure allows us to serve a large, diversified customer base in some of the industry's most mature markets. It also allows us to meet demand for various types of service, whether for dedicated centers, centralized processing, or decentralized processing close to production sites.

A successful business transformation towards activities that demonstrated strong performance during the downturn leaves us well positioned to capitalize on market recovery and secular trends emerging in the energy sector

We have reoriented our business towards a high-margin, capital expenditures-light and technology-focused business model, which remained robust in 2020 despite the recent downturn in the oil and gas industry. This new model also strongly positions us to benefit from secular industry trends. Our exit from the capital-intensive marine and land contractual data acquisition businesses has allowed us to focus on geoscience, multi-client and equipment activities and to reduce the volatility of our earnings. Our technological leadership and focus on high value-additive services differentiates us in the industry landscape.

2020 was marked by a rapid drop in the oil price by more than 50% in the first quarter, a result of both the significant decline in oil demand caused by the Covid-19 pandemic and a contest for market share between Saudi Arabia and Russia. Consensus estimates based on various brokers and large institutions (such as the U.S. Energy Information Administration) now project that oil prices will stabilize above US$50 per barrel (Brent) in 2021. These price levels are expected to drive additional reservoir development production optimization activity, which in turn should result in increased demand for our services.

In 2020, we also continued to develop new areas of profitable growth, extending our existing strengths and expertise into adjacent markets and supporting our clients' energy transition agendas. We are progressing well in establishing ourselves in new businesses, including digital solutions, structural health monitoring ("SHM"), support for carbon capture, utilization and storage ("CCUS"), geothermal energy and environmental geosciences.

Strong board and executive team to implement strategy, supported by experienced operational management

We have a highly skilled Board of Directors and an experienced executive and operational management team. Our key management personnel each has, on average more than 15 years of experience in our industry, with a strong track record in oil and gas field services and geoscience. The experience of our management team has been demonstrated in recent years by their leadership through our business transformation to a high-margin, capital expenditure-light and technology-focused business centred on geoscience, multi-client, and equipment activities. Our management has also demonstrated a proactive approach to our capital structure and liquidity management.

The members of our Board of Directors have a wide variety of skills and deep expertise in key areas of our current and future activities. All of our Board members have experience in innovation, digitalization and technology, and three-quarters have experience and skills in the oil and gas business and in strategy.

We employ geophysicists, geologists, engineers and other highly skilled employees who have contributed to maintaining our operational excellence and leading technology in the industry. We believe that the strength of our management team and our highly qualified workforce, including our key operational management, will be an important factor in the implementation of our business strategy.

Our Strategies

We intend to continue providing leading geological, geophysical and reservoir solutions and services to our broad base of customers, who primarily operate in the global oil and gas industry. Our strategy is to deliver leading technology, data, equipment and services that help our industry to discover and responsibly manage the Earth's natural resources. We provide a leading understanding of the subsurface, and by increasing precision we contribute significantly to the exploration, development and production value chain.

We are a people, data and technology company with established and strong leadership positions in our three core segments of Geoscience, Multi-Client and Equipment. We actively seek to preserve and expand our leadership within the industry, which requires focus on our clients and constant willingness and aspiration to exceed their expectations.

To achieve this objective, we have adopted the following strategies:

Developing an integrated Geoscience activity and capitalizing on our multi-client library in mature producing basins

We continue to invest in our key high-end geoscience technologies. Many of our customers are focusing their exploration and production budgets on increasing production from existing fields where they can use installed infrastructure. Our GGR segment benefits from this trend with robust demand for its services, data and imaging projects, given our leading ocean bottom nodes processing capabilities, as well as large multi-client projects in mature basins. In addition, major oil and gas companies are asking for more reprocessing of existing data sets in order to benefit from the development of new imaging algorithms. This allows our customers to maximize the return from exploration investments at a lower cost, compared with acquisition of new data.

The geoscience market is following the global trend of reduced exploration and production spending by clients, despite processing and imaging being a small part of their budgets. We expect that the development of renewable energy will be expensive and take time and that fossil fuels will remain at the core of oil and gas companies, which need the cash flows they provide to progressively transform their energy portfolios and meet the world's energy demands through the transition.

In this environment, geoscience imaging technology will continue to play a key role as it enables clients to make surgical choices when allocating their investments. Reprocessing data with the latest technologies is a cost-effective alternative to new data acquisition, and the balance between processing and reprocessing is shifting towards reprocessing.

Overall, our geoscience activity saw its external revenue decrease by 15% in 2020 compared to 2019, although we believe it still outperformed the market in 2020 on the back of its strong backlog at the beginning of 2020.

In the last few years, we have made a conscious effort to increase our Multi-Client business's participation in development and production and have avoided frontier exploration areas that we believed were less robust. Between 2017 and 2019, the share of the Geoscience revenue dedicated to exploration decreased from 35% to 25% as most of the projects delivered in subsurface imaging were related to producing fields and fields undergoing development. These projects are important for our clients even in the current environment. Our technology provides a much better understanding of the subsurface, and therefore is of significant value to clients as they decide on drilling locations, development opportunities or production plans.

Multi-Client segment revenues decreased by 41% in 2020 as compared to 2019, mainly as clients reduced spending on aftersales.

We expect that our future multi-client programs will continue to target core basins where our clients are focusing their investments (including Brazil and the North Sea). This will enable our clients to capitalize on their existing infrastructure while increasing and accelerating their returns.

Advancing our digital capabilities

Anticipating and supporting the increase in the volume of acquired data (Big Data) has required and will continue to require considerable research and development for seismic data processing, data driven solutions, data storage and management, and new parallel computing architectures that enable such data to be processed with a reasonable speed and in an energy efficient manner.

We believe that by continually improving our seismic data processing algorithms and software along with our HPC technology, we will remain one of the leading suppliers of high-end geoscience services. Our research and development work will therefore continue to focus on improving these technologies in order to support clients in their efforts to reduce the costs and risks associated with exploration, development and production.

We also believe that oil and gas companies are increasingly considering their geoscience data as one of their major assets. In this context, we are concentrating our digital geoscience expertise to provide expert digital transformation and data upcycling services, delivering cloud-ready data and software, pioneering data-driven algorithms and approaches, as well as harnessing artificial intelligence, machine learning and data analytics to augment geoscience workflows.

Developing innovative solutions within the Equipment segment and capitalizing on a strong client base

We believe that our Equipment business benefits from a strong reputation as a producer of high-end solutions, with a large installed base. We plan to continue to bring to the market our industry-leading equipment while expanding into other non-oil and gas markets.

In our Equipment segment, we believe Sercel maintains a strong level of research and development driven by high technological content of seismic equipment, which includes numerous modern technologies, such as wireless transmission, high- and low-frequency transmission or miniaturized electronic technologies, and also optical and acoustic technologies. Recently, Sercel launched S-lynks, a fully connected, stand-alone wireless solution from Sercel for measuring structural vibration.

Overall, the geophysics market is characterized by increasing demand for new technologies, both in land and marine, to achieve high-resolution imaging. Because of its strong reputation and past success, we expect Sercel should be able to maintain its position in the seismic equipment market, capitalizing on its installed base and the implementation of new technologies in its full product range. In 2020, Sercel's external revenue decreased by 35% as compared to 2019, mainly driven by a decrease of land activity. The streamer marine market is expected to remain weak as marine contractors continue to face a difficult market, restricting their ability to invest in new equipment. However, their current fleets are aging and their equipment excess is shrinking. Eventually, we expect that updates and replacements will be required.

In the medium term, we believe that the land equipment market should be supported by the need for better imaging of conventional onshore reservoirs that are currently being operated intensively in order to better control depletion. We expect that geographical pockets of new opportunities in India and Algeria should complement our traditional markets (Russia, China and the Middle East).

Using our core capabilities to expand into adjacent areas

We are pursuing efforts to further develop outside our core areas in a capital-efficient way. The current crisis has accelerated many of our clients' ambitions towards decarbonisation and the energy transition. We are seeking to develop new areas of profitable growth focused on near-to-core step-out diversification and establishing new businesses to address the growing demand for green energy. We are looking at three business development opportunities:

1. Adjacent end markets to which we could extend our current core business: we believe that CGG has leading market capabilities in data processing and data management and is well positioned to expand into data delivery, analysis and transformation. Our satellite mapping technologies help our E&P clients monitor offshore pollution. We have also expanded the range of our clients with mining companies, monitoring the stability of their mines and tailings dams.
2. Using existing core capabilities to extend into other domains: in our Equipment business, we believe Sercel has industry-leading sensor technologies and is expanding their application through SHM solutions. Infrastructure SHM spending is increasing at a CAGR of approximately 15% to 17% from 2020 to 2025 (source: AMR Report, Team analysis). Technological advancements in both sensor technologies and computing capabilities enable permanent and remote monitoring to transform reactive maintenance of aging infrastructure into a pre-emptive solution, reducing risks and maintenance costs while extending effective life. Satellite mapping technologies can be applied to a range of problems including infrastructure, facilities, subsidence and geo-hazards monitoring.
3. Expanding into areas where our clients are growing. Our clients continue to be increasingly focused on the energy transition, including decarbonization and a reduction of their environmental footprint. We believe that one of the key enablers for achieving these ambitious objectives is CCUS. Many of our clients are starting to incorporate the application of CCUS technologies into their field development plans. This requires a detailed understanding of the subsurface, for which we believe we possess key technologies and expertise. Within the CCUS value chain, CGG is aiming to play a key role in field development and monitoring of underground CO2 storage projects.

The Refinancing

Throughout this offering memorandum, we refer to the Refinancing as, collectively, the Offering and issuance of the Notes, the entering into of the Revolving Credit Facility, the Security Documents creating security interests

over the Collateral contemplated by the Indenture and the Intercreditor Agreement, and the application of proceeds from the issuance of the Notes as described under *"Use of Proceeds*", including (i) the Tender Offer launched by the Existing First Lien Notes Issuer for the Existing First Lien Notes, (ii) the settlement of the Tender Offer on the Issue Date, (iii) the satisfaction and discharge and subsequent redemption of any of (a) any remaining Existing First Lien Notes not tendered and accepted in the Tender Offer on or about the Issue Date and (b) the Existing Second Lien Notes, (iv) the release of the collateral securing the Existing Notes and (v) the payment of all fees and expenses in connection with the foregoing; in each case, in accordance with the terms of the respective indentures governing the Existing Notes. For additional information, see *"Use of Proceeds*", "*Description of the Notes*" and *"Operating and Financial Review—Liquidity and Capital Resources*".

The Tender Offer and Redemption

On March 15, 2021, the Existing First Lien Notes Issuer launched a tender offer for the purchase of any and all of the Existing First Lien Notes outstanding for cash (the "Tender Offer"): (i) in the case the U.S. dollar-denominated Existing First Lien Notes, at a purchase price of $1,027.00 per $1,000 aggregate principal amount, plus accrued and unpaid interest and (ii) in the case of the euro-denominated Existing First Lien Notes, at a purchase price of €1,023.63 per €1,000 aggregate principal amount, plus accrued and unpaid interest. Settlement of the Tender Offer is conditional on the issuance of the Notes.

The tender period for the Tender Offer is expected to expire on or about March 29, 2021 (the "Expiration Date") and holders who validly tender (and do not validly withdraw) their Existing First Lien Notes in such Tender Offer prior to the Expiration Date will receive the tender consideration on or about the Issue Date. The Tender Offer is being made pursuant to a separate tender offer memorandum (the "Offer to Purchase") and not pursuant to this Offering Memorandum.

Existing First Lien Notes that are not tendered and accepted in the Tender Offer and the Existing Second Lien Notes will be satisfied and discharged and subsequently redeemed at a redemption price of (i) 102.250% plus accrued and unpaid interest for the U.S. dollar-denominated Existing First Lien Notes, (ii) 101.9688% plus accrued and unpaid interest for the euro-denominated Existing First Lien Notes, and (iii) 100.000% plus accrued and unpaid interest for the Existing Second Lien Notes. The satisfied and discharged Existing First Lien Notes not tendered in the Tender Offer will be redeemed on May 1, 2021, and the satisfied and discharged Existing Second Lien Notes will be redeemed on April 14, 2021, in each case, following delivery of a conditional notice of redemption delivered by the Existing First Lien Notes Issuer and the Issuer, respectively, on March 15, 2021. On the Issue Date, the Issuer will lend to the Existing Notes Issuer a portion of the proceeds from the issuance of the Notes in this Offering in order to fund the payment by the Existing Notes Issuer of the total tender consideration in the Tender Offer and the amount necessary to satisfy and discharge the remaining Existing First Lien Notes not tendered and accepted in the Tender Offer. Each of the Existing First Lien Notes and the Existing Second Lien Notes will accrue interest until the date that they are redeemed. Following the Refinancing, the Existing Notes will have been entirely redeemed and cancelled. See "*Use of Proceeds*" and "*Capitalization*".

Recent Developments

Cybersecurity incident

We were recently informed of a cybersecurity incident on a server hosting a third-party application. The vulnerability that exploited the application, before a corrective patch could be found, was originally discovered in another customer environment of the third-party software provider. From initial analysis, we determined that the incident was limited to a perimeter network on a separate server, isolated from CGG's production IT infrastructure. The application was used on a separate server which had limited use within CGG and was not used to transfer or store personal or commercial sensitive information. We are investigating the incident in collaboration with the third-party application and our external security partners, to document full details of the incident and identify any potential areas to further reduce future risks.

Current trading

The following discussion is based on preliminary management estimates. Because this information is preliminary, it is subject to change and those changes could be material. As such, you should not place undue reliance on the following discussion. In addition, the following discussion includes forward-looking statements that are necessarily subject to uncertainty. Our ability to realize any estimates or expectations may be affected by numerous factors, many of which are beyond our control, including the factors described under "Forward-

Looking Statements" in this offering memorandum. The occurrence or exacerbation of one or more of the risks described under "Risk Factors" could have a material impact on our ability to realize the expectations described below. We make no undertaking to update any of the following except as required by applicable laws and regulations.

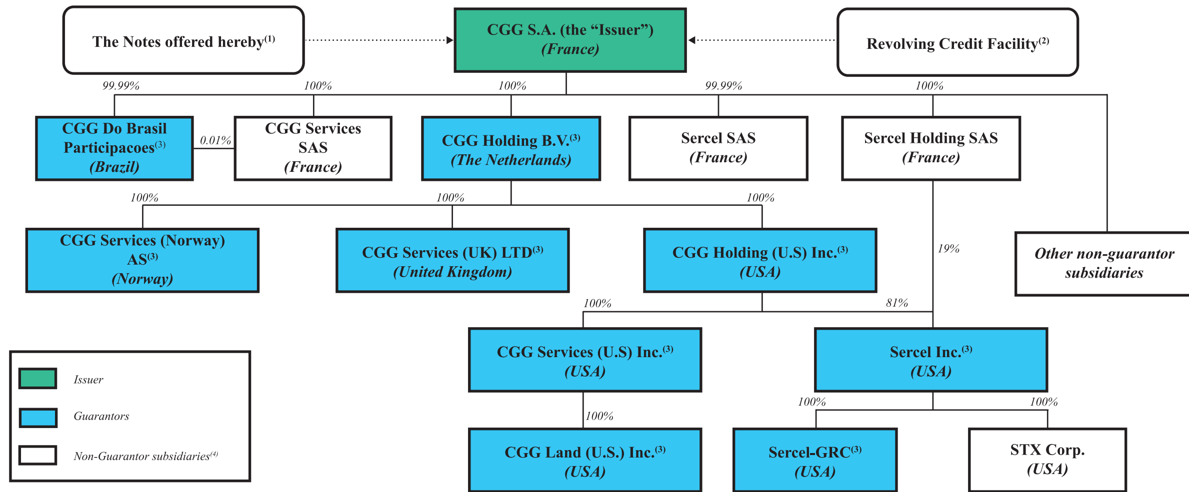
Based on our performance in January and February 2021, we expect to generate positive cash flow in the first quarter of 2021 on the back of strong equipment sales. We expect our Equipment segment revenues to be up strongly compared to the first quarter of 2020, sustained by deliveries of land equipment for mega-crews in Saudi Arabia. We expect our segment revenues for GGR in the first quarter of 2021 to decline year-on-year compared to the first quarter of 2020, which preceded the full impact of the Covid-19 pandemic and the steep decline in oil prices. Improving operational and commercial activity to date in 2021 and the oil price above US$60/bbl lead us to expect the recovery to continue during the year, especially in the second half of 2021.

Rating of the Notes

The Notes have been rated B3 by Moody's Investor Services ("Moody's"), CCC+ by S&P Global Ratings ("S&P") and B ("Fitch"). A credit rating is not a recommendation to buy, sell or hold securities and may be subject to revision, suspension or withdrawal by the rating agency at any time. No assurance can be given that a credit rating will remain constant for any given period of time or that a credit rating will not be lowered or withdrawn entirely by the credit rating agency if, in its judgment, circumstances in the future so warrant.

Summary Corporate and Financing Structure

The diagram below illustrates, in simplified form, our corporate and financing structure as of the date of this offering memorandum after giving effect to the Refinancing. For more information, see "*Capitalization*" and "*Use of Proceeds*". For a summary of the material financing arrangements identified in this diagram, see "*Description of the Notes*" and "*Description of Certain Financing Arrangements*".



Notes:

(1) We will issue US$500 million aggregate principal amount of Dollar Notes and €585 million aggregate principal amount of Euro Notes. The Notes will be senior secured obligations of the Issuer. On the Issue Date, the Notes will be secured on a first-priority basis by virtue of the Intercreditor Agreement by collateral consisting of: (i) the shares held by the Issuer in CGG Holding B.V., CGG Services SAS, Sercel SAS and Sercel Holding SAS, the shares held by CGG Holding (U.S.) Inc. in CGG Services (U.S.) Inc. and Sercel Inc., and the shares held by CGG Services (U.S.) Inc. in CGG Land (U.S.) Inc.; (ii) U.S. general asset security over the assets, including certain intellectual property rights and intercompany loan receivables, of CGG Holding (U.S.) Inc., CGG Services (U.S.) Inc. and CGG Land (U.S.) Inc., in each case, other than real estate and certain other excluded assets; and (iii) certain intercompany loan receivables owed to the Issuer (collectively, the "Issue Date Collateral"). On a date (the "Post-Issue Date") occurring no later than 90 days following the Issue Date, the Notes will additionally be secured on a first-priority basis by virtue of the Intercreditor Agreement by collateral consisting of: (i) the shares held by CGG Holding B.V. in CGG Services (UK) Limited, CGG Services (Norway) AS and CGG Holding (U.S.) Inc., and the shares held by Sercel Inc. in Sercel-GRC Corp. and STX Corp.; and (ii) U.S. general asset security over the assets, including certain intellectual property rights and intercompany loan receivables, of Sercel Inc. and Sercel-GRC Corp., in each case, other than real estate and certain other excluded assets (collectively, the "Post-Issue Date Collateral"). See "*Description of the Notes—Security*". The Collateral will also secure the Revolving Credit Facility Agreement, as described below.

(2) On or about the Issue Date, we will enter into the Revolving Credit Facility. The Revolving Credit Facility will have a total available commitment of US$100 million and is expected to be undrawn on the Issue Date. The Revolving Credit Facility will be secured by first-ranking security interests in the Collateral. In the event of enforcement of the Collateral, holders of the Notes will receive proceeds from the enforcement only after the lenders under the Revolving Credit Facility have been repaid in full. See "*Description of Certain Indebtedness—The Revolving Credit Facility*" and "*Description of Certain Indebtedness—The Intercreditor Agreement*".

(3) On the Issue Date, the Notes will be guaranteed on a senior secured basis (the "Issue Date Guarantees") by CGG Holding (U.S.) Inc., CGG Services (U.S.) Inc. and CGG Land (U.S.) Inc. (collectively, the "Issue Date Guarantors"). On the Post-Issue Date, the Notes will be guaranteed on a senior secured basis (the "Post-Issue Date Guarantees") by Sercel-GRC Corp., Sercel Inc., CGG Holding B.V., CGG Services (UK) Limited, CGG Services (Norway) AS and CGG do Brasil Participações (collectively, the "Post-Issue Date Guarantors" and together with the Issue Date Guarantors, the "Guarantors"). The Guarantors will also guarantee our obligations under the Revolving Credit Facility on a *pari passu* basis. The obligations of the Guarantors under their respective Guarantees will be contractually limited under the applicable Guarantees to reflect limitations under applicable law with respect to financial assistance, maintenance of share capital, corporate benefit, fraudulent conveyance and other legal restrictions applicable to the Guarantors and their respective shareholders, directors and general partners. For a description of such contractual limitations, see "*Risk Factors—Risks Related to the Notes, the Guarantees and the Collateral—The insolvency laws of applicable jurisdictions may not be as favorable to you as the insolvency laws of the jurisdiction with which you are familiar*" and "*Limitations on Validity and Enforceability of the Security Interests and the Guarantees and Certain Insolvency Law Considerations*". The Issuer and the Guarantors (excluding their subsidiaries that have not guaranteed the Notes), after elimination of intragroup transactions, collectively generated US$469.3 million of operating revenues representing 53% of our total consolidated revenues and US$175.3 million of EBITDAs representing 60% of our total consolidated EBITDAs and had US$2,256.2 million of total assets representing 69% of our total consolidated assets (excluding assets held for sale), in each case as of and for the year ended December 31, 2020.

(4) As of December 31, 2020, on an as-adjusted basis after giving effect to the Refinancing, our subsidiaries not guaranteeing the Notes would have had US$25.1 million of third-party indebtedness (excluding trade payables).

SUMMARY OF THE OFFERING

The Issuer	CGG S.A.
Securities Offered	*Dollar Notes*: US$500,000,000 aggregate principal amount of 8.75% senior secured notes due 2027 *Euro Notes*: €585,000,000 aggregate principal amount of 7.75% senior secured notes due 2027
Issue Price	For the Dollar Notes, 100%, plus accrued interest, if any, from the Issue Date. For the Euro Notes, 100%, plus accrued interest, if any, from the Issue Date.
Issue Date	April 1, 2021
Maturity	April 1, 2027
Tender Offer and Redemption	On March 15, 2021, the Existing First Lien Notes Issuer launched a tender offer for the purchase of any and all of the Existing First Lien Notes for cash (the "Tender Offer") with respect to: (i) in the case of the U.S. dollar-denominated Existing First Lien Notes, at a purchase price of US$1,027.00 per US$1,000 aggregate principal amount of U.S. dollar-denominated Existing First Lien Notes accepted, and (ii) in the case of the euro-denominated Existing First Lien Notes, at a purchase price of €1,023.63 per €1,000 aggregate principal amount of euro-denominated Existing First Lien Notes; in each case plus accrued and unpaid interest to, but excluding, the date of settlement of the Tender Offer. Settlement of the Tender Offer is conditional on the issuance of the Notes. The tender period under such Tender Offer is expected to expire on or about March 29, 2021 (the "Expiration Date") and holders who validly tender (and do not validly withdraw) their Existing First Lien Notes in such Tender Offer prior to the Expiration Date will receive the tender consideration on or about the Issue Date. The Tender Offer is being made pursuant to a separate tender offer memorandum (the "Offer to Purchase") and not pursuant to this Offering Memorandum. Existing First Lien Notes that are not tendered and accepted in the Tender Offer and the Existing Second Lien Notes will be satisfied and discharged and subsequently redeemed at a redemption price of (i) 102.250% plus accrued and unpaid interest for the U.S. dollar-denominated Existing First Lien Notes, (ii) 101.9688% plus accrued and unpaid interest for the euro-denominated Existing First Lien Notes, and (iii) 100.000% plus accrued and unpaid interest for the Existing Second Lien Notes. The satisfied and discharged Existing First Lien Notes not tendered in the Tender Offer will be redeemed on May 1, 2021, and the existing Second Lien Notes will be redeemed on April 14, 2021, in each case, following delivery of a notice of conditional redemption delivered by the Existing First Lien Notes Issuer and the Issuer, respectively, on March 15, 2021. On the Issue Date, the Issuer will lend to the Existing Notes Issuer a portion of the proceeds from the issuance of the Notes in this Offering in order to fund the payment by the Existing Notes Issuer of the total tender consideration in the Tender Offer and the amount necessary to satisfy and discharge the remaining Existing First Lien Notes not tendered and accepted in the Tender Offer. Each of the Existing First Lien

Notes and the Existing Second Lien Notes will accrue interest until the date that they are redeemed. Following the Refinancing, the Existing Notes will have been entirely redeemed and cancelled. See "*Use of Proceeds*" and "*Capitalization*".

Interest . . . . For the Dollar Notes, 8.75% per annum; and

For the Euro Notes, 7.75% per annum,

in each case payable semi-annually in arrears on April 15 and October 15, commencing on October 15, 2021. Interest on the Notes will accrue from, and including, the Issue Date.

Denominations . . . . The Dollar Notes will have a minimum denomination of US$200,000 and any integral multiple of US$1,000 in excess thereof. The Euro Notes will have a minimum denomination of €100,000 and any integral multiple of €1,000 in excess thereof.

Guarantees . . . . On the Issue Date, the Notes will be guaranteed on a senior secured basis (the "Issue Date Guarantees") by CGG Holding (U.S.) Inc., CGG Services (U.S.) Inc. and CGG Land (U.S.) Inc. (collectively, the "Issue Date Guarantors").

On a date (the "Post-Issue Date") occurring no later than 90 days after the Issue Date, the Notes will additionally be guaranteed on a senior secured basis (the "Post-Issue Date Guarantees") by Sercel-GRC Corp., Sercel Inc., CGG Holding B.V., CGG Services (UK) Limited, CGG Services (Norway) AS and CGG do Brasil Participações (collectively, the "Post-Issue Date Guarantors").

The Guarantors will also guarantee our obligations under the Revolving Credit Facility.

Our other subsidiaries will not initially guarantee the Notes and, in certain circumstances, we may elect to have certain Guarantors released from their Guarantees (see "*Description of the Notes—Guarantees—Releases of Guarantees*").

The Guarantees will be senior secured obligations of the Guarantors and will:

- rank senior in right of payment to all of the applicable Guarantor's existing and future debt and other obligations that are, by their terms, expressly subordinated in right of payment to the Guarantees;
- rank *pari passu* in right of payment to all of the applicable Guarantor's existing and future senior debt and other obligations that are not, by their terms, expressly subordinated in right of payments to the Guarantees;
- be structurally subordinated to all current and future indebtedness and other obligations, including trade payables, of any subsidiary of a Guarantor if that subsidiary is not also a Guarantor of the Notes; and
- be effectively senior to all of the applicable Guarantor's existing and future debt secured by a junior priority lien and unsecured senior debt and other unsecured obligations, in each case, to the extent of the value of the assets securing the Guarantees.

The Issuer and the Guarantors (excluding their subsidiaries that have not guaranteed the Notes), after elimination of intragroup transactions, collectively generated US$469.3 million of operating revenues representing 53% of our total consolidated revenues and US$175.3 million of EBITDAs representing 60% of our total consolidated EBITDAs and had US$2,256.2 million of total assets representing 69% of our total consolidated assets (excluding assets held for sale), in each case as of and for the year ended December 31, 2020.

Ranking . . . . The Notes will be senior secured obligations of the Issuer and will:

- rank senior in right of payment to our existing and future debt and other obligations that are, by their terms, expressly subordinated in right of payment to the Notes;
- rank *pari passu* in right of payment to all of our existing and future senior debt and other obligations that are not, by their terms, expressly subordinated in right of payments to the Notes;
- be structurally subordinated to all current and future indebtedness and other obligations, including trade payables, of each of our subsidiaries that is not a Guarantor of the Notes; and
- be effectively senior to all of our existing and future debt secured by a junior priority lien and unsecured senior debt and other unsecured obligations, in each case, to the extent of the value of the assets securing the Notes.

The Indenture will permit us and our subsidiaries to incur additional indebtedness (including additional secured indebtedness), subject to certain conditions.

The Dollar Notes and the Euro Notes will each constitute a separate series of Notes, but shall be treated as a single class for all purposes under the Indenture, including in respect of any amendment, waiver or other modification of the Indenture (other than with respect to any amendment, waiver or modification that only affects one series of the Notes) or any other action by the holders of the Notes thereunder, except as otherwise provided in the Indenture.

Collateral . . . . On the Issue Date, the Notes will be secured on a first-priority basis by virtue of the Intercreditor Agreement by collateral consisting of:

(i) the shares held by the Issuer in CGG Holding B.V., CGG Services SAS, Sercel SAS and Sercel Holding SAS, the shares held by CGG Holding (U.S.) Inc. in CGG Services (U.S.) Inc. and Sercel Inc., and the shares held by CGG Services (U.S.) Inc. in CGG Land (U.S.) Inc.;

(ii) U.S. general asset security over the assets, including certain intellectual property rights and intercompany loan receivables, of CGG Holding (U.S.) Inc., CGG Services (U.S.) Inc. and CGG Land (U.S.) Inc., in each case, other than real estate and certain other excluded assets; and

(iii) certain intercompany loan receivables owed to the Issuer (collectively, the "Issue Date Collateral").

On the Post-Issue Date, the Notes will additionally be secured on a first-priority basis by virtue of the Intercreditor Agreement by collateral consisting of:

(i) the shares held by CGG Holding B.V. in CGG Services (UK) Limited, CGG Services (Norway) AS and CGG Holding (U.S.)

Inc., and the shares held by Sercel Inc. in Sercel-GRC Corp. and STX Corp.; and

(ii) U.S. general asset security over the assets, including certain intellectual property rights and intercompany loan receivables, of Sercel Inc. and Sercel-GRC Corp., in each case, other than real estate and certain other excluded assets (collectively, the "Post-Issue Date Collateral").

See "*Description of the Notes—Security*".

We will enter into the Security Documents with respect to the Collateral in or under the laws of France, England and Wales, New York, the Netherlands and Norway.

Subject to the terms of the Security Documents, the Collateral will also secure the obligations outstanding under the Revolving Credit Facility Agreement and certain hedging obligations (if any); provided, however, that the Collateral will be applied to repayment of the Revolving Credit Facility and such hedging obligations prior to being applied to repayment of the Notes. The Revolving Credit Facility will also be guaranteed by the Issue Date Guarantors on the Issue Date, and the Post-Issue Date Guarantors on the Post-Issue Date. See "*Description of Certain Financing Arrangements—The Revolving Credit Facility Agreement*" and "*Description of Certain Financing Arrangements—The Intercreditor Agreement*".

The security interests in the Collateral will be subject to certain contractual and legal limitations and defenses provided by French, New York, English, Dutch and Norwegian law, as described in "*Limitations on Validity and Enforceability of the Security Interests and the Guarantees and Certain Insolvency Law Considerations*" and may be released under certain circumstances. See "*Description of Certain Financing Arrangements—The Intercreditor Agreement*" and "*Description of the Notes—Security—Release of Liens*".

Intercreditor Agreement .... The Intercreditor Agreement will set out various matters governing the relative rights relating to the indebtedness and obligations under the Notes, the Revolving Credit Facility and certain other existing and future indebtedness and obligations permitted under the Indenture. See "*Description of Certain Financing Arrangements—The Intercreditor Agreement*". Although the Notes will be secured by certain liens on the Collateral, under the terms of the Intercreditor Agreement, the holders of the Notes will be subject to certain limitations on their ability to take certain actions in respect of their interests in the Collateral.

Optional Redemption

Dollar Notes .... We may redeem all or a part of the Dollar Notes at any time on or after April 1, 2024 at the redemption prices described in this offering memorandum plus accrued and unpaid interest to the date of redemption. At any time prior to April 1, 2024, we may redeem all or part of the Dollar Notes at a redemption price equal to 100% of the principal amount of the Dollar Notes plus the applicable make-whole premium described in this offering memorandum plus accrued and unpaid interest to the date of redemption.

	At any time prior to April 1, 2024, we may redeem on any one or more occasions Dollar Notes representing up to 40% of the original aggregate principal amount of the Dollar Notes plus any additional Dollar Notes issued under the Indenture after the Issue Date at a redemption price of 108.750% of the principal amount thereof plus accrued and unpaid interest thereon to the redemption date, with the net cash proceeds from certain equity offerings, provided that Dollar Notes representing at least 50% of the sum of the aggregate principal amount of the original aggregate principal amount of the Dollar Notes plus any other Dollar Notes issued under the Indenture after the Issue Date remain outstanding immediately after the occurrence of each such redemption. At any time prior to April 1, 2024, during each 12-month period commencing from the Issue Date, we may redeem up to 10% of the aggregate principal amount of the Dollar Notes plus any additional Dollar Notes issued under the Indenture after the Issue Date at a redemption price of 103% of the principal amount redeemed, plus accrued and unpaid interest thereon to the redemption date.
Euro Notes	We may redeem all or a part of the Euro Notes at any time on or after April 1, 2024 at the redemption prices described in this offering memorandum plus accrued and unpaid interest to the date of redemption. At any time prior to April 1, 2024, we may redeem all or part of the Euro Notes at a redemption price equal to 100% of the principal amount of the Euro Notes plus the applicable make-whole premium described in this offering memorandum plus accrued and unpaid interest to the date of redemption. At any time prior to April 1, 2024, we may redeem on any one or more occasions Euro Notes representing up to 40% of the original aggregate principal amount of the Euro Notes plus any additional Euro Notes issued under the Indenture after the Issue Date at a redemption price of 107.750% of the principal amount thereof plus accrued and unpaid interest thereon to the redemption date, with the net cash proceeds from certain equity offerings, provided that Euro Notes representing at least 50% of the sum of the aggregate principal amount of the original aggregate principal amount of the Euro Notes plus any other Euro Notes issued under the Indenture after the Issue Date remain outstanding immediately after the occurrence of each such redemption. At any time prior to April 1, 2024, during each 12-month period commencing from the Issue Date, we may redeem up to 10% of the aggregate principal amount of the Euro Notes plus any additional Euro Notes issued under the Indenture after the Issue Date at a redemption price of 103% of the principal amount redeemed, plus accrued and unpaid interest thereon to the redemption date.
Change of Control	If the Issuer undergoes a change of control, each holder of the Notes may require us to repurchase all or a portion of the Notes held by such holder at 101% of the principal amount thereof, plus accrued and unpaid interest thereon to the date of purchase.
Asset Sales	If we sell assets, under certain circumstances, we will be required to make an offer to purchase the Notes at 100% of the principal amount thereof, plus accrued and unpaid interest thereon, with excess proceeds from the sale of such assets.

Redemption for Changes in Tax Law . . . . Under certain conditions, we will be required to pay additional amounts to the holders of the Notes to compensate them for any amounts deducted from payments to them in respect of the Notes on account of certain taxes and other governmental charges. If we become obliged to pay such additional amounts in respect of the Notes as a result of a change in law, the Notes will be subject to redemption, in whole but not in part, at our option at a price equal to 100% of the principal amount of the Notes, plus accrued and unpaid interest thereon, if any.

Certain Covenants and Events of Default . . . . The Indenture governing the Notes will contain certain covenants and events of default that, among other things, limit our ability and that of certain of our subsidiaries to:

- incur or guarantee additional indebtedness or issue preferred shares;
- pay dividends or make other distributions;
- purchase equity interests or redeem subordinated indebtedness prior to its maturity;
- create or incur certain liens;
- create or incur restrictions on the ability to pay dividends or make other payments to us;
- enter into transactions with affiliates;
- sell assets or merge or consolidate with another company; and
- impair the security interests for the benefit of the holders of Notes.

All of these limitations are subject to a number of important qualifications and exceptions.

If at any time the Notes achieve Investment Grade Status, and no default or event of default has occurred and is continuing, certain restrictions, covenants and events of default will cease to be applicable to the Notes for so long as the Notes maintain such ratings.

Transfer Restrictions . . . . We have not registered the Notes or the Guarantees under the Securities Act or any state securities laws. You may not offer or sell the Notes except under an exemption from, or in a transaction not subject to, the registration requirements of the Securities Act and applicable state securities laws. See "*Transfer and Selling Restrictions*". We have not agreed to, or otherwise undertaken to, register the Notes under the Securities Act.

No Prior Market . . . . The Notes will be new securities for which there is currently no established trading market. Although the Initial Purchasers have advised us that they intend to make a market in the Notes, they are not obligated to do so and they may discontinue market making at any time without notice. Accordingly, we cannot assure you that an active trading market will develop for the Notes.

Taxation . . . . For a discussion of certain tax consequences of an investment in the Notes, see the section entitled "*Taxation*".

Use of Proceeds . . . . We intend to use the net proceeds from this offering, together with cash on hand, to (i) repurchase the Existing First Lien Notes by way

of the Tender Offer, (ii) with respect to the Existing First Lien Notes that are not repurchased in the Tender Offer, satisfy and discharge and subsequently redeem in full the remaining Existing First Lien Notes, (iii) satisfy and discharge and subsequently redeem in full the Existing Second Lien Notes and (iv) pay all fees and expenses in connection with the foregoing. See “*Use of Proceeds*”.

Listing	Application has been made to admit the Notes to listing on the Official List of the Luxembourg Stock Exchange and to trading on the Euro MTF.
Governing Law	The Indenture, the Notes and the Guarantees will be governed by, and construed in accordance with, the laws of the State of New York. The Revolving Credit Facility and the Intercreditor Agreement will be governed by the laws of England and Wales. The Security Documents will be governed by the laws of France, the United States, England and Wales, the Netherlands and Norway, as applicable.
Trustee	BNY Mellon Corporate Trustee Services Limited.
Paying Agent	The Bank of New York Mellon, London Branch.
Security Agent	The Bank of New York Mellon, London Branch. References to the Security Agent with respect to Collateral governed by French law in this offering memorandum are references to The Bank of New York Mellon SA/NV, Paris Branch, as security agent in France.
Luxembourg Listing Agent	The Bank of New York Mellon SA/NV, Luxembourg Branch
Registrar and Transfer Agent	The Bank of New York Mellon SA/NV, Dublin Branch

For further information regarding the Notes, see “*Description of the Notes*”.

Risk Factors

Investment in the Notes offered hereby involves certain risks. You should carefully consider the information under “*Risk Factors*” and all other information included in this offering memorandum before investing in the Notes.

SUMMARY FINANCIAL INFORMATION

The following summary historical consolidated financial information as of and for the three years ended December 31, 2020 is derived from our Consolidated Financial Statements included elsewhere in this offering memorandum. Our Consolidated Financial Statements have been audited by Ernst & Young et Autres and Mazars.

We implemented IFRS 16 with respect to leases effective January 1, 2019 with a modified retrospective application. Therefore, the cumulative effect of adopting IFRS 16 was recognized as an adjustment to the opening balance of retained earnings on January 1, 2019, with no restatement of comparative information. Information as of and for the year ended December 31, 2018 is reported under IAS 17 and related interpretations.

The summary financial data included below should be read in conjunction with, and are qualified in their entirety by reference to, our Consolidated Financial Statements included elsewhere in this offering memorandum and "*Use of Proceeds*", "*Capitalization*" and "*Operating and Financial Review*".

	As of and for the year ended December 31,		
	2020	**2019**	**2018**
	(in millions of US dollars except ratios)		
Statement of operations data:			
Operating revenues	886.0	1,355.9	1,193.5
Other income from ordinary activities	0.7	0.7	1.4
Cost of operations	(725.9)	(967.0)	(931.0)
Gross profit	**160.8**	**389.6**	**263.9**
Research and development expenses, net	(18.6)	(23.6)	(30.5)
Marketing and selling expenses	(32.5)	(47.0)	(45.9)
General and administrative expenses	(67.9)	(66.2)	(81.1)
Other revenues (expenses)	(214.5)	(9.3)	(286.1)
Operating income	**(172.7)**	**243.5**	**(179.7)**
Cost of financial debt, net	(134.1)	(131.7)	(127.4)
Other financial income (loss)	(39.4)	5.6	819.9
Income taxes	(29.5)	8.9	(7.4)
Equity in income of affiliates	0.1	(0.1)	(1.2)
Net income (loss) for continuing operations	(375.6)	126.2	504.2
Net income (loss) for discontinued operations	(62.5)	(187.7)	(600.0)
Net income (loss)	**(438.1)**	**(61.5)**	**(95.8)**
Attributable to:			
Owners of CGG S.A.	(441.8)	(69.1)	(101.6)
Non-controlling interests	3.7	7.6	5.8
Balance sheet data:			
Cash and cash equivalents	385.4	610.5	434.1
Working capital[(1)]	212.5	147.6	189.3
Property, plant & equipment, net	268.1	300.0	189.2
Multi-client surveys	492.4	531.0	633.3
Goodwill, net	1,186.5	1,206.9	1229.0
Total assets	3,377.5	4,012.6	3,896.7
Gross financial debt[(2)]	1,389.1	1,326.0	1,166.7
Equity attributable to owners of CGG S.A.	1,119.7	1,561.7	1,631.5
Other financial historical data and other ratios:			
Segment EBIT[(3)(4)]	(164.2)	247.2	141.1
EBIT[(4)]	(172.6)	243.4	(180.9)
Segment EBITDAs[(3)(5)]	360.7	720.8	556.0
Adjusted Segment EBITDAs[(3)(5)(6)]	402.3	—	—
EBITDAs[(5)]	291.5	676.2	474.2
Segment Operating income[(3)]	(164.3)	247.3	142.3
Operating income	(172.7)	243.5	(179.7)
Segment Free-cash flow[(3)(7)]	(38.4)	490.6	68.9

	As of and for the year ended December 31,		
	2020	2019	2018
	(in millions of US dollars except ratios)		
Capital expenditures[8]	64.1	75.3	78.0
Investments in multi-client surveys, net cash	(239.0)	(185.7)	(222.8)
Cost of financial debt, net	(134.1)	(131.7)	(127.4)
Gross financial debt/Segment EBITDAs[2][3][5]	3.9x	1.8x	2.1x
Net financial debt /Segment EBITDAs[3][5][9]	2.8x	1.0x	1.3x
Segment EBITDAs/Cost of financial debt, net[3][5]	2.7x	5.5x	4.4x
Gross financial debt/EBITDAs[2][5]	4.8x	2.0x	2.5x
Net financial debt/EBITDAs[5][9]	3.4x	1.1x	1.5x
EBITDAs/Cost of financial debt, net[5]	2.2x	5.1x	3.7x
As adjusted cost of financial debt, net[10]	108.9	—	—
As adjusted cash and cash equivalents[10]	275.0	—	—
As adjusted gross financial debt[10]	1,355.9		
As adjusted net financial debt[9][10]	1,080.9	—	—
As adjusted gross financial debt/Segment EBITDAs[2][3][5][10]	3.8x	—	—
As adjusted net financial debt/Segment EBITDAs[3][5][9][10]	3.0x		
Segment EBITDAs/as adjusted cost of financial debt, net [3][5][10]	3.3x	—	—
As adjusted gross financial debt/EBITDAs[5][10]	4.7x	—	—
As adjusted net financial debt/EBITDAs[5][9][10]	3.7x	—	—
EBITDAs/as adjusted cost of financial debt, net[5][10]	2.7x	—	—
As adjusted gross financial debt/Adjusted Segment EBITDAs[3][5][6][10]	3.4x	—	—
As adjusted net financial debt/Adjusted Segment EBITDAs[3][5][6][9][10]	2.7x	—	—
Adjusted Segment EBITDAs/as adjusted cost of financial debt, net[3][5][6][10]	3.7x	—	—

Notes:—

(1) "Working capital" is defined as net trade accounts and notes receivable, net inventories and work-in-progress, tax assets, other current financial assets, other current assets and assets held for sale less trade accounts and notes payable, accrued payroll costs, income tax payable, advance billings to customers, current provisions, other current financial liabilities, other current liabilities and liabilities directly associated with the assets classified as held for sale.

(2) "Gross financial debt" is defined as financial debt, including lease liabilities, current maturities and bank overdrafts.

(3) "Segment" figures are presented before IFRS 15 in accordance with the Group's previous method for recognizing Multi-Client prefunding revenues based on percentage of completion. In 2018, beyond IFRS 15, Segment figures also excluded Sercel inventories provision and restructuring costs related to the Transformation Plan and corresponding to the costs related to the industrial transformation of the Group and the Financial Restructuring, including personnel costs, site closure costs and fees and expenses related to the Financial Restructuring.

(4) Earnings before interest and tax ("EBIT") is defined as operating income plus our share of income in companies accounted for under the equity method. EBIT is used by management as a performance indicator because it captures the contribution to our results of the significant businesses that we manage through our joint ventures. However, other companies may present EBIT and related measures differently than we do. EBIT is not a measure of financial performance under IFRS and should not be considered as an alternative to cash flow from operating activities or as a measure of liquidity or an alternative to net income as indicators of our operating performance or any other measures of performance derived in accordance with IFRS. See "*Operating and Financial Review—Liquidity and Capital Resources—EBIT and EBITDAs*" for a reconciliation of EBIT to operating income.

(5) "EBITDAs" is defined as earnings before interest, tax, income from equity affiliates, depreciation, amortization net of amortization costs capitalized to multi-client surveys and share-based compensation cost. Share-based compensation includes both stock options and shares issued under our share allocation plans. EBITDAs is presented as additional information because we understand that it is one measure used by certain investors to determine our operating cash flow and historical ability to meet debt service and capital expenditure requirements. However, other companies may present EBITDAs and similar measures differently than we do. EBITDAs is not a measure of financial performance under IFRS and should not be considered as an alternative to cash flow from operating activities or as a measure of liquidity or an alternative to net income as indicators of our operating performance or any other measures of performance derived in accordance with IFRS. See "*Operating and Financial Review—Liquidity and Capital Resources—EBIT and EBITDAs*" for a reconciliation of EBITDAs to net cash provided by operating activities.

(6) "Adjusted Segment EBITDAs" is defined as Segment EBITDAs before severance costs of $41.6 million incurred in 2020 as we reduced staff in various locations worldwide and closed sites in response to the significant decline in E&P spending as a consequence of the Covid-19 pandemic.

(7) "Free cash-flow" is defined as "Net cash flow provided by operating activities" plus "Total net proceeds from disposals of assets", minus "Total capital expenditures" and "Investments in multi-client surveys, net cash" as set out in our consolidated statement of cash flows in the "Investing section".

(8) "Capital expenditures" is defined as "total capital expenditures (including variation of fixed assets suppliers, excluding multi-client surveys)" from our statement of cash flows.

(9) "Net financial debt" is defined as gross financial debt less cash and cash equivalents. Net financial debt is presented as additional information because we understand that certain investors believe that netting cash against debt provides a clearer picture of the financial liability exposure. However, other companies may present net financial debt differently than we do. Net financial debt is not a measure of financial performance under IFRS and should not be considered as an alternative to any other measures of performance derived in accordance with IFRS.

(10) "As adjusted" information is adjusted to reflect the Refinancing as if it had occured on December 31, 2020.

RISK FACTORS

An investment in the Notes involves risks. Before investing in the Notes, you should carefully consider the following risk factors and all information contained in this offering memorandum. Additional risks and uncertainties of which we are not aware or that we believe are immaterial may also adversely affect our business, financial condition, liquidity, results of operations or prospects. If any of these events occur, our business, financial condition, liquidity, results of operations or prospects could be materially and adversely affected. If that happens, we may not be able to pay interest or principal on the notes when due and you could lose all or part of your investment.

Risks Related to Our Business and Strategy

Demand for our products and services largely depends on activity within the oil and gas industry, and lower capital expenditures by our clients within the oil and gas industry could materially impact our business.

A significant portion of the demand for our products and services is linked to the level of expenditures by oil and gas companies in their effort to find, develop and produce hydrocarbons. These expenditures are discretionary in nature and can vary significantly based on oil and gas prices and expectations regarding future prices, which may fluctuate based on relatively minor changes in the supply of and demand for oil and gas, expectations regarding future changes and other factors beyond our control. Lower or volatile hydrocarbon prices tend to limit the demand for our products and services. For instance, our customers announced significant cuts in their exploration and production ("E&P") spending during the year ended December 31, 2020 as a result of the decline in demand for oil and gas following the outbreak of the Covid-19 pandemic as well as the volatility of the Brent oil price during the year, which resulted in reduction in total capital expenditures by approximately 30% in the industry compared to the year ended December 31, 2019.

At the same time, increases in oil and natural gas prices may not necessarily increase demand for our products and services or otherwise have a positive effect on our financial condition or results of operations. For instance, following the improvement of oil prices from their lowest levels in March 31, 2020, our clients did not revise their capital expenditure targets upwards. It is therefore difficult to predict the demand for our products and services, which can have a material adverse effect on our operations and results of operations.

In addition, the locations where oil and gas companies choose to invest in exploration, development and production can have a material effect on our business. Demand for our products and services may not reflect the level of activity across the industry, as our data libraries are located in specific basins globally (including, in particular, the Gulf of Mexico, Brazil, the North Sea and the Permian Basin) and approaches in the selection of products and services used for finding and producing oil and gas vary between customers and basins. Our offerings are preferred where high-end geoscience technology is perceived to lower the risks and costs associated with exploration, development and production but may not be the most cost-effective choice for producers exploring and producing in lower-risk areas.

It is difficult to predict how and where oil and gas companies will choose to invest, as this is subject to a large number of considerations including, but not limited to, those indicated above, as well as:

- demand for hydrocarbons, which is affected by worldwide population growth, economic growth rates, and general economic and business conditions, including reductions in travel and commerce relating to the Covid-19 pandemic;
- government policies regarding the development of oil and gas reserves in their territories, as well as governmental laws, policies, regulations and subsidies related to or affecting the production, use, and exportation or importation of oil and natural gas;
- the ability or willingness of the Organization of Petroleum Exporting Countries and other oil producing countries to increase or decrease supply;
- shareholder activism, activities by non-governmental organizations, or pressure from the general public to restrict exploration, development and production of oil and natural gas;
- development, exploitation, relative price and availability of alternative sources of energy and our customers' shift of capital to the development of these sources;
- the overall costs and risks of exploring for, developing and producing oil and gas in different locations;
- oil and gas companies' perception of prospects of different global basins;

- changes in short- and medium-term investment decisions following the outbreak of the Covid-19 pandemic and its impact on oil and gas prices;
- global and local economic and political conditions, including political and economic uncertainty and socio-political unrest;
- the strategies selected by oil and gas companies to manage their portfolios;
- volatility in, and access to, capital and credit markets, which may affect our customers' activity levels and spending on our products and services;
- technological advances affecting energy consumption; and
- the development of technologies that can significantly affect the costs and risks associated with exploration, development and production.

If oil and gas companies decide to invest in regions where we are not active or where our data portfolio is less robust, or if customers prefer lower-cost solutions, our business, results of operation and financial condition could be materially adversely affected.

We operate in a highly competitive environment and unanticipated changes in competitive factors in our industry may impact our results of operations.

We compete on the basis of a number of different factors, such as product offerings, project execution, customer service and price. Maintaining our competitive advantage in high-quality solutions requires us to continuously invest in order to be able to innovate and keep abreast of the latest technological changes. However, we may be unable to capture the full value of innovations and may encounter resource constraints or technical or other difficulties that could delay the introduction of new and enhanced services in the future. We may also commit errors or misjudgments in our planning and misallocate resources, for instance, by developing services that are not commercially viable but require large investments in research and development ("R&D") and capital expenditures.

We are focused on providing premium products and services and have positioned ourselves at the high end of the market. While we believe our customers choose us specifically for the quality of our offerings, they may decide to buy products and services from our competitors if we are unable to continue to convey the benefits of our offerings as compared to lower-cost options. While our R&D strategy is focused on developing the highest quality solutions, our products and services may not be the most cost-efficient options for our customers and as a result may not achieve market acceptance. If our customers decide to shift away from our offerings to lower- cost products and services, either because of constraints on their capital expenditures or because we are not successful in differentiating our offerings from those of our competitors, we would suffer a loss in our market share and a negative impact in our results of operations.

We are subject to risks related to our international operations and to global economic and geopolitical volatility.

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 customers to be withdrawn or delayed, reducing or eliminating the viability of some markets for our services;
- war, terrorism, riots and uprisings, which can make it unsafe to continue operations, adversely affect budgets and schedules and expose us to losses;
- challenges in protection and enforcement of intellectual property rights;
- fraud and political corruption;
- changes in legal and regulatory requirements;
- inability to repatriate income or capital;
- potentially burdensome taxation;
- seizure, expropriation, nationalization or detention of assets, or renegotiation or nullification of existing contracts;

- trade restrictions, trade protection measures, price controls, or trade disputes; and
- foreign exchange restrictions, import/export quotas, sanctions, boycotts and embargoes and other laws and policies affecting taxation, trade and investment.

We are exposed to these risks in all of our international operations to some degree, particularly in emerging markets where the political, economic and legal environment may be less stable.

In addition, global market and economic conditions are uncertain and volatile. In recent periods, economic contractions and uncertainty (accelerated following the outbreak of the Covid-19 pandemic) have weakened demand for oil and natural gas while the OPEC+ production curtailment agreements have increased supply. This dynamic has resulted in lower prices and a reduction in the levels of exploration, development and production of hydrocarbons and therefore demand for our products and services. In addition to affecting activity levels, these developments also impact the prices we can charge our customers. The price of Brent decreased from approximately US$111/bbl as of December 31, 2013 to approximately US$51/bbl as of December 31, 2020. The Brent oil price has been particularly volatile recently due to the significant decline in the demand for oil and gas following the outbreak of the Covid-19 pandemic and the shifts in oil supply from certain oil-producing countries (particularly Saudi Arabia and Russia), which resulted in Brent oil prices falling from approximately US$65/bbl as of December 31, 2019 to approximately US$25/bbl as of March 31, 2020, before rebounding to approximately US$40/bbl as of June 30, 2020 and further to approximately US$50/bbl as of December 31, 2020. It is difficult to predict how long current economic conditions and imbalance between supply and demand will persist, whether oil prices will remain at current levels, whether the current market conditions will deteriorate further, and which of our products and services may be adversely affected. The reduction in the 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.

Uncertainty about the general economic situation, the impact of the Covid-19 pandemic and the medium-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 in our industry, which may affect some of our customers and suppliers. The current economic and oil industry climate may lead customers to cancel, delay or choose not to renew orders and may leave suppliers unable to provide goods and services as agreed. Our governmental customers 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 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, financial condition and results of operations.

The failure of our strategic partners to perform their obligations in accordance with our expectations may have an adverse impact on our financial condition and results of operations.

We enter into strategic partnerships and joint ventures from time to time in the course of our operations. We are subject to risks related to these partnerships, including failures of our strategic partners to perform their obligations in accordance with our expectations or breaches of the terms of the agreements that govern our relationship.

Our overseas operations are dependent on our good relationship and continuous cooperation with our local partners and governments. For instance, our subsidiary Sercel operates in China through Heibei Sercel-Junfeng Geophysical Prospecting Equipment Co. Ltd. ("SJF"), a joint venture in which Sercel holds 51% of the share capital, and BGP inc. ("BGP"), a subsidiary of the Chinese state-owned enterprise China National Petroleum Corporation ("CNPC"), holds nearly 30% of the share capital. The remainder of the share capital is held by a shareholding vehicle, for employees of BGP that was established by it in 2000. BGP is a major player in seismic acquisition and geoscience processing in China and related overseas markets, and remains the primary customer of SJF. As a result of these arrangements, Sercel depends on BGP's continuous cooperation and may be significantly affected if BGP decides to stop cooperating with Sercel or decides to develop its own equipment factory.

On January 8, 2020, we completed the sale of our interest in Global Seismic Shipping AS ("GSS"), an entity indirectly owning several seismic vessels and which subsequently acquired all of our streamers to Shearwater. We contracted with Shearwater for guaranteed access to a portion of their global fleet (as amended, the "Capacity Agreement"). However, if Shearwater is unable to deliver access to its fleet in accordance with the terms of our contractual arrangements or if they provide lower-quality data than expected or if their acquisition techniques are not sufficiently advanced, the value of our multi-client libraries could deteriorate in the future.

In addition, in connection with our exit from the marine data acquisition business, Shearwater CharterCo AS entered into five-year bareboat charter agreements (guaranteed by Shearwater) with GSS and its subsidiaries for five high-end vessels equipped with streamers. We have agreed to substitute ourselves for Shearwater CharterCo AS as charterer of the five high-end seismic vessels (equipped with streamers) in the event of a payment default by Shearwater CharterCo AS under its charter party agreement with the GSS subsidiaries (as amended, the "Step-in Agreement"). Because we are required to pay a portion of the amounts due under the Capacity Agreement directly to the GSS subsidiaries to cover Shearwater CharterCo's obligations under its bareboat charter agreements, a payment default can be triggered only by our payment default or a Shearwater insolvency.

The Step-In Agreements will not impact the statement of financial position unless a trigger event, as described above, occurs. In such circumstance, the obligations under the Capacity Agreement would be terminated and replaced by the obligations under the Step-In Agreements (for a lower amount than the Capacity Agreement).

The performance of our business is subject to demand for, and continued exploration, development and production of, oil and gas; the reduction in the consumption of carbon-based energy products could significantly impair our business and reduce demand for our products and services.

Our business depends on the level of activity in the oil and gas industry, and demand for our products and services is tied to the exploration, development and production of hydrocarbons. Civil society and numerous stakeholders (including governments) are increasingly encouraging the reduced consumption of carbon-based energy products and the establishment of a more balanced energy mix, geared to low-carbon and renewable energy, in order to combat climate change. As social interest worldwide regarding the energy transition continues to grow, demand for renewables (as a partial or complete substitute for hydrocarbons) continues to increase. In this context, oil and gas companies may experience a shift in demand away from traditional oil and gas and toward lower-carbon sources of energy such as renewables. A major shift toward renewables could significantly impair our business by reducing demand for our products and services and impairing the value of our Multi-Client library.

The pace and magnitude of the demand shift from hydrocarbons to renewables remains unclear and difficult to predict, and its impact on our business is subject to a number of factors including the following:

- global commodity prices for hydrocarbons and the price and availability of alternative fuels;
- global and local economic and geopolitical conditions;
- laws and regulations that restrict the use of fossil fuels or increase the use of alternative fuels, including governmental policies regarding atmospheric emissions, use of alternative energy, and the exploration, development and production of oil and gas;
- the development of technologies that significantly affect the costs and risks associated with any energy source (for example, battery efficiency or emission reduction technology);
- actions by members of governmental or non-governmental organizations, shareholders, investors or the general public that favor or penalize one source of energy over another;

- any change in our banks' or investors' perception of the energy transition that could cause them to adjust meaningfully their opinions of our company and significantly change their exposure to our debt and equity;
- any change in the perception of the energy transition by potential employees that may make it more difficult for us to attract qualified talent;
- our ability to predict global energy demand and modify our business to effectively address these changes; and
- the strategies and investments selected by oil and gas companies to address the energy transition.

In particular, laws or regulations intended to limit or reduce emissions of gases, such as carbon dioxide, methane and other greenhouse gases (which may be contributing to climate change), or nitrogen oxides, have had and may continue to seriously impact the demand for our clients' core products, and would therefore reduce the demand for our geophysical products and services. In addition, such laws, regulations and proposals may also result in more onerous obligations with respect to our operations, including the facilities where we manufacture our products. Such decline in demand for our products and services, and such onerous obligations in respect of our operations, may adversely affect our financial condition, results of operations, or cash flows. The European Union has already established greenhouse gas emissions 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.

Risks Related to Our Operations

We are subject to loss or destruction of key assets, including physical infrastructure such as data centers and factories.

We are subject to the risk that one of our physical sites is rendered totally or partially unavailable by a major event. Our Geosciences seismic data processing and imaging business relies on physical infrastructure hosted at our data centers in order to provide our customers with highly reliable solutions. Problems, including those rising to the level of loss events, at one or more of our data centers, whether or not within our control, could result in service interruptions or significant infrastructure or equipment damage. In addition, in connection with our Equipment business, Sercel manufactures a wide range of geophysical equipment for land or marine seismic data acquisition, including seismic recording equipment, software and seismic sources at various manufacturing facilities. Furthermore, destruction of our factories could result in loss of access to certain of our information technology databases and remote access to the databases located at the destroyed site (including related to R&D) may not be possible.

A loss event as a result of fire, natural hazard, extreme weather event or explosion, or due to critical equipment failure, third-party event or cyber-incident could impair our ability to provide services and deliver products and could harm our reputation. Any such event occurring at one of our sites or in its vicinity could also have other consequences and may result in personal and/or property damage or business interruption, which could impact our results of operations and financial results.

We may need to impair goodwill or the carrying value of other assets and liabilities on our balance sheet.

We have been involved in a number of business combinations leading to the recognition of goodwill on our balance sheet. In accordance with IFRS, goodwill is subject to impairment that could have material adverse effects on our results of operations.

As indicated in note 1 to our 2020 Consolidated Financial Statements, we review the recoverable amount of the cash generating units to which the goodwill is allocated at least at each annual closing date for the statement of financial position. To do so, we determine the value in use by estimating future cash flows expected from the cash generating units, discounted to their present value using the sector weighted average cost of capital ("WACC") estimated on a yearly basis. We recognize an impairment loss in the income statement whenever the carrying amount exceeds the recoverable value. In addition to the periodic yearly test, we also perform impairment reviews whenever any indication exists that the cash generating unit may be impaired. Factors that could trigger such an ad hoc impairment review include, among others, the following:

- significant underperformance relative to expected operating results based upon historical and/or projected data;
- significant changes in the strategy for our overall business; and
- significant negative industry or economic trends.

In 2018 and 2019, we did not impair any goodwill. In 2020, however, following the collapse in oil prices and the severe cuts and deferrals in exploration and production spending from our customers in the industry by approximately 30% compared to the previous year, mainly due to the uncertainty created by the Covid-19 pandemic, we recorded US$24 million of impairment loss relating to goodwill allocated to our Geoconsulting cash generating unit, which has been particularly hit by the cuts in its clients' spending. Given the uncertainty and the cyclical markets where we operate, we may need to write down goodwill in potentially material amounts in the future.

We may also need to write down the value of other assets on our balance sheet, such as our multi-client library. Multi-Client surveys consist of seismic surveys to be licensed to customers on a non-exclusive basis. All costs directly incurred in acquiring, processing and otherwise completing seismic surveys are capitalized into the multi-client surveys (including transit costs when applicable). The carrying amount of our multi-client library is stated in in our statement of financial position at the aggregate of those costs less accumulated amortization. As of December 31, 2020, the carrying value of the multi-client library was US$492 million. We perform a systematic impairment test on the delivery date of each survey and at each annual closing date for the statement of financial position. Whenever there is an indication that a survey may be impaired, we perform an impairment test. In 2020, we recorded US$99.6 million of impairment loss on our Multi-Client library, mainly in frontier exploration areas, due to governmental decisions and political unrest in a context of high volatility in oil price.

Impairments of our assets in general, and our multi-client library in particular, depend on a variety of factors, many of which are beyond our control. These include the prices of oil and gas, customer demand for seismic services and multi-client data and the availability of similar multi-client data from competitors. Technological or regulatory changes or other developments could also adversely impact the value of our library. For example, regulatory changes such as limitations on drilling could affect the ability of our customers to develop exploration and development programs, either generally or in a specific location where we have acquired seismic data, and technological changes could make existing data obsolete.

We rely on third-party suppliers and are subject to disruptions outside our control.

Disruptions to our supply chain and other outsourcing risks may adversely affect our ability to deliver our products and services to our customers. The high technology content of our products and services renders us dependent on the supply of electronic components, some of which could be temporarily or permanently unavailable to us, including if production is fully captured by larger users. In those circumstances, our production could be delayed, or we could be forced to develop and manufacture alternative solutions and products.

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. Certain parts and materials we require to develop our products and services are procured from single-source suppliers and the lack or limited number of alternatives makes us more vulnerable to price increases and shortages when demand is high. We are also vulnerable to other disruptions in this supply chain from changes in government regulations, tax and currency changes, strikes, boycotts, public health crises (such as the Covid-19 pandemic), natural disasters 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 and relies on a number of suppliers that are based in China. Sercel operates in China through SJF, which is based in the Hebei province. We have faced limited and short-term disruptions resulting from the outbreak of the Covid-19 pandemic, which first emerged in the city of Wuhan, located in the Hebei province. If one of our main suppliers or SJF were forced to slow or stop operations due to re-emergence, or worsening, of outbreaks of Covid-19 or other health crises in the region or elsewhere, it would materially affect our ability to deliver certain products and services to our customers.

Our French manufacturing sites outsource part of their production to local third-party companies selected according to certain criteria, including quality, financial soundness and corporate social responsibility factors. 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 products and services to our customers.

In addition, shortcomings in suppliers' corporate social responsibility or actual or perceived issues related to their information security, trade, legal and regulatory compliance programs could negatively impact our reputation. These or other circumstances could 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.

Our reputation, business, financial condition and results of operations may be affected if we fail to deliver projects in line with our clients' expectations.

We seek to provide our customers with reliable data as well as an overall positive experience in their interactions with the Group. Our revenues depend on our ability to offer them services, cutting-edge technology and high-quality data, and our inability to deliver in line with their expectations could materially affect our ability to retain existing business and obtain new business from our customers. In particular, our customers use our products, services and data to reduce the uncertainty associated with their exploration, development and production activities. If we do not deliver high-quality data, our customers may face increased difficulties in identifying appropriate areas for drilling. Our product development, manufacturing controls and testing may not be adequate to detect all defects, errors, failures, and quality issues that could affect our customers, which could result in claims against us, order cancellations or delays in market acceptance. If our customers are not satisfied with our products or services or if they experience difficulties that they attribute to the quality of our output, they may stop doing business with us, which could materially and adversely affect our reputation, business, financial condition or results of operations.

This risk is particularly acute in connection with our Multi-Client business, in connection with which we undertake highly complex projects on behalf of our clients, which heightens the possibility of not being able to deliver our products and services in line with our clients' expectations. We may experience project failures as a result of, among other things, the inability of our partners or subcontractors to complete or deliver a project on time, our lack of coverage of certain survey areas requested by our clients (for example, due to obstructions, adverse weather conditions or other factors outside of our control), quality issues that require our sub- contractors to reshoot data or use an acquisition method that may not be fit for its purpose, such as new non-field-tested seismic sources. In addition, the success of our ability to deliver projects on time and with the quality expected by our clients may be impeded by factors such as regulatory changes, lack of appropriate permits (or expiration of existing permits), data loss or other failure to meet our clients' expectations for reasons that could be related to health and safety, environmental, legal or other similar concerns. Any failure to meet our clients' expectations in connection with the products or services they hire us to provide may affect our ability to invoice our clients for the work we perform or require us to incur additional costs to rectify or remedy any issues that may arise. In addition, our reputation towards the impacted client and potentially in the market generally could suffer as a result of such incidents, which could materially and adversely affect our business, prospects, financial condition and results of operations.

We could be subject to liability and loss of reputation due to failure or malfunctioning of our products following delivery to our clients.

We provide our clients globally with an extensive range of geoscience products that can be used offshore or onshore, in various environments and conditions, and as such are exposed to risks related to the use of our products by our clients. In particular, Sercel manufactures equipment to be used by our clients in their technical and complex operations.

An accident involving this equipment, or a failure of one of our products after it has been delivered to the client, could cause loss of life, personal injury, damage to or destruction of property, equipment or the environment, or require our clients to suspend operations, all of which may subject us to litigation and could result in significant liability. Our products are very complex and require a high level of quality control during the development, manufacturing and testing phases. We may face claims from our clients if our controls and tests are not adequate to detect all possible defects and quality issues in the products that we supply. In addition, if substantial quality and/or reliability issues arise in connection with our products following delivery, we may be required to issue a recall or provide a replacement for such products at no charge, which would result in increased expenses and damage to our reputation. Such incidents could have a material impact on our reputation and in our ability to develop and maintain customer relationships, which could in turn materially and adversely affect our business, prospects, financial condition and results of operations.

Risks Related to Information Technology, Information Security and Intellectual Property

We are subject to risks related to our information technology, including cyber security risks and risks of hardware and software failures.

The oil and gas and geothermal industries are increasingly using new digital technologies to improve the quality and effectiveness of their operations. Machine learning, high-performance computing ("HPC") and cloud computing are now part of the standard solutions that the industry is implementing. Although these new

technologies and solutions bring a significant value to the industry, they also increase its exposure to cyber-related incidents and to IT systems failure risks. We depend on these digital technologies and related infrastructure (including the servers that host our multi-client data libraries) to perform many of our services, deliver our products and to process and record financial and operating data.

As our dependence on information technology has increased, cyber incidents, including deliberate attacks, have become increasingly common and sophisticated. For instance, we were recently informed of a cyber security incident on one of our servers hosting a third-party application. For more information, see "*Recent Developments—Cyber security incident*". In response to the outbreak of the Covid-19 pandemic and the measures adopted to prevent its spread, we have transitioned many of our employees to remote working arrangements, which presents increased cyber security risks. If a cyber-attack, power outage, connectivity issue or other event occurred that impacted our employees' ability to work remotely, it may be difficult or, in certain cases, impossible, for us to continue our business for a substantial period of time.

The US government has issued public warnings that indicate that energy assets might be specific targets of cyber security threats. Our technologies, systems and networks, and those of our vendors, suppliers and other business partners, may become the target of cyber-attacks or information security breaches that could result in the unauthorized release, gathering, monitoring, misuse, loss or destruction of proprietary and other information, or other disruption of business operations. In addition, certain cyber incidents, such as surveillance, may remain undetected for an extended period. As cyber security incidents continue to evolve, despite the controls implemented to strengthen our cyber security defenses, our systems, networks and services potentially remain vulnerable to an information security incident. As such, we may be required to expend additional resources to continue to modify or enhance our protective measures or to investigate or remediate any vulnerabilities to cyber incidents. We engage with external partners to help us improve our cyber security defenses, reduce our exposure and provide support in case of a compromise to our systems. However, disruptions or failures in the physical infrastructure or operating systems that support our businesses and clients, or cyberattacks or security breaches of our networks or systems, could result in the loss of clients and business opportunities, legal liability, regulatory fines, penalties or intervention, reputational damage, reimbursement or other compensation and additional compliance costs, any of which could materially adversely affect our business, financial condition and operating results.

In addition, our success depends on the efficient and uninterrupted operation of our computer, communications and other business IT systems. A failure of our network or data gathering procedures could impede the processing of data, delivery of databases and services, execution of customer orders and day-to-day management of our business and could result in the corruption or loss of data. Despite any precautions we may take, damage from fire, floods, hurricanes, power loss, telecommunications failures and similar events at our computer facilities could result in interruptions in the flow of data to our servers and from our servers to our customers. In addition, our business lines are increasingly managed through IT solutions. All of the operational functions related to our businesses are managed through enterprise resource planning ("ERP") systems (including, among others, finance, sales, repair, production and planning, purchasing, inventory and quality control). If we were to lose access to ERP systems we may experience issues related to customer invoicing, vendor payments, accounting (including delayed monthly closings), production planning (for instance, in connection with our equipment business), compliance and human resources issues (such as the inability to process payroll). Any of these risks related to IT systems could damage our reputation and harm our business, financial condition and results of operations.

Our proprietary technology could be rendered obsolete or be misappropriated by third parties.

Technology changes rapidly in the oil and gas industry, and 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. In the markets where we operate, technological innovation is frequent, and industry and regulatory standards are constantly evolving. Both of these factors could contribute to the obsolescence of our existing technology, products and services. In our industry, new and innovative technologies are rarely available for us to purchase from third parties, so we must develop them internally. If we are not able to develop and produce new and enhanced products and services on a cost-effective and timely basis to replace technologies that have become obsolete, our business, financial condition and results of operations could suffer.

We invest heavily in R&D and rely on innovation to offer new and more efficient products and services to our customers. Protection of our intellectual property rights ("IP"), especially our innovative algorithms and data processing, in particular for our Geoscience division where this is the primary asset, is essential for our business. We are exposed to risks associated with the misappropriation or infringement of that technology and rely on a combination of patents, trademarks and trade secret laws to protect our proprietary technology. Our ability to

maintain or increase prices for our products 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 protect our proprietary technology.

In addition, we have a patent portfolio, which as a whole is material to our operations and business. We actively protect and promote our patents, but the laws of certain 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. Furthermore, the protection of our algorithms through patents requires us to disclose the underlying codes. Considering that keeping such algorithms and codes secret from our competitors and other third parties is essential in giving us a competitive edge, we often seek to maintain these as trade secrets rather than patents, which may offer less protection.

Although we take steps to strictly maintain the confidentiality of our proprietary and trade secret information, unauthorized use, misappropriation or disclosure may nevertheless occur. Our actions to protect our proprietary rights may not be adequate to deter the misappropriation or independent third-party development of our technology. The use of our intellectual property and other proprietary information and know-how by an unauthorized third party could reduce or eliminate any competitive advantage that has been developed and consequently cause us to lose market share or otherwise adversely affect our business, operating results or financial condition.

We also actively monitor our operations to ensure that our activities do not infringe third parties' intellectual property rights. However, we cannot assure you that our technology and services will not be challenged by third parties as infringing on their intellectual property rights and we may be subject to lawsuits 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 that could have a material impact on the Group, such litigation may take place in the future.

We may be unable to maintain data governance standards required by our clients or applicable regulations.

The digital environment is continuously evolving with, for example, greater use of cloud computing, and so are the applicable data governance standards. We may be unable to comply with the standards required by applicable legislation (e.g., GDPR) or by our clients, including specific contractual requirements, which could result in fines or penalties being imposed on us by regulators, damage our client relationships and raise potential liability issues if we do not protect our clients' sensitive information. Data governance failures may result from, among other things, internal or external malicious acts, human error, failures by service providers or partners or lack of or inadequate training. In addition, we may agree to maintain certain standards when negotiating new contracts with clients, suppliers or subcontractors that we may ultimately be unable to comply with. In addition, government data protection regulation is evolving quickly, which may result in unanticipated changes to regulations that may be adverse to our business or may lead to compliance issues if our internal teams are unable to cope with the fast-evolving technological environment. Undetected leakage of sensitive information, infringements to contractual and legal obligations and lack of internal data governance procedures could have legal and financial impacts (such as regulatory violations or breach of contracts that may lead to litigation, imposition of fines, contractual penalties or loss of market share) and would impact our reputation, all of which could have a material adverse effect on our business, results of operations or financial condition.

Risks Related to Our People

We depend on the experience of our senior management and other key personnel.

Our future results of operations depend in part upon the continued service of our executive officers and other key management personnel, on whom we depend to execute our strategy. The loss of the services and expertise of one or more of the members of our senior management team or other key management personnel could have a material adverse effect on our business, results of operations or financial condition.

Our business is dependent on highly skilled scientists, engineers and technicians, and our inability to retain, recruit and develop these resources may impact our results of operations.

We depend on highly skilled scientists, engineers and technicians to develop, launch and service our products and solutions. If we are unable to retain these employees for any reason, we risk the loss of know-how and

technical expertise, which could, in certain circumstances, lead to delayed product rollouts and disruptions to existing customer relationships. A limited supply of such skilled personnel is available, and demand from other companies may limit our ability to fill our human capital needs in the short term or at all. In addition, given that we operate in multiple jurisdictions throughout the world, we face competition for highly skilled and qualified employees in various markets and are required to adapt our benefits packages to meet the expectations in local markets. If we are unable to hire and retain enough qualified employees, this could impair our ability to compete in the geoscience services industry and to develop and protect our know-how.

In the context of the crises linked to the significant cuts in E&P spending by oil and gas companies, we implemented cost reduction initiatives to reduce our cost structure and protect our cash flows. The first set of measures were implemented during 2020 and US$42 million of severance costs were recognized as of December 31, 2020. We expect these measures to generate gross reduction in personnel fixed costs of around US$90 million on an annualized basis. We have also initiated an employment protection plan in France, including a plan for voluntary departures. For more information, see "*Our Business—Responses to Industry Conditions—Cost base reduction*" and "*Our Business—Responses to Industry Conditions—Employment protection plan in France*". These and other similar measures may have an impact on the composition and expertise of our teams, afflict the morale of our employees and affect our reputation, which may ultimately make it more difficult to hire and/or retain enough qualified employees.

In a changing economic environment, we are required to constantly develop new expertise and adapt our resources to meet the requirements of our customers. Following our transition out of the data acquisition business, we have refocused our recruitment strategies to attract skilled applicants for digitally focused careers, such as physicists. If our new strategies are not successful, we may not be able to attract the most qualified talent to meet the needs of our clients and execute our strategy.

Our inability to attract and retain our technically skilled and qualified team members could have a material adverse effect on our reputation, business, prospects, operating results and financial position.

Our employees may be exposed to various health and safety risks.

Our employees are exposed to certain health, safety and security risks in the course of their employment, which include physical and mental health risks related to working conditions, risks of workplace accidents and, for some of our employees, security risks related to the geographic and operational nature of their roles. Physical and mental health risks include, among others, improper or poorly designed working equipment that could lead to physical injury such as musculoskeletal issues as well as increased mental strain, job-related stress and workplace accidents at our sites, which could result in bodily injury, disability or death of one or more of our employees or subcontractors. We are also exposed to the risk of infection of our employees at the workplace due to exposure to harmful microorganisms such as bacteria, fungi or viruses. Potential exposure to biological agents, including to highly contagious ones such as the SARS-Cov-2 responsible for Covid-19, has created the need to implement extraordinary health and safety measures, entailing increased expense and operational complexity.

Major health or safety incidents could result in injuries, loss of life and disruption to business activities, each of which could result in enforcement proceedings or litigation. Moreover, this could result in material damage to our reputation, since customers place increasing emphasis on hiring providers of services, products and solutions with strong health and safety records.

We may not be able to keep our personnel and property safe from crime and unrest.

We are exposed to security risks in connection with certain of our premises and operations. For example, some of our premises, offices, workshops, storage areas and guesthouses could be subject to burglary and robbery, which could lead to the theft of expensive equipment and damage to sensitive installations such as processing centers. In addition, our offices in certain locations are exposed to the risk of civil unrest, states of emergency or other crisis situations, which could result in attacks on our centers and personnel by armed insurgents, kidnapping, looting and other acts of violence and destruction of property. Moreover, our employees may face specific threats when traveling on work-related missions in politically or economically unstable regions.

Risks Related to Economy and Finance

We face risks related to our liquidity needs and substantial indebtedness.

We rely primarily on our ability to generate cash from operations and our access to external financing to fund our working capital needs. Our cash generation depends on, among other factors, market conditions, the credit

quality of customers and other contractual counterparties, the countries of cash collection and any transfer restrictions that may be in place, as well as the strength of our bank partnerships.

We are subject to certain risks due to the nature and concentration of our customer base. We seek to reduce commercial risk by monitoring our customer credit profiles. In 2020, our two most significant customers accounted for 8.7% and 6.8% of our consolidated revenues, compared with 6.7% and 6.5% in 2019 and 7.1% and 6.3% in 2018, respectively. The loss of any of our significant customers or deterioration in our relations with any of them could affect our business results of operations and financial condition. Some of our customers are national oil companies, which can result in longer payment terms for us and expose us to political risk. These customers represented around 28% of our revenue for the year ended December 31, 2020. In addition, in our international operations we work with a wide network of approximately 50 banks and are therefore subject to counterparty risk. As of December 31, 2020, 12% of our cash balances were located in banks rated below A3 by Moody's.

We may not be able to generate sufficient cash from operations to fund our activities or may find that cash generated in certain countries is blocked due to tax, compliance or other reasons. Cash and Cash equivalents included trapped cash amounting to US$49 million as of December 31, 2020 from US$76 million as of December 31, 2019 mainly driven by a decrease in our activity in China. Our treasury IT tools could be breached, blocking access to our bank accounts, or our bank accounts could be attacked due to the failure of our banks' IT security systems or fraud. We may not be able to satisfy our working capital needs and meet our obligations (such as payments to suppliers, capital expenditures and payroll, as well as payments of interest and principal on our outstanding debt obligations) if we are unable to generate sufficient cash or if our access to cash is blocked for other reasons or if we are unable to gain access to financing on acceptable terms.

It is difficult for us to predict with certainty our working capital needs. This difficulty is due primarily to working capital requirements related to multi-client projects and the development and introduction of new lines of geophysical equipment products. For example, in certain 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.

In addition, certain of our customers and suppliers, and certain tax, social security or customs authorities may request that we or certain of our subsidiaries or affiliates post performance or bid bonds or guarantees issued by financial institutions, including in the form of standby letters of credit, in order to guarantee our or their legal or contractual obligations. As of December 31, 2020, guarantees granted by financial institutions in favor of our customers amounted to approximately US$47 million. As of the same date, the amount of the cash collateral (or its equivalent) we had provided for these guarantees amounted to approximately US$16 million (reported in our financial statements as fixed assets and financial investments) and the bank guarantees or guarantees granted by us amounted to approximately US$334 million (excluding the guarantees granted to financial institutions, and the guarantees related to capital leases already presented on balance sheet as per IFRS 16). As a result of our financial condition leading up to our debt restructuring in 2018, certain financial institutions phased out our existing guarantees and required the establishment of cash collateral (or its equivalent in the relevant jurisdiction) for any new guarantee or renewal of existing guarantees, and we cannot guarantee that similar measures will not be imposed again in the future. Failure to provide these or similar performance bonds or guarantees in the amounts or durations required or for the benefit of the necessary parties on favorable terms could reduce our capacity to conduct business or perform our contracts.

In addition, we are exposed to risks related to our substantial outstanding debt, which we may not be able to repay or refinance on favorable terms. As of December 31, 2020, our net financial debt (defined as gross financial debt less cash and cash equivalents) was US$848.6 million before giving effect to IFRS 16 and US$1,003.7 million after giving effect to IFRS 16. Our gross financial debt, as of December 31, 2020, was US$1,234.0 million (including US$12.6 million of accrued interest and bank overdrafts) before giving effect to IFRS 16 and US$1,389.1 million after giving effect to IFRS 16. As of December 31, 2020, our available financial resources amounted to US$336.5 million (including cash, cash equivalents and marketable securities and excluding trapped cash). See note 28 to our 2020 Consolidated Financial Statements for additional information. Following the Refinancing, we will continue to have a substantial amount of outstanding debt. See "*—Risks related to Our Indebtedness—Our significant leverage may make it difficult for us to service our debt, including the Notes, and operate our business*".

Our ability to repay or refinance our indebtedness and fund our working capital needs and planned capital expenditures depends, among other things, on our future operating results, which will be partly the result of

economic, financial, competitive and other factors beyond our control. In response to difficult market conditions, we finalized on February 21, 2018 the implementation of our Financial Restructuring Plan, which met our objectives of strengthening our balance sheet and providing financial flexibility to continue investing in the future. See Note 2 to our 2018 and 2019 Consolidated Financial Statements, included in this offering memorandum.

Continued difficult conditions in the markets where we operate or volatility in the financial markets, including in relation to the Covid-19 pandemic, could have a material adverse effect on our ability to service or refinance all or a portion of our indebtedness or 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, financial condition and results of operation.

If we are unable to satisfy our debt obligations, we may have to seek 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 to, and the conditions under which we may, borrow funds to refinance existing debt or finance our operations depends on many factors, including conditions in credit markets, perceptions of our business and the corporate ratings attributed to us by rating agencies (which as of the date of this offering memorandum are CCC+ for S&P, B3 for Moody's and B- for Fitch).

Moreover, we are subject to interest rate risks on our floating rate debt and when we refinance any of our debt. As of December 31, 2020, we had US$577.2 million of debt under our second lien notes, bearing a floating rate of interest, such that an increase of one percentage point in the applicable three-month interest rate would have had a negative impact on our net results before taxes of US$1.1 million on a twelve-month basis. Our second lien notes are also subject to paid-in-kind (PIK) interest at a fixed rate of 8.5%. As a result, the principal amount increases each period and as such, the variable component of interest is paid on an increasing amount each period. Although we may enter into and maintain certain hedging arrangements designed to fix a portion of these rates, we are not required to do so and there can be no assurance that hedging will continue to be available on commercially reasonable terms. Hedging itself carries certain risks, including that we may need to pay a significant amount (including costs) to terminate any hedging arrangements.

In addition, changes in the monetary policies of the US Federal Reserve and the European Central Bank, developments in financial markets and changes in our perceived credit quality may increase our financing costs and consequently adversely impact our ability to refinance our indebtedness, which could have a negative impact on our business, liquidity, results of operations and financial condition.

We are exposed to exchange rate fluctuations.

We derive a substantial portion of our revenues from international sales, which subjects 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 Euro, Brazilian reais, British pounds, Chinese yuan, Norwegian kroner, Canadian dollars, Mexican pesos, and Australian dollars. A portion of our debt is denominated in Euro, which exposes us to fluctuations in the Euro/US dollar rate. We do not expect any weakening of the British pound following the United Kingdom's departure from the European Union ("Brexit") to have a material impact on our business, given the low exposure of our UK business to backlog denominated in pounds.

Our net foreign exchange exposure, as of December 31, 2020, is principally linked to the Brazilian real (with a net asset position of US$21 million), the Euro (with a net asset position of US$15 million as of December 31, 2020), and to a lesser extent the British pound (with a net liability position of US$1 million). Fluctuations in the exchange rate of the US dollar against each of the Brazilian real, the Euro and the British pound have had in the past and will have in the future a significant effect upon our results of operations.

As of December 31, 2020, we estimated that our annual recurring net expenses in Euros were approximately €200 million and, as a result, an unfavorable variation of US$0.10/€ in the average annual exchange rate of the Euro against the US dollar would reduce our net income and our shareholders' equity by approximately US$20 million.

We regularly hedge our exposures whenever possible or practicable, but we cannot hedge all our currency exposures (mainly our exposures in Brazilian reais, or currencies for which there is no forward market), nor those

in relation to balance sheet items (largely for taxes, pensions liabilities and IFRS 16 debts that are either long term or for which the cash conversion date is unknown). Therefore, significant fluctuations in the values of the currencies in which we operate may materially adversely affect our future results of operations and cash position.

Legal and Regulatory Risks

We are subject to the risk of regulatory changes in the countries in which we operate, including changes as a result of Brexit.

We operate worldwide in a complex, volatile and evolving sector, and in light of the current economic conditions, oil price uncertainty, political or trade tensions (including as a result of Brexit) and environmental concerns, the regulatory environment in the countries in which we operate is constantly evolving. If we are not able to anticipate and react quickly to these regulatory changes, we are at risk of not being compliant with the new rules and regulations, which may have a material adverse effect on our reputation, business, financial condition and results of operations.

We expect the United Kingdom's withdrawal from the European Union to result in new national legislative and regulatory policy developments and may result in disruption to critical supplies and customer deliveries in the first half of 2021. Our EAME Geoscience division relies heavily on our UK computer center and although we do not expect renewal and expansion plans for computer equipment to be affected by Brexit-related supply chain disruptions, we cannot guarantee that such adverse effects will not materialize. Uncertainties over supplier cost increases remain largely unknown, other than those associated with the movement of goods. The supply chain may largely absorb these costs in the near term but will feel pressure to pass them on at some point in 2021.

In addition, new and future laws and regulations intended to limit or reduce emissions of gases, such as carbon dioxide, methane and other greenhouse gases (which may be contributing to climate change), or nitrogen oxides, may affect our operations or, more generally, the production and demand for fossil fuels such as oil and gas. To the extent that our customers' operations are disrupted by future laws and regulations, our own business, financial condition and results of operations may be materially and adversely affected. See "*Risks Related to Our Business and Strategy—The performance of our business is subject to demand for, and continued exploration, development and production of oil and gas; the reduction in the consumption of carbon-based energy products could significantly impair our business and reduce demand for our products and services*".

Further changes in such laws and regulations could affect the demand for our products or services or result in the need to modify our products and services, which may involve substantial costs or delays in sales and could have an adverse effect on our results. Moreover, if applicable laws and regulations, or the interpretation or enforcement thereof, become more stringent in the future, we could incur capital or operating costs beyond those currently anticipated.

Our legal and regulatory risks are particularly acute in connection with our operations in emerging markets where the political, economic and legal environment may be less stable. Operations in developing countries are subject to decrees, laws, regulations and court decisions that may change frequently or be retroactively applied and could cause us to incur unanticipated or unrecoverable costs or delays. The legal systems in developing countries may not always be fully developed, and courts or other governmental agencies in these countries may interpret laws, regulations or court decisions in a manner that might be considered inconsistent or inequitable, and may be influenced by factors other than legal merits, which could have an adverse effect on our reputation, business, financial condition and results of operations.

Our business is subject to complex laws and governmental regulations, including permits and other licensing requirements, in the various jurisdictions in which we operate, and our failure to comply with them may subject us to legal proceedings in these jurisdictions.

Operating a business in many jurisdictions requires us, our agents and our partners to comply with international conventions and treaties, national, regional, state and local laws and regulations in force in these various jurisdictions. We invest financial and managerial resources to comply with these laws and related permit requirements.

We currently hold numerous regulatory authorizations, permits and licenses necessary to operate our business. We cannot assure you that all of our authorizations or licenses are valid, that we will be able to maintain all authorizations and licenses necessary to operate our business or that we will be able to renew our authorizations

or licenses when they expire. If we are held to be in breach of any applicable law or the terms and conditions of our licenses, our licenses may be revoked. The loss of any of our authorizations or licenses or a material modification of the terms of any existing or renewed licenses may have a material adverse effect on our business, financial condition and result of operations. For instance, we could be excluded from the ability to tender on certain large projects.

Certain of our business activities may require prior government approval in the form of export licenses and may otherwise be subject to tariffs and import/export restrictions, including sanctions regimes. These laws can change over time and may result in adjustments to our business practices and commercial strategies, as well as limitations on our ability to undertake work in affected areas. In the case of US legislation, non-US persons employed by our separately incorporated non-US entities may conduct business legally in some foreign jurisdictions that are subject to US trade embargoes and sanctions by the US Office of Foreign Assets Control ("OFAC"). We may generate revenue in some of these countries through multi-client surveys and licensing, the provision of data processing and reservoir consulting services, the sale of software licenses and software maintenance and the sale of Sercel equipment. We may have current and ongoing relationships with customers in some of these countries.

Our internal controls, operational support procedures and employee training are focused on ensuring that we understand and comply with applicable restrictions and obligations that may be imposed by the United States, the European Union or other countries. Failure to comply with these restrictions and obligations could result in material fines and penalties, damage our reputation, and negatively affect the market price or demand for our securities.

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 codes of ethics and have implemented a Business Code of Conduct and related training, but there is a risk that we, our subsidiaries or affiliates or our or their respective officers, directors, employees or agents may act in violation of such codes and applicable laws, including the Foreign Corrupt Practices Act of 1977. We require compliance with such codes and applicable laws but cannot always prevent or detect corrupt or unethical practices by third parties, such as subcontractors, agents, partners or customers, which may result in substantial civil and criminal fines and penalties, reputational damage to us and might materially adversely affect our business, results of operations, financial condition or reputation.

Our failure to comply with such laws could result in civil or criminal fines, enforcement actions, claims for personal injury or property damage, and obligations to investigate and/or remediate environmental contamination, as well as an adverse impact on our reputation.

In addition, our extensive range of seismic products and services also expose us to the risk of litigation and legal proceedings under the laws of these jurisdictions in connection with such regulations and other laws, including those related to product liability, personal injury and contract liability.

We face the risk of payment, supplier and other types of fraud, which could subject us to penalties and reputational damage.

We have been and expect to continue to be subject to different types of attempted fraud, both internal and external. Internal fraud threats include misappropriation of assets (such as theft of petty cash, misuse of employee passwords to make unauthorized payments and schemes designed to change bank account details to direct payments to unauthorized persons), purchasing fraud (including employees purchasing goods and services for personal use or the use of fictitious suppliers), payroll fraud (such as the submission of fictitious expense claims and illegitimate overtime), theft or abuse of proprietary information, fraud related to inventory and fixed assets and corruption (including kickbacks to employees from suppliers and other unauthorized payments to government officials). External fraud threats include purchasing fraud (involving the submission of false purchase invoices with requests for payment) and email fraud, imposter fraud and account takeovers. Increasingly, such attempts take the form of advanced phishing campaigns and scams. We have adopted policies and procedures to detect fraud attempts, including phishing and impersonation scams, and have trained our employees in fraud prevention, but there can be no assurance that our ongoing policies and procedures will be followed at all times or will effectively detect and prevent every instance of fraud in every jurisdiction. As a result, we could be subject to penalties and reputational damage, with material adverse consequences for our reputation, business, financial condition and results of operations.

Risks Related to Our Indebtedness

Our significant leverage may make it difficult for us to service our debt, including the Notes, and operate our business.

Upon completion of the Refinancing, we will have a substantial amount of outstanding indebtedness with significant debt service requirements. As of December 31, 2020, on an as-adjusted basis after giving effect to the Refinancing, our total outstanding principal amount of financial indebtedness (including lease liabilities) would have been $1,355.9 million.

Our significant leverage could have important consequences for a holder of the Notes, including:

- making it more difficult for us to satisfy our obligations with respect to the Notes and our other debt and liabilities;
- requiring us to dedicate a substantial portion of our cash flow from operations to payments on our debt, thus reducing the availability of our cash flow to fund internal growth through working capital and capital expenditures and for other general corporate purposes;
- increasing our vulnerability to a downturn in our business or economic or industry conditions;
- placing us at a competitive disadvantage compared to any competitors that may have less debt in relation to cash flow;
- limiting our flexibility in planning for or reacting to changes in our business and our industry;
- restricting us from investing in strategic initiatives, growing our business and exploiting certain business opportunities; and
- limiting, among other things, our and our subsidiaries' ability to borrow additional funds or raise equity capital in the future and increasing the costs of such additional financings.

Our ability to service our indebtedness will depend on our future performance, which will be affected by prevailing economic conditions and financial, business, regulatory and other factors. Many of these factors are beyond our control. If we cannot service our indebtedness and meet our other obligations and commitments, we might be required to refinance our debt or to dispose of assets to obtain funds for such purpose. We cannot assure you that refinancings or asset dispositions could be effected on a timely basis or on satisfactory terms, if at all, or would be permitted by the terms of our debt instruments.

We may incur additional indebtedness, including at the level of our subsidiaries, which could increase our risk exposure from debt and could decrease your share in any proceeds from enforcement of the Collateral.

Subject to restrictions in the Indenture and restrictions in the Revolving Credit Facility Agreement, we may incur additional indebtedness, which could increase the risks associated with our already substantial indebtedness. We will have the ability to borrow up to $100 million under our new Revolving Credit Facility, which borrowings and indebtedness are secured by the Collateral on a *pari passu* basis with the Notes. The terms of the Indenture permit us to incur additional indebtedness which may also be secured on a *pari passu* basis with the Notes.

Our subsidiaries may also be able to incur substantial additional indebtedness in the future, further increasing the risks associated with our substantial leverage. If any of our subsidiaries incurs additional indebtedness, the holders of that debt will be entitled to share ahead of holders of the Notes in any proceeds distributed in connection with any insolvency, liquidation, reorganization, dissolution or other winding-up of such subsidiaries. See "*Description of Certain Financing Arrangements*". If we incur additional indebtedness, the related risks that we now face, as described above and elsewhere in these risk factors could intensify.

We are subject to restrictive covenants under the Indenture and the Revolving Credit Facility Agreement, which could impair our ability to run our business.

Restrictive covenants under the Indenture and the Revolving Credit Facility Agreement may restrict our ability to operate our business. Our failure to comply with these covenants, including as a result of events beyond our control, could result in an event of default that could materially and adversely affect our financial condition and results of operations.

The Indenture and the Revolving Credit Facility Agreement contain negative covenants restricting, among other things, our ability to:

- make certain loans or investments;

- incur indebtedness or issue guarantees;
- sell, lease, transfer or dispose of assets and subsidiary stock;
- merge or consolidate with other companies;
- transfer all or substantially all of our assets;
- make a substantial change to the general nature of our business;
- pay dividends and make other restricted payments;
- create or incur liens;
- agree to limitations on the ability of our subsidiaries to pay dividends or make other distributions; and
- enter into transactions with affiliates.

In addition, the Revolving Credit Facility Agreement contains a springing financial maintenance covenant that is tested quarterly to the extent total cash drawings outstanding under the Revolving Credit Facility on the last day of the relevant financial quarter exceed 40% of the greater of (i) the original commitments in respect of the Revolving Credit Facilities and (ii) the total commitments under the Revolving Credit Facility on the relevant testing date. See "*Description of Certain Financing Arrangements—The Revolving Credit Facility Agreement*".

The restrictions contained in the Indenture and the Revolving Credit Facility Agreement could affect our ability to operate our business and may limit our ability to react to market conditions or take advantage of potential business opportunities as they arise. For example, such restrictions could adversely affect our ability to finance our operations, pursue our strategic initiatives, make investments, restructure our organization or finance our capital needs. Additionally, our ability to comply with these covenants and restrictions may be affected by events beyond our control. These include prevailing economic, financial and industry conditions. If we breach any of these covenants or restrictions, we could be in default under the Indenture or the Revolving Credit Facility Agreement.

If there were an event of default under any of our debt instruments that is not cured or waived, the holders of the defaulted debt could terminate their commitments thereunder and cause all amounts outstanding with respect to such indebtedness to be due and payable immediately, which in turn could result in cross-defaults under our other debt instruments, including the Notes. Any such actions could force us into bankruptcy or liquidation, and we may not be able to repay our obligations under the Notes in such an event. See "*Description of Certain Financing Arrangements*" and "*Description of the Notes*".

We may not be able to generate sufficient cash to meet our debt service obligations, or our obligations under other financing agreements, in which case our creditors could declare all amounts owed to them due and payable, leading to liquidity constraints.

Our ability to make interest payments on the Notes and to meet our other debt service obligations, including under the Indenture and the Revolving Credit Facility Agreement, or to refinance our debt, depends on our future operating and financial performance, which in turn depends on our ability to successfully implement our business strategy as well as general economic, financial, competitive, regulatory and other factors that are beyond our control. If we cannot generate sufficient cash to meet our debt service requirements, we may, among other things, need to refinance all or a portion of our debt, including the Notes, obtain additional financing, delay planned capital expenditures or investments or sell material assets. If we are not able to refinance any of our debt, obtain additional financing or sell assets on commercially reasonable terms or at all, we may not be able to satisfy our debt obligations, including the Notes. If we are also unable to satisfy our obligations on other financing arrangements, we could be in default under the Indenture, the Revolving Credit Facility Agreement and other financing agreements which we may enter into in the future. In the event of a default under the Revolving Credit Facility Agreement or certain other defaults under any other agreement, the lenders under the respective facilities or financing instruments could take certain actions, including terminating their commitments and declaring all amounts that we have borrowed under our credit facilities and any other indebtedness that we have incurred or may incur in the future to be due and payable, together with accrued and unpaid interest. Such a default, or a failure to make interest payments on the Notes, could mean that borrowings under other debt instruments that contain cross-acceleration or cross-default provisions, including the Notes and the Revolving Credit Facility, may as a result also be accelerated and become due and payable. If the debt under the Notes or the Revolving Credit Facility or any other material financing arrangement that we have entered into or will subsequently enter into were to be accelerated, our assets may be insufficient to repay the Notes in full. Any such actions could force us into bankruptcy or liquidation, and we might not be able to repay our obligations under the Notes in such an event. See "*Description of Certain Financing Arrangements*" and "*Description of the Notes*".

The loans under the Revolving Credit Facility and other material financing agreements bear, or will bear, interest at floating rates that could rise significantly, increasing our financing costs and reducing our cash flow.

A portion of our debt bears interest at a variable rate, and we will be exposed to the risk of fluctuations in interest rates. These interest rates could rise significantly in the future, increasing our interest expense associated with these obligations, reducing cash flow available for capital expenditures and hindering our ability to make payments on the Notes. In particular, any borrowings under the Revolving Credit Facility will bear interest at a variable rate which is based on LIBOR (with a 0% floor) plus an applicable margin. Fluctuations in LIBOR or the occurrence of a market disruption event may increase our overall interest burden and could have a material adverse effect on our ability to service our debt obligations. As of the Issue Date, we do not plan to hedge the floating rate interest exposure in relation to any borrowings under the Revolving Credit Facility; however, we will continue to monitor such exposures and may enter into interest hedging arrangements in the future. As such, to the extent that LIBOR increases, our interest expense would also correspondingly increase, thereby adversely affecting our cash flow.

The Revolving Credit Facility may be impacted by applicable regulation and may bear interest that could rise significantly, thereby increasing our costs and reducing our cash flow.

Following allegations of manipulation of LIBOR, a measure of interbank lending rates, regulators and law enforcement agencies from a number of governments and the European Union are conducting investigations into whether the banks that contribute data in connection with the calculation of daily Euro Interbank Offered Rate ("EURIBOR") or the LIBOR may have been manipulating or attempting to manipulate EURIBOR and LIBOR. As a result, EURIBOR, LIBOR and other interest rates that are indices which are deemed to be "benchmarks" are the subject of recent and ongoing national, international and other regulatory guidance and proposals for reform, including the implementation of the IOSCO Principles for Financial Market Benchmarks (July 2013) and Regulation (EU) 2016/1011 (the "Benchmarks Regulation"), which was published in the Official Journal of the EU on June 29, 2016 and has applied since January 1, 2018. Some of these reforms are already effective while others are still to be implemented. The Benchmarks Regulation applies to the provision of benchmarks, the contribution of input data to a benchmark and the use of a benchmark within the EU. It will, among other things, (i) require benchmark administrators to be authorized or registered (or, if non-EU-based, to be subject to an equivalent regime or otherwise recognized or endorsed) and (ii) prevent certain uses by EU-supervised entities of benchmarks operated by administrators that are not authorized or registered (or, if non-EU-based, not deemed equivalent or recognized or endorsed).

These reforms, including the Benchmarks Regulation, may cause such benchmarks to perform differently than in the past, or to disappear entirely, or have other consequences which cannot be predicted. Any such consequence could have a material adverse effect on the Revolving Credit Facility or our debt linked to such a "benchmark". In particular, the Benchmarks Regulation could have a material impact on the Revolving Credit Facility and our other debt linked to such a "benchmark", if the methodology or other terms of the LIBOR benchmark are changed in order to comply with the requirements of the Benchmarks Regulation. Such changes could, among other things, have the effect of reducing, increasing or otherwise affecting the volatility of the published rate or level of the LIBOR benchmark. In addition, any of the international, national or other proposals for reform, or the general increased regulatory scrutiny of "benchmarks," could increase the costs and risks of administering or otherwise participating in the setting of a "benchmark," including LIBOR, and complying with any such regulations or requirements.

Such factors may have the following effects on certain "benchmarks" such as LIBOR: (i) discourage market participants from continuing to administer or contribute to such "benchmark"; (ii) trigger changes in the rules or methodologies used in the "benchmarks" or (iii) lead to the disappearance of the "benchmark". On July 27, 2017, and in subsequent speeches (including the speech by its chief executive on July 12, 2018 and the announcement dated March 5, 2021), the UK Financial Conduct Authority announced that it will no longer persuade or compel banks to submit rates for the calculation of the LIBOR benchmark after 2021 (the "FCA Announcements"). The FCA Announcements indicate that the continuation of LIBOR on the current basis cannot and will not be guaranteed after 2021. The potential elimination of the LIBOR benchmark or any other benchmark, changes in the manner of administration of any benchmark, or actions by regulators or law enforcement agencies could result in changes to the manner in which LIBOR is determined, which could require an adjustment to the terms and conditions of any debt linked to such benchmark, or result in other consequences in respect of any debt linked to such benchmark. Any of the above changes or any other consequential changes as a result of international, national or other proposals for reform or other initiatives or investigations, as well as manipulative

practices or the cessation thereof, may result in a sudden or prolonged increase in reported LIBOR, which could have a material adverse effect on the value of and return on any floating rate debt linked to LIBOR (including our Revolving Credit) and on our ability to service debt that bears interest at floating rates of interest.

Any elimination of the EURIBOR benchmark, or changes in the manner of administration of EURIBOR, could require an adjustment to the terms and conditions of our floating rate debt (including our Revolving Credit Facility) or hedging. Any such adjustment, as well as manipulative practices or the cessation thereof, may result in a sudden or prolonged increase in reported EURIBOR or LIBOR, which could have an adverse impact on our ability to service debt that bears interest at floating rates of interest. Any such consequence could have a material adverse impact on the value of and return on our floating rate debt (including our Revolving Credit Facility). In addition, the development of alternatives to EURIBOR or LIBOR may result in our floating rate debt (including our Revolving Credit Facility and the Floating Rate Notes) performing differently than would otherwise have been the case if the alternatives to EURIBOR or LIBOR had not developed.

Investors should be aware that, if LIBOR were discontinued or otherwise unavailable, the rate of interest under the Revolving Credit Facility will be determined by fallback provisions contained in the Revolving Credit Facility, which may in certain circumstances (i) be reliant upon the provision by reference banks of offered quotations for the LIBOR benchmark which, depending on market circumstances, may not be available at the relevant time, (ii) result in the effective application of a fixed rate based on the rate which applied in the previous period when LIBOR was available or (iii) permit the borrower to replace LIBOR with any alternative rate which has replaced LIBOR in customary market usage for purposes of determining the interest in accordance with the terms of the Revolving Credit Facility. Any of the foregoing could result in the interest under the Revolving Credit Facility rising significantly, thereby increasing our costs and reducing our cash flow, which could adversely affect our ability to make payments on the Notes.

French tax legislation may restrict the deductibility, for French tax purposes, of all or a portion of the interest on our indebtedness incurred in France, thus reducing the cash flow available to service our indebtedness.

The French Finance Law for 2019 (Law 2018-1317 of December 28, 2018) included specific provisions which have implemented into French tax legislation the provisions of the ATAD 1 Directive (Council Directive (EU) 2016/1164 of 12 July 2016) regarding interest deductibility limitations in respect of fiscal years opened as from January 1, 2019.

In relation to such implementation, (i) the former provisions of (x) Articles 212 *bis* and 223 B *bis* of the French tax code ("FTC") (relating to the former 25% general limitation of deductibility of financial expenses ("*rabot fiscal*")) and (y) Article 209-IX of the FTC (the "*Amendement Carrez*" limitation) have been repealed and (ii) the former thin-capitalization rules provided in the former Article 212-II of the FTC have been amended into more stringent deduction limitation rules and are now included in the new general limitation rules provided by new article 212 bis of the FTC, as developed in more detail below. The other rules relating to the maximum deductible tax rate for interest paid to direct minority shareholders or to related parties in the sense of Article 39,12 of the FTC (Articles 39-1-3° and 212-I, a of the FTC) remain unchanged.

Under Article 39-1-3 of the FTC, interest paid by an entity to its direct shareholders who are not related parties within the meaning of Article 39,12 of the FTC are tax deductible only up to the amount of interest computed on the basis of the rate referred to in Article 39-1-3 of the FTC (*i.e.*, the annual average of the average effective floating rates on bank loans to companies with an initial maturity exceeding two years). Under Article 212-I, a of the FTC, interest incurred on loans granted by related parties within the meaning of Article 39,12 of the FTC is deductible up to the amount of interest computed on the basis of the rate referred to in Article 39-1-3 of the FTC or, if higher, up to the amount of interest computed on the basis of the rate that the borrowing entity could have obtained from independent financial credit institutions in similar circumstances.

Pursuant to Article 212 *bis* of the FTC, the deductibility of net financial expenses incurred by an entity in respect of a given fiscal year is now limited to the highest of (i) €3 million and (ii) 30% of its adjusted EBITDA in the same fiscal year (corresponding to its taxable income before offset of carry-forward tax losses and without taking into consideration net financial expenses and, to some extent, depreciation, provisions and capital gains/losses) generated by such entity (the "30% Limitation"). Such limitation applies to both related-party and third-party financings regardless of the purpose of these financings, subject to certain limited exceptions.

Furthermore, for entities being part of a group that files eligible consolidated financial statements, a safeguard clause has been implemented in order to partially exempt companies that are able to demonstrate that the ratio of

their equity over their total assets is equal to or higher than the same ratio computed at the level of the accounting consolidated group to which they belong for accounting purposes. In this specific case, net financial expenses exceeding the 30% Limitation are deductible up to 75% of their amount (the "75% Additional Deduction").

French thin-capitalization rules have also been amended and apply cumulatively to the 30% Limitation, but only in respect of loans granted by related parties and no longer to third-party debts guaranteed by related parties. In this respect, where the amount of the related party debt of a company exceeds a ratio equal to 1.5 time the company's net assets (*fonds propres*) during a financial year, measured, at the company's option, at the opening or the close of such financial year, the company is regarded as thinly capitalised and the deduction of net financial expenses borne by such entity and corresponding to financing granted by unrelated parties and financing granted by related parties up to 1.5 times the company net assets (*fonds propres*) are only deductible up to the higher of (i) 30% of its adjusted EBITDA or (ii) €3 million, multiplied by a ratio equal to (A) the average amount of financing granted by non-related parties within the meaning of Article 39,12 of the FTC increased by 1.5 time the company's net assets (*fonds propres*) (assessed either at the beginning or at the closing date of the fiscal year) by (B) the average amount of all financing granted to the company during said year. The net financial expenses borne by such companies and corresponding to financing granted by related parties exceeding 1.5 times the company's net assets (*fonds propres*) are only deductible up to the highest of (i) 10% of its adjusted EBITDA or (ii) €1 million, multiplied by a ratio equal to (A) the average amount of financing granted by related parties within the meaning of Article 39,12 of the FTC exceeding 1.5 time the company's net assets (*fonds propres*) (assessed either at the beginning or at the closing date of the fiscal year) by (B) the average amount of all financing granted to the company during said fiscal year (the "10% Limitation"). However, the interest deductibility limitation provided for by these amended thin-capitalization rules does not apply if the borrowing company demonstrates that the overall debt-to-equity ratio of the group (as determined under accounting consolidation rules) to which it belongs is higher than its own debt-to-equity ratio. In addition, when a company falls within the scope of French thin-capitalization rules, it is not allowed to benefit from the 75% Additional Deduction.

Financial expenses that are disallowed pursuant to the 30% Limitation (and, as the case may be, after application of the 75% Additional Deduction) can be carried forward indefinitely and deducted in the future under the same conditions. On the other hand, the portion disallowed as a result of the application of the 10% Limitation is only eligible for carry-forward for one-third of its amount. The unused interest deduction capacity of a current fiscal year may broadly also be used over the five following fiscal years, but only against financial expenses incurred in respect of those fiscal years, it being noted that this measure is not available to thinly capitalized entities.

Specific rules apply to companies that belong to French tax consolidated groups, *i.e.,* mainly (i) the 30% Limitation is computed on the basis of the consolidated adjusted EBITDA generated by such companies and (ii) the 1.5 debt-to-equity ratio is analyzed (x) on a consolidated basis pursuant to French accounting rules applying for purposes of establishing consolidated financial statements and (y) in respect of loans granted by related parties within the meaning of Article 39,12 of the FTC which do not belong to the same tax consolidated group.

In addition, the new anti-hybrid limitation resulting from the ATAD 2 Directive (EU directive 2016/1164) has been implemented into French tax law by the French Finance Law for 2020 under Articles 205 B, 205 C and 205 D of the FTC and, in counterpart, the former French anti-hybrid rules, as set forth in former Article 212-I-b of the FTC, have been repealed. The relevant mismatches are those arising, *inter alia,* from (i) hybrid instruments and entities (including permanent establishments), (ii) reverse hybrid entities and (iii) situations of dual residency. Such new provisions are applicable as from January 1, 2020, it being noted that the application of provisions relating to reverse hybrid entities (Article 205 C of the FTC) are deferred to January 1, 2022.

Articles 205 B *et seq.* of the FTC implementing ATAD 2 provide, broadly, limitations on interest deductions in the event of (i) a deduction of a payment at the level of a paying entity without a corresponding inclusion of such payment in the taxable income of the receiving entity (referred to as a "deduction without inclusion") or (ii) a deduction of the same payment, operational expenses or losses in the taxable income of both the paying and receiving entity (referred to as a "double deduction"). Such limitations only apply to payments taking place between "associated enterprises," except for the so-called "structured arrangements" (i.e., an arrangement pricing the relevant mismatch or an arrangement designed to produce the mismatch, subject to certain conditions). If the hybrid mismatch results in a deduction without inclusion, the deduction from taxable income will generally be denied to the French paying entity. Alternatively, the payment to a French receiving entity will be included in its taxable income if deduction is not denied in the jurisdiction of the paying entity. If the hybrid mismatch results in a double deduction, the deduction will either be denied at the level of the receiving entity or at the level of the

paying entity. The new provisions also cover, *inter alia*, reverse hybrid entities, referring to situations where an entity is deemed to be tax transparent in its country of establishment but the jurisdiction of its "associated enterprises" holding directly or indirectly an aggregate of at least 50% of the voting rights, capital interests or rights to share profit, qualify the entity as non-transparent. In this situation, the entity would be treated as taxable in its jurisdiction of establishment (either at the level of the entity or at the level of its shareholders or partners).

The above-mentioned tax rules, as well as generally applicable tax principles, may limit our ability to deduct interest accrued on our indebtedness incurred in France and may thus increase our tax burden, which could adversely affect our business, financial condition and results of operations, and reduce the cash flow available to service our indebtedness.

Tax legislation, tax audits or disputes and our results may restrict our ability to use tax loss carry-forwards.

We may record deferred tax assets on our balance sheet, reflecting future tax savings resulting from discrepancies between the tax and accounting valuation of the assets and liabilities or in respect of tax loss carry-forwards from our entities. The actual realization of these assets in future years depends on tax laws and regulations, the outcome of potential tax audits and the future results of the relevant entities. In particular, pursuant to Article 209, I, paragraph 3 of the FTC, the fraction of French tax loss carry-forwards that may be used to offset the taxable profit with respect to a given fiscal year is limited to €1.0 million *plus* 50% of the portion of taxable profit exceeding €1.0 million. Similar rules apply to tax losses generated by French tax consolidated groups. As of December 31, 2020, French tax loss carry-forwards recorded in our financial statements totalled $2.4 billion, with no deferred tax assets recognized. Any reduction in our ability to use these assets due to changes in laws and regulations, potential tax reassessment or lower than expected results could have a negative impact on our business, results of operations and financial condition.

The adoption by the Council of the European Union of an EU blacklist of non-cooperative jurisdiction for tax purposes and the use of this list in the jurisdictions where we operate may impact our financial results.

The Council of the European Union adopted on December 5, 2017 its conclusions on the EU blacklist of non-cooperative jurisdictions for tax purposes (the "Council Conclusions") (the "EU Blacklist"). The EU Blacklist was established following a screening and a dialogue conducted by a code of conduct working group appointed by the Council during 2017 with a large number of third-country jurisdictions and has been recently updated (Council conclusions on the revised EU list of non-cooperative jurisdictions for tax purposes, approved by the Council at its meeting held on 22 February 2021).

A French law that aims at fighting against tax fraud was published on October 24, 2018 (Law 2018-898 of October 23, 2018) and expands under certain conditions the French tax regime regarding non-cooperative states or territories (*États ou territoires non coopératifs*) as defined under Article 238-0 A of the FTC ("Non-Cooperative States") to states and jurisdictions included in the EU Blacklist. As a result, interest paid or accrued to persons domiciled or established in states and jurisdictions included in the EU Blacklist or paid on an account opened in a financial institution located in such states and jurisdictions may be subject to withholding tax in France and not be deductible for purposes of the computation of the debtor's corporate income tax liability. The anti-abuse measures apply in principle to states and jurisdictions newly added to the list as from the French first day of the third month following the month during which the French list is published, it being mentioned that the French list has been updated in 2021 and includes the states and jurisdictions contained in the last version of the Black List dated February 22, 2021 *(Ministerial Order dated February 2, 2021 amending the ministerial order dated February 12, 2010)*. Such list of Non-Cooperative States currently includes, the following states and territories: American Samoa, Anguilla, the British Virgin Islands, Fiji, Dominique, Guam, Palaos, Panama, Samoa, Seychelles, Trinidad and Tobago, the United States Virgin Islands and Vanuatu (*Ministerial Order dated February 2, 2021 amending the ministerial order dated February 12, 2010*).

The EU Proposed Financial Transactions Tax may apply.

The European Commission published on February 14, 2013 a proposal for a Directive for a common financial transactions tax ("EU FTT") in Austria, Belgium, Estonia, France, Germany, Greece, Italy, Portugal, Slovakia, Slovenia and Spain (the "Participating Member States"). Estonia has since then officially announced its withdrawal from the negotiations.

The proposed EU FTT has a very broad scope and could, if introduced in its current draft form, apply to certain transactions relating to the notes (including secondary market transactions) in certain circumstances. The issuance of notes should, however, be exempt.

The EU FTT could, if applied in its current draft form, apply in certain circumstances to persons both within and outside of the Participating Member States. Generally, it would apply to certain transactions relating to the notes where at least one party is a financial institution, and at least one party is established in a Participating Member State.

More recently, the Participating Member States (excluding Estonia) have agreed to continue negotiations on the basis of a joint French-German proposal based on the French financial transactions tax model at a minimum rate of 0.2%, which in principle would only concern acquisition of shares of listed companies whose market capitalization exceeds €1 billion on December 1 of the preceding year and whose head office is in a Member State of the European Union. However, the EU FTT proposal remains subject to negotiation between the Participating Member States (excluding Estonia) and its scope remains uncertain. It may, therefore, be altered prior to any implementation, the timing of which remains unclear. Additional European Union Member States may decide to participate, and certain of the Participating Member States (excluding Estonia) may decide to withdraw.

Prospective holders of the notes are advised to seek their own professional advice in relation to the EU FTT.

If the proposed Directive or any similar tax is adopted, transactions on the notes could be subject to higher costs, and the liquidity of the market for the notes may be diminished, provided that the scope of application of the most recent proposal of EU FTT based on the French FTT is modified in the future, as it currently only targets acquisitions of shares in listed companies.

Prospective investors should consult their tax advisors regarding the tax consequences of an investment in the Notes.

In view of the number of different jurisdictions where tax laws may apply to a holder, except as described in "Taxation", this offering memorandum does not discuss all of the tax consequences to prospective investors of the acquisition, ownership and disposition of the notes. Prospective investors should consult their tax advisors regarding the tax consequences to them of acquiring, owning and disposing of the Notes, and should carefully consider those consequences before making a decision to invest.

Risks Related to the Notes, the Guarantees and the Collateral

The Notes will not benefit from certain Guarantees and some of the Collateral prior to the Post-Issue Date.

On the Issue Date, the Notes will be secured by first-priority security interests over the Issue Date Collateral only and will be guaranteed only by the Issue Date Guarantors. On the Post-Issue Date, the Notes will be further secured by the Post-Issue Date Collateral. Furthermore, the Post-Issue Date Guarantors are only required to guarantee the Notes on the Post-Issue Date.

There can be no assurance, however, that we will be successful in procuring the grant of the Post-Issue Date Collateral and the Post-Issue Date Guarantees within the time period specified, and any subsequent grant of security will be subject to certain agreed security principles and perfection requirements, as well as any other liens permitted under the Indenture to be granted on the same Collateral. See "*—Rights in the Collateral may be adversely affected by the failure to perfect security interests in certain Collateral, whether now owned or acquired in the future*." Furthermore, the security interests and the guarantees will be limited as set forth under "*Limitations on Validity and Enforceability of the Security Interests and Guarantees and Certain Insolvency Law Considerations*," which limitations could be significant. It should be noted that if a security interest or guarantee granted in certain jurisdictions is granted after the secured obligation arose, such security interest or guarantee may be subject to claw-back provisions under applicable local insolvency laws. See "*Limitations on Validity and Enforceability of the Security Interests and Guarantees and Certain Insolvency Law Considerations*".

The Notes will be structurally subordinated to the liabilities of non-guarantor subsidiaries.

Certain of our subsidiaries will not guarantee the Notes. Our subsidiaries will not have any obligations to pay amounts due under the Notes or to make funds available for that purpose unless they guarantee the Notes. Generally, holders of debt of, and trade creditors of, non-guarantor subsidiaries, including lenders under bank financing agreements, are entitled to payment of their claims from the assets of such subsidiaries before these assets are made available for distribution to the Issuer or any Guarantor, as a direct or indirect shareholder.

Accordingly, in the event that any non-guarantor subsidiary becomes insolvent, is liquidated, reorganized or dissolved or is otherwise wound up other than as part of a solvent refinancing:

- the creditors of the Issuer (including the holders of the Notes) and the Guarantors will have no right to proceed against the assets of such subsidiary; and
- the creditors of such non-guarantor subsidiary, including trade creditors, will generally be entitled to payment in full from the sale or other disposal of the assets of such subsidiary before the Issuer or any Guarantor, as a direct or indirect shareholder, will be entitled to receive any distributions from such subsidiary.

As such, the Notes and each Guarantee will be structurally subordinated to the creditors (including trade creditors) and any preferred stockholders of our non-guarantor subsidiaries. As of December 31, 2020, on an as-adjusted basis after giving effect to the Refinancing, our subsidiaries not guaranteeing the Notes would have had US$25.1 million of third-party indebtedness (excluding trade payables). Any of the debt that our non-guarantor subsidiaries incur in the future in accordance with the Indenture will also rank structurally senior to the Notes and the Guarantees.

Holders of the Notes will not receive proceeds from enforcement of the Collateral until after certain super senior creditors are repaid and may not control certain decisions regarding the Collateral.

To the extent permitted under applicable law, and subject to the Agreed Security Principles, the Notes will be secured on a first priority basis by substantially the same rights, property and assets securing our obligations under the Revolving Credit Facility Agreement. In addition, under the terms of the Indenture, we are permitted to incur significant additional indebtedness and other obligations that may be secured by the same Collateral.

Pursuant to the Intercreditor Agreement, lenders under the Revolving Credit Facility, providers of certain additional super priority indebtedness, certain priority hedging obligations, if any, the Security Agent, any receiver and certain creditor representatives, including the Trustee, are entitled to be repaid with the proceeds of the Collateral sold in any enforcement sale and all amounts received by the Security Agent pursuant to the turnover provisions of the Intercreditor Agreement in priority to the Notes. As such, in the event of a foreclosure of the Collateral or any other distressed disposal, the holders of the Notes may not be able to recover on the Collateral if the aggregate of the then outstanding claims under super priority indebtedness are greater than or equal to the proceeds realized. Any proceeds from an enforcement sale of the Collateral and all amounts received by the Security Agent pursuant to the turnover provisions of the Intercreditor Agreement will, after all obligations under super priority indebtedness have been discharged from such recoveries, be applied pro rata in repayment of the Notes and any other obligations secured by the Collateral on a *pari passu* basis with the Notes.

The Intercreditor Agreement will regulate the ability of the Trustee or the holders of the Notes to instruct the Security Agent to take enforcement action. The Security Agent will act upon the instructions of the Instructing Group (as defined in the Intercreditor Agreement), which will mean:

(i) creditors holding more than 66⅔% of the indebtedness and commitments under the Revolving Credit Facility Agreement, certain super priority hedging obligations and additional super priority indebtedness (the "Majority Super Senior Creditors"); and

(ii) creditors holding more than 50% of the indebtedness under the Notes and indebtedness ranking *pari passu* with the Notes (the "Majority Senior Secured Creditors")

(in each case acting through their respective creditor representative) prior to the "Credit Facility Lender Discharge Date" (as defined in the Intercreditor Agreement). The Intercreditor Agreement will further provide that if the Super Senior Creditors or the Senior Secured Creditors wish to instruct the Security Agent to commence enforcement, their creditor representative must send a notice to the Security Agent and the creditor representatives of the Majority Super Senior Creditors and the Majority Senior Secured Creditors must consult with each other for a period of 15 days to agree on joint enforcement instructions.

If the creditor representatives are not able to agree on joint enforcement instructions by the end of the consultation period, the Security Agent will enforce the Collateral in accordance with the terms of the enforcement instructions (if any) given by the Majority Senior Secured Creditors in accordance with the Intercreditor Agreement, *provided, however, that* if:

(i) the super senior creditors (comprising the creditors in respect of our Revolving Credit Facility and the counterparties to certain of our super priority hedging arrangements and other holders of additional super

priority indebtedness) have not been fully repaid in cash within six months of the end of the consultation period;

(ii) the Security Agent has not commenced any enforcement action within three months of the end of the consultation period; or

(iii) the Company or certain of its subsidiaries becomes subject to insolvency or similar proceedings and the Security Agent has not commenced any enforcement action at that time,

then the instructions given by the Majority Super Senior Creditors will prevail. To the extent that we incur further indebtedness that is secured by the Collateral on a *pari passu* basis with the Notes, the voting interest of the holders of the Notes in the Majority Senior Secured Creditors will be diluted to an extent commensurate with the amount of indebtedness we incur.

As these other creditors and counterparties may have interests that are different from the interests of holders of the Notes and may elect to pursue their remedies in respect of the Collateral at a time when it would be disadvantageous for the holders of the Notes to do so, these arrangements could result in the enforcement of the Collateral in a manner that results in lower recoveries by holders of the Notes.

Furthermore, other creditors not subject to the Intercreditor Agreement could commence enforcement action against the Company or its subsidiaries during such period, the Company or one or more of its subsidiaries could seek protection under applicable bankruptcy laws, or the value of certain Collateral could otherwise be impaired or reduced in value. In addition, if the Security Agent sells Collateral comprising the shares of any of our subsidiaries as a result of an enforcement action in accordance with the Intercreditor Agreement, claims under the Guarantees provided by such subsidiaries and the liens over such shares and the assets of such subsidiaries securing the Guarantees may be released. See "*Description of the Notes—Security; the Collateral," "Description of Certain Financing Arrangements—The Intercreditor Agreement*".

The holders of the Notes may be limited in their ability to take enforcement action in respect of the Collateral.

The Indenture and the Intercreditor Agreement will provide that, to the extent permitted by applicable law, only the Security Agent has the right to enforce the security documents relating to the Collateral on behalf of the Trustee and the holders of the Notes. As a consequence of such contractual provisions, holders of the Notes will be barred from taking enforcement action in respect of the Collateral securing the Notes, except through the Trustee under the Indenture, who will (subject to the provisions of the Indenture and the Intercreditor Agreement) provide instructions to the Security Agent.

Applicable laws may limit amounts recoverable under the Guarantees and the security interests in the Collateral.

The obligations of the Guarantors and grantors of security interests in the Collateral will be limited to the maximum amount that can be guaranteed or granted by such Guarantor or grantor under the applicable laws of each jurisdiction without rendering the relevant Guarantee or security interest in the Collateral voidable or otherwise ineffective under applicable law.

The enforcement of the Guarantees and the security interests in the Collateral will be limited to the maximum amount that can be guaranteed or secured over such Collateral, as applicable, under the applicable laws of each jurisdiction, to the extent that the granting of such a Guarantee or security interest in the Collateral is not in the grantor's corporate interests, or the burden of such security interest exceeds the benefit to the relevant grantor, or such guarantee or security interest would be in breach of capital maintenance, financial assistance or thin capitalization rules or any other general statutory laws and would cause the directors of such subsidiary grantor, in certain jurisdictions, to contravene their fiduciary duties and incur civil or criminal liability.

French law contains specific provisions for dealing with fraudulent conveyances both within and outside of insolvency proceedings. These are known as the "*action paulienne*" provisions. Under French law, as interpreted by French published case law, an "*action paulienne*" can be exercised by the creditors' representative (*mandataire judiciaire*), the trustee in charge of overseeing the implementation of the safeguard or reorganization plan (*commissaire à l'exécution du plan*) insolvency proceedings of the relevant debtor, or any creditor in or outside insolvency proceedings against a legal act performed by a debtor if it is established that: (i) the debtor performed such act without an obligation to do so; (ii) the creditor or (in the case of a claim lodged by the creditors' representative (*mandataire judiciaire*) or the trustee in charge of overseeing the implementation of the

safeguard or reorganization plan (*commissaire à l'exécution du plan*)) any creditor was prejudiced in its means of recovery as a consequence of the act; and (iii) at the time the legal act was performed, both the debtor and the counterparty to the transaction knew or should have known that one or more of such debtor's creditors (existing or future) would be prejudiced in their means of recovery (where the legal act was entered into for no consideration (*à titre gratuit*), no such knowledge of the counterparty is necessary). If a court found that the issuance of the Notes or the grant of the security interests in the Collateral involved a fraudulent conveyance that did not qualify for any defense under applicable law, then the issuance of the Notes or the granting of the security interests in the Collateral could be declared unenforceable against all the creditors of the debtor (if the claim was lodged by the creditors' representative (*mandataire judiciaire*) or the trustee in charge of overseeing the implementation of the safeguard or reorganization plan (*commissaire à l'exécution du plan*)) or the concerned creditor (if the claim was lodged by such creditor). As a result of such successful challenges, holders of the Notes may not enjoy the benefit of the Notes or the security interests in the Collateral and the value of any consideration that holders of the Notes receive with respect to the Notes or the security interests in the Collateral could also be subject to recovery from the holders of the Notes and, possibly, from subsequent transferees. In addition, under such circumstances, holders of the Notes might be held liable for any damages incurred by prejudiced creditors of the Issuer as a result of the fraudulent conveyance.

Pursuant to Brazilian law, if a Brazilian Guarantor is unable to pay amounts due under the Guarantee, then the Brazilian Guarantor may become subject to bankruptcy or judicial reorganization proceedings in Brazil. The bankruptcy laws of Brazil currently in effect may be significantly different from, and many times less favorable to creditors than, those of certain other jurisdictions. Noteholders may have limited rights at creditors' meetings in the context of a court reorganization proceeding. In a judicial reorganization, the foreign currency amounts will be converted into Brazilian reais for purposes of voting in a creditors' meeting (using the foreign exchange rate of the day before the meeting. In this case, the foreign currency creditors will cast their votes pursuant to the Brazilian reais amounts calculated. The debt itself will remain in the currency set out in the corresponding agreement and, as a rule, such debt will be paid in the foreign currency. The reorganization plan may set forth that payments will be made in local currency, subject to the approval of the relevant creditor. Furthermore, the plan is likely to provide for a debt restructuring (e.g., haircut, grace period, change of interest rate), which means that the amount arising out from the Notes will not be paid pursuant to the terms of the agreement, but in new terms set forth by the plan. If the plan is rejected by the creditors' meeting, the judicial reorganization will be converted into a bankruptcy proceeding and all of our and/or the Guarantors' assets will be sold so the product of the sale can be applied to the payment of creditors, pursuant to an order set forth by Brazilian bankruptcy laws (first, holders of fiduciary liens and other amounts not subject to bankruptcy, followed by labor creditors, secured creditors, tax authorities, unsecured creditors and, lastly, shareholders and related parties). In addition, in the event of bankruptcy, all of the Brazilian Guarantors' debt obligations that are denominated in a foreign currency, including the Notes, will be converted into Brazilian reais at the prevailing exchange rate on the date of declaration of bankruptcy by the court and interest will stop being accrued.

There are circumstances under English insolvency law in which the granting by an English company of security and guarantees can be challenged. The following paragraphs discuss potential grounds for challenge that may apply to guarantees and security interests.

Under English insolvency law, a liquidator or administrator of a company has certain powers to apply to the court to challenge transactions entered into by that company if the company was unable to pay its debts (as defined in the U.K. Insolvency Act 1986) at the time of the transaction or if the company became unable to pay its debts as a result of the transaction. Generally, only an administrator or liquidator of a company may bring a claim challenging a reviewable transaction. For example, transactions that can be challenged include preferences and transactions at an undervalue.

A transaction might be challenged as a transaction at an undervalue if it involved the relevant company making a gift or otherwise entering into a transaction on terms under which it received no consideration, or the company received significantly less value (in money or money's worth) than it gave in return. The court can set aside transactions at an undervalue entered into by the company within a period of two years ending with the onset of insolvency. A court generally will not intervene in circumstances where a company entered into the transaction in good faith for the purpose of carrying on its business and if at the time it did so there were reasonable grounds for believing the transaction would benefit the company. The Issuer cannot assure holders of the Notes that in the event of insolvency the Guarantees by the Guarantors incorporated in England and Wales would not be challenged by a liquidator or administrator or that a court would support our analysis that the guarantees have been entered into in good faith for the purposes described above.

A transaction might be challenged as a preference where, in the event of the relevant company going into insolvent liquidation, the relevant company has done something or suffered something to be done which has the effect of putting a creditor, surety or guarantor in a better position than the creditor, surety or guarantor would have otherwise been in. However, for the court to determine a preference, it must be shown that the English company was influenced by a desire to prefer that party. If a transaction is found to have given a preference to a creditor, surety or guarantor of the company then the court may make such order as it thinks fit for restoring the position to what it would have been if the company had not given that preference (which could include reducing payments under the guarantees or setting aside any security interests or guarantees although there is protection in specific circumstances for a third party that acquires an interest in property or benefits from the transaction and has acted in good faith for value without notice of the relevant circumstances). In any proceedings, it is for the administrator or liquidator to demonstrate that the English company was unable to pay its debts at the relevant time and that there was such desire to prefer the relevant creditor, unless the beneficiary of the transaction was a connected person (other than solely by reason of being an employee of the company), in which case it is presumed that the company intended to put that person in a better position and the connected person must demonstrate that there was, in fact, no such desire, on the part of the company, to prefer them. If the preference is given to a person connected to the company (other than solely by reason of being an employee of the company), the court looks back and sets aside those preferences entered into in the period of two years ending with the date of the onset of the company's insolvency. If the person is not connected to the company, the court can only go back and set aside those preferences entered into in the period of six months ending on the onset of insolvency.

If a court voided any Guarantee, or any payment thereunder, as a result of a transaction at an undervalue or a preference, or held it unenforceable for any other reason, you would cease to have any claim against the applicable Guarantor under its Guarantee. In such circumstances, if we cannot satisfy our obligations under the Notes, we cannot assure you that we can ever repay in full any amount outstanding under the Notes. If we cannot satisfy our obligations under the Notes or any Guarantee is found to be a preference, fraudulent transfer or conveyance or is otherwise set aside, we cannot assure you that we can ever repay in full any amounts outstanding under the Notes.

Under English insolvency law, a liquidator or an administrator of a company, or a person who is a victim of the relevant transaction can apply to the court for an order to set aside a security interest or guarantee granted by that company on the grounds the security interest or guarantee was a transaction defrauding creditors. A transaction will constitute a transaction defrauding creditors if it is a transaction at an undervalue and the court is satisfied the substantial purpose of a party to the transaction was to put assets beyond the reach of actual or potential claimants against it or to prejudice the interest of such persons.

If the court determines that the transaction was a transaction defrauding creditors, then it may make such order as it may deem fit to restore the position to what it was prior to the transaction or protect the victims of the transaction (including reducing payments under the guarantee or setting aside the security interest or guarantees) but there is protection for a third party acting in good faith and for value without notice of the relevant circumstances. Any "victim" of the transaction (with the leave of the court if the company is in liquidation or administration) may apply to court under this provision and not just liquidators or administrators. There is no time limit in the English insolvency legislation within which the company must enter insolvency proceedings and the relevant company does not need to have been unable to pay its debts at the time of the transaction or as a result of it.

Under English insolvency law, if an English company is unable to pay its debts at the time of (or as a result of) granting a floating charge then such floating charge can be avoided on the action of a liquidator or administrator if it was granted in the period of one year ending with the onset of insolvency (as defined in the Insolvency Act). The floating charge, however, will be validated to the extent of the value of the consideration provided for the creation of the charge in the form of money paid to, or goods or services supplied to, or any discharge or reduction of any debt of, the relevant English company at the same time as or after the creation of the floating charge plus interest payable on such amounts. Where the floating charge is granted to a "connected person," the charge can be challenged if given within two years of the onset of insolvency and the prerequisite to challenge that the company is unable to pay its debts does not apply. However, if the floating charge qualifies as a "security financial collateral arrangement" under the Financial Collateral Arrangements (No. 2) Regulations 2003, the floating charge will not be subject to challenge as described in this paragraph.

In the Netherlands, receipt of any payment made by any Dutch Guarantor under a guarantee or security interest may be adversely affected by specific or general defenses available to debtors under Dutch law in respect of the validity, binding effect and enforceability of such guarantee or security interest. Pursuant to Article 2:7 of the

Dutch Civil Code (*Burgerlijk Wetboek*), the validity and enforceability of a guarantee of, or a security interest granted by or in, any Dutch Guarantor may also be successfully contested by such Dutch Guarantor (or its receiver (*curator*) in bankruptcy) on the basis of an ultra vires claim if the objects of that entity were transgressed by the transaction and the other party to the transaction knew or should have known this without independent investigation (*wist of zonder eigen onderzoek moest weten*). In determining whether the objects of a legal entity are transgressed, not only the description of the objects in that legal entity's articles of association is decisive, but all (relevant) circumstances must be taken into account, in particular whether the transaction is in the company's corporate interests (*vennootschappelijk belang*) and to its benefit; and whether the subsistence of the company is jeopardized by the transaction.

The validity and enforceability of the obligations of any Dutch Guarantor under a guarantee or security interest may also be successfully contested by any creditor, or by the subsidiaries' respective receiver (*curator*) in bankruptcy when the subsidiary is in bankruptcy proceedings, if such obligation is prejudicial to the interests of any other creditor and the other requirements for voidable preference under the Dutch Civil Code and Dutch Bankruptcy Act (*Faillissementswet*) are met, the so-called *actio pauliana* provisions. As a result, the value of the guarantee and security interests provided by the Dutch Guarantors may be limited.

Pursuant to Dutch law, payment under a guarantee or a security document governed by Dutch law may be withheld under doctrines of reasonableness and fairness (*redelijkheid en billijkheid*), force majeure (*niet toerekenbare tekortkoming*) and unforeseen circumstances (*onvoorziene omstandigheden*) and other defenses afforded by Dutch law to obligors generally. Other general defenses include claims that a guarantee or security interest should be avoided because it was entered into through undue influence (*misbruik van omstandigheden*), fraud (*bedrog*), duress (*bedreiging*) or error (*dwaling*). Furthermore, under Dutch law, a party to an agreement may under certain circumstances suspend performance of its obligations under such agreement pursuant to the *exceptio non-adimpleti contractus* or otherwise. For more information see "*Limitations on Validity and Enforceability of the Security Interests and Guarantees and Certain Insolvency Law Considerations—The Netherlands*".

Pursuant to Norwegian law a transaction which (i) improperly gives preference to one creditor at the expense of the others, (ii) prevents the debtor's assets from being used to cover the creditor's claims, or (iii) increases the debtor's liabilities in a manner which is detrimental to the creditors, may be voided if the debtor's financial situation was weak or became seriously weakened by the transaction. The transaction may be voided if the other party knew or should have known of the debtor's financial difficulties and the circumstances which rendered the transaction improper. The provision applies to transactions completed within the period starting 10 years prior to the commencement of the insolvency proceeding in respect of the debtor. For more information, see "*Limitations on the Validity and Enforceability of the Security Interests and Guarantees and Certain Insolvency Law Considerations—Norway*".

Additionally, in a U.S. bankruptcy case, any pledge of Collateral in favor of the security agent specified in the relevant Security Document (each, an "Applicable Security Agent") and any other secured party as specified in the relevant Security Document, including pursuant to security documents delivered after the date of the Indenture, may be avoided by the grantor (as debtor-in-possession) or by its trustee in bankruptcy if the transfer is (i) to or for the benefit of a creditor, (ii) for or on account of an antecedent debt owed by the grantor before such transfer was made, (iii) made while the grantor is insolvent, (iv) made on or within 90 days before the date on which a bankruptcy petition is filed (or made within one year, if the creditor is an insider), and (v) enables the creditor to receive more than the creditor would receive if the bankruptcy case were a case under Chapter 7 of the United States Bankruptcy Code (the "Bankruptcy Code") and the transfer had not been made.

Secured parties may be required to pay a cash amount "soulte" in the event they decide to enforce a pledge over the shares of French subsidiaries by judicial or contractual foreclosure of the Collateral consisting of shares rather than by a sale of such collateral in a public auction.

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

Under French law, pledges over assets may generally be enforced at the option of the secured creditors either (i) in connection with a judicial process (x) by way of a sale of the pledged assets in a public auction (the proceeds of the sale being paid to the secured creditors) or (y) by way of judicial foreclosure (*attribution judiciaire*) of the pledged assets, following which the secured creditors become the legal owner of the pledged

assets or (ii) by way of non-judicial private attribution (*pacte commissoire*) of the pledged assets to the secured creditors, following which the secured creditors become the legal owner of the pledged assets.

If the secured creditors choose to enforce by way of foreclosure (whether a judicial foreclosure or contractual foreclosure), the secured liabilities would be deemed extinguished up to the value of the foreclosed assets. Such value is determined either by the court in the context of a judicial foreclosure or by a pre-contractually agreed expert in the context of a contractual foreclosure. If the value of the pledged assets exceeds the amount of the secured debt, the secured creditors may be required to pay the pledgor a cash amount ("*soulte*") equal to the difference between the value of the pledged assets and the amount of the secured debt. This is true regardless of the actual amount of proceeds ultimately received by the secured creditors from a subsequent on-sale of the pledged assets.

Consequently, in the event that the lenders under the Revolving Credit Facility Agreement and the holders of the Notes are entitled to, and decide to, enforce the Collateral that consists of a pledge over shares of a French entity, through judicial or contractual foreclosure, and the value of such shares exceeds the amount of the secured debt, the lenders under the Revolving Credit Facility Agreement and the holders of the Notes may be required to pay to the relevant pledgors a cash amount ("*soulte*") equal to the amount by which the value of such shares exceeds the amount of the secured debt.

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

An enforcement of the pledged securities could be undertaken through a public auction in accordance with applicable law. If enforcement is implemented through a public auction procedure, it is possible that the sale price received in any such auction might not reflect the value of the securities, since the latter will not be sold pursuant to a competitive bid process and/or a private sale organized by an investment bank and controlled by the vendor on the basis of a value determined pursuant to the methods usually used for the purpose of the acquisition of companies or groups of companies. See "*Limitations on Validity and Enforceability of the Security Interests and Guarantees and Certain Insolvency Law Considerations—France—Limitations on enforcement of security interests and cash amount ("soulte")*".

We will depend on payments from our subsidiaries to make payments on the Notes.

The Issuer conducts certain operations on its own in France and holds shares in its direct subsidiaries. The Issuer will be dependent on the cash flows from the Group's subsidiaries available to it, be it by dividend, interest payments on intercompany loans or other distributions, to meet its obligations, including under the Notes. The amounts of such payments, dividends and other distributions available to the Issuer will depend on the profitability and cash flows of its subsidiaries as well as the ability of those subsidiaries to declare dividends under applicable law. The subsidiaries of the Issuer, however, may not be able to, or may not be permitted under applicable law to, make distributions or make interest payments on loans from, or otherwise advance upstream loans to, the Issuer to enable payments in respect of its debt, including the Notes. While the Indenture and the Revolving Credit Facility Agreement limit the ability of our subsidiaries to incur contractual restrictions on their ability to pay dividends or make other intercompany payments to us, these limitations are subject to certain significant qualifications and exceptions. We cannot assure you that arrangements with our subsidiaries, the funding permitted by the agreements governing existing and future indebtedness of our subsidiaries, and our results of operations and cash flow generally will provide us with sufficient dividends, distributions or loans to fund payments on the Notes. In the event that we do not receive distributions or other payments from our subsidiaries, we may be unable to make required principal and interest payments on the Notes.

We may incur other indebtedness secured on a pari passu basis with the Notes. In addition, creditors under the Revolving Credit Facility and certain hedging obligations will be entitled to be repaid with the proceeds of the Collateral sold in any enforcement sale in priority to the Notes.

The Notes will be secured by the Collateral. See "*Description of the Notes—Security*". The Indenture and the Revolving Credit Facility will also permit the Collateral to be pledged to secure additional indebtedness on a *pari passu* basis with the Notes in accordance with the terms thereof and the Intercreditor Agreement. Furthermore, pursuant to the Intercreditor Agreement, the liabilities under the Revolving Credit Facility and certain hedging obligations will have priority over any amounts received from the sale of the Collateral pursuant to an enforcement action taken with respect to such Collateral. As a result, in the event of an enforcement of the

Collateral, you may not be able to recover on such Collateral if the then-outstanding claims under the Revolving Credit Facility and certain of our hedging obligations are greater than the proceeds realized from such enforcement. As a result, holders of the Notes may not be able to recover the full amount from an enforcement action.

The proceeds from the enforcement of the Collateral may not be sufficient to satisfy the obligations under the Notes.

The Notes will be secured by the Collateral. The Collateral will also secure on a *pari passu* basis our obligations under the Revolving Credit Facility and certain hedging obligations. The Collateral may also secure additional debt to the extent permitted by the terms of the Indenture, the Revolving Credit Facility and the Intercreditor Agreement. The rights of holders of the Notes to the Collateral may be diluted by any increase in the *pari passu* debt secured by the Collateral.

Not all of our assets will secure, directly or indirectly, the Notes. The value of the Collateral and the amount to be received upon an enforcement of such Collateral will depend upon many factors, including, among others, the ability to sell the Collateral in an orderly sale, whether or not the business is sold as a going concern, the condition of the economies in the jurisdictions where we and our Guarantors operate and where the Collateral is located and the availability of buyers. The book value of the Collateral should not be relied on as a measure of realizable value for such assets. All or a portion of the Collateral may be illiquid and may have no readily ascertainable market value. Likewise, we cannot assure you that there will be a market for the sale of the Collateral, or, if such a market exists, that there will not be a substantial delay in its liquidation. In addition, the pledges, shares and ownership interests of an entity may be of no value if that entity is subject to an insolvency or bankruptcy proceeding because all of the obligations of the entity must first be satisfied, leaving little or no remaining assets in the entity.

It may be difficult to realize the value of the Collateral.

The Collateral will be subject to exceptions, defects, encumbrances, liens, loss of legal perfection and other imperfections permitted under the Indenture, the Revolving Credit Facility Agreement and the Intercreditor Agreement and accepted by other creditors that have the benefit of *pari passu* or higher-ranking security interests in the Collateral from time to time, whether on or after the date the Notes are first issued. The existence of any such exceptions, defects, encumbrances, liens, loss of legal perfection and other imperfections could adversely affect the value of the Collateral, as well as the ability of the Security Agent to realize or foreclose on such Collateral. Furthermore, the security interests can be affected by a variety of factors, including, among others, the timely satisfaction of perfection requirements, statutory liens or characterization under the laws of the jurisdictions where the Collateral is located. The security interests will be subject to practical problems generally associated with the realization of security interests in collateral. For example, the Security Agent may need to obtain the consent of a third party to enforce a security interest. We cannot assure you that the Security Agent will be able to obtain any such consents. We also cannot assure you that the consents of any third parties will be given when required to facilitate a foreclosure on such assets. Accordingly, the Security Agent may not have the ability to foreclose upon those assets, and the value of the Collateral may significantly decrease.

Furthermore, due consideration should be given by investors to the circumstance that enforcement procedures and timing for obtaining judicial decisions in the jurisdictions where the Collateral is located may be materially more complex and time-consuming than in equivalent situations in jurisdictions with which investors may be familiar.

There are circumstances other than repayment or discharge of the Notes under which the applicable Collateral will be released automatically without your consent or the consent of the Trustee.

Under various circumstances, the Collateral will be released automatically, including (among others):

- in connection with any sale or other disposition of Collateral to a person that is not the Issuer or a Restricted Subsidiary;
- the release of Collateral owned by or in respect of a Restricted Subsidiary that is released from its Guarantee pursuant to the terms of the Indenture;
- the release of Collateral owned by a Guarantor upon its designation by the Issuer as an Unrestricted Subsidiary; and

- pursuant to a Permitted Reorganization (as defined under "*Description of the Notes—Certain Definitions*") or in the case of a merger, consolidation or other transfer of assets that is otherwise permitted by the Indenture.

See "*Description of the Notes—Security—Release of the Security*".

Unless consented to by the holders of the Notes (and subject to certain exceptions), the Intercreditor Agreement provides that the Security Agent shall not, in an enforcement scenario, exercise its rights to release the security interests in the Collateral unless, among other things, the relevant sale or disposal is made:

- for consideration of which all or substantially all is in the form of cash; and
- in certain cases, pursuant to a fairness opinion obtained from an internationally recognized investment bank selected by the Security Agent (unless such sale or disposal is made pursuant to a public auction or process supervised by a court of law which makes a determination as to value).

The Intercreditor Agreement provides that the Collateral may, in certain circumstances, be released and retaken in connection with the refinancing of certain indebtedness, including the Notes. Under certain circumstances, other creditors, insolvency administrators or representatives or courts could challenge the validity and enforceability of the grant of the Collateral. Any such challenge, if successful, could potentially limit your recovery in respect of the Collateral and thus reduce your recovery under the Notes. See "*Description of Certain Financing Arrangements—The Intercreditor Agreement*" and "*Description of the Notes*".

Rights in the Collateral may be adversely affected by the failure to perfect security interests in the Collateral, whether now owned or acquired in the future.

Under applicable law, a security interest in certain assets can only be properly perfected, and its priority retained, through certain actions undertaken by the secured party and the grantor of the security. The liens on the Collateral securing the Notes may not be perfected with respect to the claims of the Notes if we, or the Security Agent, fail or are unable to take the actions required to perfect any of these liens.

Applicable law requires that a security interest in certain tangible and intangible assets can only be properly perfected and its priority retained through certain actions undertaken by us. Applicable law also requires that certain property and rights acquired after the grant of a general security interest can only be perfected at the time such property and rights are acquired and identified. However, our obligation to perfect the security interest for the benefit of the holders of the Notes in specified Collateral is limited. For example, the Issuer and the Guarantors will not be required to take certain perfection actions with respect to the Collateral, including perfecting any liens by control in deposit accounts and securities accounts, by delivery of future intercompany loan agreements to the Security Agent and by making filings with the United States Patent and Trademark Office or the United States Copyright Office relating to future intellectual property of any U.S. Guarantor. To the extent a security interest in certain Collateral is not properly perfected, such security interest might become invalid, lose its priority ranking or be avoidable in bankruptcy, which could impact the value of the Collateral. The Trustee and the Security Agent will not be under any obligation or responsibility to take any steps or action to perfect, or ensure the perfection of, any such security interest. Further, neither the Trustee nor the Security Agent will be responsible to monitor, and there can be no assurance that the Issuer will inform the Trustee or the Security Agent of, the future acquisition of property and rights that constitute Collateral, or that the necessary action will be taken to properly perfect the security interest in such after-acquired Collateral. Any failure to monitor may result in the loss of the security interest in such Collateral or the priority of the security interest against third parties.

In France, pledges over the shares of French companies in the form of a stock company (*société par actions*) that are governed by French law consist of pledges over a securities account (*nantissement de compte de titres*) in which the relevant shares are registered. The securities account pledges will be validly established after execution of a statement of pledge (*déclaration de nantissement de compte titres financiers*) by each security provider in favor of the Security Agent. Each statement of pledge will have to be registered in the relevant shareholder's account (*compte d'actionnaire*) and shares registry (*registre de mouvement de titres*) of each relevant French company which issued the securities that are pledged. In France, no lien searches are available for security interests which are not publicly registered, with the result that no assurance can be given on the priority of a security interest if it is not publicly registered. To the extent that the security interests are not perfected, the Security Agent's rights will be equal to the rights of general unsecured creditors in the event of a liquidation, foreclosure, bankruptcy, reorganization or similar proceeding.

In the Netherlands, registered shares (*aandelen op naam*) in the share capital of a Dutch company can be pledged unless the articles of association of the relevant company provide otherwise. The pledge on registered shares is created by the execution of a notarial deed. However, the pledgee can only exercise its right of pledge on registered shares after acknowledgement by the Dutch company of the pledge or after a certified copy or extract from the notarial deed has been served by official writ on the Dutch company. The company concerned is legally obliged to register the pledge of the shares in the shareholders' register. In the Netherlands, no lien searches are available for rights of pledge, with the result that no assurance can be given on the priority of a rights of pledge.

Under Dutch law, a pledge on a claim (*vordering op naam*) such as certain receivables may be created in two different ways: a disclosed pledge (*openbaar pand*) or an undisclosed pledge (*stil pand*). A disclosed pledge is created by: (i) a written deed of pledge and (ii) notification of the execution of such deed of pledge to the debtor of the pledged claim by either the pledgor or the pledgee. An undisclosed pledge can only be created by: (i) the execution of a deed of pledge in the form of an authentic deed, generally a notarial deed, or (ii) the recording of a (non-authentic) deed of pledge with the competent tax authority (*Belastingdienst*). An undisclosed pledge need not be communicated to the debtor; the pledgee is authorized to notify the debtor about the pledge if the pledgor is in default or if the pledgee has good reason to believe that such default will occur. In addition, the pledgor and pledgee may agree on other circumstances or events which will permit notification to the debtor. After notifying the debtor, the pledgee is authorized to demand payment of the claim which is encumbered by the pledge, provided that the claim is due and payable, and the pledgor may only demand payment with the approval of the pledgee or with authorization of the competent court. Once the pledgor's debtor has been notified of the execution of the deed of pledge, the debtor is precluded from paying the pledgor as its creditor. For more information see "*Limitations on Validity and Enforceability of the Security Interests and Guarantees and Certain Insolvency Law Considerations—The Netherlands*".

The security over the Collateral will not be granted directly to the holders of the Notes.

The Security Documents are granted to the benefit of *inter alios* the Trustee. To the extent that the security interests in the Collateral created for the benefit of the Trustee are successfully challenged by other parties, holders of the Notes will not be entitled to receive on this basis any proceeds from an enforcement of the security interests in the Collateral. In addition, the holders of the Notes will bear the risks associated with the possible insolvency or bankruptcy of the Trustee.

Under French law, security interests cannot be held on behalf of third parties who do not hold the secured claim, unless they act as fiduciary (*fiduciaire*) under Article 2011 of the French Civil Code or as security agent (*agent des sûretés*) under Articles 2488-6 to 2488-12 of the French Civil Code. The beneficial holders of interests in the Notes from time to time will not be parties to the Security Documents. In order to permit the beneficial holders of the Notes to benefit from a secured claim, the Intercreditor Agreement provides for the creation of "parallel debt" obligations in favor of the Security Agent (the "Parallel Debt") mirroring the obligations of the Issuer and the Guarantors (as principal obligors) towards the holders of the Notes under or in connection with the Indenture (the "Principal Obligations"). Any payment in respect of the Principal Obligations will discharge the corresponding Parallel Debt and any payment in respect of the Parallel Debt will discharge the corresponding Principal Obligations. The Security Agent will have, including pursuant to the Parallel Debt, a claim against the Issuer and the Guarantors for the full principal amount of the Notes. The holders of the Notes will not be entitled to enforce such security interest except through the Trustee as trustee for the Notes.

None of the Parallel Debt mechanism constructs as set forth in the Indenture and/or the Intercreditor Agreement have been generally recognized by French courts. Although the French Supreme Court (*Cour de cassation*) has recognized, in a decision on Parallel Debt mechanisms (Cass. com. 13 September 2011 n°10-25.533 *Belvédère*) relating to bond documentation governed by New York law, the enforceability in France of certain rights (especially the filing of claims in safeguard proceedings) of a security agent benefiting from a Parallel Debt, there can be no assurance that such a structure will be effective in all cases before French courts. Indeed, such a decision should not be considered as a general recognition of the enforceability in France of the rights of a security agent benefiting from a Parallel Debt claim. There is no certainty that the Parallel Debt construction will eliminate the risk of unenforceability under French law.

To the extent that the security interests in the Collateral created to the benefit of the Security Agent as Parallel Debt Creditor under the Parallel Debt construction are successfully challenged by other parties, holders of the Notes will not be entitled to rely on the Parallel Debt construction to receive on the basis of such construction any proceeds from an enforcement of the security interests in the Collateral. In addition, the holders of the Notes will bear the risks associated with the possible insolvency or bankruptcy of the Security Agent as the beneficiary of the Parallel Debt.

The concept of "*trust*" has been recognized by the French Tax Code and the French Supreme Court (*Cour de cassation*), which has held, in the same published decision referred to above (Cass. com. 13 September 2011 n°10-25.533 *Belvédère*), that a trustee validly appointed under a trust governed by the laws of the State of New York could validly be regarded as a creditor in safeguard proceedings commenced in France. However, while substantial comfort may be derived from the above, France has not ratified the Hague Convention of July 1, 1985 on the law applicable to trusts and on their recognition, so that the concept of "trust" has not been generally recognized under French law, and the precise nature, effect and enforceability of the duties, rights and powers of a security agent as agent or trustee for the holders of the Notes in respect of security interests such as pledges are unclear under French law.

It is generally assumed that a Dutch law right of mortgage (*hypotheekrecht*) or right of pledge (*pandrecht*) cannot be validly created in favor of a person who is not the creditor of the secured claims. As a result, under Dutch law, the pledgee of a Dutch law security interest and the creditor of the claim secured by such security interest are required to be the same person. Such security interest cannot be held on behalf of third parties who do not hold the secured claim. The beneficial holders of interests in the Notes from time to time will not be parties to the Security Documents. In order to permit the beneficial holders of the Notes to benefit from a secured claim, the Parallel Debt is created in favor of the Security Agent, as explained above. There is currently no statutory law or explicit case law by the Dutch Supreme Court available on the use of such parallel debt in the Netherlands. In the general view of leading authors in Dutch legal literature, a parallel debt creates a claim of the mortgagee or pledgee (in the underlying scenario, the Security Agent) which can be validly secured by a right of mortgage or right of pledge.

The existence and validity of the Parallel Debt are governed by the laws governing the document in which such Parallel Debt is intended to be created. It is assumed that the obligations under or in connection with the Notes will be considered as Principal Obligations, and as such will lead to an increase of the Parallel Debt as provided in the Intercreditor Agreement. If a new debt would qualify as a novation *(schuldvernieuwing*), whereby the existing debt is replaced by a new debt, the security rights created under the Dutch law security documents would normally cease to exist. Additionally, if an increase of the (existing) debt is substantial and such increase is not envisaged by the secured obligations or a parallel debt construction, there is a risk that such increase is not secured by (existing) Dutch law security rights. The question whether the parties to these Dutch law security documents envisaged that the increase of debt falls within the scope of the secured obligations as defined in such Dutch law security documents is a matter of interpretation, but cannot be answered exclusively on the basis of a grammatical interpretation of the provisions of such Dutch law security documents. For the answer to that question, the meaning that the parties could reasonably give to the provisions under the relevant circumstances and what they could reasonably expect from each other in relation thereto is also relevant, as well as any other facts and circumstances that could affect such interpretation. Typically, the definition of secured obligations in Dutch law security documents makes a reference to the parallel debt including any increase, amendments and changes thereto. Whether or not any new debt or obligations fall under the scope of such secured obligations is therefore subject to the laws governing such parallel debt. For more information see "*Limitations on Validity and Enforceability of the Security Interests and Guarantees and Certain Insolvency Law Considerations—The Netherlands*".

Dutch law does not have a concept or doctrine identical to the concept of a trust. However, the Netherlands has ratified the Hague Convention on the Law Applicable to Trusts and on their Recognition 1985 (the "Hague Trust Convention"), and as such, any trust validly created under its governing law will be recognized by the Dutch courts, according to, and subject to the limitations of, the act on the law applicable to trusts (*Wet conflictenrecht trusts*) (the "Trust Act"), which implements said convention. However, the agency concept is recognized in the Netherlands only as a contractual arrangement. In theory, however, Dutch law will recognize certain trust relations created under other laws; the extent of this is unclear and parties do not tend to rely on a trust. Dutch courts will, however, not be bound to recognize a trust of which the significant elements are more closely connected with states that do not provide for the institution of such trust.

Enforcing your rights as a holder of the Notes or under the Guarantees or security interests in the Collateral across multiple jurisdictions may be difficult.

The Issuer is organized under the laws of France and the Guarantors are incorporated or organized (as applicable) under the laws of England and Wales, the United States (in the states of Delaware and Oklahoma), the Netherlands, Norway and Brazil. In the event of bankruptcy, insolvency or a similar event, proceedings could be initiated in any of these jurisdictions and in the jurisdiction of incorporation or organization of a future Guarantor. Your rights under the Notes, the Guarantees and the Collateral will thus be subject to the laws of a

number of jurisdictions, and it may be difficult to effectively enforce such rights in multiple bankruptcy, insolvency and other similar proceedings. Moreover, such multijurisdictional proceedings are typically complex and costly for creditors and often result in substantial uncertainty and delay in the enforcement of creditors' rights.

The bankruptcy, insolvency, administration and other laws of the Issuer's jurisdiction of organization and the jurisdiction of organization or incorporation of each of the Guarantors may be materially different from, or conflict with, each other and with the laws of the United States, including in the areas of creditors' rights, priority of creditors, the ability to obtain post-petition interest and the duration of the insolvency proceeding. The application of these various laws in multiple jurisdictions could trigger disputes over which jurisdictions' law should apply and could adversely affect your ability to enforce the Collateral securing the Notes and to realize any recovery under the Notes and the Guarantees. See "*Limitations on Validity and Enforceability of the Guarantees and the Security Interests and Certain Insolvency Law Considerations*".

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

Furthermore, the Collateral consists of pledges over shares and other capital stock of certain of the Guarantors and the shares and other capital stock owned by the Group in certain other subsidiaries. In connection with the enforcement of share pledges over shares of entities with outstanding debt obligations, any sale of such entities is likely to involve a release of some or all of the debt of such entity, which could result in a taxable capital gain to such entities. The Indenture does not prohibit the Guarantors from incurring additional debt claims in the future. Consequently, the enforcement of the share pledges over the shares of the applicable Guarantors may result in the release of the debt obligations of the relevant Guarantor. Such release is permitted by the Intercreditor Agreement and could result in a taxable capital gain. This taxable capital gain is likely to reduce the proceeds of any recovery from the enforcement of such share pledge.

The Corporate Insolvency and Governance Act 2020 affects the ability of creditors to commence insolvency proceedings.

The UK government passed the Corporate Insolvency and Governance Act 2020 ("CIGA") in the UK Parliament in June 2020. The CIGA has introduced significant new corporate restructuring tools to the UK insolvency regime. Some of the measures are temporary in nature and have been introduced specifically to support businesses experiencing financial difficulties as a result of the economic fallout from the Covid-19 pandemic. The temporary measures include a suspension of the personal liability of directors for wrongful trading with retrospective effect from March 1, 2020, now extended until April 30 2021 and a prohibition on the presentation of winding up petitions on or after April, 27 2020 based on a statutory demand served during March 1, 2020 now extended to March 31, 2021 or based on the company's inability to pay its debts (other than where the Covid-19 pandemic has not had a financial effect on the company or the relevant facts giving rise to such statutory demand or winding-up petition would have arisen even if the Covid-19 pandemic had not had a financial effect on the company). Other measures would be permanent rather than temporary in nature and would have a significant impact on the way creditors and others interact with businesses in financial difficulty. The CIGA has introduced permanent reforms in two key areas: a moratorium and the introduction of a new pre-insolvency rescue and re-organization procedure, or restructuring plan.

The free-standing moratorium is available to eligible companies, for a limited period of an initial 20 business days subject to permitted extensions. In order to enable the company to reach an agreement with its creditors and thereby facilitate company restructurings, the moratorium would give the company a payment holiday for specified debts, as well as restrict creditors from taking certain enforcement measures including issuing legal proceedings and enforcing security without the leave of the court (for example, no floating charge holder would be able to give notice to crystallize a floating charge), whilst imposing controls on the company entering into certain transactions. The moratorium does not provide a payment holiday for debts arising under certain financial services contracts (including, for example, loan and other credit agreements) and includes a carve-out for enforcement over security created under a financial collateral arrangement or the taking of any step to enforce a collateral security charge which is permitted.

The new restructuring plan offers eligible companies an alternative to the existing scheme of arrangement. Similar to a scheme of arrangement the procedure would be court approved and require a creditor meeting(s) and vote(s) and will, once effective, be binding on all affected parties. However unlike a scheme of arrangement, where the restructuring plan is not approved by the required majority (75% by value of the creditors, or class of creditors, present) at the relevant meeting, the court nevertheless has the discretion to sanction the plan, and thereby "cram-down" dissenting classes of creditors if: (a) the court is satisfied that if the restructuring plan were sanctioned, no creditor in the dissenting class would be worse off than they would be in what the court considers to be the most likely alternative scenario for the company if the plan were not sanctioned; and (b) the plan has been agreed by a number representing 75% by value of a class of creditors who would receive a payment, or have a genuine economic interest in the company, in the event of the most likely alternative scenario referred to in (a) above.

The new moratorium and cross-class cram-down restructuring procedures in particular have a significant effect on the ability of creditors and others to commence insolvency proceedings and on the enforcement of rights and legal proceedings, including, among other things, rights under a floating charge.

We may not have the ability to raise the funds necessary to finance a change of control offer.

Upon the occurrence of certain events constituting a "change of control," we will be required to offer to repurchase all outstanding Notes at a purchase price in cash equal to 101% of the principal amount thereof on the date of purchase, plus accrued and unpaid interest, if any, to the date of purchase. If a change of control were to occur, we cannot assure you that we would have sufficient funds available at such time to pay the purchase price of the outstanding Notes or that the restrictions in the Revolving Credit Facility Agreement, the Intercreditor Agreement or our other then-existing contractual obligations would allow us to make such required repurchases. A change of control may result in an event of default under, acceleration of or the ability of lenders to cancel their commitments under, as applicable, our Revolving Credit Facility, the Notes and any other indebtedness that we have incurred or may incur in the future. The repurchase of the Notes pursuant to such an offer could cause a default under the Revolving Credit Facility and any other indebtedness that we have incurred or may incur in the future, even if the change of control itself does not. The ability of the Issuer to receive cash from its subsidiaries to allow it to pay cash to the holders of the Notes following the occurrence of a change of control may be limited by our then-existing financial resources. Sufficient funds may not be available when necessary to make any required repurchases. If an event constituting a change of control occurs at a time when our subsidiaries are prohibited under the terms of their indebtedness from providing funds to the Issuer for the purpose of repurchasing the Notes, our subsidiaries may seek the consent of the lenders under such indebtedness for the purchase of the Notes or may attempt to refinance the borrowings that contain such prohibition. If such a consent to repay such borrowings is not obtained, we will remain prohibited from repurchasing any Notes. In addition, we expect that we would require third-party financing to make an offer to repurchase the Notes upon a change of control. We cannot assure you that we would be able to obtain such financing. Our failure to offer to purchase the Notes would constitute a default under the Indenture, which would, in turn, constitute a default under the Revolving Credit Facility and certain other indebtedness. See "*Description of the Notes—Purchase of Notes upon a Change of Control*".

The change of control provisions contained in the Indenture may not necessarily afford you protection in the event of certain important corporate events, including a reorganization, restructuring or other similar refinancings involving us that may adversely affect you, because such corporate events may not involve a shift in voting power or beneficial ownership or, even if they do, may not constitute a "change of control" as defined in the Indenture. Except as described under "*Description of the Notes—Change of Control*," the Indenture will not contain provisions that would require the Issuer to offer to repurchase or redeem the Notes in the event of a reorganization, restructuring, recapitalization or similar refinancing.

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

The interests of our shareholders may conflict with yours as a creditor.

We are a publicly traded company on Euronext Paris. The interests of our shareholders may conflict with your interests as holders of the Notes. Our shareholders may have an interest in pursuing divestitures or other transactions that in their judgment could enhance their investment, though such transactions may not enhance the value of the Notes or your position as a creditor.

The insolvency laws of applicable jurisdictions may not be as favorable to you as the insolvency laws of the jurisdiction with which you are familiar.

Our obligations under the Notes will be guaranteed by the Guarantors and secured by security interests in the Collateral. The Issuer is organized under the laws of France and the Guarantors are organized under the laws of England and Wales, the United States (in the states of Delaware and Oklahoma), the Netherlands, Norway and Brazil. In addition, the Collateral includes, among other assets, shares in certain of our subsidiaries organized in France, England and Wales, the United States (in the states of Delaware and Oklahoma), the Netherlands and Norway. The insolvency, administration and other laws of foreign jurisdictions may not be as favorable to your interests as the laws of the United States or other jurisdictions with which you are familiar.

Applicable fraudulent transfer and conveyance and equitable principles, financial assistance limitations, insolvency laws and limitations on the enforceability of judgments obtained in courts in such jurisdiction could limit the enforceability of the Notes against the Issuer, the enforceability of a Guarantee against a Guarantor and the enforceability of the security interests in the Collateral. The court may also in certain circumstances avoid the security interest or the Guarantee where the company is close to or near insolvency.

In France, among other limitations, the granting of new security interests in the Collateral in connection with the issuance of the Notes may fall under the legal framework of clawback periods where certain arrangements or dispositions that are made during a specified period (the "suspect period") preceding the opening order of reorganization proceedings or liquidation proceedings may be challenged by the creditor's representative, the judicial administrator, the trustee in charge of overseeing the implementation of the safeguard or reorganization plan or the public prosecutor in bankruptcy and certain creditors under the applicable rules of avoidance. Indeed, while opening reorganization or judicial liquidation proceedings, the French court will set the date on which the debtor is deemed to have become insolvent (*date de cessation des paiements*). This date (i) can be fixed at any time up to 18 months prior to the judgement opening the proceedings and, except for fraud, (ii) may not be fixed at an earlier date than the date of the final court decision that approved a restructuring agreement (*homologation*) in the context of conciliation proceedings. The period between the date of insolvency and the commencement of insolvency proceedings is known as the clawback period. The Indenture also permits the security interests in the Collateral to be released and retaken in certain circumstances. At each time, if the security interest were granted or recreated during the clawback period applicable in such jurisdiction, it may be declared automatically void or at risk of being voided by the court. For more information, see "*Limitations on Validity and Enforceability of the Security Interests and Guarantees and Certain Insolvency Law Considerations*". In France, insolvency legislation tends to favor the continuation of a business and protection of employment over the payment of creditors. In the context of insolvency proceedings affecting creditors, including court-assisted proceedings (*mandat ad hoc* proceedings or conciliation proceedings (*procédure de conciliation*)), and court-controlled proceedings (safeguard proceedings, accelerated safeguard (*sauvegarde accélérée*), accelerated financial safeguard (*sauvegarde financière accélérée*) and reorganization or liquidation proceedings (*redressement ou liquidation judiciaire*)), the ability of holders of the Notes to enforce their rights under the Notes could be limited or suspended.

One of the Guarantors is incorporated under the laws of England and Wales. Accordingly, insolvency proceedings with respect to that entities would be likely to proceed under, and be governed by, English insolvency law. In addition, English insolvency law may not be as favorable to investors as the laws of the United States or other jurisdictions with which investors are familiar. Although laws differ among jurisdictions, in general, applicable insolvency laws in such jurisdictions and limitations on the enforceability of judgments obtained in New York courts would limit the enforceability of judgments against the Issuer and the Guarantors. The following discussion of insolvency law, although an overview, describes generally applicable terms and principles, which are defined under the relevant jurisdictions' insolvency statutes.

In an insolvency proceeding, it is possible that creditors of the Guarantors or appointed insolvency administrator may challenge the Guarantees, and intercompany obligations generally, as fraudulent transfers or conveyances or on other grounds. If so, such laws may permit a court, if it makes certain findings, to:

- avoid or invalidate all or a portion of a Guarantor's obligations under its Guarantee;

- direct that holders of the Notes return any amounts paid under a Guarantee to the relevant Guarantor or
- to a fund for the benefit of the Guarantor's creditors; and
- take other action that is detrimental to holders of the Notes.

We cannot assure you which standard a court would apply in determining whether a Guarantor was "insolvent" as of the date the Guarantees were issued or that, regardless of the method of valuation, a court would not determine that a Guarantor was insolvent on that date, or that a court would not determine, regardless of whether or not a Guarantor was insolvent on the date its Guarantee was issued, that payments to holders of the Notes constituted fraudulent transfers on other grounds.

Furthermore, under English insolvency law, some of our subsidiaries' debts may be entitled to priority, including amounts owed in respect of various U.K. social security contributions, amounts owed in respect of occupational pension schemes, certain amounts owed to employees and liquidation expenses. The U.K. government confirmed its intention in the Finance Bill 2020 that from December 1, 2020 claims by HMRC in respect of certain taxes including VAT, PAYE income tax (including student loan repayments), employee NI contributions and Construction Industry Scheme deductions (but excluding corporation tax and employer NI contributions) which are held by the company on behalf of employees and customers will also be entitled to priority.

For more information regarding insolvency laws and enforceability issues as they relate to the Guarantees and security interests in the Collateral, see "*Limitations on Validity and Enforceability of the Security Interests and Guarantees and Certain Insolvency Law Considerations*".

In the event that any one or more of the Issuer, the Guarantors, or any other of the Issuer's subsidiaries, or any other grantor of security interests in the Collateral, experiences financial difficulty, it is not possible to predict with certainty in which jurisdiction or jurisdictions insolvency or similar proceedings would be commenced, or the outcome of such proceedings. In the event of bankruptcy, insolvency, administration or similar event, proceedings could be initiated in any of these jurisdictions. Rights under the Notes, the Guarantees and the Collateral are likely to be subject to insolvency and administrative laws of more than one jurisdiction and there can be no assurance that the holders of the Notes will be able to effectively enforce their rights in complex proceedings. The application of these laws may also conflict with each other, including in the areas of rights of secured and other creditors, the ability to void preferential transfer, priority of governmental and other creditors, the ability to obtain post-petition interest and the duration of the proceeding. The application of these laws could call into question whether any particular jurisdiction's law should apply, adversely affect your rights under the Guarantees and limit any amounts that you may realize from the Collateral.

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

We cannot assure you as to:

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

Future trading prices for the Notes will depend on many factors, including, among other things, prevailing interest rates, our operating results and the market for similar securities. Historically, the market for non-investment-grade securities has been subject to disruptions that have caused substantial volatility in the prices of securities similar to the Notes. The liquidity of a trading market for the Notes may be adversely affected by a general decline in the market for similar securities and is subject to disruptions that may cause volatility in prices. The trading market for the Notes may attract different investors and this may affect the extent to which the Notes may trade. It is possible that the market for the Notes will be subject to disruptions. Any such disruption may have a negative effect on you, as a holder of the Notes, regardless of our prospects and financial performance. As a result, there is no assurance that there will be an active trading market for the Notes. If no active trading market develops, you may not be able to resell your holding of the Notes at a fair value, if at all. In addition, the Indenture will allow us to issue additional notes in the future, which could adversely impact the liquidity of the Notes.

You may face foreign exchange risks by investing in the Notes, which risk may be increased if the euro no longer exists or if the Notes are otherwise redenominated as a result of member states leaving the Eurozone.

The Euro Notes will be denominated and payable in euros and the Dollar Notes will be denominated and payable in US dollars. If investors measure their investment returns by reference to a currency other than the euro or the US dollar, as applicable, an investment in the Notes will entail foreign exchange-related risks due to, among other factors, possible significant changes in the value of the euro or US dollar relative to the currency by reference to which such investors measure the return on their investments. These changes may be due to economic, political and other factors over which we have no control. Depreciation of the euro or US dollar, as applicable, against the currency by reference to which such investors measure the return on their investments could cause a decrease in the effective yield of the Notes below their stated coupon rates and could result in a loss to investors when the return on the Notes is translated into the currency by reference to which such investors measure the return on their investments.

In addition, despite the measures taken by countries in the Eurozone to alleviate credit risk, concerns persist regarding the debt burden of certain Eurozone countries and their ability to meet future financial obligations, the overall stability of the euro and the suitability of the euro as a single currency given the diverse economic and political circumstances in individual Eurozone member states. These and other concerns could lead to the reintroduction of individual currencies in one or more member states, or, in more extreme circumstances, the possible dissolution of the euro entirely. Should the euro dissolve entirely, the legal and contractual consequences for holders of euro-denominated obligations would be determined by laws in effect at such time. We cannot assure you that the official exchange rate at which the Notes may be redenominated would accurately reflect their value in euro. These potential developments, or market perceptions concerning these developments and related issues, could adversely affect the value of the Notes.

Investments in the Euro Notes by U.S. investors may also have important tax consequences as a result of foreign exchange gains or losses, if any. See "*Taxation—United States Federal Income Tax Considerations*".

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

The Issuer and certain of the Guarantors and their respective subsidiaries are organized outside the United States and a majority of the members of our Board of Directors and all of our executive officers are nonresidents of the United States. Although the Issuer and the Guarantors will submit to the jurisdiction of certain New York courts in connection with any action under U.S. securities laws, it may not be possible for holders to effect service of process within the United States upon the Issuer's or such Guarantors' directors and officers or to enforce against these persons, or the Issuer or such Guarantors, judgments of United States courts predicated upon civil liability provisions of the federal securities laws of the United States. Moreover, in light of recent decisions of the U.S. Supreme Court, actions of the Issuer or the Guarantors may not be subject to the civil liability provisions of the federal securities laws of the United States. However, it may be possible for investors to effect service of process within France upon those persons or entities, provided that The Hague Convention on the Service Abroad of Judicial and Extrajudicial Documents in Civil or Commercial Matters of November 15, 1965 is complied with.

The United States is not currently bound by a treaty providing for reciprocal recognition and enforcement of judgments, other than arbitral awards, rendered in civil and commercial matters with France or the other jurisdictions where our assets are located. There is, therefore, doubt as to the enforceability of civil liabilities based upon U.S. federal securities laws in an action to enforce a U.S. judgment in France or in the other jurisdictions where our assets are located. In addition, the enforcement in France and other jurisdictions where our assets are located of any judgment obtained in a U.S. court based on civil liabilities, whether or not predicated solely upon U.S. federal securities laws, will be subject to certain conditions. There is also doubt that a court in France or in such other jurisdictions would have the requisite power or authority to grant remedies sought in an original action brought in France or such jurisdictions on the basis of U.S. federal securities laws violations. For further information, see "*Service of Process and Enforcement of Liabilities*".

Credit ratings may not reflect all risks, are not recommendations to buy or hold securities and may be subject to revision, suspension or withdrawal at any time.

One or more independent credit rating agencies may assign credit ratings to the Notes. The ratings may not reflect the potential impact of all risks related to the structure, market, additional risk factors discussed herein and other factors that may affect the value of the Notes. A credit rating is not a recommendation to buy, sell or hold securities and may be subject to revision, suspension or withdrawal by the rating agency at any time. No

assurance can be given that a credit rating will remain constant for any given period of time or that a credit rating will not be lowered or withdrawn entirely by the credit rating agency if, in its judgment, circumstances in the future so warrant. A suspension, reduction or withdrawal at any time of the credit rating assigned to the Notes by one or more of the credit rating agencies may adversely affect the cost and terms and conditions of our financings and could adversely affect the value and trading of the Notes.

The transfer of the Notes is restricted, which may adversely affect their liquidity and the price at which they may be sold.

The Notes are being offered and sold pursuant to an exemption from registration under the U.S. Securities Act and applicable state securities laws of the United States. The Notes have not been and will not be registered under the U.S. Securities Act or any state securities laws. Therefore, you may not transfer or sell the Notes in the United States except pursuant to an exemption from, or a refinancing not subject to, the registration requirements of the U.S. Securities Act and applicable state securities laws, or pursuant to an effective registration statement, and you may be required to bear the risk of your investment in the Notes for an indefinite period of time. The Indenture contains provisions that restrict the Notes from being offered, sold or otherwise transferred except pursuant to the exemptions available pursuant to Rule 144A and Regulation S under the U.S. Securities Act, or other exemptions under the U.S. Securities Act. In addition, by acceptance of delivery of any Notes, the holder thereof agrees on its own behalf and on behalf of any investor accounts for which it has purchased the Notes that it shall not transfer the Notes in an aggregate principal amount of less than $200,000 in respect of the Dollar Notes and €100,000 in respect of the Euro Notes.

Furthermore, we have not registered the Notes under any other country's securities laws and do not have any intention to do so. It is your obligation to ensure that your offers and sales of the Notes within the United States and other countries comply with applicable securities laws. See "*Notice to Investors*".

The Notes will initially be held in book-entry form and therefore investors must rely on the procedures of the relevant clearing systems to exercise any rights and remedies.

The Notes will initially only be issued in global certificated form and held through Euroclear and Clearstream (with respect to the Euro Notes) and DTC (with respect to the Dollar Notes). Interests in the Global Notes will trade in book-entry form only, and Notes in definitive registered form, or definitive registered notes, will be issued in exchange for book-entry interests only in very limited circumstances. Owners of book-entry interests will not be considered owners or holders of Notes. The common depositary, or its nominee, for Euroclear and Clearstream will be the sole registered holder of the Global Notes representing the Euro Notes and the nominee for DTC will be the sole registered holder of the Global Notes representing the Dollar Notes. Payments of principal, interest and other amounts owing on or in respect of the Global Notes representing the Notes will be made to the relevant paying agent, which will make payments to Euroclear and Clearstream or DTC, as applicable. Thereafter, these payments will be credited to participants' accounts that hold book-entry interests in the Global Notes representing the notes and credited by such participants to indirect participants. After payment to the common depositary for Euroclear and Clearstream and the nominee for DTC, as applicable, the Issuer will have no responsibility or liability for the payment of interest, principal or other amounts to the owners of book-entry interests. Accordingly, if investors own a book-entry interest, they must rely on the procedures of Euroclear and Clearstream or DTC, as applicable, and if investors are not participants in Euroclear and Clearstream or DTC, as applicable, they must rely on the procedures of the participant through which they own their interest, to exercise any rights and obligations of a holder of Notes under the Indenture. Unlike the holders of the Notes themselves, owners of book-entry interests will not have the direct right to act upon the Issuer's solicitations for consents, requests for waivers or other actions from holders of the Notes. Instead, if an investor owns a book-entry interest, it will be permitted to act only to the extent it has received appropriate proxies to do so from Euroclear and Clearstream or DTC, as applicable. The procedures implemented for the granting of such proxies may not be sufficient to enable such investor to vote on a timely basis. Similarly, upon the occurrence of an event of default under the Indenture, unless and until definitive registered Notes are issued in respect of all book-entry interests, if investors own book-entry interests, they will be restricted to acting through Euroclear and Clearstream or DTC, as applicable. The procedures to be implemented through Euroclear and Clearstream or DTC, as applicable, may not be adequate to ensure the timely exercise of rights under the Notes. See "*Book-entry, Delivery and Form*".

The Notes may not become, or remain, listed on the Luxembourg Stock Exchange.

Although an application has been made for the Notes to be listed on the Official List of the Luxembourg Stock Exchange and admitted to trading on the Euro MTF Market of the Luxembourg Stock Exchange, the Issuer

cannot assure you that the Notes will become, or remain listed. If the Notes are listed on the Official List of the Luxembourg Stock Exchange and admitted to trading on the Euro MTF Market of the Luxembourg Stock Exchange and the Issuer can no longer maintain such listing or if it becomes unduly burdensome to make or maintain such listing, the Issuer may cease to make or maintain such listing on the Official List of the Luxembourg Stock Exchange, provided, however, that it will use its commercially reasonable efforts to obtain and maintain the listing of the Notes on another recognized stock exchange, although there can be no assurance that the Issuer will be able to do so.

In addition, although no assurance is made as to the liquidity of the Notes as a result of listing the Notes on the Official List of the Luxembourg Stock Exchange or another recognized stock exchange in accordance with the Indenture, failure to obtain approval for the listing or the delisting of the Notes from the Official List of the Luxembourg Stock Exchange or another recognized stock exchange, as applicable, may have a material adverse effect on a holder's ability to resell Notes in the secondary market.

Certain covenants may be suspended upon the occurrence of a change in our ratings.

The Indenture will provide that, if at any time following the date of the Indenture, the Notes receive a rating of "BBB" or better from S&P and "Baa3" or better from Moody's and no default or event of default has occurred and is continuing, then beginning that day and continuing until such time that the Notes receive a rating of below "BBB" from S&P and below "Baa3" from Moody's, certain covenants will cease to be applicable to the relevant Notes. See "*Description of the Notes—Suspension of Covenants on Achievement of Investment Grade Status*". If these covenants were to cease to be applicable, we would be able to incur additional indebtedness or make payments, including dividends or investments, which may conflict with the interests of holders of the Notes. There can be no assurance that the Notes will ever achieve an investment grade rating or that any such rating will be maintained.

USE OF PROCEEDS

We expect the gross proceeds to be received by us from the Offering to be approximately US$1,200 million (equivalent). We intend to use the proceeds from this offering, together with cash on hand, to (i) repurchase the Existing First Lien Notes by way of the Tender Offer, (ii) with respect to the Existing First Lien Notes that are not repurchased in the Tender Offer, satisfy and discharge and subsequently redeem in full the remaining Existing First Lien Notes, (iii) satisfy and discharge and subsequently redeem in full the Existing Second Lien Notes and (iv) pay all fees and expenses in connection with the foregoing.

On or prior to the Issue Date, we will enter into the Revolving Credit Facility Agreement, which will provide for a Revolving Credit Facility in the amount of US$100 million. On the Issue Date, the Revolving Credit Facility is expected to be undrawn.

On March 15, 2021, the Existing First Lien Notes Issuer launched a tender offer for the purchase of any and all of the for the Existing First Lien Notes outstanding for cash (the "Tender Offer") (i) in the case of the U.S. dollar-denominated Existing First Lien Notes, at a purchase price of $1,027,00 per $1,000 aggregate principal amount of U.S. dollar-denominated Existing First Lien Notes accepted, plus accrued and unpaid interest to, but excluding, the date of settlement of the Tender Offer; and (ii) in the case of the euro-denominated Existing First Lien Notes, at a purchase price of €1,023.63 per €1,000 aggregate principal amount of euro-denominated Existing First Lien Notes accepted, plus accrued and unpaid interest to, but excluding, the date of settlement of the Tender Offer. Settlement of the Tender Offer is conditional on the issuance of the Notes. The tender period under such Tender Offer is expected to expire on or about March 29, 2021 (the "Expiration Date") and holders who validly tender (and do not validly withdraw) their Existing First Lien Notes in such Tender Offer prior to the Expiration Date will receive the tender consideration on or about the Issue Date. The Tender Offer is being made pursuant to a separate tender offer memorandum (the "Offer to Purchase") and not pursuant to this Offering Memorandum.

Existing First Lien Notes not tendered prior to the Expiration Date will be satisfied and discharged upon consummation of the Offering and redeemed in full on or about May 1, 2021, being more than 30 days after the Existing First Lien Notes Issuer's delivery of a conditional notice of redemption on March 15, 2021. The Existing Second Lien Notes will be satisfied and discharged upon consummation of the Offering and redeemed in full on or about April 14, 2021, being 30 days after the Existing First Lien Notes Issuer's delivery of a conditional notice of redemption on March 15, 2021. The redemptions will take place at a redemption price of (i) 102.250% plus accrued and unpaid interest for the U.S. dollar-denominated Existing First Lien Notes, (ii) 101.9688% plus accrued and unpaid interest for the euro-denominated Existing First Lien Notes, and (iii) 100.000% plus accrued and unpaid interest for the Existing Second Lien Notes.

On the Issue Date, the Issuer will lend to the Existing Notes Issuer a portion of the proceeds from the issuance of the Notes in this Offering in order to fund the payment by the Existing Notes Issuer of the total tender consideration in the Tender Offer and the amount necessary to satisfy and discharge the remaining Existing First Lien Notes not tendered and accepted in the Tender Offer. Each of the Existing First Lien Notes and the Existing Second Lien Notes will accrue interest until the date that they are redeemed. Following the Refinancing, the Existing Notes will have been entirely redeemed and cancelled. See "*Capitalization*".

Sources and Uses

The following table sets forth our expected estimated sources and uses of funds in connection with the Offering and the Refinancing. Amounts included in the table below are based on the assumption that the Offering of the Notes and the settlement of the Tender Offer occur on April 1, 2021, that the redemption of the Existing First Lien Notes not purchased in the Tender Offer occurs on May 1, 2021 and that the redemption of the Existing Second Lien Notes occurs on April 14, 2021. Actual amounts may vary from estimated amounts depending on several factors, including differences from the estimates of outstanding amounts of existing indebtedness to be repaid on the Issue Date, the estimates of the costs of conducting the Tender Offer, the estimated amount of cash of the Issuer and its subsidiaries as of the Issue Date, as well as the differences between estimated and actual fees and expenses. Any additional use of funds will be paid out of cash on balance sheet. The exchange rate used to translate euro amounts to US dollars in this table is the rate we used to prepare our financial statements as of December 31, 2020 (US$1.2271 per €1.00).

Sources of Funds	Amount	Uses of Funds	Amount
	(in millions of US$)		*(in millions of US$)*
Proceeds from the Offering[(1)]	1,200	Repayment of the Existing First Lien Notes[(2)]	644
Cash on balance sheet	110	Repayment of the Existing Second Lien Notes[(3)]	454
		PIK interest[(4)]	138
		Accrued interest[(5)]	36
		Call premium and estimated costs, fees and expenses[(6)]	39
Total sources	1,310	Total uses	1,310

Notes:

(1) Represents the approximate amount of gross proceeds from the issuance of the Notes.

(2) The repayment of the Existing First Lien Notes will be financed in full using the proceeds of the Offering and will be effected (i) by way of the Tender Offer and (ii) with respect to the Existing First Lien Notes that are not tendered and accepted in the Tender Offer, by way of satisfaction and discharge and subsequent redemption. The amount shown in the table represents the estimated aggregate amount that would have been necessary to repurchase the Existing First Lien Notes pursuant to the Tender Offer on April 1, 2021 and redeem in full the remaining Existing First Lien Notes not tendered and accepted on May 1, 2021, which includes the outstanding principal amount of the Existing First Lien Notes, accrued and unpaid interest on the Existing First Lien Notes to the date of repurchase or redemption (in the "accrued interest" line) and the premium above principal paid in the Tender Offer and the call premium for the Existing First Lien Notes (in the "call premium and estimated costs, fees and expenses" line), on the basis of the following assumptions: (A) 50% of the aggregate outstanding principal amount of the Existing First Lien Notes will be repurchased pursuant to the Tender Offer and (B) 50% of the aggregate principal amount of the Existing First Lien Notes will be satisfied and discharged and ultimately redeemed at the redemption prices and on the redemption dates indicated above.

As of December 31, 2020, the outstanding principal amount of the Existing First Lien Notes amounted to $643.6 million (composed of $300.0 million principal amount denominated in US dollars bearing interest at a rate of 9.0% per annum and €280 million principal amount denominated in euros bearing interest at a rate of 7.875% per annum). The Existing First Lien Notes mature on May 1, 2023. Following the Refinancing, the Existing First Lien Notes will have been entirely redeemed and cancelled. See "*Capitalization*".

(3) The satisfaction and discharge and subsequent redemption of the Existing Second Lien Notes will be financed in full using the proceeds of the Offering. The amount shown represents the estimated aggregate amount that would have been necessary to redeem in full the Existing Second Lien Notes at par on April 14, 2021, which includes the outstanding principal amount of the Existing Second Lien Notes, and accrued and unpaid interest on the Existing Notes to the date of repurchase or redemption (in the "PIK interest" line in respect of PIK interest, and in the "Accrued cash interest" line in respect of cash interest).

As of December 31, 2020, the outstanding principal amount of the Existing Second Lien Notes amounted to $577.2 million (composed of $355.1 million principal amount denominated in US dollars bearing interest at a rate of 3 month USD Libor plus 4% in cash and 8.5% in PIK interest per annum and €80.4 million principal amount denominated in euros bearing interest at a rate of 3 month Euribor plus 4% in cash and 8.5% in PIK interest per annum).

The Existing Second Lien Notes mature on February 21, 2024. Following the Refinancing, the Existing Second Lien Notes will have been entirely redeemed and cancelled. See "*Capitalization*".

(4) Represents PIK interest incurred in respect of the Existing Second Lien Notes, of US$123.4 million as of December 31, 2020 and US$14.1 million for the period from January 1, 2021 to April 14, 2021.

(5) Represents accrued cash interest in respect of the Existing First Lien Notes and Existing Second Lien Notes of US$12.4 million as of December 31, 2020 and of US$23.8 million for the period from January 1, 2021 to April 14, 2021 for the Existing Second Lien Notes and as described in (2) for the Existing First Lien Notes.

(6) Represents call premium on the Existing First Lien Notes and costs, fees and expenses associated with the Refinancing, including Initial Purchasers' fees, legal and accounting expenses and other transaction costs.

CAPITALIZATION

The following table shows, on a consolidated basis, our cash and cash equivalents, total financial debt and total capitalization as of December 31, 2020, on an actual basis and as adjusted to reflect the Refinancing as if it had occurred on December 31, 2020.

The financial information in the actual column has been derived from our 2020 Consolidated Financial Statements included elsewhere in this offering memorandum. The information set out below should be read in conjunction with "*Use of Proceeds*", "*Operating and Financial Review*", "*Description of Certain Financing Arrangements*" and the 2020 Consolidated Financial Statements and the accompanying notes included elsewhere in this offering memorandum. The as adjusted unaudited capitalization information has been prepared for illustrative purposes only and, because of its nature, may not give an accurate picture of our actual capitalization as of December 31, 2020. Other than as described below, there has been no material change in our total capitalization since December 31, 2020.

	As of December 31, 2020	
	Actual	**As adjusted for the Refinancing**
	(in millions of US dollars)[1]	
Cash and cash equivalents	**385.4**	**275.0[2]**
Revolving Credit Facility[3]	—	—
Secured loans	**—**	**—**
Existing First Lien Notes	643.6[4]	—
Existing Second Lien Notes	577.2[5]	—
Senior Secured Notes due 2027 offered hereby	—	1,200[6]
Senior secured notes	**1,220.8**	**1,200**
Bank loans and other loans	0.6	0.6
Lease liabilities	155.1	155.1
Accrued interest	12.4	— [7]
Bank overdrafts	0.2	0.2
Other financial debt	**168.3**	**155.9**
Total financial debt (including bank overdrafts) (I)	1,389.1	1,355.9
Net financial debt (Total financial debt less cash and cash equivalents)	**1,003.7**	**1,080.9**
Shareholders' equity (II)	1,119.7	1,042.5[8]
Minority interests (III)	44.9	44.9
Total capitalization (I+II+III)	**2,553.7**	**2,443.4**

Notes:

(1) The exchange rate used to translate euro amounts to US dollars in the following table is the rate we used to prepare our financial statements as of December 31, 2020 (US$1.2271 per €1.00).

(2) As adjusted, cash and cash equivalents reflect the receipt of the estimated gross proceeds from the Notes offered hereby of US$1,200 million equivalent after the payment of US$24.1 million of the Initial Purchasers' commissions and discounts and other fees and expenses directly related to the Offering and the use of such proceeds and cash on hand to complete the Tender Offer, the redemption of the Existing First Lien Notes not tendered in the Tender Offer and the redemption of the Existing Second Lien Notes and settle PIK and accrued interests as well as associated costs.

(3) We have entered into a commitment letter with the lenders under the Revolving Credit Facility pursuant to which they committed to provide us with the Revolving Credit Facility. We will enter into the Revolving Credit Facility Agreement on the Issue Date. The Revolving Credit Facility provides for borrowings of up to €100 million. We expect the Revolving Credit Facility to be undrawn on the Issue Date. See "*Description of Certain Financing Arrangements—The Revolving Credit Facility Agreement*".

(4) The aggregate principal amount of the Existing First Lien Notes was US$300.0 million and €280.0 million as of December 31, 2020.

(5) The aggregate principal amount of the Existing Second Lien Notes was US$355.1 million and €80.4 million plus accrued PIK interest of US$96.6 million and €21.9 million as of December 31, 2020.

(6) Represents the approximate U.S. dollar-equivalent aggregate principal amount of the Notes being offered in the Offering.

(7) As adjusted, reflects the payment of the interest accrued as of December 31, 2020.

(8) As adjusted, reflects the cost of (i) the fees and expenses directly associated with the Offering for US$24.1 million, (ii) PIK interest and accrued cash interest to the redemption date for the Existing Second Lien Notes for US$22.4 million and (iii) call premium and interest to the redemption date for the Existing First Lien Notes of US$30.7 million.

SELECTED FINANCIAL INFORMATION

The following selected historical consolidated financial information as of and for the three years ended December 31, 2020 is derived from our Consolidated Financial Statements included elsewhere in this offering memorandum. Our Consolidated Financial Statements have been audited by Ernst & Young et Autres and Mazars.

We implemented IFRS 16 with respect to leases effective January 1, 2019 with a modified retrospective application. Therefore, the cumulative effect of adopting IFRS 16 was recognized as an adjustment to the opening balance of retained earnings on January 1, 2019, with no restatement of comparative information. Information as of and for the year ended December 31, 2018 is reported under IAS 17 and related interpretations.

The selected financial data included below should be read in conjunction with, and are qualified in their entirety by reference to, our Consolidated Financial Statements included elsewhere in this offering memorandum and "*Use of Proceeds*", "*Capitalization*" and "*Operating and Financial Review*".

	As of and for the year ended December 31,		
	2020	2019	2018
	(in millions of US dollars except ratios)		
Statement of operations data:			
Operating revenues	886.0	1,355.9	1,193.5
Other income from ordinary activities	0.7	0.7	1.4
Cost of operations	(725.9)	(967.0)	(931.0)
Gross profit	**160.8**	**389.6**	**263.9**
Research and development expenses, net	(18.6)	(23.6)	(30.5)
Marketing and selling expenses	(32.5)	(47.0)	(45.9)
General and administrative expenses	(67.9)	(66.2)	(81.1)
Other revenues (expenses)	(214.5)	(9.3)	(286.1)
Operating income	**(172.7)**	**243.5**	**(179.7)**
Cost of financial debt, net	(134.1)	(131.7)	(127.4)
Other financial income (loss)	(39.4)	5.6	819.9
Income taxes	(29.5)	8.9	(7.4)
Equity in income of affiliates	0.1	(0.1)	(1.2)
Net income (loss) for continuing operations	(375.6)	126.2	504.2
Net income (loss) for discontinued operations	(62.5)	(187.7)	(600.0)
Net income (loss)	**(438.1)**	**(61.5)**	**(95.8)**
Attributable to:			
Owners of CGG S.A.	(441.8)	(69.1)	(101.6)
Non-controlling interests	3.7	7.6	5.8
Balance sheet data:			
Cash and cash equivalents	385.4	610.5	434.1
Working capital[1]	212.5	147.6	189.3
Property, plant & equipment, net	268.1	300.0	189.2
Multi-client surveys	492.4	531.0	633.3
Goodwill, net	1,186.5	1,206.9	1229.0
Total assets	3,377.5	4,012.6	3,896.7
Gross financial debt[2]	1,389.1	1,326.0	1,166.7
Equity attributable to owners of CGG S.A.	1,119.7	1,561.7	1,631.5
Other financial historical data and other ratios:			
Segment EBIT[3][4]	(164.2)	247.2	141.1
EBIT[4]	(172.6)	243.4	(180.9)
Segment EBITDAs[3][5]	360.7	720.8	556.0
Adjusted Segment EBITDAs[3][5][6]	402.3	—	—
EBITDAs[5]	291.5	676.2	474.2
Segment Operating income[3]	(164.3)	247.3	142.3
Operating income	(172.7)	243.5	(179.7)
Segment Free-cash flow[3][7]	(38.4)	490.6	68.9
Capital expenditures[8]	64.1	75.3	78.0
Investments in multi-client surveys, net cash	(239.0)	(185.7)	(222.8)
Cost of financial debt, net	(134.1)	(131.7)	(127.4)

	As of and for the year ended December 31,		
	2020	2019	2018
	(in millions of US dollars except ratios)		
Gross financial debt/Segment EBITDAs(2)(3)(5)	3.9x	1.8x	2.1x
Net financial debt /Segment EBITDAs(3)(5)(9)	2.8x	1.0x	1.3x
Segment EBITDAs/Cost of financial debt, net(3)(5)	2.7x	5.5x	4.4x
Gross financial debt/EBITDAs(2)(5)	4.8x	2.0x	2.5x
Net financial debt/EBITDAs(5)(9)	3.4x	1.1x	1.5x
EBITDAs/Cost of financial debt, net(5)	2.2x	5.1x	3.7x
As adjusted cost of financial debt, net(10)	108.9	—	—
As adjusted cash and cash equivalents(10)	275.0	—	—
As adjusted gross financial debt(10)	1,355.9		
As adjusted net financial debt(9)(10)	1,080.9	—	—
As adjusted gross financial debt/Segment EBITDAs(2)(3)(5)(10)	3.8x	—	—
As adjusted net financial debt/Segment EBITDAs(3)(5)(9)(10)	3.0x		
Segment EBITDAs/as adjusted cost of financial debt, net (3)(5)(10)	3.3x	—	—
As adjusted gross financial debt/Adjusted Segment EBITDAs(3)(5)(6)(10)	3.4x	—	—
As adjusted net financial debt/Adjusted Segment EBITDAs(3)(5)(6)(9)(10)	2.7x	—	—
Adjusted Segment EBITDAs/as adjusted cost of financial debt, net(3)(5)(6)(10)	2.7x	—	—
As adjusted gross financial debt/EBITDAs(5)(10)	4.7x	—	—
As adjusted net financial debt/EBITDAs(5)(9)(10)	3.7x	—	—
EBITDAs/as adjusted cost of financial debt, net(5)(10)	3.7x	—	—

Notes:—

(1) "Working capital" is defined as net trade accounts and notes receivable, net inventories and work-in-progress, tax assets, other current financial assets, other current assets and assets held for sale less trade accounts and notes payable, accrued payroll costs, income tax payable, advance billings to customers, current provisions, other current financial liabilities, other current liabilities and liabilities directly associated with the assets classified as held for sale.

(2) "Gross financial debt" is defined as financial debt, including lease liabilities, current maturities and bank overdrafts.

(3) "Segment" figures are presented before IFRS 15 in accordance with the Group's previous method for recognizing Multi-Client prefunding revenues based on percentage of completion. In 2018, beyond IFRS 15, Segment figures also excluded Sercel inventories provision and restructuring costs related to the Transformation Plan and corresponding to the costs related to the industrial transformation of the Group and the Financial Restructuring, including personnel costs, site closure costs and fees and expenses related to the Financial Restructuring.

(4) Earnings before interest and tax ("EBIT") is defined as operating income plus our share of income in companies accounted for under the equity method. EBIT is used by management as a performance indicator because it captures the contribution to our results of the significant businesses that we manage through our joint ventures. However, other companies may present EBIT and related measures differently than we do. EBIT is not a measure of financial performance under IFRS and should not be considered as an alternative to cash flow from operating activities or as a measure of liquidity or an alternative to net income as indicators of our operating performance or any other measures of performance derived in accordance with IFRS. See "*Operating and Financial Review—Liquidity and Capital Resources—EBIT and EBITDAs*" for a reconciliation of EBIT to operating income.

(5) "EBITDAs" is defined as earnings before interest, tax, income from equity affiliates, depreciation, amortization net of amortization costs capitalized to multi-client surveys and share-based compensation cost. Share-based compensation includes both stock options and shares issued under our share allocation plans. EBITDAs is presented as additional information because we understand that it is one measure used by certain investors to determine our operating cash flow and historical ability to meet debt service and capital expenditure requirements. However, other companies may present EBITDAs and similar measures differently than we do. EBITDAs is not a measure of financial performance under IFRS and should not be considered as an alternative to cash flow from operating activities or as a measure of liquidity or an alternative to net income as indicators of our operating performance or any other measures of performance derived in accordance with IFRS. See "*Operating and Financial Review—Liquidity and Capital Resources—EBIT and EBITDAs*" for a reconciliation of EBITDAs to net cash provided by operating activities.

(6) "Adjusted Segment EBITDAs" is defined as Segment EBITDAs before severance costs of $41.6 million incurred in 2020 as we reduced staff in various locations worldwide and closed sites in response to the significant decline in E&P spending as a consequence of the Covid-19 pandemic.

(7) "Free cash-flow" is defined as "Net cash flow provided by operating activities" plus "Total net proceeds from disposals of assets", minus "Total capital expenditures" and "Investments in multi-client surveys, net cash" as set out in our consolidated statement of cash flows in the "Investing section".

(8) "Capital expenditures" is defined as "total capital expenditures (including variation of fixed assets suppliers, excluding multi-client surveys)" from our statement of cash flows.

(9) "Net financial debt" is defined as gross financial debt less cash and cash equivalents. Net financial debt is presented as additional information because we understand that certain investors believe that netting cash against debt provides a clearer picture of the financial liability exposure. However, other companies may present net financial debt differently than we do. Net financial debt is not a measure of financial performance under IFRS and should not be considered as an alternative to any other measures of performance derived in accordance with IFRS.

(10) "As adjusted" information is adjusted to reflect the Refinancing as if it had occured on December 31, 2020.

OPERATING AND FINANCIAL REVIEW

The following discussion and analysis should be read in conjunction with our Consolidated Financial Statements and the notes thereto included elsewhere in this offering memorandum, which have been prepared in accordance with IFRS, and the sections titled "Summary Financial Information" and "Selected Financial Information". This discussion includes forward-looking statements which, although based on assumptions we consider reasonable, are subject to risks and uncertainties which could cause actual events or conditions to differ materially from those expressed or implied herein. See "Forward-looking Statements" and "Risk Factors" for a discussion of the risks, uncertainties and assumptions associated with these statements.

Group organization

Segment presentation and discontinued operations

The financial information by segment is reported in accordance with our internal reporting system and provides internal segment information that is used by our chief operating decision maker to manage and measure performance.

Until the last quarter of 2018, we organized our activities in four segments for financial reporting: (i) Contractual Data Acquisition, (ii) Geology, Geophysics & Reservoir ("GGR"), (iii) Equipment and (iv) Non-Operated Resources.

In November 2018, we announced a new strategy that included the transition to an asset-light model by reducing our exposure to the Contractual Data Acquisition business. As a result of these strategic announcements and actions undertaken since then, our Contractual Data Acquisition segment and part of our Non-Operated Resources segment have been presented as discontinued operations in our income statement and as assets held for sale in our balance sheet in accordance with IFRS 5. The costs of implementation of our Strategic Plan described above, referred to as the "CGG 2021 Plan", are reported in discontinued operations in the related Contractual Data Acquisition business lines.

Continuing Operations

Our GGR and Equipment segments are reported in continuing operations.

GGR

This operating segment comprises the Geoscience business line (processing and imaging of geophysical data, reservoir characterization, geophysical consulting and software services, geological data library and data management solutions) and the Multi-Client Data business line (development and management of a seismic and geological data library that we undertake and license to a number of clients on a non-exclusive basis). Both activities regularly combine their offerings, generating overall synergies between their respective activities.

Equipment

This operating segment comprises our manufacturing and sales activities for seismic equipment used for data acquisition, both on land, marine, ocean bottom, borehole and non-oil and gas equipment. The Equipment segment carries out its activities through our subsidiary Sercel and owns trademarks such as Sercel, Metrolog, GRC and DeRegt.

Discontinued operations

Contractual Data Acquisition

This operating segment comprises the following business lines:

- Marine: offshore seismic data acquisition undertaken by us on behalf of specific clients; and
- Land and Multi-physics: other seismic data acquisition undertaken by us on behalf of specific clients.

Non-Operated Resources

We started implementing our Transformation Plan in the first quarter of 2014 to address the cyclical trough in the seismic market, and as market conditions deteriorated further, we implemented additional steps, ultimately

downsizing our marine fleet to five 3D high-end vessels. As a result, some of our owned vessels were not operated for a certain period of time. The costs of the non-operated acquisition resources, as well as the costs of the implementation linked to the downsizing of our Contractual Data Acquisition business, are reported in the discontinued operations portion of this segment.

Internal reporting and segment presentation

Before the implementation of IFRS 15, the Group applied the percentage of completion method for recognizing multi-client prefunding revenues. Following the implementation of IFRS 15, the Group recognizes multi-client prefunding revenues only upon delivery of final processed data.

Although IFRS fairly presents the Group's statement of financial position, for internal reporting purposes our management continues to apply the pre-IFRS 15 revenue recognition principles, with multi-client prefunding revenues recorded based on percentage of completion. Our management believes this method aligns revenues closely with the activities and resources used to generate it and provides useful information as to the progress made on multi-client surveys, while also allowing for useful comparison across time periods.

We therefore present the Group's results of operations in two ways:

- the "Reported" or "IFRS" figures, prepared in accordance with IFRS, with multi-client prefunding revenues recognized upon delivery of the final data; and
- the "Segment" figures, for purposes of internal management reporting (IFRS 8), prepared in accordance with the Group's previous method for recognizing multi-client prefunding revenues.

Other companies may present segment and related measures differently than we do. Segment figures are not a measure of financial performance under IFRS and should not be considered as indicators of our operating performance or an alternative to other measures of performance in accordance with IFRS.

Exit of Contractual Data Acquisition business

Aiming at ensuring growth and sustainable returns through the cycles, the CGG 2021 Plan announced in November 2018 included a planned transition to an asset-light business model by reducing our exposure to the Contractual Data Acquisition business. The Contractual Data Acquisition business has been adversely affected over the years by structural industry overcapacity, lack of differentiation, commodity pricing and a heavy fixed cost base. The CGG 2021 Plan thus outlined the following plans:

- Marine Exit:
  - reduce the number of seismic vessels in operation in 2019,
  - search for a strategic partner to cost efficiently operate and control the vessels;
- Land Exit: progressively wind down and exit the market;
- Multi-Physics Exit: market for sale and monetize when suitable;
- Divest equity stakes in the Argas and Seabed Geosolutions BV joint ventures;
- Implement general and administrative expenses and support costs by adjusting in line with new size and footprint.

Following the announcement of the CGG 2021 strategic plan in November 2018 and the actions undertaken to implement it, the Contractual Data Acquisition business has been accounted for under IFRS 5 as discontinued operations. As a result, its contributions to our income statement and cash flow statement are aggregated in a single line item for all periods presented, namely "Net income (loss) from discontinued operations" in the former and "Net cash flows incurred by Discontinued Operations" in the latter.

Marine Exit and Streamer NewCo Transaction

In June 2019, together with Shearwater GeoServices Holding AS ("Shearwater"), we announced the signature of a binding term sheet that included the following elements:

(i) Shearwater's acquisition of all the shares in Global Seismic Shipping AS ("GSS"), the 50/50 joint venture between us and Eidesvik Offshore ASA ("Eidesvik"). GSS, through its subsidiaries, owns five high-end seismic vessels and two legacy vessels with associated bank debt. Shearwater also agreed to acquire the streamers owned by us, which were associated with GSS's five high-end seismic vessels;

(ii) a five-year services contract (as amended, the "Capacity Agreement") between us and Shearwater. Under the Capacity Agreement, we committed to using Shearwater's acquisition services for 730 vessel days annually on average over five years with flexibility in terms of actual annual utilization. The Capacity Agreement ensures our access to strategic capacity for our future multi-client projects through Shearwater's global fleet of high-end 3D and source vessels; and

(iii) the establishment of a technology partnership through the creation of a company under the Sercel brand name and with our majority ownership to which the parties would contribute their respective towed marine stream equipment businesses. The new company thus created would be focused on the development, manufacturing, commercialization and support of streamers, navigation software and steering systems (the "Streamer Newco Transaction").

The closing of Shearwater's acquisition of the shares in GSS and the streamers, as well as the entry into force of the Capacity Agreement, took place on January 8, 2020 (the "Marine Closing"). Due to the downturn in the oil and gas industry triggered by the Covid-19 pandemic, however, we announced on November 5, 2020 that we and Shearwater had jointly agreed to suspend negotiations around the Streamer Newco Transaction.

All impacts of the Marine Closing have been taken into consideration in the statement of financial position as of December 31, 2019 through the remeasurement of the fair value, less the cost to sell the Marine disposal group for a net amount of US$(108.3) million.

On January 8, 2020, the following transactions occurred:

- We acquired the 50% interest held by Eidesvik in GSS and indemnified Eidesvik for the end of the relationship in exchange for Shearwater shares. We also granted Eidesvik a put option on such Shearwater shares (the "Eidesvik Put Option");
- Shearwater acquired 100% of GSS and the streamers from us in exchange for Shearwater vendor notes exchangeable into Shearwater shares (the "Shearwater Vendor Notes");
- the existing umbrella agreement and the existing bareboat charter agreements between us and GSS subsidiaries were terminated along with the guarantee granted by us;
- Shearwater CharterCo AS entered into five-year bareboat charter agreements with GSS subsidiaries, guaranteed by Shearwater, for the use of five high end vessels equipped with streamers (the "Shearwater Charter Agreements") and CGG Services SAS entered into the Capacity Agreement;
- under a payment instructions agreement (the "Payment Instructions Agreement"), Shearwater and Shearwater CharterCo AS direct CGG Services SAS to pay amounts due under the Capacity Agreement directly to GSS subsidiaries to cover Shearwater CharterCo's obligations under its bareboat charter agreements;
- We also entered into step-in agreements with Shearwater and GSS (as amended, the "Step-In Agreements"), which could come into force if certain conditions are met and would require us to substitute ourselves for Shearwater CharterCo AS as charterer of GSS subsidiaries' five high end seismic vessels (equipped with streamers).

Capacity Agreement

The main terms of the Capacity Agreement require us to:

- work exclusively with Shearwater, for seismic streamer acquisition and source vessels for nodes projects, for up to 730 vessel days per year on average for five years from the Marine Closing;
- pay a pre-agreed day rate for the first 2.5 years and the higher of the market rate or the pre-agreed day rate for the remaining 2.5 years;
- reimburse Shearwater for project-related operational costs and fuel; and
- compensate Shearwater for days during which more than one of its high-end seismic vessels are idle, for a maximum of three vessels (the "Idle Vessels Compensation").

The pre-agreed day rate negotiated in connection with the Capacity Agreement was higher than the estimated average market day rate as of the Marine Closing. Thus, an operational liability of US$(69) million was recognized at the Marine Closing representing the net present value of the positive difference between the pre-agreed rate and the estimated market rate over the five-year contractual term of the Capacity Agreement.

The Idle Vessels Compensation gave rise to a US$(79) million financial liability at the Marine Closing representing the net present value of expected payments under this clause. The expected payments are estimated based on Shearwater fleet utilization assumptions over the five-year commitment period. At December 31, 2020, the residual commitment in respect of idle vessel compensation through to the end of the five-year period was US$(88.1) million.

Eidesvik Put Option and Sale of Shearwater's shares to Rasmussengruppen

Shearwater shares and Eidesvik Put option

On December 29, 2020, we converted the Shearwater Vendor Notes issued by Shearwater on January 8, 2020 into a US$49.39 million stake in Shearwater. Through this transaction, we acquired 1,958,248 Class A shares, corresponding to 3.30% of the total outstanding shares and 3.34% of the shares having voting rights in Shearwater Geoservices Holding AS.

Eidesvik Put Option

On January 11, 2021, Eidesvik exercised its put option and sold to us all of its 1,987,284 Class A shares in Shearwater at a strike price of US$30 million, thus increasing our stake in Shearwater to 6.72% of the total outstanding shares with voting rights.

Sale of Shearwater shares to Rasmussengruppen

On January 12, 2021, we accepted the binding offer from Rasmussengruppen to acquire all Shearwater's shares held by us, including those acquired as a result of the exercise of the Eidesvik Put Option, at fair market value for total cash consideration of US$27.62 million. The transaction was completed on January 18, 2021 and payment was received on January 20, 2021.

Step-In Agreements

As described above, following the Marine Closing, Shearwater CharterCo AS entered into five-year bareboat charter agreements with GSS subsidiaries, guaranteed by Shearwater, for the five high-end vessels equipped with streamers. Under the Step-In Agreements, we agreed to substitute ourselves for Shearwater CharterCo AS as charterer of GSS subsidiaries' five high-end seismic vessels (equipped with streamers) in the event of a payment default under the charter party agreement between the GSS subsidiaries and Shearwater CharterCo AS (a "Step-In Event"). Given that we are required under the Payment Instructions Agreement to pay amounts due under the Capacity Agreement directly to GSS subsidiaries to cover Shearwater CharterCo's obligations under its bareboat charter agreements, this payment default can only be triggered either by our non-payment under the Payment Instructions Agreement, or by Shearwater's insolvency.

If a Step-In Event were to occur:

- We would be entitled to terminate the Capacity Agreement;
- We would become the charterer of the five high-end seismic vessels equipped with streamers under bareboat charter agreements;
- We would be entitled to acquire all the share capital of GSS, knowing that GSS and its subsidiaries' principal assets would be the vessels and streamers and its principal liabilities would be the debt associated with such vessels.

The Step-In Agreements will not impact our statement of financial position unless a trigger event, as described above, occurs. In such circumstance, the obligations under the Capacity Agreement would be terminated and replaced by the obligations under the Step-In Agreements, for a lower amount compared to the Capacity Agreement.

As a result of these transactions, our statement of financial position as of December 31, 2020 includes the following items:

- US$52.9 million in Vendor Notes at the Marine Closing converted into Shearwater Shares on December 29, 2020 and valued at US$13.7 million as of December 31, 2020;

- US$(148.0) million in liabilities in respect of the Capacity Agreement as at the Marine Closing date, amounting to US$(127.2 million) as of December 31, 2020; and

- US$(4.6) million for the fair value of the Eidesvik Put Option as at the Marine Closing, amounting to US$(16.1) million as of December 31, 2020.

Land exit

We progressively reduced the Land Data Acquisition business over 2019 and fully shut down the activity in the first quarter of 2020.

Multi-Physics exit

On August 5, 2020 we entered into a sale and purchase agreement with Xcalibur Group for the sale of our Multi-Physics business.

See notes 2 and 5 to our 2020 Consolidated Financial Statements for additional information.

Divestment in Seabed Geosolutions BV

In line with our strategy to exit the Contractual Data Acquisition business, on December 30, 2019 we entered into a Share Purchase and Exit Agreement ("Exit Agreement") to transfer on that date 15% (out of our total 40% stake) of our shares in the Seabed Geosolutions BV joint venture ("Seabed") to our partner Fugro NV ("Fugro"), with our remaining 25% shareholding transferred on April 1, 2020.

In addition, we paid US$35 million to Fugro to settle any disputes and claims relating to Seabed, such as those related to the partners' respective obligations to jointly finance Seabed and the differing interpretations of non-competition provisions in the Seabed joint venture agreement.

GeoSoftware

In 2019, after we were approached by several potential buyers interested in our GeoSoftware business, which is part of our GGR segment, the related assets were reclassified to the line "assets held for sale" and related liabilities to the line "liabilities directly associated with the asset classified as held for sale". The GeoSoftware activity does not meet the criteria of a major line of business under IFRS 5 and, therefore, the GeoSoftware operations were not presented as discontinued operations in the consolidated statements of operations and in the consolidated statements of cash flows (hence triggering no retrospective presentation).

For more information on these transactions, please refer to note 2 and note 5 to our 2019 Consolidated Financial Statements.

Factors affecting our results of operations

Our operating results are generally affected by a variety of factors, some of which are described below and others that are set out in "Our *Business—Industry Conditions*" and "*Risks Factors*". In particular, our results of operations are affected by the geophysical market environment, which is discussed in those paragraphs.

Market environment

Overall demand for geophysical services and equipment is dependent on spending by oil and gas companies for exploration, development, production and field management activities. We believe the level of spending of such companies depends on the price of oil and gas as well as on their ability to efficiently supply the oil and gas market in the future. The geoscience market has historically been volatile and many factors contribute to its volatility, such as the geopolitical uncertainties that can harm the confidence and visibility that are essential to our clients' long-term decision-making processes, the expected balance in the mid- to long-term between supply and demand for hydrocarbons, and the world economic growth playing on investment decisions.

Lower or volatile hydrocarbon prices tend to limit the demand for geoscience services and products. In recent years, oil and gas companies have reduced their exploration and production ("E&P") spending due to falling or volatile oil prices, adversely affecting the demand for our products and services and leading to a lower level of

our activity. *See "Risk Factors—Risks Related to Our Business and Strategy—Demand for our products and services largely depends on activity within the oil and gas industry, and lower capital expenditures by our clients within the oil and gas industry could materially impact our business."*

The Covid-19 pandemic, the drop in oil price and resulting cut in E&P spending

The outbreak of the Covid-19 pandemic plunged the global economy into a deep recession in 2020 and lead to a significant decline in the demand for oil and gas, mainly due to the lockdown and other measures imposed as a result of the pandemic. The radical increase in supply by certain oil-producing countries (particularly Saudi Arabia and Russia) in March of 2020 further exacerbated the crisis. As a result, the oil price experienced huge variations over the year, with Brent going from approximately US$65/bbl during late 2019 down to approximately US$50/bbl on March 5, 2020, the date on which our Board of Directors approved our 2019 financial statements, before reaching the low point of approximately US$25/bbl on March 31, 2020. The oil price then rebounded and fluctuated between US$40/bbl and US$45/bbl until mid-November 2020, before gradually recovering following the announced arrival of Covid-19 vaccines to approximately US$50/bbl on December 31, 2020.

This volatility changed dramatically our business environment and the energy sector experienced strong headwinds. Our clients reacted sharply and, on average, reduced their E&P spending in the industry by around 30% in 2020, refocusing their investments in oil and gas towards core areas and producing the most accessible oil, while the energy transition agenda quickly gained momentum. Our activity reduced in 2020, which had a material adverse effect on our result of operations and cash flows. *See "Risk Factors—Risks Related to Our Business and Strategy—Demand for our products and services largely depends on activity within the oil and gas industry, and lower capital expenditures by our clients within the oil and gas industry could materially impact our business." and "Risk Factors—Risks Related to Our Business and Strategy—We operate in a highly competitive environment and unanticipated changes in competitive factors in our industry may impact our results of operations."*

It is difficult to predict how long the instability and imbalance in the oil market will last or the timing and breadth of any recovery of our clients' E&P activities, which are the main drivers for demand of our products and services. We believe, however, that the on-going vaccination campaigns will improve the prospects of economic recovery. In line with the predictions of some analysts and investment banks and in view of recent OPEC+ agreements, we anticipate that demand for oil and gas will rebalance, and that the Brent price will stabilize above US$50/bbl in 2021. In this context and provided the Covid-19 pandemic remains under control, after several years of under-investment we anticipate that E&P spending will increase gradually and stimulate the demand for our products and services, as we believe oil and gas will continue to play a major part in the energy mix and in the financial equation of our clients despite the growing importance of renewable energy sources. We also believe that we should more especially benefit from our clients' focus on reservoir development and production optimization of existing portfolios of assets as, thanks to our technology and people, we developed a recognized expertise in these geoscience domains.

With revenues from operations down by 35% for the year 2020 compared to 2019, we adapted our businesses and organization to the new industry baseline and cut significantly our capital expenditures and cost structure, reducing staff in various locations worldwide and closing sites, to preserve cash. We benefited from government support measures in certain countries, which had a positive cash impact of US$12 million, including US$6 million of tax and social contribution deferrals, US$5 million of grants and subsidies and US$1 million of partial unemployment measures.

Impairment and non-recurring and restructuring costs

To adjust to the volatile market environment, we may have to incur non-recurring or restructuring costs as well as impairment losses or write-offs due to events or changes in circumstances that reduce the fair value of an asset below its book value. As a result of the uncertain 2020 outlook described above, we recorded the following costs in 2020 in our Continuing Operations:

- US$42 million of costs corresponding mainly to severance costs *(see note 16 to our 2020 Consolidated Financial Statements)*;
- US$37 million of impairment loss related to fair value re-measurement of our GeoSoftware business available for sale *(see note 5 to our 2020 Consolidated Financial Statements)*;

- US$36 million of impairment loss related to fair value re-measurement of the Shearwater Vendor Notes *(see note 7 to our 2020 Consolidated Financial Statements)*;
- US$98 million of impairment loss on our multi-client library as a consequence of the downward revision in sales forecasts for surveys in frontier exploration areas following governmental decisions and political unrest *(see note 10 to our 2020 Consolidated Financial Statements)*;
- US$24 million of impairment loss relating to goodwill affected our GeoConsulting cash generating unit mainly involved in exploration and upstream evaluation *(see note 11 to our 2020 Consolidated Financial Statements)*;
- US$11 million of loss related to the fair value remeasurement of the Eidesvik Put Option *(see note 14 to our 2020 Consolidated Financial Statements)*;
- US$9 million of loss on deferred tax asset *(see note 24 to our 2020 Consolidated Financial Statements)*;
- US$7 million impairment loss on customer relationships and trade name of our GeoConsulting business *(see note 21 to our 2020 Consolidated Financial Statements)*; and
- US$4 million impairment loss of right of use *(see note 9 to our 2020 Consolidated Financial Statements)*.

In our Discontinued Operations, we recorded the following charges in relation to the CGG 2021 Plan:

- US$34 million of impairment loss mainly related to the fair value re-measurement and impairment of our disposal groups, of which US$34 million of loss was on our joint ventures and US$1 million of loss was on our Land business, partly offset by US$1 million of gain on our Multi-Physics business; and
- US$14 million of financial losses for the Idle Vessel Compensation have been recognized, of which a US$10 million increase of the Idle Vessel Compensation following revised assumptions (see *"—Contractual obligations*").

In 2019, in our continuing operations, we recognized impairments and restructuring costs as follows:

- US$3 million of restructuring costs corresponding mainly to sundry right sizing measures;
- US$6 million of impairment mainly relating to buildings (notably in the United States); and
- US$33 million of impairment of Multi-Client surveys mostly due to changes in government regulations in Ireland and Africa;

In 2019, in our discontinued operations, we recognized US$156 million of impairments of assets and restructuring costs as part of the CGG 2021 Plan, comprising:

- US$12 million of restructuring costs, mostly related to exit, agency wind-down measures, and advisory fees;
- US$50 million of net impairment loss, including US$44 million of impairment loss recognized on the remeasurement to fair value less cost to sell for the disposal groups and US$6 million of impairment of intangible assets in Multi-Physics; and
- US$94 million of losses on the divestment of Seabed Geosolutions BV, including a US$35 million settlement payment to Fugro.

In 2018, in our continuing operations, we recognized write-offs, impairments and restructuring costs as follows:

- US$18 million of costs relating to the Transformation Plan and our financial restructuring;
- US$30 million of valuation allowance of Sercel's inventory; and
- US$240 million of impairment (mainly linked to the US Gulf of Mexico StagSeis data library for US$197 million).

In 2018, our discontinued operations, write-offs, impairments and net restructuring costs related to our Transformation Plan amounted to US$27 million (mainly redundancy packages). As part of the CGG 2021 Plan, we recognized US$402 million of impairments, provisions and restructuring costs at the operating income level in 2018, including:

- US$139 million of write-offs and impairments of assets;
- US$126 million of provisions for onerous contracts related to the reduction of our operating fleet from 5 to 3 vessels; and
- US$137 million of additional provisions, mainly related to redundancy costs.

Accounting policies

This operating and financial review and prospects should be read in conjunction with our Consolidated Financial Statements and the notes thereto included in this document, which have been prepared in accordance with IFRS and their interpretation as issued by the *International Accounting Standards Board* ("IASB") and as adopted by the European Union as at December 31, 2020.

Our significant accounting policies are fully described in note 1 to our 2020 Consolidated Financial Statements.

IFRS 16 application

We implemented IFRS 16 effective January 1, 2019 with a modified retrospective application. Therefore, the cumulative effect of adopting IFRS 16 was recognized as an adjustment to the opening balance of retained earnings on January 1, 2019, with no restatement of comparative information.

The impact of IFRS 16 on the net income from continuing operations in 2019 was not material, as the increase in depreciation and financial expense was offset by the decrease in operating lease expense. Similarly, in 2019, operating and investing cash flows from continuing operations increased and financing cash flows from continuing operations decreased by approximately US$50 million as operating lease payments are now treated as financial debt repayment.

The Group recognized right-of-use assets for continuing operations of US$129 million (after impairment) from the identified operating lease commitments and a discounted lease liability of US$146 million on January 1, 2019. In addition, the existing finance lease assets (US$67 million) and liabilities (US$50 million) determined in accordance with IAS 17 as at December 31, 2018 were classified in the same line item as the right-of-use assets and lease liabilities on operating leases determined in accordance with IFRS 16 on January 1, 2019.

For more information, please refer to note 1.3 of our 2019 Consolidated Financial Statements.

IFRS 15 application, internal reporting and Segment figures

We implemented the new accounting standard for revenues, IFRS 15, on January 1, 2018 with a modified retrospective application. Therefore, the cumulative effects of adopting IFRS 15 were recognized as an adjustment of the opening balances on January 1, 2018, with no restatement of comparative information.

The only change from the Group's historical practices related to recognition of multi-client prefunding revenues. Before the implementation of IFRS 15, the Group applied the percentage of completion method for these revenues. Following the implementation of IFRS 15, the Group instead recognizes multi-client prefunding revenues only upon delivery of final processed data. Consequently, the implementation of IFRS 15 impacts the timing of revenue recognition and amortization compared to previous accounting principles that provided for recognition of revenues and amortization over time as work was carried out. Multi-client prefunding revenues and related amortization are generally recognized later under IFRS 15 compared to the previous accounting principles.

Although IFRS fairly presents the Group's statement of financial position, for internal reporting purposes, our management continues to apply the previous (pre-IFRS 15) revenue recognition principle, with multi-client prefunding revenues recorded based on percentage of completion. Our management believes this method aligns revenues more closely with the activities and resources used to generate it and provides useful information as to the progress made on multi-client surveys, while also allowing for useful comparison across time periods.

We therefore present the Group's results of operations in two ways:

(i) the "Reported" or "IFRS" figures, prepared in accordance with IFRS, with multi-client prefunding revenues recognized upon delivery of the final data; and

(ii) the "Segment" figures, for purposes of internal management reporting (IFRS 8), prepared in accordance with the Group's previous method for recognizing multi-client prefunding revenues.

Beyond IFRS 15, the "Segment" figures also exclude the financial impacts of events and/or decisions made in consideration of exceptional conditions, such as our Transformation Plan and our financial restructuring

completed in February 2018. Our management believes that Segment figures presented this way provide a useful indication of the underlying profitability of operating activities for the period, while allowing for better tracking of organic performance and comparison across periods.

However, other companies may present Segment and related measures differently than we do. Segment figures are not a measure of financial performance under IFRS and should not be considered as an alternative to operating revenues, operating income or any other measures of performance derived in accordance with IFRS as indicators of our operating performance.

Changes in estimate for multi-client surveys amortization

Because the majority of the multi-client surveys sales take place during the prefunding phase and the subsequent four years and in order to harmonize reporting practices with other multi-client players, we decided from October 1, 2018 to adopt a four-year straight-line post-delivery amortization in accordance with the industry standard. Amortization was previously based on the sales forecast method (80% of the sales in most cases).

The introduction of the four-year straight-line post-delivery amortization led to us recognizing US$146 million of amortization on after sales from October 1, 2018 to December 31, 2018 (US$57 million from surveys more than four years old and US$89 million from other surveys). The amortization of after sales would have been US$39 million without this change in estimate. The negative impact of this change in estimate was thus US$106 million.

The prefunding cost of sales, recognized concurrently with the revenue upon delivery of the survey, is calculated from October 1, 2018 as the difference between the total capitalized cost of a survey upon delivery and the fair value based upon discounted future expected sales. The net book value of the survey upon delivery thus equals the net present value of future expected sales. Prefunding cost of sales was previously 80% of the prefunding sales recognized upon delivery.

Two surveys were delivered between October 1, 2018 and December 31, 2018. The previous estimate based on 80% of the prefunding sales was US$12 million higher than the prefunding cost of sales derived on discounted future expected sales. The positive impact of this change in estimate was US$12 million. The total negative impact of multi-client changes in estimate was US$94 million (US$106 million from after sales less the US$12 million from prefunding, represented as a net increase in amortization).

Significant events, acquisitions and divestures

During the periods under review, the most significant external event was the unprecedented crisis triggered by the Covid-19 pandemic, which led to a significant reduction in oil demand following, among other factors, the economic slowdown of the world economy and resulted in the collapse of oil prices and significant cuts in E&P spending by our clients.

The most significant changes to our perimeter during the period under review were the finalization of our Marine strategic partnership with Shearwater on January 8, 2020 and the divestment from Seabed.

Also during the periods under review, Shearwater acquired all of the shares in GSS and five sets of streamers, while the Capacity Agreement entered into force.

Please refer to note 2 to our 2020 Consolidated Financial Statements and note 2 to our 2019 Consolidated Financial Statements for a discussion on major events during the period under review.

Year ended December 31, 2020 compared to year ended December 31, 2019

Unless otherwise specified, comparisons made in this section are between the twelve months ended December 31, 2020 and the twelve months ended December 31, 2019. References to 2020 correspond to the twelve months ended December 31, 2020 and references to 2019 correspond to the twelve months ended December 31, 2019.

Operating revenues

The following table sets forth our operating revenues by division for each of the periods stated:

	Year ended December 31,						Increase/(Decrease)	
	2020			2019			2020 vs. 2019	
(In millions of US$)	Segment Figures	IFRS 15 adjustment	As reported	Segment Figures	IFRS 15 adjustment	As reported	Segment Figures	As reported
Geoscience	328.3	—	328.3	385.2	—	385.2	(15)%	(15)%
Multi-Client Data	339.7	(69.2)	270.5	574.7	(44.6)	530.1	(41)%	(49)%
GGR Revenues	**668.0**	**(69.2)**	**598.8**	**959.9**	**(44.6)**	**915.3**	**(30)%**	**(35)%**
Equipment Revenues	**290.7**	**—**	**290.7**	**452.1**	**—**	**452.1**	**(36)%**	**(36)%**
Eliminated revenues and others	(3.5)	—	(3.5)	(11.5)	—	(11.5)	(69)%	(69)%
TOTAL OPERATING REVENUES	**955.2**	**(69.2)**	**886.0**	**1,400.5**	**(44.6)**	**1,355.9**	**(32)%**	**(35)%**

Our consolidated operating revenues as reported, following the application of IFRS 15, decreased by 35% to US$886 million in 2020 from US$1,356 million in 2019.

Before IFRS 15 adjustments, our consolidated operating revenues decreased by 32% to US$955 million in 2020 from US$1,400 million in 2019, driven by declines in both our GGR and Equipment segments mainly due to the reduced E&P spending of our clients following the outbreak of the Covid-19 pandemic and the volatility in oil prices during the year. The respective contributions from the Group's businesses to our segment operating revenues were 70% from GGR and 30% from Equipment.

GGR

Operating revenues as reported from our GGR segment decreased by 35% to US$599 million in 2020 compared to US$915 million in 2019. Before IFRS 15 adjustments, GGR segment revenues decreased by 30% to US$668 million from US$960 million in 2019, with clients reprioritizing portfolios to factor in reductions in spending. The main components of our GGR segment and the main drivers behind the changes in operating revenues are detailed below.

Geoscience

Despite the general slowdown of the global economy following the outbreak of the Covid-19 pandemic and its negative effect on the oil price and clients' E&P spending, Geoscience has remained resilient over the period, while the majority of its employees was working remotely. Geoscience production was down by 15% to US$328 million in 2020 compared to US$385 million in 2019, driven by reduced demand from national oil companies, partly offset by long-term secured revenue of our dedicated processing centers and our interpretation software activities.

Multi-Client Data

Multi-Client Data revenues as reported decreased by 49% to US$270 million in 2020 compared to US$530 million in 2019. This decrease was mainly caused by exploration spending cuts triggered by our clients' budget reduction. Before IFRS 15 adjustments, Multi-Client Data segment revenues decreased by 41% to US$340 million in 2020 compared to US$575 million in 2019.

Prefunding revenues as reported decreased by 17% to US$144 million in 2020 from US$174 million in 2019. Excluding IFRS 15 adjustment, prefunding revenue of our multi-client projects reached US$213 million, down by 3% from US$218 million in 2019 as we started the year with a robust backlog. Our multi-client cash capital expenditures were up to US$239 million in 2020 from US$186 million in 2019, while the cash-prefunding rate was at 89% in 2020 from 118% in 2019.

Strongly impacted by the severe reduction of our clients' E&P spending, after-sales revenues decreased by 64% to US$127 million in 2020 from US$356 million in 2019, which included large one-off transfer fees following Anardarko's acquisition by Occidental Petroleum in the third quarter of 2019.

Equipment

Total revenues for our Equipment segment (including internal and external sales) decreased 36% to US$291 million in 2020 from US$452 million in 2019, mainly due to the significant reduction in equipment purchases following the outbreak of the Covid-19 pandemic.

Internal sales represented 1% of our total revenues in 2020 compared to 3% in 2019. External revenues for our Equipment segment decreased by 35% to US$287 million in 2020 from US$441 million in 2019.

- Land equipment sales represented 74% of total revenues in 2020, compared to 72% in 2019, with over 320,000 channels delivered in 2020 mainly in North Africa, the Middle East, India and Russia. Additionally, the first land node WiNG system was successfully delivered by Sercel in North America during 2020;
- Marine equipment sales represented 17% of total revenues in 2020 compared to 18% in 2019, driven by sales of spare sections of Sentinel streamers' installed base; and
- Downhole equipment and non-oil and gas sales decreased to US$25 million in 2020 compared to US$46 million in 2019, mainly due to the significantly reduced demand in the US shale for artificial lift gauges.

Operating expenses

The following table sets forth our operating expenses for each of the periods stated:

	Year ended December 31,				Increase/(Decrease)	
	2020		2019		2020 vs. 2019	
(In millions of US$)	Segment Figures	As reported	Segment Figures	As reported	Segment Figures	As reported
Operating revenues	955.2	886.0	1,400.5	1,355.9	(32)%	(35)%
Costs of Operations	(786.7)	(725.9)	(1,007.8)	(967.0)	(22)%	(25)%
% of operating revenues	(82)%	(82)%	(72)%	(71)%	—	—
Gross Margin	**169.2**	**160.8**	**393.4**	**389.6**	**(57)%**	**(59)%**
% of operating revenues	**18%**	**18%**	**28%**	**29%**	**—**	**—**
Research and development	(18.6)	(18.6)	(23.6)	(23.6)	(21)%	(21)%
% of operating revenues	(2)%	(2)%	(2)%	(2)%	—	—
Marketing and Selling	(32.5)	(32.5)	(47.0)	(47.0)	(31)%	(31)%
% of operating revenues	(3)%	(4)%	(3)%	(3)%	—	—
General and Administrative	(67.9)	(67.9)	(66.2)	(66.2)	3%	3%
% of operating revenues	(7)%	(8)%	(5)%	(5)%	—	—
Other incomes (expenses)	(214.5)	(214.5)	(9.3)	(9.3)	—	—
OPERATING INCOME	**(164.3)**	**(172.7)**	**247.3**	**243.5**	**(166)%**	**(171)%**
% OF OPERATING REVENUES	(17)%	(19)%	18%	18%	—	—

As a percentage of operating revenues as reported, cost of operations as reported increased to 82% in 2020 from 71% in 2019. Excluding IFRS 15 adjustments, segment cost of operations, as a percentage of the segment operating revenues, increased to 82% in 2020 from 72% in 2019, mainly due to the Group's reduced activity triggering lower absorption of structure costs.

Excluding impairment losses, the amortization cost of our multi-client library as reported corresponded to 68% of the Multi-Client Data revenues as reported in 2020 compared to 52% in 2019. Excluding impairment losses and IFRS 15 adjustments, the segment amortization cost of our multi-client library increased to 72% of the Multi-Client Data segment revenues in 2020 compared to 55% in 2019, mainly due to the decrease and less favorable mix in sales, and large one-off transfer fees in 2019.

Gross profit as reported decreased by 59% to US$161 million in 2020 from US$390 million in 2019, representing 18% and 29% of operating revenues, respectively; as a result of the factors discussed above. Segment gross profit was US$169 million in 2020, representing 18% of segment operating revenues compared to 28% in 2019.

Research and development costs decreased by US$5 million in 2020 compared to 2019 as a larger part of project development costs were capitalized in 2020 in our Equipment segment.

Marketing and selling expenses decreased by 31% in 2020 compared to 2019, mainly due to our reduced activity and the cost reduction measures.

General and administrative expenses increased slightly by 3% in 2020, impacted by a slightly less favorable exchange rate environment (the average exchange rate was set as US$1.14 per euro in 2020 compared to US$1.12 per euro in 2019).

Other expenses of US$214.5 million were composed of US$42 million of restructuring, corresponding mainly to severance costs, and US$171 million of impairment and loss on fair value re-measurement.

Operating income

Operating income as reported amounted to a loss of US$173 million in 2020 as a result of the factors described above, compared to a gain of US$244 million in 2019. Excluding IFRS 15 adjustments, segment operating income amounted to a loss of US$164 million in 2020 compared to a gain of US$247 million in 2019.

Segment operating income from our GGR segment was a loss of US$130 million in 2020 compared to a gain of US$211 million in 2019, with 2020 strongly impacted by charges booked to align the Group cost structure with our clients' revised spending.

Segment operating income from our Equipment segment recorded a loss of US$11 million in 2020 compared to a gain of US$67 million in 2019, mainly impacted by the drop in the equipment market triggered by the Covid-19 pandemic.

Financial income and expenses

Net cost of financial debt in 2020 was US$134 million, which was stable compared to US$132 million in 2019.

Other financial income and expenses amounted to a loss of US$39 million in 2020, compared to an income of US$6 million in 2019, including US$47 million of loss on fair value re-measurement relating to other financial assets and liabilities linked to the Marine Acquisition exit transaction in 2020.

Income taxes

Income taxes as reported amounted to an expense of US$30 million in 2020, including US$9 million of impairment loss on a deferred tax asset triggered by the downward revision of perspectives following our clients' E&P spending reductions in 2020, compared to a US$9 million gain in 2019.

Net income from continuing operations

Net income from continuing operations as reported was a loss of US$376 million in 2020 compared to a gain of US$126 million in 2019 as a result of the factors discussed above.

Excluding IFRS 15 adjustments, net income from continuing operations amounted to a loss of US$367 million in 2020 compared to a gain of US$130 million in 2019.

Net income from discontinued operations

Operating revenues for Contractual Data Acquisition decreased 80% to US$39 million in 2020 from US$191 million in 2019.

Net loss from discontinued operations amounted to US$63 million in 2020 compared to a loss of US$188 million in 2019, mainly due to our gradual exit from this segment as part of our CGG 2021 Plan.

Net income

Net income as reported was a loss of US$438 million in 2020 compared to a loss of US$62 million in 2019.

Statutory financial statements of CGG S.A.

Operating revenues of CGG S.A. in 2020 were €17 million compared to €26 million in 2019.

Operating loss amounting to €17 million in 2020 was stable compared to 2019.

Financial loss amounted to €929 million in 2020 compared to a financial income of €195 million in 2019, mainly as a consequence of a provision allowance on shares of subsidiaries of €1,224 million, and due to downgraded perspectives following E&P spending cuts. In 2020, the financial results of CGG S.A. also included *(i)* a provision reversal of €125 million after the Seabed Geosolution BV (Seabed) sale; and *(ii)* a provision allowance on Shearwater shares of €33 million. Financial interests remain stable.

Extraordinary income and expense amounted to a loss of €137 million in 2020, including the sale of the Seabed remaining shares for €125 million and the cancellation of Argas dividends for €12 million. Extraordinary expense amounted to €101 million in 2019, including the sale of Seabed shares for €75 million and the €31 million payment to Fugro to terminate the Seabed joint venture agreement.

Net income tax was a credit of €7 million in 2020 because of French tax group benefits, compared to a tax credit of €20 million in 2019 partly resulting from the reversal of the provision for the use of subsidiaries' deficits.

Net income was a loss of €1,076 million compared to a net income of €97 million in 2019, resulting from the above factors.

The shareholders' equity as of December 31, 2020 amounted to €0.8 billion including the net loss for the period, compared to €1.9 billion as of December 31, 2019.

No dividend has been distributed in the last three fiscal years.

Year ended December 31, 2019 compared to year ended December 31, 2018

Unless otherwise specified, comparisons made in this section are between the twelve months ended December 31, 2019 and the twelve months ended December 31, 2018. References to 2019 correspond to the twelve months ended December 31, 2019 and references to 2018 correspond to the twelve months ended December 31, 2018.

Operating Revenues

The following table sets forth our operating revenues by division for each of the periods stated:

	2019			**2018**			**Increase/(Decrease)**	
	Segment figures	**IFRS 15 adjustment**	**As reported**	**Segment figures**	**IFRS 15 adjustment**	**As reported**	**Segment figures**	**As reported**
				(In millions of US$)				
Geoscience	385.2	—	385.2	396.0	—	396.0	(3)%	(3)%
Multi-Client Data	574.7	(44.6)	530.1	517.4	(33.9)	483.5	11%	10%
GGR Revenues	**959.9**	**(44.6)**	**915.3**	**913.4**	**(33.9)**	**879.5**	**5%**	**4%**
Equipment Revenues	**452.1**	**—**	**452.1**	**350.8**	**—**	**350.8**	**29%**	**29%**
Eliminated revenues and others	(11.5)	—	(11.5)	(36.8)	—	(36.8)	—	—
Total operating revenues	**1,400.5**	**(44.6)**	**1,355.9**	**1,227.4**	**(33.9)**	**1,193.5**	**14%**	**14%**

Our consolidated operating revenues as reported, following the implementation of IFRS 15, increased by 14% to US$1,356 million in 2019 from US$1,194 million in 2018.

The respective contributions from the Group's businesses to our segment operating revenues were 69% from GGR and 31% from Equipment in 2019.

GGR

In 2019, GGR revenues as reported increased by 4% compared to 2018. Excluding IFRS 15 adjustments, GGR segment revenues increased by 5% to US$960 million from US$913 million in 2018.

Geoscience

Operating revenues from our Geoscience business line decreased by 3% to US$385 million in 2019 from US$396 million in 2018, mainly due to project delays and increased focus on more profitable businesses. In 2019, Geoscience expanded its position in the Middle East, particularly in Abu Dhabi and Kuwait. The demand for high-end OBN (ocean bottom node) projects remained strong.

Multi-Client Data

Multi-Client Data revenues as reported increased by 10% in 2019 compared to 2018. Excluding IFRS 15 negative adjustments of US$45 million, Multi-Client Data segment revenues were up by 11% at US$575 million in 2019.

Prefunding revenues as reported decreased by 4% to US$174 million in 2019. Excluding IFRS 15 adjustments, prefunding segment revenues increased by 1% to US$218 million in 2019 from US$216 million in 2018, despite capital expenditures' decreasing by 17%, down to US$186 million in 2019 mostly due to programs and permits delays. The cash-prefunding rate was 118%, compared to 97% reached in 2018.

After-sales revenues were very strong in active basins at US$356 million in 2019, up by 18% compared to US$302 million in 2018, including a significant one-off transfer fee in the third quarter of 2019. Without the non-recurring transfer fee portion, after-sales revenues would have been essentially flat in 2019 compared to 2018.

Equipment

Total revenues for our Equipment segment (including internal and external sales) increased by 29% to US$452.1 million in 2019.

Internal sales represented 3% of total revenues in 2019 compared to 10% in 2018. External revenues for our Equipment segment increased by 40% to US$441 million in 2019 from US$314 million in 2018, due to higher land equipment volumes with more deliveries of our 508XT systems.

Land equipment sales represented 72% of total revenues in 2019, compared to 61% in 2018, with significant deliveries in the Middle East, Russia and North Africa (with close to 100,000 508XT channels delivered in the fourth quarter of 2019) and the first sale of our WiNG system.

Marine equipment sales represented 18% of total revenues in 2019 compared to 26% in 2018 as a result of demand for streamers replacement continuing to be constrained by low capital expenditures from our customers.

Downhole gauges sales represented 7% of equipment revenues in 2019 and 10% in 2018, with sales of artificial lift gauges slowing in the United States.

Non-oil-field-related sales increased compared to 2018 and represented 4% of total revenues in 2019.

Operating expenses

	December 31, 2019		December 31, 2018	
	Segment figures	As reported	Segment figures	As reported
	In millions of US$			
Operating revenues	1,400.5	1,355.9	1,227.4	1,193.5
Costs of operations	(1,007.8)	(967.0)	(930.7)	(931.0)
% of operating revenues	(72)%	(71)%	(76)%	(78)%
Gross margin	**393.4**	**389.6**	**298.1**	**263.9**
% of operating revenues	28%	29%	24%	22%
Research and development	(23.6)	(23.6)	(30.5)	(30.5)
% of operating revenues	(2)%	(2)%	(2)%	(3)%
Marketing and selling	(47.0)	(47.0)	(45.9)	(45.9)
% of operating revenues	(3)%	(3)%	(4)%	(4)%
General and administrative	(66.2)	(66.2)	(81.1)	(81.1)
% of operating revenues	(5)%	(5)%	(7)%	(7)%
Other income (expenses)	(9.3)	(9.3)	1.7	(286.1)
Operating income	**247.3**	**243.5**	**142.3**	**(179.7)**
% of operating revenues	18%	18%	12%	(15)%

The amortization cost of our seismic library as reported corresponded to 58% of the Multi-Client Data revenues as reported in 2019 compared to 67% in 2018. Excluding IFRS 15 adjustments, the segment amortization costs of our seismic library decreased to 61% of the multi-client data segment revenues in 2019 compared to 63% in 2018, mainly due to a favourable after-sales mix despite impairments.

Cost of operations as reported, including depreciation and amortization, increased by 4% to US$967 million in 2019 compared to US$931 million in 2018, mainly as a consequence of the significant growth in activity of our Equipment segment, partially offset by the reduction in amortization costs of our seismic library as mentioned above.

As a percentage of operating revenues as reported, cost of operations as reported decreased to 71% in 2019 from 78% in 2018. Excluding IFRS 15 adjustments, segment cost of operations decreased to 72% in 2019 from 76% in 2018 mainly due to activity and revenue increase triggering better absorption of structure costs.

Gross margin as reported increased to US$390 million in 2019 from US$264 million in 2018, representing 29% and 22% of operating revenues, respectively, as a result of the factors discussed above. Segment gross margin was a profit of US$393 million in 2019, representing 28% of segment operating revenues and 24% of segment operating revenues in 2018.

Research and development expenditures decreased to US$24 million in 2019 from US$31 million in 2018, representing 2% and 3% of operating revenues as reported, respectively. They also represented 2% of segment operating revenues in 2019. The decrease in research and development expenditures in 2019 compared to 2018 was mainly due to the write-down of a research tax credit in the United States in 2018.

Marketing and selling expenses increased by 2% to US$47 million in 2019 from US$46 million in 2018. They represented 3% of operating revenues as reported and of segment operating revenues in 2019, compared to 4% in 2018.

General and administrative expenses decreased by 18% to US$66 million in 2019 from US$81 million in 2018, mostly due to (i) the reduction in support costs as part of our CGG 2021 Plan and (ii) a favourable exchange rate environment with an average rate of US$1.12 per euro for 2019 compared to US$1.18 per euro in 2018. General and administrative expenses represented 5% of operating revenues as reported in 2019 from 7% in 2018. Excluding IFRS 15 adjustments, they represented 5% of segment operating revenues in 2019.

Other expenses were US$9 million in 2019, including US$6 million of impairment relating mainly to unused spaces in buildings (notably in the United States) and US$3 million of net restructuring costs relating to sundry right-sizing measures. In 2018, other expenses as reported amounted to US$286 million, including mostly US$240 million of impairment of intangible assets principally related to our offshore multi-client library, and US$30 million of valuation allowance of inventory and US$18 million of other restructuring costs relating to our Transformation Plan and financial restructuring (mostly fees relating to the financial restructuring completed in early 2018).

Operating income

Operating income as reported amounted to a gain of US$244 million in 2019 as a result of the factors described above, compared to a loss of US$180 million in 2018. Excluding IFRS 15 adjustments, the impact of the Transformation Plan and the financial restructuring and impairments and provisions, the segment operating income amounted to a gain of US$247 million in 2019 compared to a gain of US$142 million in 2018.

Segment operating income from our GGR segment was an income of US$211 million in 2019 compared to an income of US$176 million in 2018, mainly coming from a favourable sales mix in Multi-Client, boosted by the one-off transfer fee, while Geoscience businesses delivered a steady performance.

Segment operating income from our Equipment segment was an income of US$67 million in 2019 compared to an income of US$12 million in 2018, mostly due to high volumes in land equipment sales driving a better absorption of manufacturing costs.

Equity in income of affiliates

Net income from investments accounted for under the equity method was nil in 2019 compared to a loss of US$1 million in 2018.

Financial income and expenses

Net cost of financial debt increased by 3% to US$132 million in 2019 from US$127 million in 2018 mostly due to the payment in kind feature in our second lien senior secured notes due 2024 and the impact of the application of IFRS 16 which amounted to US$9 million in 2019.

Other financial income and expenses amounted to an income of US$6 million in 2019, compared to an income of US$820 million in 2018, mainly resulting from the strong positive impact of our financial restructuring for US$771 million.

Income taxes

Income taxes as reported amounted to an income of US$9 million in 2019 compared to an expense of US$7 million in 2018, mainly due to deferred taxation impacts in France and in the United States.

Net income from continuing operations

Net income as reported from continuing operations amounted to US$126 million in 2019 compared to a gain of US$504 million in 2018 as a result of the factors discussed above.

Excluding IFRS 15 adjustments, the impact of the Transformation Plan and the financial restructuring and impairments and provisions, segment net income from continuing operations amounted to a gain of US$130 million in 2019 compared to a gain of US$78 million in 2018.

Net income from discontinued operations

Operating revenues for Contractual Data Acquisition decreased by 15% to US$191 million in 2019 from US$226 million in 2018.

Operating expenses decreased by 42% to US$198 million in 2019 from US$340 million in 2018 due to the wind-down of activities.

Other expenses amounted to US$156 million in 2019, including:

(i) US$12 million of restructuring costs, mostly related to exit and wind-down measures;

(ii) US$50 million of net impairment loss, including US$44 million of impairment loss recognized on the remeasurement to fair value less cost to sell for the disposal groups and US$6 million of impairment of intangible assets in Multi-Physics; and

(iii) US$94 million of losses on the divestment in Seabed, including the US$35 million settlement payment to Fugro.

Other net expenses amounted to US$425 million in 2018, including (i) US$402 million of impairments and provisions relating to our CGG 2021 Plan, (ii) US$27 million of net restructuring costs relating to our Transformation Plan and (iii) US$4 million of net gain on sales of assets.

Net loss from discontinued operations amounted to US$188 million in 2019 compared to a loss of US$600 million in 2018 as a result of factors described above.

Net income

Net loss as reported was US$62 million in 2019 compared to a loss of US$96 million in 2018 as a result of the factors discussed above.

Net income attributable to the shareholders of CGG S.A. was US$(69) million (€(62) million) in 2019 compared to net loss of US$102 million (€86 million) in 2018.

Statutory financial statements of CGG S.A.

Operating revenues of CGG S.A. in 2019 were €26 million compared to €28 million in 2018.

Operating loss in 2019 amounted to €17 million compared to a loss of €16 million in 2018.

Financial income amounted to €195 million in 2019 compared to a loss of €152 million in 2018, mainly as a consequence of (i) dividends received from affiliates for €216 million compared to €260 million in 2018, (ii) a net reversal of provisions for €18 million mainly related to the exit of Seabed compared to a provision allowance of €(474) million in 2018, and (iii) interest income on loans to affiliates; offset by (iv) interest expenses of €79 million compared to €69 million in 2018.

Extraordinary income and expense amounted to an expense of €(101) million in 2019, mainly due to the sale of Seabed shares for €(75) million and the €(31) million payment to Fugro to terminate the Seabed joint venture agreement. Extraordinary income and expense amounted to expense of €(103) million in 2018, including financial restructuring costs of €(41) million and €(64) million of grants provided by CGG S.A. to its subsidiary CGG International SA.

Net income tax was a credit of €20 million in 2019 partly resulting from the reversal of the provision for the use of subsidiaries' deficits. Net income tax was nil in 2018.

Net income was an income of €97 million compared to a net loss of €271 million in 2018, resulting from the above factors.

The shareholders' equity as of December 31, 2019 amounted to €1.9 billion compared to €1.8 billion as of December 31, 2018, including the net income for the period of €97 million.

No dividend has been distributed in the last three fiscal years.

Liquidity and Capital Resources

Our principal financing needs are the funding of ongoing operations and capital expenditures, investments in our Multi-Client Data library, the funding of restructuring costs and the rest of the CGG 2021 Plan as well as of our debt service obligations. We do not have any major debt repayment scheduled before 2023, the maturity date of our first lien senior secured notes as of December 31, 2020. We intend to fund our capital requirements through cash generated by operations and liquidity on hand. In the past, we have obtained financing through bank borrowings, asset financing, capital increases and issuances of debt and equity-linked securities.

Our ability to make scheduled payments of principal, or to pay the interest or additional amounts, if any, or to refinance our indebtedness, or to fund planned capital expenditures will depend on our future performance, which, to a certain extent, is subject to general economic, financial, competitive, legislative, regulatory and other factors that are beyond our control such as investors' perceptions of the oil and gas market in an energy transition context.

Cash flows

Operating activities

The following table presents a summary of the net cash provided by operating activities for each of the periods stated:

	Year ended December 31,		
	2020	2019	2018
	In millions of US$		
Net cash before changes in working capital	300.1	637.8	434.1
Change in working capital	(35.8)	113.6	(68.8)
Net cash provided by operating activities	264.3	751.4	365.3

Before changes in working capital, net cash as reported provided by operating activities in 2020 was US$300 million compared to US$638 million in 2019, due to lower demand resulting from the Covid-19 pandemic and the industry factors discussed above. Changes in working capital had a negative impact on cash from operating activities of US$36 million in 2020 driven by the rebound of Equipment sales in the fourth quarter of 2020, while a very favorable collection pattern materially impacted 2019.

Net cash provided by operating activities was US$264 million in 2020 compared to US$751 million in 2019.

Before changes in working capital, net cash provided by operating activities in 2019 was US$638 million compared to US$434 million in 2018, mainly due to increased profitability of our continuing operations in a context of strong revenue growth. Changes in working capital had a positive impact on cash from operating activities of US$114 million in 2019 compared to a negative impact of US$69 million in 2018, mainly due to a significant decrease in accounts receivables (as a result of the collection in 2019 of the high revenue from the fourth quarter of 2018 and faster than usual collection in the fourth quarter of 2019).

Net cash provided by operating activities was US$751 million in 2019 compared to US$365 million in 2018.

Investing activities

The following table presents the summary of main items of net cash used in investing activities for each of the periods stated:

	Year ended December 31,		
	2020	2019	2018
	In millions of US$		
Net cash used in investing activities	289.6	261.5	300.8
Of which			
Industrial capital expenditures	23.2	42.9	44.9
Capitalized development costs	40.9	32.4	33.1
Multi-Client Data	239.0	185.7	222.8

The net cash used in investing activities was US$290 million in 2020 compared to US$262 million in 2019, increasing by US$53 million mainly driven by multi-client data investments in Brazil, the North Sea and Australia.

In 2020, we had five on-going multi-client projects, including three marine streamer surveys (Nebula in Brazil, Gippsland in Australia and North Viking Graben in Norway), one ocean bottom nodes survey in the UK North Sea in the Cornerstone, and one onshore land survey in the US – Central Basin Platform.

As of December 31, 2020, the net book value of our multi-client data library as reported was US$492 million compared to US$531 million as of December 31, 2019. Excluding IFRS 15 adjustments, the segment net book value of our multi-client data library was US$285 million as of December 31, 2020, compared to US$376 million as of December 31, 2019.

Net cash used in investing activities was US$262 million in 2019 compared to US$301 million in 2018. In 2019, we slightly decreased our industrial capital expenditures inclusive of the Sercel lease pool, and net of asset suppliers' variance to US$43 million compared to US$45 million in 2018, while we kept development costs stable.

The decrease in multi-client data was principally due to lower capital expenditures in delayed offshore multi-client projects (permits delays in particular). We invested in multi-client data primarily in Brazil, the North Sea and US Land during 2019, while in 2018 we invested primarily in Latin America, Mozambique and Scandinavia.

As of December 31, 2019, the net book value of our multi-client data library as reported was US$531 million compared to US$633 million as of December 31, 2018. Excluding IFRS 15 adjustments, the segment net book value of our multi-client data library was US$376 million as of December 31, 2019, compared to US$519 million as of December 31, 2018.

Financing activities

Net cash used by financing activities was US$148 million during the twelve months ended December 31, 2020, compared to net cash used of US$142 million for 2019. In 2020, net cash flow used by financing activities was mainly related to financial expenses paid of US$80 million, lease repayments (resulting from the application of IFRS 16) of US$55 million, dividends paid to minority shareholders of US$7 million and the early repayment of creditors as we completed our safeguard procedure of US$5 million.

The net cash flow used by financing activities was US$142 million in 2019 compared to net cash provided of US$191 million in 2018 as the result of the finalization of our financial restructuring plan on February 21, 2018.

In 2019, the net cash flow used by financing activities included US$57 million of lease repayments, mostly resulting from the application of IFRS 16.

Net cash flow from discontinued operations

The following table presents a summary of the cash flows of the discontinued operations for each of the periods stated:

	Year ended December 31,		
	2020	**2019**	**2018**
	In millions of US$		
Net cash flow provided by operating activities	(51.8)	(92.7)	(113.6)
Net cash flow used in investing activities	6.3	(37.5)	(5.7)
Net cash flow provided by (used in) financing activities	(27.0)	(37.4)	—
Net cash flow from discontinued operations	(72.5)	(167.6)	(119.3)

The net cash flow incurred by discontinued operations in 2020 included disbursements in respect of the CGG 2021 Plan for an amount of US$87 million, of which US$42 million of severance cash outflows, US$22 million of cash outflows in respect of Idle Vessel Compensation and US$24 million of ramp down cash outflows and US$7 million of proceeds of Land assets.

The net cash flow incurred by discontinued operations was US$168 million in 2019 compared to net cash incurred of US$119 million in 2018. In 2019, the net cash flow incurred by discontinued operations included disbursements related to the CGG 2021 Plan for an amount of US$136 million, including the settlement payment of US$35 million to Fugro relating to our exit from Seabed.

Financial debt

After IFRS 16, net financial debt as of December 31, 2020 was US$1,004 million compared to US$716 million as of December 31, 2019. The ratio of net financial debt to equity was 90% as of December 31, 2020 compared to 46% as of December 31, 2019. The ratio of net debt to equity as of December 31, 2019 and 2018 was 46% and 45%, respectively.

"Gross financial debt" is the amount of bank overdrafts, plus current portion of financial debt, plus financial debt, and "net financial debt" is gross financial debt less cash and cash equivalents. Net financial debt is presented as additional information because we understand that certain investors believe that netting cash against debt provides a clearer picture of our financial liability exposure. However, other companies may present net financial debt differently than we do. Net financial debt is not a measure of financial performance under IFRS and should not be considered as an alternative to any other measures of performance derived in accordance with IFRS.

The following table presents a reconciliation of gross financial debt and net financial debt to financing items of the balance sheet at December 31, 2020, 2019 and 2018 (according to IFRS):

	Year ended December 31,		
	2020	2019	2018
	In millions of US$		
Bank overdrafts	0.2	0.0	0.0
Current portion of financial debt	58.6	59.4	17.8
Financial debt	1,330.3	1,266.6	1,148.9
Gross financial debt	**1,389.1**	**1,326.0**	**1,166.7**
Less cash and cash equivalents	(385.4)	(610.5)	(434.1)
Net financial debt	**1,003.7**	**715.5**	**732.6**

Cash and cash equivalents included trapped cash amounting to US$49 million as at December 31, 2020, compared to US$76 million as at December 31, 2019. Trapped cash means any cash and cash equivalent held by a subsidiary that operates in a country where exchange controls or other legal restrictions prevent these cash balances from being available for use by the Group or one of its subsidiaries.

EBIT and EBITDAs

EBIT is defined as operating income plus our share of income in companies accounted for under the equity method. As a complement to operating income, EBIT may be used by management as a performance indicator for segments.

EBITDAs is defined as earnings before interest, tax, income from equity affiliates, depreciation, amortization net of amortization expense capitalized to multi-client and share-based compensation cost. Share-based compensation includes both stock options and shares issued under our share allocation plans. EBITDAs is presented as additional information because we understand that it is one measure used by certain investors to determine our operating cash flow and historical ability to meet debt service and capital expenditure requirements.

However, other companies may present EBIT and EBITDAs differently than we do. EBIT and EBITDAs are not a measure of financial performance under IFRS and should not be considered as an alternative to cash flow from operating activities or as a measure of liquidity or an alternative to net income as indicators of our operating performance or any other measures of performance derived in accordance with IFRS.

The following table presents a reconciliation of EBITDAs and EBIT to net income for the periods indicated:

	Year ended December 31, 2020			
	Segment figures	Transformation Plan, provisions and impairments	IFRS 15 adjustments	As reported
	In millions of US$			
EBITDAs	**360.7**	**—**	**(69.2)**	**291.5**
Depreciation and amortization	(193.5)	—	—	(193.5)
Multi-Client surveys impairment and amortization	(345.6)	—	60.8	(284.8)
Depreciation, amortization and impairment	18.1	—	—	18.1
Share-based compensation expenses	(4.0)	—	—	(4.0)
Operating income	**(164.3)**	**—**	**(8.4)**	**(172.7)**
Share of (income) loss in companies accounted for under equity method	0.1	—	—	0.1
EBIT	**(164.2)**	**—**	**(8.4)**	**(172.6)**
Cost of financial debt, net	(134.1)	—	—	(134.1)
Other financial income (loss)	(39.4)	—		(39.4)
Total income taxes	(29.5)	—		(29.5)
Net income from continuing operations	**(367.2)**	**—**	**(8.4)**	**(375.6)**

	Year ended December 31, 2019			
	Segment figures	Transformation Plan, provisions and impairments	IFRS 15 adjustments	As reported
	In millions of US$			
EBITDAs	**720.8**	**—**	**(44.6)**	**676.2**
Depreciation and amortization	(138.2)	—	—	(138.2)
Multi-Client surveys impairment and amortization	(348.8)	—	40.8	(308.0)
Depreciation, amortization and impairment	18.8	—	—	18.8
Share-based compensation expenses	(5.3)	—	—	(5.3)
Operating income	**247.3**	**—**	**(3.8)**	**243.5**
Share of (income) loss in companies accounted for under equity method	(0.1)	—	—	(0.1)
EBIT	**247.2**	**—**	**(3.8)**	**243.4**
Cost of financial debt, net	(131.7)	—	—	(131.7)
Other financial income (loss)	5.6	—	—	5.6
Total income taxes	8.9	—	—	8.9
Net income from continuing operations	**130.0**	**—**	**(3.8)**	**126.2**

	Year ended December 31, 2018			
	Segment figures	Transformation Plan, provisions and impairments	IFRS 15 adjustments	As reported
	In millions of US$			
EBITDAs	**556.0**	**(47.9)**	**(33.9)**	**474.2**
Depreciation and amortization	(104.0)	(13.9)	—	(117.9)
Multi-Client surveys impairment and amortization	(326.0)	(226.0)	(0.3)	(552.3)
Depreciation, amortization and impairment	18.8	—	—	18.8
Share-based compensation expenses	(2.5)	—	—	(2.5)
Operating income	**142.3**	**(287.8)**	**(34.2)**	**(179.7)**
Share of (income) loss in companies accounted for under equity method	(1.2)	—	—	(1.2)
EBIT	**141.1**	**(287.8)**	**(34.2)**	**(180.9)**
Cost of financial debt, net	(126.1)	(1.3)	—	(127.4)
Other financial income (loss)	66.7	753.2	—	819.9
Total income taxes	(3.3)	—	(4.1)	(7.4)
Net income from continuing operations	**78.4**	**464.1**	**(38.3)**	**504.2**

For 2020, EBITDAs as reported represented 33% of operating revenues as reported compared to 50% for 2019. For 2019, EBITDAs as reported represented 50% of operating revenues as reported compared to 40% for 2018. In 2018, EBITDAs as reported included US$18 million of restructuring expenses relating to our Transformation Plan.

The following table presents EBITDAs by segment for the periods indicated:

	Year ended December 31, 2020			
	Segment figures	Transformation Plan, provisions and impairments	IFRS 15 adjustments	As reported
	In millions of US$			
GGR	361.2	—	(69.2)	292.1
Equipment	20.9	—	—	20.9
Non-Operated Resources	—	—	—	—
Eliminations and other	(21.5)	—	—	(21.5)
EBITDAs	**360.7**	**—**	**(69.2)**	**291.5**

	Year ended December 31, 2019			
	Segment figures	**Transformation Plan, provisions and impairments**	**IFRS 15 adjustments**	**As reported**
	In millions of US$			
GGR	652.1	—	(44.6)	607.5
Equipment	96.6	—	—	96.6
Non-Operated Resources	—	—	—	—
Eliminations and other	(27.9)	—	—	(27.9)
EBITDAs	**720.8**	**—**	**(44.6)**	**676.2**

	Year ended December 31, 2018			
	Segment figures	**Transformation Plan, provisions and impairments**	**IFRS 15 adjustments**	**As reported**
	In millions of US$			
GGR	557.8	—	(33.9)	523.9
Equipment	42.1	(30.1)	—	12.0
Non-Operated Resources	—	(17.8)	—	(17.8)
Eliminations and other	(43.9)	—	—	(43.9)
EBITDAs	**556.0**	**(47.9)**	**(33.9)**	**474.2**

Net cash flow

"Net cash flow" is defined as "Net cash flow provided by operating activities" plus "Total net proceeds from disposals of assets", minus (i) "Total capital expenditures", "Investments in multi-client surveys, net cash" and "Acquisition of investments, net of cash and cash equivalent acquired" as set out in our consolidated statement of cash flows in the "Investing section", (ii) "Lease repayment" and "Financial expenses paid" as set out in our consolidated statement of cash flows in the "Financing section", and (iii) "Net cash flows incurred by Discontinued Operations".

Net cash flow is presented as additional information because we understand that it is one measure used by certain investors to determine our operating cash flow and historical ability to meet debt service and capital expenditure requirements. However, other companies may present net cash flow differently than we do. Net cash flow is not a measure of financial performance under IFRS and should not be considered as an alternative to cash flow from operating activities or any other measures of performance derived in accordance with IFRS.

Net cash flow as reported amounted to inflows of US$186 million in 2019 compared to outflows of US$129 million in 2018. Before Net cash flows incurred by Discontinued Operations, Net cash flow amounted to inflows of US$353 million in 2019, compared to outflows of US$10 million in 2018.

	Year		
	2020	**2019**	**2018**
	In millions of US$		
Net cash flow provided by operating activities	264.3	751.4	365.3
Total capital expenditures (including variation of fixed assets suppliers, excluding multi-client surveys)	(64.1)	(75.3)	(78.0)
Investments in multi-client surveys, net cash	(239.0)	(185.7)	(222.8)
Total net proceeds	0.5	0.2	4.4
Acquisition of investments, net of cash and cash equivalents acquired	(0.4)	—	—
Lease repayments	(55.5)	(56.9)	(5.7)
Financial expenses paid	(80.2)	(80.5)	(73.2)
Net cash flow before net cash flows incurred by Discontinued Operations	(174.4)	353.2	(10.0)
Net cash flows incurred by Discontinued Operations	(72.5)	(167.6)	(119.3)
Net cash flow	**(246.9)**	**185.6**	**(129.3)**

Contractual obligations

The following table presents payments in future periods relating to contractual obligations as of December 31, 2020:

(In millions of US$)	Payments due by period				
	Less than 1 year	**2-3 years**	**4-5 years**	**After 5 years**	**Total**
Financial debt (including cumulated PIK)[a]	—	643.6	751.8	0.6	1,396.0
Other long-term obligations (cash interest)	83.5	147.9	9.2	—	240.6
Total long-term debt obligations	**83.5**	**791.5**	**761.0**	**0.6**	**1,636.6**
Lease obligations	53.6	56.0	19.3	11.1	139.9
Total contractual cash obligations[b][c]	**137.1**	**847.5**	**780.3**	**11.7**	**1,776.5**

(a) PIK: Payment-In-Kind interest

(b) Payments in other currencies are converted into US dollars at December 31, 2020 exchange rates

(c) These amounts are principal amounts and do not include any accrued cash interest

Off-balance sheet arrangements and contractual obligations

We have not entered into any other off-balance sheet arrangements that have or are reasonably likely to have a current or future material effect on our financial condition, changes in financial condition, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources that are material to investors.

See *"—Exit of Contractual Data Acquisition business—Capacity Agreement"* and *"—Step-In Agreements"* and notes 2 and 17 to our 2020 Consolidated Financial Statements for additional information regarding our commitments under the Capacity Agreement and Step-In Agreements.

Currency fluctuations

As a company that derives a substantial amount of its revenue from sales internationally, we are subject to risks relating to fluctuations in currency exchange rates. Our revenues and expenses are mainly denominated in US dollars and euros, and to a significantly lesser extent, in Canadian dollars, Brazilian reais, Australian dollars, Norwegian kroner, British pounds and Chinese yuan.

As of December 31, 2020, we estimate our net annual recurring expenses in euros at the Group level to be approximately €200 million, and as a result, an unfavorable variation of US$0.10 in the average yearly exchange rate between the US dollar and the euro would reduce our net income (loss) and our shareholders' equity by approximately US$20 million.

For further details on the effect of fluctuations in the exchange rate upon our results of operations, please refer to note 14 to our 2020 Consolidated Financial Statements.

Interest rates

We are subject to interest rate risk on our floating rate debt and when we refinance any of our debt. As of December 31, 2020, we had US$577 million of debt under our second lien notes, bearing variable interest, and an increase of one percentage point in the applicable three-month interest rate would have had a negative impact on our net results before taxes of US$5.8 million. Our second lien notes are subject to payment-in-kind (PIK) interest at a fixed rate of 8.5% per year. As a result, the principal amount increases each period and as such, the variable component of interest is paid on an increasing principal amount each period. Changes in the monetary policies of the US Federal Reserve and the European Central Bank, developments in financial markets and changes in our perceived credit quality may increase our financing costs and consequently adversely impact our ability to refinance our indebtedness, which could have a negative impact on our business, liquidity, results of operations and financial condition. We aim at having medium-term fixed rate debts to the extent possible.

For more information about our variable interest rate exposure, please refer to note 14 to our 2020 Consolidated Financial Statements.

Income taxes

We conduct the majority of our activities outside of France and pay taxes on income earned or deemed profits in each foreign country pursuant to local tax rules and regulations.

We have significant tax losses carried forward that are available to offset future taxation on income earned in certain OECD countries. Deferred tax assets are recognized only when their recovery is considered as probable or when there are existing taxable temporary differences, of an appropriate type, that reverse in an appropriate period. When tax laws limit the extent to which unused tax losses can be recovered against future taxable profits in each year, the amount of deferred tax assets recognized from unused tax losses as a result of suitable existing taxable temporary differences is restricted as specified by the applicable tax laws. When financial forecasts are revised downward, we consider the depreciation of our deferred tax assets recognized in prior periods.

Seasonality

We have historically experienced higher levels of activity in our equipment manufacturing operations in the fourth quarter as our clients seek to fully deploy annual budgeted capital expenditures. The same overall pattern usually applies to our Multi-Client activity which usually shows an increase in sales in the fourth quarter of the year.

OUR BUSINESS

Overview

We are a global geoscience technology leader. We employ approximately 3,900 people worldwide and provide a comprehensive range of data, products, services and equipment that support the discovery and responsible management of the Earth's natural resources.

CGG S.A. is the parent holding company of the CGG Group, which is comprised of 67 consolidated subsidiaries as of December 31, 2020 (62 abroad and five in France).

Geoscience

As recognized leaders in advanced subsurface imaging, our experts bring a collaborative approach to problem-solving. Our global network of 23 data imaging centers provides region-specific expertise, outstanding service and remarkable technology in every image.

We provide integrated reservoir characterization services and innovative solutions for complex exploration and production ("E&P") challenges. Our comprehensive portfolio of geoscience services brings valuable insight to all aspects of natural resource exploration and development, helping to reduce drilling risk and build better reservoir models.

We develop sophisticated algorithms and intuitive interfaces to deliver powerful reservoir answers from geophysical data at every stage from exploration to production. Since 2018, we have typically committed, on average, approximately 10 per cent. of our yearly revenues in research and development activities ("R&D"). We believe this contributes to our differentiation within the industry and has a positive impact on our market share.

Multi-Client

We invest in a portfolio of geographical opportunities to build a geoscience database and strive to achieve a high prefunding for our new projects.

We typically invest in the range of $200 million per year in our surveys. At the end of 2020, we had over 1.1 million square kilometers of high-end offshore, and over 100,000 square kilometers of high-end onshore, unconventional seismic data in some of the most prolific basins around the world. We own marketing rights to such data for a period of time and sell licenses to use this data to specific clients who generally use it for reservoir exploration and development.

Equipment

Through our subsidiary Sercel, we offer a full spectrum of systems, sensors and sources for seismic acquisition and downhole monitoring. Sercel sells its equipment and offers customer support services including training, on a worldwide basis. Sercel manufactures in its six seismic equipment manufacturing facilities a wide range of geophysical equipment for land and marine seismic data acquisition, including seismic recording equipment, software and seismic sources. Based on our own estimations, Sercel is the market leader in seismic equipment design, engineering, manufacturing and support as of December 31, 2020.

Operating Revenues Data

Revenues by Activity

The following table sets forth our consolidated operating revenues by activity in millions of dollars for the periods indicated:

	2020	2019	2018
	In millions of US$		
Multi-Client data	340	575	517
Geoscience	328	385	396
Geology, Geophysics & Reservoir ("GGR") segment revenues	668	960	913
Equipment segment revenues	291	452	351
Eliminated revenues and others	(4)	(11)	(37)
IFRS 15 impact on multi-client pre-commitments	(69)	(45)	(34)
Consolidated revenues	886	1,356	1,194

Revenues by Region

The following table sets forth our consolidated operating revenues by region (based on the location of our customers) in millions of dollars, and the percentage of total consolidated operating revenues represented thereby, for the periods indicated:

	2020		2019		2018	
	In millions of US$, except percentages					
North America	153	17%	375	28%	244	21%
Latin America	141	16%	180	13%	268	22%
Europe, Africa and the Middle East	410	46%	489	36%	447	37%
Asia Pacific	182	21%	312	23%	235	20%
Total	**886**	**100%**	**1,356**	**100%**	**1,194**	**100%**

Strengths

Leading people, data, and technology company

We have market-leading positions across our three core segments: Geoscience, Multi-Client (together known as GGR) and Equipment. Through our Geoscience division, we provide data imaging and processing services; our Multi-Client division comprises a comprehensive seismic data library with a large footprint in strategic locations in Europe, Africa, the Middle East, Asia Pacific, North America and Latin America; and our Equipment division provides leading high-tech land, marine, ocean bottom seismic and downhole equipment.

We believe we are one of the established leaders in subsurface imaging, geology and geoscience software, and we utilize modern technologies, advanced seismic interpretation, proprietary software and sophisticated algorithms to map challenging geologies. Our Geosciences division generated external revenues of $328 million for the year ended December 31, 2020.

Our multi-client data library, which we license to our clients on a non-exclusive basis, covers over 1.2 million square kilometres as of December 31, 2020. We believe it is particularly developed in some of the industry's key mature and secure basins (including, in particular, the Gulf of Mexico, Brazil, the North Sea and the Permian Basin). Our multi-client business generated segment revenues of $340 million for the year ended December 31, 2020.

Finally, our equipment division, Sercel, is one of the leading worldwide equipment providers. We have the largest installed base in the industry as of December 31, 2020 comprising an offering of land, marine, ocean bottom and downhole equipment. Sercel generated external revenues of $287 million for the year ended December 31, 2020.

We believe that our exposure to reservoir development and production and near field exploration provides resilience through the cycles, particularly as we expect clients to retrench into their core areas and prioritize capital expenditure on projects with lower risks or higher returns and to focus on higher efficiency and productivity. We also benefit from a well-balanced exposure within our GGR segment to different types of clients (with oil majors, international oil companies and national oil companies contributing 30%, 39% and 31%, respectively, to revenues of our GGR segment for the year ended December 31, 2020).

Strong focus on technology and providing value to clients

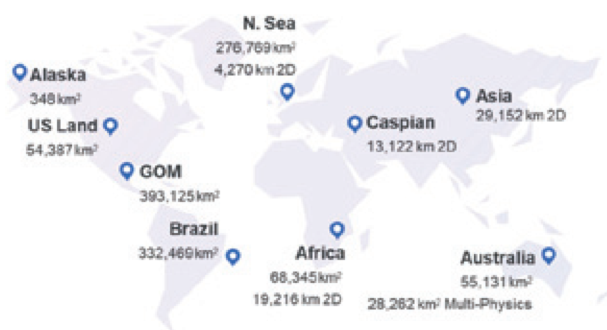
Our propriety technology allows us to provide value to our clients. We recognize the importance of technological leadership in enabling our customers to obtain new insights into mature exploration and production areas and more accurately understand and predict reservoir parameters.

In our Geoscience division, we believe that our imaging algorithms and processing software are industry-leading. They are supported by strong data processing capabilities: our 272 PetaFlops of high performance computing ("HPC") power is on par with leading global technology companies. This technology allows us to process data accurately and rapidly and to deliver it seamlessly into our clients' systems. Our Geoscience activity also benefits from long-term contracts and as of January 1, 2021 had a backlog of more than six months of forward activity. This is complemented by long-term (2-3 year) contracts for our dedicated centers and by recurring maintenance revenue from our GeoSoftware business.

In our multi-client business, our technology enables us to provide our clients with quick access to our high-quality seismic data. Likewise, in our equipment division, Sercel, we believe we offer a leading technology portfolio of modern equipment with strong product reliability and a focus on customer support. We believe we are at the forefront of the digitalization trends in the industry and have integrated analytics and machine learning technologies that have enhanced the value of our services and products, systematized quality control functions, and optimized our operations.

Multi-client library positioned in mature and stable core basins generating attractive returns and reducing financial volatility through pre-funding

We own a large and geographically diverse multi-client library comprising more than 1.2 million square kilometres of high-quality 3D seismic data. Our data library is particularly developed in mature and stable core basins such as Brazil, the North Sea (both UK and Norway) and the Gulf of Mexico. The map below shows the geographic breakdown of our multi-client libraries as of December 31, 2020.



We seek to mitigate cost-recovery risks associated with acquiring multi-client data through pre-funding of acquisition costs and we have a long track record of achieving our target prefunding levels of over 75%. For the year ended December 31, 2020, we achieved a cash pre-funding rate of 89% on multi-client capital expenditures of $239 million. Segment revenues from our multi-client business increased by 23% from 2017 to 2019. Additionally, we have seen an increasing percentage of such revenues deriving from after-sales in each of the three years, though these revenues decreased significantly in 2020 given the approximately 30% reduction in E&P spending in the industry globally.

Large global subsurface imaging footprint

We have a large and geographically-diversified subsurface imaging footprint, comprising a combination of open and dedicated (client-specific) centers on six continents focused on data production. Our 23 centers are staffed with more than 1,300 employees and are focused primarily on production, operations, and research and development. This infrastructure allows us to serve a large, diversified customer base in some of the industry's most mature markets. It also allows us to meet demand for various types of service, whether for dedicated centers, centralized processing, or decentralized processing close to production sites.

A successful business transformation towards activities that demonstrated strong performance during the downturn leaves us well positioned to capitalize on market recovery and secular trends emerging in the energy sector

We have reoriented our business towards a high-margin, capital expenditures-light and technology-focused business model, which remained robust in 2020 despite the recent downturn in the oil and gas industry. This new model also strongly positions us to benefit from secular industry trends. Our exit from the capital-intensive marine and land contractual data acquisition businesses has allowed us to focus on geoscience, multi-client and equipment activities and to reduce the volatility of our earnings. Our technological leadership and focus on high value-additive services differentiates us in the industry landscape.

2020 was marked by a rapid drop in the oil price by more than 50% in the first quarter, a result of both the significant decline in oil demand caused by the Covid-19 pandemic and a contest for market share between Saudi Arabia and Russia. Consensus estimates based on various brokers and large institutions (such as the U.S. Energy Information Administration) now project that oil prices will stabilize above US$50 per barrel (Brent) in 2021. These price levels are expected to drive additional reservoir development production optimization activity, which in turn should result in increased demand for our services.

In 2020, we also continued to develop new areas of profitable growth, extending our existing strengths and expertise into adjacent markets and supporting our clients' energy transition agendas. We are progressing well in establishing ourselves in new businesses, including digital solutions, structural health monitoring ("SHM"), support for carbon capture, utilization and storage ("CCUS"), geothermal energy and environmental geosciences.

Strong board and executive team to implement strategy, supported by experienced operational management

We have a highly skilled Board of Directors and an experienced executive and operational management team. Our key management personnel each has, on average more than 15 years of experience in our industry, with a strong track record in oil and gas field services and geoscience. The experience of our management team has been demonstrated in recent years by their leadership through our business transformation to a high-margin, capital expenditure-light and technology-focused business centred on geoscience, multi-client, and equipment activities. Our management has also demonstrated a proactive approach to our capital structure and liquidity management.

The members of our Board of Directors have a wide variety of skills and deep expertise in key areas of our current and future activities. All of our Board members have experience in innovation, digitalization and technology, and three-quarters have experience and skills in the oil and gas business and in strategy.

We employ geophysicists, geologists, engineers and other highly skilled employees who have contributed to maintaining our operational excellence and leading technology in the industry. We believe that the strength of our management team and our highly qualified workforce, including our key operational management, will be an important factor in the implementation of our business strategy.

Strategies

We intend to continue providing leading geological, geophysical and reservoir solutions and services to our broad base of customers, who primarily operate in the global oil and gas industry. Our strategy is to deliver leading technology, data, equipment and services that help our industry to discover and responsibly manage the Earth's natural resources. We provide a leading understanding of the subsurface, and by increasing precision we contribute significantly to the exploration, development and production value chain.

We are a people, data and technology company with established and strong leadership positions in our three core segments of Geoscience, Multi-Client and Equipment. We actively seek to preserve and expand our leadership within the industry, which requires focus on our clients and constant willingness and aspiration to exceed their expectations.

To achieve this objective, we have adopted the following strategies:

Developing an integrated Geoscience activity and capitalizing on our multi-client library in mature producing basins

We continue to invest in our key high-end geoscience technologies. Many of our customers are focusing their exploration and production budgets on increasing production from existing fields where they can use installed infrastructure. Our GGR segment benefits from this trend with robust demand for its services, data and imaging projects, given our leading ocean bottom nodes processing capabilities, as well as large multi-client projects in mature basins. In addition, major oil and gas companies are asking for more reprocessing of existing data sets in order to benefit from the development of new imaging algorithms. This allows our customers to maximize the return from exploration investments at a lower cost, compared with acquisition of new data.

The geoscience market is following the global trend of reduced exploration and production spending by clients, despite processing and imaging being a small part of their budgets. We expect that the development of renewable energy will be expensive and take time and that fossil fuels will remain at the core of oil and gas companies, which need the cash flows they provide to progressively transform their energy portfolios and meet the world's energy demands through the transition.

In this environment, geoscience imaging technology will continue to play a key role as it enables clients to make surgical choices when allocating their investments. Reprocessing data with the latest technologies is a cost-effective alternative to new data acquisition, and the balance between processing and reprocessing is shifting towards reprocessing.

Overall, our geoscience activity saw its external revenue decrease by 15% in 2020 compared to 2019, although we believe it still outperformed the market in 2020 on the back of its strong backlog at the beginning of 2020.

In the last few years, we have made a conscious effort to increase our Multi-Client business's participation in development and production and have avoided frontier exploration areas that we believed were less robust. Between 2017 and 2019, the share of the Geoscience revenue dedicated to exploration decreased from 35% to 25% as most of the projects delivered in subsurface imaging were related to producing fields and fields undergoing development. These projects are important for our clients even in the current environment. Our technology provides a much better understanding of the subsurface, and therefore is of significant value to clients as they decide on drilling locations, development opportunities or production plans.

Multi-Client segment revenues decreased by 41% in 2020 as compared to 2019, mainly as clients reduced spending on aftersales.

We expect that our future multi-client programs will continue to target core basins where our clients are focusing their investments (including Brazil and the North Sea). This will enable our clients to capitalize on their existing infrastructure while increasing and accelerating their returns.

Advancing our digital capabilities

Anticipating and supporting the increase in the volume of acquired data (Big Data) has required and will continue to require considerable research and development for seismic data processing, data driven solutions, data storage and management, and new parallel computing architectures that enable such data to be processed with a reasonable speed and in an energy efficient manner.

We believe that by continually improving our seismic data processing algorithms and software along with our HPC technology, we will remain one of the leading suppliers of high-end geoscience services. Our research and development work will therefore continue to focus on improving these technologies in order to support clients in their efforts to reduce the costs and risks associated with exploration, development and production.

We also believe that oil and gas companies are increasingly considering their geoscience data as one of their major assets. In this context, we are concentrating our digital geoscience expertise to provide expert digital transformation and data upcycling services, delivering cloud-ready data and software, pioneering data-driven algorithms and approaches, as well as harnessing artificial intelligence, machine learning and data analytics to augment geoscience workflows.

Developing innovative solutions within the Equipment segment and capitalizing on a strong client base

We believe that our Equipment business benefits from a strong reputation as a producer of high-end solutions, with a large installed base. We plan to continue to bring to the market our industry-leading equipment while expanding into other non-oil and gas markets.

In our Equipment segment, we believe Sercel maintains a strong level of research and development driven by high technological content of seismic equipment, which includes numerous modern technologies, such as wireless transmission, high- and low-frequency transmission or miniaturized electronic technologies, and also optical and acoustic technologies. Recently, Sercel launched S-lynks, a fully connected, stand-alone wireless solution from Sercel for measuring structural vibration.

Overall, the geophysics market is characterized by increasing demand for new technologies, both in land and marine, to achieve high-resolution imaging. Because of its strong reputation and past success, we expect Sercel should be able to maintain its position in the seismic equipment market, capitalizing on its installed base and the implementation of new technologies in its full product range. In 2020, Sercel's external revenue decreased by 35% as compared to 2019, mainly driven by a decrease of land activity. The streamer marine market is expected to remain weak as marine contractors continue to face a difficult market, restricting their ability to invest in new equipment. However, their current fleets are aging and their equipment excess is shrinking. Eventually, we expect that updates and replacements will be required.

In the medium term, we believe that the land equipment market should be supported by the need for better imaging of conventional onshore reservoirs that are currently being operated intensively in order to better control depletion. We expect that geographical pockets of new opportunities in India and Algeria should complement our traditional markets (Russia, China and the Middle East).

Using our core capabilities to expand into adjacent areas

We are pursuing efforts to further develop outside our core areas in a capital-efficient way. The current crisis has accelerated many of our clients' ambitions towards decarbonisation and the energy transition. We are seeking to develop new areas of profitable growth focused on near-to-core step-out diversification and establishing new businesses to address the growing demand for green energy. We are looking at three business development opportunities:

1. Adjacent end markets to which we could extend our current core business: we believe that CGG has leading market capabilities in data processing and data management and is well positioned to expand into data delivery, analysis and transformation. Our satellite mapping technologies help our E&P clients monitor offshore pollution. We have also expanded the range of our clients with mining companies, monitoring the stability of their mines and tailings dams.
2. Using existing core capabilities to extend into other domains: in our Equipment business, we believe Sercel has industry-leading sensor technologies and is expanding their application through SHM solutions. Infrastructure SHM spending is increasing at a CAGR of approximately 15% to 17% from 2020 to 2025 (source: AMR Report, Team analysis). Technological advancements in both sensor technologies and computing capabilities enable permanent and remote monitoring to transform reactive maintenance of aging infrastructure into a pre-emptive solution, reducing risks and maintenance costs while extending effective life. Satellite mapping technologies can be applied to a range of problems including infrastructure, facilities, subsidence and geo-hazards monitoring.
3. Expanding into areas where our clients are growing. Our clients continue to be increasingly focused on the energy transition, including decarbonization and a reduction of their environmental footprint. We believe that one of the key enablers for achieving these ambitious objectives is CCUS. Many of our clients are starting to incorporate the application of CCUS technologies into their field development plans. This requires a detailed understanding of the subsurface, for which we believe we possess key technologies and expertise. Within the CCUS value chain, CGG is aiming to play a key role in field development and monitoring of underground CO2 storage projects.

History and development

CGG S.A. was established on July 23, 1931 under the name "Compagnie Générale de Géophysique", to develop and market geophysical techniques for appraising underground geological resources. Since then, we gradually specialized in seismic techniques adapted to oil and gas exploration and production, while continuing to develop a broad range of other geophysical and geological activities. In 2007, we acquired Veritas DGC Inc. and were renamed "Compagnie Générale de Géophysique—Veritas". In 2013, we acquired Fugro's Geoscience Division and changed our name to "CGG". CGG is a *société anonyme* incorporated under the laws of the Republic of France and operates under the French Code de commerce, with a duration until 2030.

Industry conditions

Market environment and client needs

When the Covid-19 pandemic hit the global economy in the spring of 2020, oil demand fell by more than a fifth and oil prices collapsed. Since then, the economic recovery has been turbulent, but a return to the old world is unlikely. There have been oil price collapses before, but this one has been perceived as being different. Moreover, since the outbreak of the Covid-19 crisis, we have noticed significant changes in the approach of oil and gas companies towards a more accelerated energy transition by 2035, including major oil and gas companies such as BP, Shell, and Repsol announcing carbon neutrality targets.

These targets are indicative of a global transition toward carbon neutral energy sources in which even the oil industry, itself will be required to participate. As the public, governments and investors continue to appreciate the impact of climate change, growth of the renewable energy industry is accelerating. With increased environmental, societal and governance ("ESG") concerns, capital markets have shifted their investment focus and renewable energy equities have increased considerably in 2020. Governments' and investors' policies also increasingly support green infrastructure plans.

In 2020, we saw some major strategic shifts from integrated oil companies, especially in Europe. Some of them are reinventing their businesses to be in line with a global ambition to contain global warming within 2°C, transforming themselves into broader, lower-carbon energy companies and making firm commitments to

decarbonize their portfolios, increase renewable power generation, de-leverage balance sheets and support dividend commitments. The energy transition era is emerging. Renewable energy generation is expected to increase significantly in a shift away from historical fossil fuels based power generation.

We believe that the development of renewable energy will be expensive and long and that traditional oil and gas operations will for the time being remain at the core of oil and gas companies, as their cash flow is needed to progressively transform their energy portfolios and ensure the world has the energy it demands throughout the transition. Several analysts' reports project that oil and gas will remain fundamental sources of energy throughout the energy transition. As the required investments to maintain oil and gas production through the transition continue to be delayed, we expect this will eventually create an imbalance on the supply side that will need to be addressed.

While it is very difficult to predict the energy outlook in the current market, oil and gas production is projected to grow by a CAGR of 2% per year between 2019 and 2025. Some experts consider that 95% of the oil to be consumed in 2035 could come from reserves already discovered, under development or from existing reservoirs. In this context, we expect our clients to retrench into their core areas and prioritize capital expenditures on projects with lower risk and higher and more accelerated returns. We expect that oil and gas companies will remain focused on increased reservoir production and near field exploration for higher efficiency and productivity.

In this environment, we believe that our geoscience imaging technology plays a key role as it enables our clients to make surgical choices when allocating their investments. We believe that reprocessing data with the latest technologies is a cost-effective alternative to new data acquisition, and we have seen the balance between processing and reprocessing shifting towards the latter. Our Equipment business is also benefiting from the sustained activity of national oil companies ("NOCs") in the development of large and more productive onshore reservoirs. In that regard, production of key NOCs in the industry is expected to grow by approximately 5% through 2025, with capital expenditures forecast to increase by approximately 9%, based on data from Wood Mackenzie's Global Economic Model (Key NOCs include: Saudi Aramco, ADNOC, Sinopec, ONGC, Petrobras, Pemex and Sonatrach).

Financial difficulties relating to the unprecedented crisis affecting the oil and oil-services industries

We have been severely impacted by two unprecedented crises affecting the oil and gas industry: first, a steep decline in oil price between 2014 and 2018 and then, beginning in 2020, the Covid-19 pandemic, which triggered a global economic downturn. These two crises severely affected the Group as our business is dependent on the level of investments made by our customers in exploration, development and production of oil and gas, which is directly impacted by fluctuations in the price of oil. These crises have required us to re-evaluate our business profile and adjust our activity and headcount to the new baseline of activity in the industry.

The 2014-2018 oil market downturn and our Financial Restructuring

Oil prices began to drop from their highs in the second half of 2013 below levels anticipated by analysts and continued dropping through 2014 and 2015. As a result, our annual consolidated revenues in 2016 fell to a third of what we had recorded in 2012.

In response to this crisis, we began implementing our Transformation Plan in 2014. The implementation of this operational restructuring plan resulted, in particular, in (i) the reduction of the fleet of vessels operated by the CGG Group, (ii) the repositioning of our business in high value-added market segments, such as GGR and Equipment, (iii) a reduction of our workforce by 50%, (iv) enhanced cost control through rigorous cash management, which led to a reduction of approximately 80% of our monthly marine costs and 60% of our overhead costs, and (v) the reduction of our annual investments by close to 60%. This operational restructuring plan was financed in part by the €351 million capital increase completed in February 2016.

Despite these operational efforts, in a stagnant market that continued to weigh on business volume and prices, our debt level was no longer in line with our financial capabilities. Consequently, we announced at the beginning of 2017 that our financial performance would not enable us to generate sufficient cash flows to service our then-current level of debt. In this context, we began discussions with the various stakeholder groups in order to establish a financial restructuring plan and requested the appointment of a *mandataire ad hoc* to assist us in our negotiations. By a court order dated February 27, 2017, SELARL FHB, acting through Mrs. Hélène Bourbouloux, was appointed as *mandataire ad hoc* for a period of five months.

We continued our discussions with representatives of certain CGG creditors and our largest shareholders, under the aegis of the *mandataire ad hoc*. On June 1, 2017, we reached an agreement in principle, which was followed on June 13, 2017 by the signature of a lock-up agreement and a restructuring support agreement.

The comprehensive restructuring of our debt was implemented principally by way of safeguard proceedings in France and Chapter 11 and Chapter 15 proceedings in the United States.

A draft Safeguard Plan was approved on July 28, 2017 by the Lenders' Committee and by the General Meeting of Bondholders. The Works Council of the Company, which was consulted with respect to the draft Safeguard Plan, rendered a favorable opinion during its meeting held on October 2, 2017. In parallel, the different classes of affected creditors in the context of the Chapter 11 proceedings voted in favor of the Chapter 11 Plan, which was confirmed by the US Bankruptcy Court for the Southern District of New York by an order dated October 16, 2017.

In order to implement the restructuring plan, the necessary resolutions were approved by our General Meeting of Shareholders on November 13, 2017. The Safeguard Plan was then approved by a judgment of the Commercial Court of Paris on December 1, 2017. Lastly, the judgment of the Commercial Court of Paris relating to the Safeguard Plan was recognized and made enforceable in the United States under Chapter 15 proceedings on December 21, 2017. The implementation of the financial restructuring plan was finalized on February 21, 2018.

The Safeguard Plan met our objectives of strengthening our balance sheet and providing financial flexibility to continue investing in the future. The plan included (i) the equitization of nearly all of our unsecured debt, (ii) the extension of the maturities of our secured debt and (iii) the provision of additional liquidity to meet various business scenarios. We made certain undertakings as part of the Safeguard Plan, including to do what is necessary for our parent company and our French subsidiaries to be able to maintain their decision centers in France until December 31, 2022.

Certain minority holders of convertible bonds lodged an appeal against the approval judgement of the Safeguard Plan, which was rejected by the Appeals Court of Paris in a ruling dated May 18, 2018. This ruling was upheld by the French Supreme Court in a decision dated February 26, 2020, putting an end to this litigation. By a ruling issued on November 24, 2020, the Commercial Court of Paris acknowledged the completion of CGG's Safeguard Plan, following the early repayment in full of all of our remaining debt under it. Notwithstanding this successful outcome, on December 22, 2020, three third-party appeals were filed against the decision approving the completion of our Safeguard Plan. For further information, see "—*Legal Proceedings*".

The 2020 Covid-19 pandemic and volatility in oil prices

Thanks to significant progress in 2019, well ahead of our plans towards our strategic objective to become an asset-light people, data and technology company, we entered the year 2020 with a much leaner organization, which we believe is better positioned to navigate global economic and industry cycles.

Unfortunately, since the beginning of March 2020, two compounding crises dramatically affected global economies in general and the oil and gas industry in particular, severely degrading our business environment. The first crisis was the global economic downturn triggered by the Covid-19 pandemic. The second crisis was the volatility in the oil price throughout the year as prices declined from approximately US$65 per barrel (Brent) ("bbl") as of December 31, 2019 to approximately US$25/bbl as of March 31 2020, before rebounding to approximately US$40/bbl as of June 30, 2020 and further to approximately US$50/bbl as of December 31, 2020. This volatility throughout the year resulted mainly from the combined impact of the significant decline in oil demand caused by the Covid-19 pandemic, on the one hand, and the shift in oil supply from certain oil-producing countries (particularly Saudi Arabia and Russia), which increased their oil supply to gain market share, on the other hand. Therefore, in just a few weeks starting in March 2020, our business environment dramatically changed over the course of just a few weeks, and the energy sector experienced especially strong headwinds. Our clients reacted very quickly and profoundly: on average, oil and gas companies reduced their planned 2020 capital spending in the industry by around 30%. The energy transition agenda quickly gained momentum, and our clients started to shift a portion of their spending towards this transition, especially in Europe, while refocusing their oil and gas investments towards core areas and producing the most accessible oil.

In this business environment, facing one of the most intense cycles in the industry's recent history, we quickly adapted our businesses and organization to the new industry baseline and updated our plans to effectively manage a challenging 2020. Given the magnitude of the revenue drop in just three months, the Company rapidly cut its capital expenditures and cost structure, reduced staff in various locations worldwide, decreased administrative and support costs and reduced the number of contractors in our Equipment business.

The Covid-19 vaccine is expected to de-risk medium-term oil and gas demand, setting up a macro recovery cycle. There may be delays and the global oil market may still be volatile for longer than expected. In the near term, OPEC+ has shown a commitment to rebalancing oil markets via record production cuts with high levels of compliance. We believe that the industry's underinvestment in upstream development and production since 2014, especially in 2020 and the first months of 2021, could be setting the stage for global undersupply of oil in the near future. US shale oil production has been reset to a lower level and the days of annual growth above one million barrels a day might be over.

Responses to Industry Conditions

Cost base reduction

With segment revenues from activities down by 32% in 2020 compared to 2019, we quickly launched adaptation measures to reduce our cost structure, notably headcounts reduction, so as to preserve cash. The cost reduction measures will be implemented in phases in order to ensure business continuity. The first set took place during 2020 and US$42 million of severance costs were recognized as of December 31, 2020. We expect these measures to generate gross reduction in personnel fixed costs of around US$90 million on an annualized basis.

Employment protection plan in France

In the context of the crisis linked to the significant cuts in E&P spending by oil and gas companies, we initiated an employment protection plan in France which included a plan for voluntary departures. This plan, subject to the process of information, consultation and negotiation with the social partners, was approved in a majority agreement by the social partners as well as by the French DIRECCTE (*Direction régionale des entreprises, de la concurrence, de la consommation, du travail et de l'emploi*). The plan aims to limit the number of compulsory departures, to provide the best possible support for employees leaving the Company and to permit the Group to retain the skills and expertise necessary to carry out its activities. The plan has been implemented in compliance with applicable laws and regulations in France.

Organization

Until the last quarter of 2018, we used to organize our activities in four segments for financial reporting: (i) Contractual Data Acquisition, (ii) Geology, Geophysics & Reservoir ("GGR"), (iii) Equipment and (iv) Non-Operated Resources.

In November 2018, we announced a new strategy that included the transition to an asset-light model by reducing our exposure to our Contractual Data Acquisition business. As a result of these strategic announcements and actions undertaken since then, our Contractual Data Acquisition segment and part of our Non-Operated Resources segment have been presented as discontinued operations in our income statement and as assets held for sale in our balance sheet in accordance with IFRS 5. The costs of implementation of our Strategic Plan described above, referred to as the "CGG 2021 Plan", are reported in discontinued operations in the related Contractual Data Acquisition business lines. For additional information regarding our exit from the Contractual Data Acquisition segment, see "*Operating and Financial Review—Exit of Contractual Data Acquisition business*".

Since December 31, 2018, we have been organized in two segments:

- GGR: this operating segment comprises (i) the Geoscience business line (processing and imaging of geophysical data, reservoir characterization, geophysical consulting and software services, geological data library and data management solutions) and (ii) the Multi-Client Data business line (development and management of a seismic and geological data library that we undertake and license to a number of clients on a non-exclusive basis); and
- Equipment: this operating segment comprises our manufacturing and sales activities for seismic equipment used for data acquisition, both on land, marine, ocean bottom, borehole and non-oil and gas equipment. The Equipment segment carries out its activities through our subsidiary Sercel and owns trademarks such as Sercel, Metrolog, GRC and DeRegt.

Our five corporate functions, at the Group level, ensure a globally coordinated approach and provide support across all activities. These corporate functions include: (i) finance, information systems and risk management, (ii) human resources, (iii) legal, compliance and trade, (iv) health, safety and environment and sustainable development, and (v) marketing, sales and communication.

Business overview

The following is an overview of the business activities of our GGR, and Equipment segments. We also present an overview of our Contractual Data Acquisition business segment, which is presented as discontinued operations in our income statement and as assets held for sale in our balance sheet in accordance with IFRS 5. Our views regarding the state and outlook of the market are "forward-looking statements," based upon information available to us as of the date hereof and are subject to risks and uncertainties that may change at any time. For more information, see "*Forward-Looking Statements*".

Operating Revenues Data

Revenues by Activity

The following table sets forth our consolidated operating revenues by activity in millions of dollars for the periods indicated:

	2020	2019	2018
	In millions of US$		
Multi-Client data	340	575	517
Geoscience	328	385	396
GGR segment revenues	668	960	913
Equipment segment revenues	291	452	351
Eliminated revenues and others	(4)	(11)	(37)
IFRS 15 impact on multi-client pre-commitments	(69)	(45)	(34)
Consolidated revenues	886	1,356	1,194

Revenues by Region (by location of customers)

The following table sets forth our consolidated operating revenues by region in millions of dollars, and the percentage of total consolidated operating revenues represented thereby, for the periods indicated:

	2020		2019		2018	
	In millions of US$, except percentages					
North America	153	17%	375	28%	244	21%
Latin America	141	16%	180	13%	268	22%
Europe, Africa and Middle East	410	46%	489	36%	447	37%
Asia Pacific	182	21%	312	23%	235	20%
Total	**886**	**100%**	**1,356**	**100%**	**1,194**	**100%**

GGR

Overview

The GGR segment engages in many activities that assist our clients in identifying their exploration targets and characterizing their reservoirs. These include, among others:

- developing and licensing multi-client seismic surveys;
- processing seismic data;
- selling seismic data processing and reservoir characterization software;
- providing geoscience and petroleum engineering consulting services;
- collecting, developing and licensing geological data; and
- providing data management services and software to our clients.

Through its extensive scope of products and services and worldwide footprint, our GGR segment provides critical geoscience assistance to a wide range of clients.

General description of activities

Geoscience

Through our geoscience activity, we transform seismic and geologic data into information and high quality images of the subsurface that are then used by our clients, mainly in their efforts to find and produce oil and gas. These new insights provide a means to understand the structure of the subsurface as well as deduce various qualities of the rocks and fluids in those structures. We process seismic data for the needs of our external clients and our Multi-Client business line. We also reprocess previously processed data using new techniques in order to improve the quality of seismic images.

We conduct our seismic imaging operations out of:

- five large open CGG high performance computing ("HPC") cloud centers in Houston (USA), Crawley (UK), Rio de Janeiro (Brazil), Massy (France) and Singapore, with Houston, Crawley and Singapore serving as hubs to support the larger regions;
- 11 local HPC clouds, affiliated with the three regional hubs; and
- seven dedicated centers, each one providing services to its single specific client.

This geographic spread of our cloud computing capabilities allows personal collaboration with our clients as we jointly seek to produce the best images and understanding of the subsurface.

In addition to subsurface imaging, we offer geophysical, geologic and reservoir services. Using seismic data in conjunction with other information such as well logs, we are able to determine various rock and fluid properties and thereby assist our clients in their exploration, reservoir characterization and development efforts.

We sell seismic data processing software under the Geovation brand and sell software for reservoir characterization, interpretation, and modeling under the Hampson-Russell, Jason, Insight Earth and Velpro brands, enabling clients to enhance their own exploration, reservoir characterization and development efforts.

We sell various types of geologic services under our Robertson brand, working from a global scale on tectonic studies down to a microscopic scale on micro-fossil studies. Clients use these services to enable or enhance their frontier exploration, basin and reservoir evaluations and drilling work.

Finally, we are engaged in the business of providing data storage and retrieval solutions, data transformation and digitalization services to oil companies and oil and gas government agencies under the Smart Data Solutions brand.

We operate in those geographic and technical areas where our specific offerings can deliver significant value to customers. Based on customer feedback and industry surveys, we believe that through our Geoscience activity we are regarded as the technical leader in most markets, especially in the high-end seismic imaging arena.

Multi-Client Business Line ("MC")

The "MC" business line utilizes the resources of our other business lines as well as those of sub-contractors in order to acquire and process seismic data for itself and license that data to our clients. This data may be used in exploration, appraisal and production phases of customer operations. In addition to geophysical data, MC develops and maintains large libraries of various types of geological data covering most geographic areas of interest to petroleum and mining companies. We license this data to clients, who generally use it in the early stages of their exploration efforts, often as a precursor to seismic exploration. This activity has historically been reported under the Geoscience business line but is reported as MC for the year ended December 31, 2019 and onward.

The seismic multi-client licenses have lengthy terms, and the maximum allowable under local law, typically ranges from five to 25 years. The licenses are non-transferable, and the data may not be shared with partners who do not own a license. Oil company partnerships of various forms are a common arrangement, especially in difficult and expensive exploration plays. We believe this business model works well in venues where there is one or more of the following: significant levels of competition between oil companies exploring for assets, frequent lease turnover due to government lease rounds or lease trading activity between oil companies, frequent partnering between oil companies and relatively high costs for seismic data.

MC operates in marine environments on a worldwide basis and on land in the United States. It has significant investments in offshore Brazil, the North Sea, Norway and onshore United States. Maps and

details of all surveys in our data library are available on our website. At the end of 2020, the library of 3D seismic surveys consisted of approximately 1,111,000 square kilometers of marine surveys across numerous basins and under 100,000 square kilometers of land data, mostly in the United States.

The costs of the multi-client surveys are capitalized on our MC balance sheet and then amortized. Details of our multi-client accounting methods are fully described in note 1 to our 2020 Consolidated Financial Statements included in this offering memorandum.

In 2020, MC capitalized US$257 million of total costs, of which US$239 million represented cash expenditures, and amortized US$285 million to cost of sales, including US$100 million of impairment charges.

Competition and market

We believe the geoscience sector is led by CGG and Schlumberger (WesternGeco), but also includes companies such as TGS, PGS, DUG and a number of other small local players. Competition in the high end of seismic imaging, where our Geoscience division focuses its business, tends to be based on technology and service level, which are areas where we believe we have a strong reputation.

Processing capacity has multiplied in recent years as a result of improvements in computing technology. This increase in computing power has allowed improved processing quality through the use of more complex and more accurate algorithms. We believe our Geoscience business line is one of the market leaders in applying the most advanced processing techniques.

We believe our Geoscience business line occupies a strong position in the relatively narrow market of seismic reservoir characterization software. This geosoftware business is currently held for sale and is being marketed by a financial advisor. More information is provided in note 2 and note 5 to our 2020 Consolidated Financial Statements. The overall seismic and geological interpretation software market is led by Schlumberger and Halliburton, with numerous small players competing with niche applications. Many of these applications, including ours, are designed to be compatible with the Schlumberger and Halliburton platforms.

The main competition to our MC business line comes from Schlumberger (WesternGeco), PGS and TGS. Competition in the multi-client business is focused on location and availability of surveys, technology used in acquisition and processing, and price. We generally compete in all areas of the world where the multi-client business model is practical.

2020 segment figures

Our GGR segment's revenues in 2020 amounted to US$668 million, a decrease of 30% compared to 2019. GGR segment revenues represented 70% of the consolidated revenues in 2020. The MC business line revenues represented US$340 million (a 41% decrease compared to 2019), while our Geoscience business line generated US$328 million of revenue (a 15% decrease compared to 2019).

MC invested US$239 million in cash in seismic data libraries in 2020, with a cash prefunding rate of 89%. After sales segment revenue, revenue from completed surveys, was US$127 million in 2020. The IFRS net book value of the seismic multi-client library was US$492 million at the end of 2020. For more information, see "*Operating and Financial Review—Twelve months ended December 31, 2020 compared to twelve months ended December 31, 2019—GGR*".

Equipment

Overview

We conduct our equipment design, engineering and manufacturing operations under the Sercel brand. We believe Sercel is the market leader in the design, engineering and manufacturing of seismic equipment for the land and marine seismic markets. As of December 31, 2020, Sercel operated six seismic equipment manufacturing facilities, located in Nantes and Saint Gaudens in France, Houston, Texas and Tulsa and Oklahoma in the US, Krimpen aan de Lek in the Netherlands and in Singapore. In China, Sercel operates through Hebei Sercel-JunFeng Geophysical Prospecting Equipment Co. Ltd. ("Sercel-JunFeng"), based in Hebei, in which Sercel has a 51% equity stake. In addition, Sercel has three sites in Massy, Toulouse and Brest in France, which are dedicated to specific applications.

General description of activities

Sercel sells its equipment and provides customer support services including training on a worldwide basis. Sercel offers a complete range of geophysical equipment for land and marine seismic data acquisition, including seismic recording equipment, software and seismic sources for land (vibrators) and marine (marine sources).

With respect to land seismic equipment, Sercel launched, in the fall of 2013, the latest generation of its recording system, the 508XT system, which offers high channel count crews the ability to record up to one million channels in real time, resulting in a high level of image resolution. Since its launch, over 60 complete systems have been delivered and are in operation worldwide in all climate and terrain environments.

Sercel also introduced, along with its new acquisition system, QuietSeis, a new, high-performance digital sensor based on next-generation Micro Electro Mechanical Systems ("MEMS"), allowing seismic signals to be recorded with three times less instrument noise than before.

In September 2019, Sercel increased its offering of wireless products by launching WiNG, a fully integrated wireless nodal acquisition system seeking to achieve the most efficient and productive seismic surveys. This new product is based on the QuietSeis technology. Sercel made its first deliveries of the WiNG systems during 2020.

We believe Sercel is also a market leader for vibroseismic vehicles used as a seismic source on land and for vibrator electronic systems, such as the VE464. Sercel's latest vibrator family, called Nomad, offers high reliability and unique ergonomic features, and is available with either normal tires or a tracked drive system. As of December 31, 2020, more than 1,250 Nomad 65 vibrators have been delivered since its market introduction. Sercel also offers the Nomad 90, which is capable of exerting a peak force of 90,000 pounds-force. The acquisition of a 51% stake in Sercel-JunFeng, in 2004, reinforced our manufacturing capabilities for geophones, cables and connectors, as well as our presence in the Chinese seismic market.

In the down-hole domain, Sercel offers its latest generation VSP tool, MaxiWave, which has received positive reviews from clients. The Geowave II, launched in 2015, is the first digital multilevel borehole tool specifically designed for high temperature, high pressure wells. In March 2019, Sercel launched SigmaWave, which was its first seismic solution including Distributed Acoustic Sensing ("DAS") technology on a fiber optic cable, developed in partnership with Fotech Solutions. This product allows continuous, real-time seismic measurements along the entire length of the fiber optic cable.

With respect to marine equipment, the Seal system is currently the sole system with integrated electronics. In 2013, Sercel launched a multi-sensor version of its Sentinel streamer, Sentinel MS, with acceleration components in addition to its hydrophones, allowing the delivery of multi-sensor data sets for enhanced broadband imaging.

In September 2019, we announced the GPR, a new ocean bottom node ("OBN") developed in partnership with BGP. It has been designed to use the high performance of Sercel's QuietSeis broadband digital sensor technology to collect higher quality data than data collected by conventional sensors, for more accurate depth imaging and reservoir characterization.

The marine range of products has been further improved with the SeaProNav, a navigation software allowing the real-time positioning of streamers, the Nautilus, a totally integrated system for positioning seismic streamers, and QuietSea, a passive acoustic monitoring system for detecting the presence of marine mammals during marine seismic surveys.

Moreover, in April 2019, Sercel created two new brands, Sercel Structural Monitoring and Sercel Earth Monitoring to bring the benefits of its advanced sensor technology to the high-potential structural health monitoring (SHM) and earth monitoring markets. We believe QuietSeis is currently the most sensitive MEMS seismic sensor available and provides the most accurate data for all types of monitoring due to instrument noise below 15 ng/√Hz.

In November 2020, Sercel and Apave announced the launch of AP'Structure, which we expect will allow operators to monitor the integrity of buildings and infrastructure in real time, receive alerts in case of irregularities and extend the life cycle of the infrastructure. AP'Structure is deploying S-lynks, a fully connected, stand-alone wireless solution from Sercel for measuring structural vibration, and which we believe is the sole solution on the market based on modal analysis. S-lynks integrates the QuietSeis® sensor, which measures the ambient noise of a structure without requiring it to be shut down and which can be deployed on most types of infrastructure. The data recorded by the S-lynks solution is then transferred to a secure internet network in order to be able to consult the measurements taken remotely.

Competition and market

We estimate that the worldwide demand for geophysical equipment decreased by over 30% in terms of revenues in 2020 after two consecutive years of growth. The decrease was primarily a result of the Covid-19 pandemic and the volatility in oil price that caused the oil and gas companies and geophysical contractors to drastically cut their capital expenditures. The marine streamer market also remains weak, as the demand for new streamers and OBN equipment remains very limited. We estimate that Sercel's global revenue market share remains around 50%. Our main competitors for the manufacturing of marine seismic equipment are Ion Geophysical Inc., MIND Technology and Teledyne. For land products, the main competitors are Inova (a joint venture between BGP and Ion Geophysical Inc.), Geospace Technologies Corporation and DTCC. The market for seismic acquisition equipment is highly competitive and is characterized by continuous and rapid technological change. We believe that technology is the principal basis for competition in this market, as oil and gas companies have increasingly demanded new equipment for activities such as reservoir management and data acquisition in difficult terrains. Oil and gas companies have also become more demanding with regard to the quality of data acquired. Other competitive factors include price and customer support services.

2020 segment figures

In 2020, the total sales of the Equipment segment (Sercel), including internal and external revenues, amounted to US$291 million, a 36% decrease compared to 2019. Sercel's external segment revenue amounted to US$287 million, a decrease of 35% compared to 2019, and represented 30% of our consolidated revenue in 2020. For more information, see "*Operating and Financial Review—Twelve months ended December 31, 2020 compared to twelve months ended December 31, 2019—Equipment*".

Contractual Data Acquisition

Our land, marine, airborne and seabed activities included in the Contractual Data Acquisition segment were partially phased out, discontinued or sold in accordance with our CGG 2021 Plan during 2019 and the beginning of 2020 (with the exception of our Multi-Physics activity and our ARGAS joint-venture). See "*Operating and Financial Review—Exit of Contractual Data Acquisition business*" for additional details.

Total revenues of the Contractual Data Acquisition segment amounted to US$39 million in 2020. In accordance with IFRS, these revenues were classified as discontinued operations and assets held for sale in our Consolidated Financial Statements as of and for the years ended December 31, 2020, 2019 and 2018 following our intention to exit the Contractual Data Acquisition segment, which was announced during our Capital Markets Day on November 7, 2018. During the transition year in 2020, we continued to provide a limited range of marine seismic services.

Marine Data Acquisition business line

Activity description

Our marine seismic surveys are conducted by deploying hydrophone streamers and acoustic air gun sources from specialized vessels. The commercial model entails working on an exclusive contractual basis with each client, who is the owner of the acquired data and pays for the acquisition service.

Overview and 2020 activity

In the fourth quarter of 2019, we progressively stopped our marine activities and in the first quarter of 2020, only one vessel remained in operation in order to complete an exclusive contract offshore Mauritania for a major oil company. Our total revenue from the Marine Data Acquisition business line accounted for US$8 million in 2020.

Land Data Acquisition and Multi-Physics business lines

Land Data Acquisition

Land operations employ surveying, drilling and recording crews. Recording crews produce acoustic impulses and record the seismic signals via geophones or hydrophones. The acoustic sources used are vibrators or explosives onshore, and air guns in transition zones.

Operations in the Middle East were conducted through ARGAS, a joint-venture in which we hold a 49% stake, and the Saudi company TAQA, which holds the remaining 51%.

Seabed acquisitions were operated through the Seabed Geosolutions joint venture, which was owned 60% by Fugro and 40% by us until December 30, 2019 when the joint-venture agreement with Fugro was terminated by mutual agreement.

Multi-Physics

The Multi-Physics business line encompasses various segments of activity and provides airborne and marine services worldwide, as described below:

- Airborne activity encompasses the collection, processing and interpretation of data related to the earth's surface and the soils and rocks beneath, and provides advice based on the results to clients in the mineral, oil and gas, geothermal, governmental, engineering and environmental management sectors. We acquire electromagnetic, magnetic, radiometric and gravity data using fixed-wing airplanes and helicopter platforms. The airplanes we operate have been modified with integrated geophysical measurement systems incorporating elements of internal design and manufacture. Helicopter projects are supported using subcontracted or chartered helicopters, as the geophysical instrument systems designed for use on helicopters can be installed without significant modifications to them; and
- Marine activity encompasses the acquisition and data processing of marine gravity and magnetic data in conjunction with seismic surveys or on a stand-alone basis.

In Multi-Physics, we operate under two business models:

- the first business model consists of working on an exclusive contractual basis with each client. Each contract usually stipulates that we will receive a fixed remuneration per acquired linear kilometer, based on client's specifications. The client owns the acquired data and pays us on the agreed basis; and
- the second business model consists of operating under a multi-client model, with multiple clients prefunding the acquisition. We remain the owner of the acquired data and gain the benefit of subsequent data licensing aftersales.

Overview and 2020 operations

We wound down our Land Data Acquisition activity in 2019 and fully exited this segment in early 2020, while the sale of our Multi-Physics business was announced on August 6, 2020, and closing is expected to be finalized in 2021.

During the first quarter of 2020, one Land Data Acquisition crew was in operation to complete an exclusive contract in Tunisia.

The Multi-Physics Acquisition business operates globally and is principally focused on the acquisition, processing and interpretation of airborne geophysical data on land or offshore, and on providing marine gravity and magnetic acquisition services onboard seismic vessels or independently, as well as the processing of such data. We reduced our fleet to six airplanes over the course of the year 2019.

Land Data Acquisition revenue accounted for US$4 million in 2020 and multi-physics revenue accounted for US$27 million in 2020.

Research and development

Technology strategy

We believe that our ability to remain an industry leader in the GGR and Equipment segments is dependent on the success of our research and development ("R&D") efforts.

Over the past years, we have committed on average over 10% of revenues per year to R&D. The trend in gross R&D expenditure over the past three years, including capitalized development costs, is shown below:

	2020		**2019**		**2018**	
	Amount	**As % of net revenue**	**Amount**	**As % of net revenue**	**Amount**	**As % of net revenue**
	In millions of US$ (except percentages)					
Gross research and development expenditure	78.1	8.8%	75.9	5.6%	71.3	6.0

We believe that this amount of R&D expenditures, utilized by our skilled research and development teams, has been sufficient to keep us as one of the technology and market leaders of seismic imaging technology, geophysical acquisition equipment, and seismic reservoir characterization software.

Innovation highlights

Some key examples of our R&D innovation delivered to operations during 2020 are described below:

- increased full wave form inversion ("FWI") efficiency and capability to produce high resolution FWI images with large, high density OBN and streamer data sets. We believe this has kept us at the forefront of seismic imaging in recent years, especially in processing technology, and has been employed to great advantage in upgrading our multiclient surveys;
- developed multiple imaging capability for shallow water environments where the water bottom reflection is not properly recorded with conventional seismic acquisition geometry. We believe that this allows us to better characterize the near surface for hazard identification and enables better imaging of deeper layers;
- deployed efficient stochastic inversion toolbox on a large field (over 10,000 square kilometers) in the Middle East. We believe these new technologies are essential to update reservoir models in a consistent way, enabling them to better match all available data (including seismic, sedimentological model, petrophysics and production data);
- launched WellPath, a new interactive 3D planning solution for well planning in unconventional and fractured formations; and
- explored and integrated the concepts of "Digital Transformation", "Cloud", "Big Data", "Machine-Learning" and "Analytics" into our workflows whenever applicable.

Investing activities

In 2020, our total capital expenditures increased to US$303 million (US$303 million excluding asset suppliers' variance). In 2019, our total capital expenditures, which include industrial capital expenditures, capitalized development costs and multi-client cash capital expenditures amounted to US$261 million (US$260 million excluding asset suppliers' variance).

In 2020, our industrial capital expenditures and capitalized development costs (excluding asset suppliers' variance) amounted to US$39 million and US$23 million, respectively, for our GGR and Equipment segments. In 2019, our industrial capital expenditures and capitalized development costs (excluding asset suppliers' variance) amounted to US$49 million and US$25 million, respectively, for our GGR and Equipment segments.

Our capitalized development costs amounted to US$41 million in 2020 and US$32 million in 2019.

In 2020 and 2019, our multi-client cash capital expenditures amounted to US$239 million and US$186 million, respectively.

From a general standpoint, industrial capital expenditures and capitalized development costs are financed through permanent funding (equity and financial debt) whereas multi-client cash capital expenditures are financed mainly with funds from initial participants.

The cash prefunding rate was 89% in 2020 compared to 118% in 2019.

Property, plant and equipment

The following table sets forth certain information relating to the principal properties of the Group as of December 31, 2020:

Location	Type of facilities	Headcount	Owned/ Leased	Lease expiration date
Australia, Perth	Registered office of CGG Services (Australia) Pty Ltd and Data processing center	30	Leased	2024
Australia, Perth	Warehouse	45	Leased	2021

Location	Type of facilities	Headcount	Owned/ Leased	Lease expiration date
Brazil, Rio de Janeiro	Registered office of CGG do Brasil Participações LTDA and Data processing center	131	Leased	2021
Canada, Calgary	Registered office of Hampson Russell Ltd Partnership and Data processing center	79	Leased	2024
China, Beijing	Registered office of CGG Services Technology (Beijing) Co, Ltd and Research and development center	59	Leased	2021
China, Xu Shui	Sercel manufacturing and research and development facilities	400	Owned	n.a.
England, Crawley	Registered office of CGG Services (UK) Ltd. and Data processing center	333	Leased	2028
England, Redhill	Data processing center	57	Leased	2029
France, Carquefou	Sercel manufacturing and research and development facilities recording equipment (land and marine)	444	Owned	n.a.
France, Massy	Registered office of CGG S.A., CGG Services SAS and Data processing center	385	Leased	2022
France, Saint-Gaudens	Sercel manufacturing and research and development facilities	204	Owned	n.a.
India, Mumbai	Registered office of CGG Services India Pvt Ltd and Data processing center	33	Leased	2023
Indonesia, Jakarta	Registered office of PT Veritas Mega Pratama and Data processing center	36	Leased	2021
Malaysia, Kuala Lumpur, Kuching	Registered office of CGG Services (Malaysia) Sdn Bhd and Data processing center	50	Leased	2024
Mexico, Villahermosa	Data processing center and offices	8	Leased	2023
Mexico, Mexico City	Registered office of CGG de Mexico SA de CV	4	Leased	2021
Netherlands, La Haye	Registered office of CGG Holding BV, CGG Marine BV, CGG Services (NL) BV and CGG Data Management (Netherlands) BV	31	Leased	2022
Norway, Oslo	Registered office of CGG Services (Norway) AS, Wavefield Inseis AS and CGG Marine Resources Norge AS	62	Leased	2024
Norway, Stavanger	Data Management Solutions offices	19	Leased	2021
North Wales, Llanrhos	Offices and laboratories	205	Leased	2024
North Wales, Conwy	Offices/storage facility	60	Owned	n.a.
Russia, Moscow	Registered office of CGG Vostok and Data processing center	78	Leased	2021

Location	Type of facilities	Headcount	Owned/ Leased	Lease expiration date
Singapore	Registered office of CGG Services (Singapore) Pte. Ltd. and Data Processing Center	119	Leased	2022
USA, Houston, Texas	Principal executive offices of CGG Services (US) Inc. and data processing center	586	Leased	2024
USA, Houston, Texas	Offices and manufacturing premises of Sercel	206	Owned	n.a.
USA, Schulenburg, Texas	Offices and Warehouse	13	Owned	n.a.

We also have registered branches in Yemen, Pakistan, Bolivia and Peru, most of which are in the process of liquidation.

Intellectual Property ("IP")

We invest heavily in R&D and rely on new innovation to offer differentiating products and services to our customers. Effective management of our intellectual property rights is key to protecting our investments and leading-edge innovations from being accessed by external sources, especially unlawfully, and to ensuring that we respect IP rights belonging to other parties.

Our IP rights are managed through a dedicated department that works closely with our various innovation departments for most aspects. We have a Group policy that provides for specific adaptations for each business line, with the goal of considering specificities related to their products and services. Our IP department provides internal counselling and advice, and engages external specialists to assist the Group with specific matters if and when they arise.

We hold regular IP reviews at various business levels focused on internal technology developments and issues, and we also compile data regarding the competitive landscape with respect to IP rights covering key technologies few times a year.

Our Human Resources department ensures that clauses relating to protection of our IP rights are included in all employment contracts (from interns to long-term employees).

In the Geoscience divisions, our IP department is primarily concerned with the protection of our innovative algorithms and data processing. As a result, we work closely with our customers to define the ownership of each element of the data sets we produce and of their use (for example, who owns the first and final data or the processes deriving from the work done) and prevent any potential confusion or litigation.

Prior to 2019, we had several policy documents addressing individual sections of IP. They were reviewed in 2019 and have now been grouped under one unique general instruction document called "Protecting and Managing Intellectual Property", which complements the previous policies where necessary and will be deployed in 2021. We continue to update our documentation and procedures to guide our employees to understand the practices to follow for all IP matters, including detailing a chain of authority for key decisions, global governance and go-to contacts for any questions.

At Sercel, product development teams follow a methodology called "Maestro" which covers, among other topics, IP rights. Full deployment was completed in 2019 and as a result the development of products or services follows a dedicated workflow which is characterized by validation milestones. (i.e. at certain key stages, the responsible person must confirm that certain IP issues have been verified before advancing any further).

Intra-group transactions

We carry out intra-group transactions in various fields (e.g. different kinds of services, sales of geophysical equipment and software licenses). The corresponding remuneration or royalties vary depending on the nature of the transactions and are determined in accordance with the arm's length principle and the Group's transfer pricing policy.

The assistance and advice provided by the parent company to the Group's main subsidiaries regarding financial, administrative, commercial and technical matters are generally paid at cost and allocated subsequently to the related subsidiaries or by a fixed remuneration defined in accordance with the importance and nature of the service provided.

In most situations, payment for the services provided by the subsidiaries for the benefit of the parent company corresponds to the cost incurred plus a margin defined in accordance with the arm's length principle.

During the years 2020 and 2019, financial flows between the parent company and its subsidiaries were as follows:

	2020	2019
	In millions of US$	
Services provided	19.2	29.6
Expense rebilling	7.5	14.9

Environmental commitment

The health of the environment and climate is critical to the well-being of people and communities globally.

Consistent with our longstanding commitment to act responsibly and minimize the impact of our activities on the environment, in every sector of our business, we have announced our pledge to become carbon neutral by 2050 in scopes 1 and 2 of the GHG Protocol.

We intend to achieve this target by working to reduce our direct emissions (scope 1) and our indirect emissions (scope 2) to the lowest level practicable. Group-wide efforts are focused on continuing to improve the power usage efficiency of our data centers, offices and factories, along with increasing the share of sustainable energy in our energy supply mix purchased from utility providers. Any resulting shortfall in achieving net-zero emissions will be offset with carbon credits generated by our own activities. To reach this long-term target, we have also set ourselves an intermediary milestone to halve our current levels of scope 1 and 2 emissions by 2030.

To best protect the environment, climate and communities where we operate, we seek to always act responsibly and abide by all applicable environmental laws. We continue to advance our technology and services to enable our clients to sustainably and responsibly discover, develop and manage the earth's natural resources. We continue to advance our data collection capabilities to best measure, monitor and continuously reduce our environmental impact. We are committed to improving our power usage efficiency, increasing the low-carbon content of our energy supply and reducing our greenhouse gas emissions. We encourage and support our businesses, all employees and locations globally to find and take specific actions that support the environment, climate and the communities where we operate.

Legal proceedings

From time to time we are involved in legal proceedings arising in the normal course of our business. We do not expect that any of these proceedings, either individually or in the aggregate, will result in a material adverse effect on our consolidated financial condition or results of operations.

Arbitration proceedings in India

On March 18, 2013, CGG Services SAS, a fully owned subsidiary of CGG S.A., initiated arbitration proceedings against ONGC, an Indian company, to recover certain unpaid amounts under three commercial contracts entered into between 2008 and 2010 by ONGC and CGG Services SAS on the one hand and ONGC and Wavefield Inseis AS on the other hand. The Arbitration Tribunal issued an award of US$30.6 million in favor of CGG S.A. on July 26, 2017. ONGC submitted an appeal against the Tribunal award on October 27, 2017. On January 6, 2020, ONGC's application to set aside the Tribunal award was dismissed by the Bombay High Court without costs. ONGC submitted an appeal against the Bombay High Court's decision on March 2, 2020. We believe that the Tribunal's award will be confirmed again by the Bombay High Court, which should allow us to recover at least the portion of receivables relating to this matter that are recorded on our balance sheet as unpaid receivables as of December 31, 2020.

As of the date of this offering memorandum, legal proceedings are still ongoing.

Third party opposition to the decision issued by the Commercial Court of Paris on November 24, 2020

Certain holders of convertible bonds ("Oceanes") due 2019 and 2020 lodged an appeal against the judgement approving the Safeguard Plan, which was rejected by the Appeals Court of Paris in a ruling dated May 17, 2018. This ruling was upheld by the French Supreme Court in a decision dated February 26, 2020, putting an end to this litigation. By a ruling issued on November 24, 2020, the Commercial Court of Paris acknowledged the completion of CGG's Safeguard Plan, following the early repayment in full of all of our remaining debt under it. In this context, we reiterated our undertaking made as part of the negotiation of the Safeguard Plan to maintain and procure that the French-law subsidiaries we control within the meaning of article L.233-3 of the French Commercial Code maintain in France their decision-making centers currently located in France, including the headquarters of CGG S.A., until December 31, 2022.

Notwithstanding this successful outcome, on December 22, 2020, Mr. Jean Gatty in his capacity both as former representative of each of the two bodies of Oceanes bondholders and as director of JG Capital Management (a management company of JG Partners, itself a former holder of the Oceanes) filed three third-party appeals against the decision approving the completion of CGG's Safeguard Plan. On February 1, 2021, Mr. Gatty, as former representative of each body of Oceanes bondholders issued two notices convening general meetings of Oceanes holders in order to authorize him to lodge the aforementioned third-party appeals (which had already been lodged before the Commercial Court of Paris).

Furthermore, on February 2, 2021, we were informed that JG Capital Management also filed a criminal complaint regarding the terms of our financial restructuring approved in 2017. In this complaint, Mr. Gatty seeks to call into question the restructuring transactions effected in 2017 and 2018 under CGG's Safeguard Plan, which allegedly resulted in the differential treatment of creditors holding high-yield bonds and Oceanes. We consider that the Oceanes and high yield bondholders were not in the same position, in particular due to the guarantees granted by 14 non-French subsidiaries of the Group solely to the high-yield bondholders, which we believe justifies the difference in treatment. This point has been debated at length before various courts in a wholly transparent fashion. The French public prosecutor has three months from the filing of the complaint to decide whether or not to pursue an action.

Information and Cyber Security

As we create value by processing data, data management and protection are crucial components of our business conduct. In that regard, we have implemented several measures to protect the information of our clients, staff and partners.

We have a three-tiered information security management system ("ISMS"), the goal of which is to prevent breaches that could impact the confidentiality, availability and/or the integrity of our information assets. Our policies are defined at the Group level (Tier 1) and apply to all of our entities and business lines. Those policies can be adapted at the business line level through manuals, procedures, processes and standards with more specific objectives (Tier 2). The Tier 3 of our ISMS, in turn, covers guidelines and forms. All three tiers cover topics such as human resources security, operational security, incident management and supplier relations.

The Group Information Security Policy ("GISP") is signed by our Chief Executive Officer for the entire Group. A Chief Information Security Officer ("CISO") and a Chief Information Security Architect oversee its application, supported by regional and business lines coordinators (regional security officers and business information security officers). The GISP applies to all of our entities and segments, including our GGR and Equipment segments. The CISO reports to the Group Steering Committee (which includes the Chief Executive Officer) and to the Group Internal Audit Committee of the Board of Directors.

We have implemented measures to ensure the security of our information systems. These controls include, but are not limited to, network firewalls, intrusion detection systems and network segmentation. Security updates are systematically deployed.

To evaluate our exposure and identify areas for improvement, we recently conducted cyber-security exposure threat assessments, vulnerabilities scanning, phishing tests on all employees, as well as external penetration testing on critical systems.

We consider our employees as the strongest line of defense. To this effect, information security ("InfoSec") e-learning is mandatory for our employees. In addition, we deploy an in-class InfoSec awareness training to reinforce the message, which unfortunately could not be held in 2020 due to the Covid-19 pandemic.

A global review of the Group Information Security Management System started in 2019, with the aim of aligning it more closely to the National Institute of Standards and Technology Cyber Security Framework.

In order to mitigate our cyber security risks, we also have partnerships with well-recognized security service providers and industry groups for sharing information and intelligence and use up-to-date technologies, such as network traffic monitoring and management, firewalls, network access controls, vulnerabilities scanning, patch management program, VPN access, encryption, end-point protection, cloud access security broker, security and compliance security console and secured internet gateways, among others.

In addition, we have implemented, among others, the following measures to mitigate risks related to business IT systems failures:

- test regularly our data recovery plan in case of critical outages;
- maintenance of back-ups for critical business processes; and
- management of data by hosting partners on two separate sites, providing data redundancy.

There is no assurance that these and other measures will be successful in preventing cyber security incidents against our company in the future. See "*Recent Developments—Cyber security incident*." and "*Risks Related to Information Technology, Information Security and Intellectual Property—We are subject to risks related to our information technology, including cyber security risks and risks of hardware and software failures.*"

MANAGEMENT

Directors and Senior Management of the Company

Board of Directors

Role of the Board of Directors

Pursuant to Article L. 225-35 of the French Commercial Code, the Board of Directors lays down the guidelines governing the Issuer's activity and sees to their application. Subject to the powers explicitly assigned to the General Meetings and within the limits of the business purpose, it considers any question affecting the proper operation of the Issuer and it settles the matters concerning it. The business address of the Board of Directors is 27 avenue Carnot, 91300 Massy, France.

Composition of the Board of Directors

The appointment and dismissal of members of the Board of Directors are governed by the legal and statutory rules (Article 8 of the Issuer's articles of association). The Board of Directors of the Issuer comprises no fewer than six and no more than fifteen members, unless otherwise authorized by law. The Directors are appointed by the Ordinary General Meeting, based upon proposal from the Appointment, Remuneration and Governance Committee. They can be dismissed at any time by decision of the General Meeting.

Directors appointed by the employees

The Extraordinary General Meeting held on November 13, 2017 (28th resolution) decided to amend Article 8 of the Issuer's articles of association to provide for the appointment of Director(s) representing employees, in accordance with the provisions of Article L. 225-27-1 of the French Commercial Code applicable to the Issuer.

By decision dated December 15, 2017, the Group Committee appointed Mr. Patrice Guillaume as Director representing the employees for a term of four years, his mandate expiring, in accordance with Article 8 of the articles of association of the Issuer, following the General Meeting to be convened in order to approve the financial statements for the year ended December 31, 2020. Since May 15, 2019 the Issuer's Board of Directors has been composed of eight members elected by the shareholders. As a consequence, although the amendments to the articles of association required in accordance with the provisions of the French law called "Loi Pacte" were approved by the General Meeting held on June 16, 2020, it is not required to appoint a second Director representing the employees until further change in the composition leading to an increase in the number of Directors elected by the shareholders.

The credentials of Mr. Patrice Guillaume are set out below in this offering memorandum.

In compliance with Article R. 225-34-4 of the French Commercial Code, the Director representing the employees benefits from a training due to this position, corresponding to 40 hours per year.

Representative of the Economic and Social Committee

A representative of the Issuer's Economic and Social Committee also attends the meetings of the Board of Directors.

*Observers (*Censeurs*)*

According to Article 13 of the Issuer's articles of association, the Board of Directors may appoint one or several Observers *(Censeurs)* to a maximum number of three, to be appointed for a two-year period.

As of the date of this offering memorandum, the Issuer has not appointed any observer *(Censeur).*

The following table sets forth the names of our current Directors, their positions, the dates of their initial appointment as Directo
term as of the date of this report:

Nom	Nationality	Independent	Gender	Age	Date of first appointment	Date of the last renewal	Date of expiry of term of office	Number of years as Director	Au I Mana
Mr. Philippe Salle Chairman of the Board	French	X	M	55	2018	NA	GM 2021	3	
Mrs. Sophie Zurquiyah, CEO	French/US		F	54	2018	NA	GM 2022	3	
Mr. Michael Daly	English	X	M	67	2015	2017	GM 2021	6	
Mr. Patrice Guillaume(1)	French		M	62	2017	NA	GM 2021	4	
Mrs. Anne-France Laclide-Drouin	French	X	F	52	2017	NA	GM 2021	4	X /
Mrs. Helen Lee Bouygues	US	X	F	48	2018	2020	GM 2024	3	
Mrs. Colette Lewiner	French	X	F	75	2018	2019	GM 2023	3	
Mrs Heidi Petersen	Norwegian	X	F	63	2018	2020	GM 2024	3	
Mr. Mario Ruscev	French	X	M	64	2018	2019	GM 2023	3	

Notes:

(1) Mr. Patrice Guillaume is a director representing the employees, appointed by the Group Committee, in accordance with Article 8 of the Issuer's Articles of A
2021 Annual General Meeting, the Group Committee is currently in the process of appointing his successor.

O Chairman/Chairwoman

X Member

Mr. Philippe Salle is a graduate of the *École des Mines* and holds a MBA from the Kellogg Graduate School of Management, Northwestern University (Chicago, USA). He began his career with Total in Indonesia before joining Accenture in 1990. He then joined McKinsey in 1995 and became senior manager in 1998. In 1999, he joined the Vedior group (which later became Randstad, a company listed on Euronext Amsterdam). He became Chairman and CEO of Vedior France in 2002; In 2003, he became a member of the Managing Board of Vedior NV and was then appointed President for South Europe in 2006 (France, Spain, Italy and Switzerland). In 2007, he joined the Geoservices group (sold to Shclumberger in 2010, listed on the New York Stock Exchange), a technological company operating in the petroleum industry with 7,000 associates in 52 countries. He was first appointed Deputy CEO and then Chairman and CEO until March 2011. From 2011 to 2015, he was Chairman and CEO of the Altran group. He then became Chairman and CEO of Elior where he remained until October 2017. Since December 1, 2017, he is Head of the Foncia group (please see below the details of his positions within the Foncia group). He is a Knight of the French National Order of Merit and of the Legion of Honor and Commander of the Order of Merit of the Italian Republic.

Mrs. Sophie Zurquiyah is a graduate from the *École Centrale de Paris*. She holds a Master in Numerical Analysis from the Pierre et Marie Curie University (Paris VI) and a Master in Aerospace engineering from the Colorado University. She spent 28 years in the oilfield services industry, working for Schlumberger in P&L and in positions covering R&D, Operations and Support, in France, the United States and Brazil. Her most recent roles include Chief Information Officer (CIO), President of Data and Consulting Services that provided Processing, Interpretation and Consulting services for most of Schlumberger's business lines, and Vice President of Sustaining Engineering that included all support and improvements to commercial products, services and technologies worldwide. She joined CGG on February 4, 2013 as Senior Executive Vice President, GGR segment. Before that time, Prior to her appointment as Chief Executive Officer of CGG S.A. on April 26, 2018, Mrs. Sophie Zurquiyah was Chief Operating Officer in charge of the GGR business lines, Global Operational Excellence and Technology of CGG.

Dr. Michael Daly is a graduate of The University College of Wales, Leeds University (Ph.D.) and Harvard Business School (PMD). He is a British geologist, oil and gas executive and academic. He joined the Geological Survey of Zambia in 1976, mapping the remote Muchinga Mountains of northeast Zambia. He began his business career with BP in 1986 as a research geologist. After a period of strategy work and exploration and production positions in Venezuela, the North Sea and London, he became President of BP's Middle East and S. Asia Exploration and Production business. In 2006, Dr. Daly became BP's Global Exploration Chief and a Group Vice President. He served on BP's Group Executive team as Executive Vice President from 2010, and retired in 2014 after 28 years with the company. He has also served as Senior Director at Macro Advisory Partners. He currently serves as Non-Executive Director with Tullow Oil, and as Visiting Professor in Earth Sciences at The University of Oxford. He is President of the Geological Society of London, a registered Charity.

Mr. Patrice Guillaume graduated from the *École Centrale* of Lyon (France). He began his professional activity in 1981 as a professor of electronics at the Polytechnic of Kano Nigeria as part of the volunteer service to the national service at the French Ministry of External Relations. After a three-year stint at Air Liquide's research center as a research engineer in combustion, he joined CGG in 1985 as deputy head of mission for land acquisitions in Italy. He then returned to a career in research in geophysics in the field of imaging to become an expert in tomography and managed the team specialized in tomography. He has been a member of the CGG Works Council for about 20 years and secretary of the Group Committee for about 10 years.

Mrs. Anne-France Laclide-Drouin is a graduate from the *Institut Commercial* of Nancy (ICN) and Mannheim University. She also holds a *Diplôme d'études supérieures comptables et financières*. Mrs. Laclide-Drouin began her career at PricewaterhouseCoopers before occupying various positions in the financial division of international groups in different sectors, such as the distribution sector, where she acquired international experience. In 2001, she became Financial Director of Guilbert, then Staples, AS Watson and GrandVision. Mrs. Laclide-Drouin has been CFO of Oberthur Technologies, comprising the responsibility of the Financial and Legal Functions of the group, from 2013 to 2017 and of Consolis Holding SAS and a member of the Executive Committee of Consolis Group SAS, from 2017 to 2020. She is now Group CFO of RATP Dev (since January 1, 2021).

Mrs. Helen Lee Bouygues received her Bachelor of Arts, magna cum laude, from Princeton University in Political Science and a Masters of Business Administration from Harvard Business School. She started her career in 1995 at J.P. Morgan in the M&A group in New York and in Hong Kong. In 1997, she joined Pathnet Inc., a telecommunications provider based in Washington DC, as Director of Development and Finance. From 2000 until 2004, she worked at Cogent Communications Inc. as Chief Operating Officer, Chief Financial Officer and

Treasurer. She thereafter became a Partner at Alvarez & Marsal Paris, where she left to launch her own consulting firm specialized in corporate turnaround and transformations in 2010. In 2014, she integrated her team at McKinsey & Company in Paris where she was Partner responsible for the division Recovery and Transformation Services. Since June 2017, she is President of LB Associés, a consulting firm.

Mrs. Colette Lewiner has graduated from *École Normale Supérieure* (a leading French higher education University) and has a Ph.D. in physics. She started her career as an academic at University of Paris VII as a physics researcher. In November 1979, she joined Electricité de France (EDF), first in the Research Department, before being responsible for all fuels (notably nuclear fuel) purchasing. In 1989, she became EDF's first woman Executive Vice President in charge of the Commercial division that she created. Mrs. Lewiner was appointed Chairwoman of the Board, Chief Executive Officer, of SGN (the engineering affiliate of Cogema) on March 1992. In 1998, Mrs. Lewiner joined Capgemini and headed the Utilities Global Market Unit. She had been Non-Executive Chairwoman of TDF (2010-2015) and member of the European Union Consultative Group on Energy (2008-2012). In 2012, she became energy advisor to Capgemini Chairman. Mrs. Colette Lewiner is member of the French Academy of Technology. She is a *Grand Officier* of the French National Order of Merit and Commander of the Legion of Honor.

Mrs. Heidi Petersen holds a M.Sc. (cand. scient. degree) from the Norwegian University of Science and Technology in Trondheim, Department of Chemistry and Mathematics. She started her career as research assistant at the Norwegian University of Science and Technology in Trondheim in 1983. She was employed in Kvaerner Oil & Gas from 1988 where she worked as an engineer, project manager and departmental manager engaged in offshore and land-based industrial assignments. She served as maintenance supervisor of the Gullfaks C platform for two years from 1995 to 1997. She was appointed head of Kvaerner Oil & Gas AS in Sandefjord in 1997, where she served as Vice President until 2000. In 2000, she headed a management buy-out that led to the startup of Future Engineering AS and served as its Managing Director from 2000 to 2004. In 2004, she sold the company to Rambøll and served after that as Managing Director of Rambøll Oil & Gas from 2004 to 2007. Mrs. Petersen is an independent business woman, with 30 years of experience in the oil and offshore industry. She owns Future Technology AS, a leading consultancy and technology company located in Sandefjord and Oslo offering consultant services, engineering services and construction solutions, notably in the oil and gas market.

Mr. Mario Ruscev is a Nuclear Physicist by training holding a Ph.D. from Pierre and Marie Curie University and from Yale University. He spent 23 years with Schlumberger in various responsibilities in the R&D and operational areas. He was the head of the Seismic, Testing, Water & Gas services and Wireline Product Lines. He has since been CEO of FormFactor a provider of unique nanotech connectors for the semi-conductor industry, CEO of IGSS (GeoTech) the major Russian Seismic Company, CTO at Baker Hughes and EVP at Weatherford until 2017. He is now CEO of Noven Inc., an IoT start up specialized in monitoring and diagnostic of field assets. During his career, Mr. Ruscev had the opportunity to evolve in many environments where technology was a differentiator and his team's successfully introduced systems as diverse as:

- luggage scanners differentiating between organic and inorganic materials still in use after 30 years;
- the first container scanner based on unique gaseous sensors;
- many wireline and testing tools including the PlatForm Express Wireline combo still unequalled after 25 years;
- the first single sensor seismic systems called Q;
- the first ever Aquifer Storage and Recovery in the Middle East;
- simulators allowing users to understand the formation and propagations of fractures during Fracking operations or analytics applications in the Oilfield Operations.

His combined technology and operational experiences give him a unique perspective on the evolution of the oilfield business.

Chief Executive Officer

Mrs. Sophie Zurquiyah has been appointed Chief Executive Officer with effective date on April 26, 2018. She is also a Director.

Her credentials are set out above.

Executive Leadership team

The following table sets forth the names of members of our Executive Leadership team and their current positions as of December 31, 2020 and as of the date of this offering memorandum:

Composition of the Executive Leadership team

Mrs. Sophie Zurquiyah	Chief Executive Officer
Mr. Yuri Baidoukov	Chief Financial Officer
Mrs. Emmanuelle Dubu	EVP Equipment
Mr. Colin Murdoch	EVP Geoscience
Mr. Dechun Lin	EVP Multi-Clients
Mr. Eduardo Coutinho	EVP Group General Counsel
Mr. Hovey Cox	EVP Group Marketing & Sales and Communications
Mr. Jérôme Denigot	EVP Group Human Resources
Mr. Emmanuel Odin	SVP Group HSE/Sustainable Development

The Chief Executive Officer, Sophie Zurquiyah, which credentials are set out above in this offering memorandum, is the only corporate officer *(mandataire social)* of the Issuer's Executive Leadership team.

Mr. Yuri Baidoukov holds an MBA degree from TRIUM Global EMBA, a joint program of NYU Stern School of Business, LSE and HEC Paris, and M.Sc. (Honors), Economics degree from Russian Peoples' Friendship University. He is also an affiliate member of American Institute of CPAs. Yuri is a senior executive with over 27 years of international experience in the oil and gas industry spanning across Canada, Russia, UK/Europe, USA, MENA region and France. He started his career with Fracmaster where he held senior roles in finance and accounting. In 2000, Yuri joined Schlumberger where he worked for 10 years in positions of increasing responsibility as Business Development Manager, Geomarket and Area Finance Director, VP Operations and Corporate M&A Portfolio Manager. From 2010 to 2012 he was Group CFO and Board director of Integra Group, a leading CIS Oilfield Services company, listed on the London Stock Exchange, and from 2013 to 2014 was CFO of Maersk Oil US, based in Houston, Texas. In 2014, Mr. Baidoudov joined OiLSERV Group, a leading MENA Oilfield Services company, where he was Group CFO for four years, based in Dubai, UAE. In September 2018, Mr. Baidoukov was appointed Group CFO of CGG.

Mrs. Emmannuelle Dubu is a Metallurgist Engineer graduated from Escola Politécnica da Universidade de São Paulo. She has 30 years of international experience in Industrial multinational companies designing, manufacturing and marketing equipment for the water, oil and gas, power, chemical, mining and infrastructure markets, including 20 years leading regional and global businesses. She started her career in manufacturing, R&D and marketing.

Mr. Colin Murdoch is currently responsible for the Geoscience activity at CGG. After graduating with a degree in Natural Sciences from Trinity College, Dublin, Mr. Murdoch entered the geophysical industry in 1978, as a seismic processor, with Seiscom Delta. In 1982, he joined Digicon and was based in Venezuela. He filled a variety of roles of escalating responsibility at Digicon and Veritas, following their merger, and was responsible for operations in the Americas in 2006 when CGG acquired Veritas. Since then, he has been leading CGG's Subsurface Imaging business. His current role is running the new CGG Geoscience business, which is focused on the optimal use of new technologies to further value CGG data and services to its clients.

Mr. Dechun Lin is a graduate of the University of Science and Technology of China and holds a Master's degree in Space Physics from the Chinese Academy of Science. He has a PhD in philosophy from the Rice University and has completed the General Management Program of the European Centre for Executive Development. Mr. Lin has been part of CGG since 2000. He began his career as an Imagining Geophysicist and became Imaging Director in 2004. In 2010, he became Vice-President of the Subsurface Imaging Massy Scope (South Europe), and in 2012 he became responsible for the Sub-Surface Imaging Business in the Asia-Pacific region. In 2014 he became Senior Vice-President of the Subsurface Imaging APAC/Business Development GGR APAC and since 2019 he is Executive Vice-President of Multi-Client and New Ventures.

Mr. Eduardo Coutinho is a corporate generalist attorney with extensive in-house legal experience acquired in positions held in France, USA and Brazil during the last 23 years. As General Counsel, he currently leads CGG' global legal department and advises the Group on a wide range of legal and business issues. Compliance and Trade Compliance teams also report to him. He serves as corporate secretary to the company's board of directors

and is also a member of CGG Executive Committee, reporting to the CEO. In his professional experience at CGG, he held the position of Country Manager for Brazil from 2014 to 2018. Prior to joining CGG, Eduardo worked for 12 years at the legal department of Rhodia, a French chemical company which was acquired by Solvay Group in 2011. He was admitted to the Brazilian bar in 1998 and has a bachelor's Degree in Law from the Pontificia Universidade Catolica—PUC (Brazil), an Executive International MBA from Université Lyon 3 (France) and also attended the General Management Programme (GMP) at CEDEP/Insead (France).

Mr. Hovey Cox holds a B.A. (1985) in Geological Sciences from Stephen F. Austin State University and specialized in Physics, Mathematics and Computer Science. He is Executive Vice President CGG, responsible for global marketing and communications, key account management and commercial relations and third-party strategic relations and strategy development support. Joining CGG in 2010, he started his career in 1984 as a roustabout in Louisiana and has held a variety of positions in the US, France and the UK at Penford Oil & Gas, Sierra Geophysics, Halliburton, Schlumberger and CGG. These included Exploration Geologist, Manager IT Systems, Operations Manager United Kingdom, Real-Time Digital Manager, Strategy Director, M&A Integration Manager, Investor Relations US and Senior Vice President Marketing and Sales. Most of his over 35 years of service in the oil and gas industry was focused on the upstream petro-tech information technology markets.

Mr. Jérôme Denigot joined CGG in 2003 as Internal Audit Manager. He was Vice-President Human Resources for the Equipment Business Line from 2009. Before joining CGG, Mr. Denigot held various positions in Audit and Finance at PWC in Paris and as controller in the automotive industry. Mr. Denigot has been Executive Vice President Human Resources at CGG since 2017. He holds a Master's in Corporate Finance from *Paris Dauphine* and a post-graduate degree in Human Resources from HEC.

Mr. Emmanuel Odin graduated from the *Ecole Nationale Supérieure de Géologie de Nancy* (France). He began his professional activity in 1987 as a professor of mineral engineering at the Polytechnic of Kaduna (Nigeria) as a volunteer to the national service at the French Ministry of Foreign Affairs. He joined CGG in 1990 as a field engineer in the Land Acquisition Division. He gained responsibilities abroad within the land Acquisition Division mainly in Africa and the Middle East. Operation Supervisor in 1995, Branch Manager in 1996, Managing Director of Ardiseis Fzco (a CGG-Taqa JV in the Middle East) in 2009, and Deputy EVP Land Acquisition in France in 2012. He then joined Seabed Geosolution as COO in 2015 for two years before returning to CGG as Deputy SEVP Acquisition in 2017. He joined the Executive Leadership Team of the CGG Group as SVP HSE-SD in 2018. Mr. Odin is also an administrator of Argas, our joint-venture in Saudi Arabia with Taqa.

Compensation

Annual fixed and variable compensation of the Chairman of the Board of Directors

Compensation of Mr. Philippe Salle, Chairman of the Board of Directors

The remuneration of the Chairman of the Board of Directors is determined in accordance with the recommendations of the AFEP-MEDEF Code and in line with remuneration practices observed in France for non-executive chairs of boards. It is in line with the Issuer's corporate interest, contributes to its sustainability and is in line with its business strategy.

The position of Chairman of the Board of Directors is currently held by Mr. Philippe Salle.

In accordance with Article L. 22-10-8 of the Commercial Code, this remuneration policy will be the subject of a resolution submitted for approval to the General Meeting called to approve the financial statements for the year ending December 31, 2020.

The gross remuneration amounts paid by the Issuer and the controlled companies to Mr. Philippe Salle for the 2019 and 2020 financial years are shown in the table below.

For the 2020 financial year, Mr. Philippe Salle's remuneration structure consisted of:

- in his capacity as Director: a fixed amount of remuneration allocated to Directors, unchanged since 2018 (€70,000 gross on an annual basis for the Chairman); and
- in his capacity as Chairman of the Board: a fixed remuneration unchanged since 2018 (€170,000 gross on an annual basis).

Philippe Salle

	2019		2020	
	Amounts due	Amounts paid	Amounts due	Amounts paid
Chairman of the Board of Directors as of April 26, 2018				
Fixed remuneration	€170,000	€ 170,000	€170,000	€170,000
Annual variable remuneration	n.a.	n.a.	n.a.	n.a.
Multi-annual variable remuneration	n.a.	n.a.	n.a.	n.a.
Exceptional remuneration	n.a.	n.a.	n.a.	n.a.
Remuneration allocated to directors	€ 70,500(1)	€ 52,445,39(2)	€ 70,000(3)	€ 70,500(1)
Benefits in kind	n.a.	n.a.	n.a.	n.a.
Total	€240,500	€222,445.39	€240,000	€240,500

Notes:
Table 2 of the 2009–16 Financial Markets Authority Recommendation.
(1) Paid in February 2020 for the 2019 financial year (including €500 of travel indemnity).
(2) Paid in February 2019 for the 2018 financial year.
(3) Paid in February 2021, for the 2020 financial year.

Annual fixed and variable compensation of the Chief Executive Officer

The remuneration policy applicable to the Chief Executive Officer is designed to remunerate performance, measured in the short, medium and long term. The components of this policy have different and mutually consistent objectives. Consequently, is in line with corporate interest of the Issuer, contributes to its long-term sustainability and is in line with its sales strategy.

To determine the remuneration of the Group's Chief Executive Officer, the Board of Directors relies on a market survey conducted by an independent firm, resulting in a benchmark panel comprising 80% of the companies in the CAC Mid 60 index (essentially excluding companies with revenues of more than €10 billion and financial services and insurance companies). The positioning objective is at the median in terms of total remuneration (fixed, annual variable and long-term remuneration). In addition, given its exposure to the international market, the Issuer also regularly analyzes the positioning of the Chief Executive Officer's remuneration in light of international market studies.

In addition, the Board ensures that the remuneration policy for corporate officers remains consistent with that of the Group's other executives.

In accordance with Article L. 22-10-8 of the Commercial Code, this remuneration policy will be the subject of a resolution submitted for approval to the General Meeting called to approve the financial statements for the year ending December 31, 2020.

The position of Chief Executive Officer is currently held by Mrs. Sophie Zurquiyah.

Sophie Zurquiyah

	2019		2020	
	Amounts due	Amounts paid	Amounts due	Amounts paid
Chief Executive Officer as of April 26, 2018				
Fixed remuneration	€ 630,000	€ 630,000	€630,000	€ 630,000
Annual variable remuneration	€ 948,780(1)	€ 727,516(2)	€210,000(5)	€ 948,780(1)
Multi-annual variable remuneration*	n.a.	n.a.	n.a.	n.a.
Exceptional remuneration	n.a.	n.a.	n.a.	n.a.
Remuneration allocated to directors	n.a.	n.a.	n.a.	n.a.
Benefits in kind	€ 20,567(3)	€ 27,867(4)	€ 20,861(6)	€ 20,861(6)
Total	€1,599,347	€1,385,383	€860,861	€1,599,641

Notes:
Table 2 of the 2009–16 Financial Markets Authority Recommendation.

(1) Variable portion of the remuneration due for the 2019 financial year for the corporate office of Mrs. Sophie Zurquiyah as Chief Executive Officer paid in 2020, after approval of the 2019 financial statements by the General Meeting held on June 16, 2020, in accordance with the provisions of Article L. 22-10-34, II of the French Commercial Code.
(2) Variable portion of the remuneration due for the 2018 financial year for the corporate office of Mrs. Sophie Zurquiyah as Chief Executive Officer paid in 2019, after approval of the 2018 financial statements by the General Meeting held on May 15, 2019, in accordance with the provisions of Article L. 22-10-34, II of the French Commercial Code.
(3) Includes a benefit in kind in respect of a company car in the amount of €9,473 and a benefit in kind in respect of unemployment insurance subscribed with the GSC for 2019 in the amount of €11,094.
(4) This amount includes the benefit in kind of €7,299 under the 2018 unemployment insurance subscribed with the GSC.
(5) Variable portion of the remuneration due for the 2020 financial year for the corporate office of Mrs. Sophie Zurquiyah as Chief Executive Officer will be paid in 2021, after approval of the 2020 financial statements by the General Meeting to be convened to approve the financial statements for the year ended December 31, 2020, in accordance with the provisions of Articles L. 225-100 and L. 22-10-34, II of the French Commercial Code.
(6) Includes a benefit in kind in respect of a company car in the amount of €9,600 and a benefit in kind in respect of unemployment insurance subscribed with the GSC for 2020 in the amount of €11,261.
* No multi-annual remuneration mechanism was implemented during the 2019 and 2020 financial years.

Contractual indemnity in case of termination

Chief Executive Officer

The Board of Directors meeting on April 26, 2018, following the appointment of office by Mrs. Sophie Zurquiyah as Chief Executive Officer for a term of four years, also approved, for the duration of this term of office, the terms and conditions of the benefits granted to Mrs. Sophie Zurquiyah in the event of termination of her corporate office. This commitment was ratified by the Combined General Meeting held on May 15, 2019.

The Board of Directors held on March 5, 2020 amended the conditions of this commitment in order to comply with the provisions of the AFEP-MEDEF Code to which the Issuer refers. It has the following characteristics:

- Mrs. Sophie Zurquiyah benefits from a contractual termination indemnity in the event of dismissal, and in the event of non-renewal of her term of office within twelve months following a change of control, in the absence of any situation of failure characterized by the non-achievement of the performance conditions described below;
- no payment may be made in the event of serious or gross misconduct, regardless of the reason for departure.

The payment of the contractual termination indemnity will depend on the average rate of achievement of the objectives relating to the annual variable portion of Mrs. Sophie Zurquiyah's remuneration for the last three financial years ended prior to the departure date, in accordance with the following rule:

- if the average achievement rate is less than 80%, no contractual termination indemnity will be paid;
- if the average achievement rate is equal to or greater than 80% and less than 90%, the contractual termination indemnity will be due at 50% of its amount;
- if the average achievement rate is equal to or greater than 90%, the contractual termination indemnity will be due on a straight-line basis between 90% and 100% of its amount.

This amendment was ratified by the Combined General Meeting held on June 16, 2020.

This contractual termination indemnity will be equal to the difference between (i) a gross amount capped at 200% of the Annual Reference Remuneration and including all sums of any nature whatsoever, and on any basis whatsoever, to which Mrs. Sophie Zurquiyah may be entitled as a result of the termination, and (ii) all sums to which she may be entitled as a result of the implementation of the non-compete commitment.

The aggregate of the contractual termination indemnity and the non-compete indemnity may under no circumstances exceed 200% of the corporate officer's Annual Reference remuneration. Should the combined amount of the two benefits be greater, the contractual indemnity would be reduced to the level of this cap.

It is specified that the Board of Directors must acknowledge, prior to the payment of the contractual termination indemnity, (i) that the performance conditions described above have been met and (ii) that the contractual termination indemnity complies with the recommendations of the AFEP-MEDEF Code in force at the date of the departure of the person concerned.

Non-compete commitment in force

At its meeting of April 26, 2018, the Board of Directors approved, in accordance with the procedure applicable to regulated agreements and provided for in Articles L. 225-38 *et seq.* of the Commercial Code and the articles of

the same Code applicable to "listed" companies (Articles L. 22-10-1 *et seq.*), the conclusion of a non-compete commitment between the Issuer and Mrs. Sophie Zurquiyah. This commitment was ratified by the Combined General Meeting held on May 15, 2019.

In accordance with the decision of the Board of Directors on December 11, 2019, this commitment has been amended, in particular in order to comply with the provisions of Order no. 2019-1234 of November 27, 2019 and the decree of the same date issued for its application. The indemnity will now be paid in instalments and will not be paid if the person concerned claims his/her pension rights and, in any event, beyond the age of 65. This amendment was ratified by the Combined General Meeting held on June 16, 2020.

This commitment applies to activities involving services for the acquisition, processing or interpretation of geophysical data, or the supply of equipment or products designed for the acquisition, processing or interpretation of geophysical data, and involving the contribution of the person concerned to projects or activities in the same field as those in which Mrs. Sophie Zurquiyah has participated within the CGG group.

In consideration for this commitment for a period of 18 months from the date of Mrs. Sophie Zurquiyah's departure from the Group, Mrs. Zurquiyah would receive a remuneration corresponding to 100% of her Annual Reference Remuneration.

The annual reference remuneration is exclusively comprised of the annual fixed remuneration paid over the 12-month period prior to notice data, to which is added the annual average variable remuneration due over the previous three financial years before date of departure or date of notice (if applicable).

The non-compete commitment exists for the protection of the Group's interest, and the non-compete indemnity is the imperative financial remuneration in response to the restrictions incurred. However, the Board of Directors reserves the right to unilaterally renounce the enforcement of the non-compete commitment, at the date of termination of the Chief Executive Officer at the latest, in which case the latter would be free from any non-compete commitments and no financial remuneration would be owed on that basis.

General benefits plan

Chairman of the Board of Directors and Chief Executive Officer

The Board of Directors, at its meeting of April 26, 2018, authorised, in accordance with the procedure applicable to regulated agreements and provided for in Articles L. 225-38 *et seq.* of the French Commercial Code and the articles of the same code applicable to "listed" companies (Articles L. 22-10-1 *et seq.*), the extension to Mr. Salle and Mrs. Zurquiyah of the general compulsory benefits plan of the Group applicable to all employees. This benefit was ratified by the General Meeting held on June 16, 2020.

For 2020, the amount corresponding to the expense borne by the Issuer under this scheme represents €4,050 for Mr. Salle.

For 2020, the amount corresponding to the expense borne by the Issuer under this scheme represents €4,502 for Mrs. Zurquiyah.

Individual insurance covering loss of employment

In accordance with the procedure applicable to regulated agreements and provided for in Articles L. 225-38 *et seq.* and the articles of the same code applicable to "listed" companies (articles L. 22-10-1 *et seq.*) of the French Commercial Code, the Board of Directors, at its meeting of April 26, 2018, authorised the conclusion of an individual insurance covering loss of employment with the GSC for the benefit of Mrs. Zurquiyah.

This guarantee provides for the payment of a maximum percentage of 14.36% of Mrs. Sophie Zurquiyah's target remuneration in 2020 (i.e. €180,998) over a period of 12 months.

This commitment was ratified by the General Meeting of June 16, 2020 (13th resolution).

Directors' compensation

Maximal annual remuneration for Directors proposed at the General Meeting

For information purposes, it is reminded that the maximum amount approved by the General Meeting held on June 16, 2020 as aggregate annual remuneration of the Directors is set at €550,000, for the financial year 2020

and until further amendment by new decision of the General Meeting. This amount is lower than in the previous years, as the Annual General Meeting held on May 15, 2019 approved a maximum of €630,000 in annual aggregate remuneration for Directors for 2019.

General distribution rules

The total amount of Directors' fees, as approved by the General Meeting, is divided into a fixed component relating to the function and a variable component for meeting attendance (This does not apply to the Chairman of the Board of Directors, for whom specific rules are defined below), as well as a fixed indemnity per trip for Directors travelling from abroad. The variable remuneration based on the attendance at Board and Committee meetings has a higher weight in the total envelope compared to the fixed remuneration based on the function.

The total amount paid to each Director is determined after taking into account the actual attendance at each Board and Board Committee meetings, knowing that for the purpose of calculating the remuneration, a strategy meeting will be assimilated to a Board of Directors' meeting. In case the final aggregate amount to be paid to the Directors reaches the maximum amount approved by the General Meeting, a *prorata* calculation shall be done for each Director in order to respect and not exceed such maximum amount.

Amounts to be applied in 2021

For the 2021 fiscal year, based on the recommendations of the Appointment, Remuneration and Governance Committee and subject to the approval by the shareholders in the General Meeting to be held on May 12, 2021, the rules proposed will be broken down as follows, based on the number of Directors in office and the number of meetings expected to be held in the calendar year:

Fixed remuneration (for an entire fiscal year) based on the function

	Fixed remuneration
Chairman of the Board	€70,000
Director[(1)]	€ 7,000
Chairman of the Audit and Risk Management Committee[(1)]	€10,000
Member of the Audit and Risk Management Committee[(1)]	€ 5,000
Chairman of any Board Committee other than the Audit and Risk Management Committee[(1)]	€ 4,000
Member of any Board Committee other than the Audit and Risk Management Committee[(1)]	€ 2,000

Note:

(1) This does not apply to the Chief Executive Officer, the Director(s) representing the employees and the Chairman of the Board of Directors.

The fixed remuneration of any Director appointed in the course of the year will be calculated on a *prorata temporis* basis.

Variable remuneration based on the attendance to the Board and Board Committee meetings

	Variable remuneration
Attendance to a Board meeting	€3,570
Attendance to a Board Committee meeting	€1,785

Note:

This does not apply to the Chief Executive Officer, the Director(s) representing the employees and the Chairman of the Board of Directors.

A Director who participates in a Board Committee's meeting as a guest does not receive any fee.

These variable remunerations' amounts will be divided by two in case of a Board or a Committee meeting convened and held by phone for approval of specific matters requiring a Board or a Committee approval, out of the Board and Committees which had been planned for the relevant year.

For the purpose of calculating the remuneration, a strategy meeting will be assimilated to a Board of Directors' meeting.

Compared to the remuneration policy approved by the General Meeting held on June 16, 2020 and applicable to the financial year 2020, the amount of remuneration per Board and Committee meeting (attendance) has been revised downwards due to a higher number of meetings in the financial year 2021 than in the financial year 2020 (during which remuneration for attendance at a Board and at a Committee meeting amounted to €4,600 and €2,300, respectively). Indeed, in an improvement process initiated following the evaluation of the Board of Directors carried out in 2020, a decision was made to add strategic meetings to the Board of Directors' calendar in 2021. This change has no impact on the amount of the global maximal amount allocated for this purpose on a yearly basis, which remains unchanged compared to 2020, i.e. €550,000 per year.

Travel indemnity, irrespective of the Director's nationality

	Travel indemnity
Intercontinental travel	€2,000
Travel within the same continent	€ 500

Note:
This does not apply to the Chief Executive Officer and the Director(s) representing the employees.

This travel indemnity will apply to any travel for a Board meeting, a Strategic meeting and also an annual Board seminar, if any.

Stock options and performance shares

Pursuant to applicable law, Directors, except the Chief Executive Officer and the Director(s) representing the employees, are not entitled to receive stock options and/or performance shares of the Issuer.

Expenses

Travel expenses incurred by reason of the attendance to Board and Board Committee meetings are reimbursed by the Issuer.

Allocation of the annual fixed amount allocated to each Director for the year 2021

Mr. Philippe Salle

For the 2021 fiscal year, Mr. Philippe Salle will benefit from a fixed amount of Directors' fees and from a fixed remuneration pursuant to his position as Chairman of the Board of Directors, in accordance with the remuneration policy applicable to corporate officers here above described.

Mrs. Sophie Zurquiyah

For the 2021 fiscal year, Mrs. Sophie Zurquiyah will not benefit from any remuneration pursuant to her office as Director, but she will benefit from a remuneration in her capacity as Chief Executive Officer in accordance with the remuneration policy applicable to corporate officers here above described.

Mr. Michael Daly

For the 2021 fiscal year, and pursuant to his office as Director, Mr. Michael Daly will benefit from a remuneration in accordance with the remuneration policy applicable to corporate officers here above described.

Mr. Patrice Guillaume

For the 2021 fiscal year, in accordance with the remuneration policy applicable to corporate officers here above described, Mr. Patrice Guillaume will not receive any remuneration pursuant to his office as Director. He will receive a salary pursuant to the employment agreement he entered into with CGG Services SAS, a fully owned subsidiary of the Issuer.

Mr. Patrice Guillaume's term of office will expire at the end of the 2021 Annual General Meeting. Therefore, as of the date of this offering memorandum, the Group Committee is currently in the process of appointing his successor. With respect to remuneration, the same rules will apply to Mr. Patrice Guillaume's successor for 2021.

Mrs. Anne-France Laclide-Drouin

For the 2021 fiscal year, and pursuant to her office as Director, Mrs. Anne-France Laclide-Drouin will benefit from a remuneration in accordance with the remuneration policy applicable to corporate officers here above described.

Mrs. Helen Lee Bouygues

For the 2021 fiscal year, and pursuant to her office as Director, Mrs. Helen Lee Bouygues will benefit from a remuneration in accordance with the remuneration policy applicable to corporate officers here above described.

Mrs. Colette Lewiner

For the 2021 fiscal year, and pursuant to her office as Director, Mrs. Colette Lewiner will benefit from a remuneration in accordance with the remuneration policy applicable to corporate officers here above described.

Mrs. Heidi Petersen

For the 2021 fiscal year, and pursuant to her office as Director, Mrs. Heidi Petersen will benefit from a remuneration in accordance with the remuneration policy applicable to corporate officers here above described.

Mr. Mario Ruscev

For the 2021 fiscal year, and pursuant to his office as Director, Mr. Mario Ruscev will benefit from a remuneration in accordance with the remuneration policy applicable to corporate officers here above described.

Non-Executive Directors

The following table sets forth the amounts the Company paid to its Directors, for the years ended December 31, 2019 and 2020:

Remuneration paid to Non-Executive Directors

Directors	Amount paid for fiscal year 2019	Amount paid for fiscal year 2020
Michael Daly		
Directors' fees	€58,907.65	€62,590
Other remuneration	n.a.	n.a.
Patrice Guillaume(1)		
Directors' fees	n.a.	n.a.
Other remuneration	n.a.	n.a.
Anne-France Laclide-Drouin		
Directors' fees	€75,651.86	€77,650
Other remuneration	n.a.	n.a.
Helen Lee Bouygues		
Directors' fees	€71,615.11	€75,800
Other remuneration	n.a.	n.a.
Colette Lewiner		
Directors' fees	€68,460.97	€81,550
Other remuneration	n.a.	n.a.
Gilberte Lombard(2)		
Directors' fees	€37,978.95	n.a.
Other remuneration	n.a.	n.a.
Heidi Petersen		
Directors' fees	€57,543.06	€66,700
Other remuneration	n.a.	n.a.
Mario Ruscev		
Directors' fees	€69,778.23	€61,600
Other remuneration	n.a.	n.a.
Robert F. Semmens(3)		
Directors' fees	€31,344.99	n.a.
Other remuneration	n.a.	n.a.

Notes:
Table 3 of the AMF Recommendation no. 2009-16.
(1) Mr. Patrice Guillaume, as a Director representing the employees, does not receive Directors' fees.
(2) The term of office of Mrs. Gilberte Lombard ended on May 15, 2019.
(3) The term of office of Mr. Robert F. Semmens ended on May 15, 2019.

Board practices

The Issuer complies with the AFEP-MEDEF Code of corporate governance for listed companies (the "AFEP-MEDEF Code"). This Code is available on the website of the MEDEF (www.medef.fr).

The Appointment, Remuneration and Governance Committee and the Board review the qualification of the Directors as independent on an annual basis before release of the annual reports.

In accordance with Article 9.2 of the AFEP-MEDEF Code, the Board of Directors considers that a Director is independent when he or she has no relationship of any kind whatsoever with the Issuer, its group or its management that may impair his or her freedom of judgment.

The criteria set by the AFEP-MEDEF Code are the following:

Criterion no. 1	Not to be and not to have been within the previous five years (i) an employee or executive officer of the corporation, (ii) an employee, executive officer or Director of a company consolidated within the corporation, or (iii) an employee, executive officer or Director of the company's parent company, or a company consolidated within this parent company
Criterion no. 2	Not to be an executive officer of a company in which the corporation holds a directorship, directly or indirectly, or in which an employee appointed as such or an executive officer of the corporation (currently in office or having held such office within the last five years) holds a directorship
Criterion no. 3	Not to be a customer, supplier, commercial banker, investment banker or consultant (or be linked directly or indirectly to these persons), that is significant to the corporation or its group, or for which the corporation or its group represents a significant portion of its activities
Criterion no. 4	Not to be related by close family ties to a company officer
Criterion no. 5	Not to have been an auditor of the corporation within the previous five years
Criterion no. 6	Not to have been a Director of the corporation for more than twelve years
Criterion no. 7	For non-Executive Directors: not to receive variable compensation in cash or in the form of shares or any compensation linked to the performance of the corporation or its group.
Criterion no. 8	For Directors representing major shareholders of the corporation or its parent company: they may be considered independent, provided these shareholders do not take part in the control of the corporation. Nevertheless, beyond a 10% threshold in capital or voting rights, the Board of Directors, upon a report from the Nominations Committee, should systematically review the qualification of a Director as independent in the light of the make-up of the corporation's capital and the existence of a potential conflict of interest.

The Appointment, Remuneration and Governance Committee and the Board of Directors rely on these criteria in order to assess the independence of each Director as follows:

Name of the Director	Criterion no. 1	Criterion no. 2	Criterion no. 3	Criterion no. 4	Criterion no. 5	Criterion no. 6	Criterion no. 7	Criterion no. 8	Qualification of independence established by the Board of Directors
Philippe Salle	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sophie Zurquiyah	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Michael Daly	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Anne-France Laclide-Drouin	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Helen Lee Bouygues	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Colette Lewiner	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Heidi Petersen	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mario Ruscev	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

With regards to its annual evaluation of the independence of all the Directors, the Board of Directors reviewed specifically the situation of the business relationships of Mr. Salle and Mrs. Lewiner pursuant to criterion 3 of the AFEP-MEDEF Code. In particular, the Board of Directors reviewed the business relationships that may exist between the Issuer and its group and the companies in which these Directors have an office or function, as well as the groups to which they belong, on a quantitative basis (importance of the business relationships that may exist between the Issuer and these companies and their groups and the business flows identified during the financial year 2020), as well as qualitatively (position of the Director in the companies concerned, nature of business relations, etc.). The Board considered that none of the companies in which these Directors exercise office or functions, nor the groups to which these companies belong, can be qualified as significant clients, suppliers, business bankers, financing banker or advisor of the CGG group and that CGG cannot be considered as a significant customer or supplier of these companies or their groups.

Therefore, at its meeting of March 4, 2021, the Board concluded that there were no significant business ties with respect to these Directors and confirmed the qualification of Mr. Salle and Mrs. Lewiner as Independent

Directors, the Board having determined that these Directors do not have a relationship with the Issuer, its Group or its management that would compromise the exercise of their freedom of judgment.

As a consequence, at its meeting of March 4, 2021, the Board confirmed that seven out of the eight who were sitting on the Board at that time, qualified as independent (i.e. more than half of the Board members, which is compliant with the recommendation of the AFEP-MEDEF Code): Mrs. Helen Lee Bouygues, Mrs. Heidi Petersen, Mrs. Anne-France Laclide-Drouin, Mrs. Colette Lewiner, Mr. Philippe Salle, Mr. Michael Daly and Mr. Mario Ruscev.

Mr. Patrice Guillaume, in his capacity of Director representing the employees, is not taken into account in the calculation of the independence rate of the Board of Directors (according to section 9.3 of the AFEP-MEDEF Code).

Diversity on the Board of Directors

The Board of Directors considers that diversity of its membership is key to ensure a good performance. Diversity is applied to gender, age, independence, nationalities and skills, as described below.

It shall be noted that Mr. Patrice Guillaume, as Director representing the employees, has not been taken into account when determining the below figures as this diversity policy should only target Directors elected by the shareholders, based upon the Board's proposal.

Considering the Board of Directors remained the same in 2019 and 2020, there has been no significant change in the information provided below with respect to 2020, compared to 2019.

Missions of the Board of Directors and Works over 2020

General Information

	As of December 31, 2020
Number of meetings	8
Average attendance rate	100%
Number of Directors	9(1)
Percentage of Independent Directors:	
—Including the Director representing the employees	78%
—Excluding the Director representing the employees	88%

Note:

(1) Including the Director representing the employees.

Main missions and activities carried out over 2020 (non-exhaustive list)

Main missions (Subject to the powers explicitly assigned to the General Meetings of Shareholders and within the limits of the business purpose)	• to lay down the guidelines governing the Issuer's activity and to monitor their application; • to consider any question affecting the proper operation of the Issuer and to settle the matters in regards to it; • to promote long-term value creation by the Issuer by considering the social and environmental aspects of its activities; to ensure the implementation of a mechanism to prevent and detect corruption and influence peddling as well as the implementation of a policy of non-discrimination and diversity; • to review the opportunities and risks, such as financial, legal, operational, as well as the measures taken accordingly; • to review the Group's consolidated financial situation, particularly in terms of debt, the cash position and financial resources available on a short-term basis and in the light of forecasts;

- to authorize any operations that are significant for the Group's strategy, such as the completion of external growth operations, partnerships, disposals or strategic investments and to monitor their implementation;
- to review the Issuer's financial statements as well as all documentation required by law;
- to prepare and convene the General Meeting, prepare the documentation requested for that purpose and answer to written questions which may be sent by shareholders to the General Meeting, if any;
- to appoint corporate officers in charge of the management of the Issuer;
- to define the remuneration policy applicable to the Top Management of the Issuer to be submitted to the General Meeting, based upon the recommendations of the Appointment, Remuneration and Governance Committee; set the remuneration of the corporate officers in accordance with the remuneration policy approved by the General Meeting;
- to approve the internal control and risk management procedures implemented by the Issuer;
- more globally, ensure all missions allocated to the Board of Directors in terms of governance.

Main activities in 2020

Governance

- convening of the General Meeting of June 16, 2020 after having approved the various reports to be presented to the shareholders and the resolutions to be submitted for the shareholders' approval;
- review of the qualification of Directors as independent;
- review of the related-party agreements authorized during previous fiscal years and which had remained in force in 2020;
- adoption of the charter of the periodic assessment process of agreements relating to usual operations and entered into under normal conditions;
- review and amendment of the Composition of the Board Committees;
- approval of the report on the Group Policy on equal opportunity for equal treatment of employees, including the diversity policy applicable to the Group;
- review of the conclusions made further to the internal evaluation of the Board of Directors' operations carried out by the Chair of the Appointment, Remuneration and Governance Committee and adoption of an action plan in order to take the recommendations into account for the future;
- discussion on the succession plan of the Chief Executive Officer and members of the Executive Leadership team, on the basis of the work of the Appointment, Remuneration and Governance Committee;
- meeting held in the absence of the Chief Executive Officer, according to the AFEP-MEDEF Code recommendations. Main topics discussed were the performance of the Chief Executive Officer and of the Executive Leadership team.

Remuneration

- approval of the variable remuneration of the Chief Executive Officer for 2019 (payment of which was subject to the 2020 General Meeting approval), review of the remuneration components for the Chairman of the Board and the Chief Executive Officer for fiscal year 2020, and the method of allocation of Directors' fees for 2020 based on the package approved by the General Meeting of June 16, 2020;
- review of the impact of the Covid-19 pandemic on the remunerations, notably the variable remuneration of the Chief Executive Officer;
- review of the achievement of the performance conditions of the stock-option plans allocated in 2016 and 2018, and of the performance shares plan allocated in 2018;
- allocation of stock-options and performance shares to the Chief Executive Officer, the members of the Executive Leadership team and certain employees of the Group;
- amendment of the contractual termination indemnity for the benefit of Mrs. Sophie Zurquiyah in order to align it with the rules recently issued and the provisions of the AFEP-MEDEF code.

Finance and strategy

- approval of the 2019 annual and consolidated financial statements, review of the interim quarterly and half-year results for fiscal year 2020 and the 2020 forecasts;
- review, approval and follow-up of M&A projects;
- review of the impact of the Covid-19 pandemic and of the volatility in oil prices on the Group's business;
- close monitoring of the implementation of the CGG 2021 Plan, review of the process to implement and follow-up of the social plan;
- adoption of the strategic directions of the Group, review of the Group's strategy, approval of the 2022-2023 business plan and of the 2021 budget;
- launch of a reflection on a new strategic roadmap to be implemented in 2021 and continuing until 2024;
- detailed review of each business line activity through presentations made by the management team to the Board.

Others

- review and monitoring of the actions taken by the Group against the Covid-19 pandemic in its offices and plants, in order to ensure compliance with authorities' regulations and restrictions, workers' protection and wellbeing, control of potential impact on operations, among others;
- discussions around the strategy of the Issuer aiming at the creation of long-term value and considering the social and environmental aspects of its activities, including by reviewing opportunities and risks under a corporate social responsibility (CSR) standpoint, striving for constant improvement of compliance and governance, etc.

Appointment-Remuneration Committee:

Composition

As of December 31, 2020, the members of the Committee were the following:

- Colette Lewiner (Independent Director), Chairwoman;
- Patrice Guillaume (Director representing the employees);
- Heidi Petersen (Independent Director); and

Mario Ruscev (Independent Director).

The Chairman of the Board and the Chief Executive Officer are closely associated with the works of this Committee, notably the work relating to the appointment of Directors.

General information

	As of December 31, 2020
Number of meetings	7
Average attendance rate	100%
Number of Directors	4[1]
Percentage of Independent Directors:	
Including the Director representing the employees	75%
Excluding the Director representing the employees	100%

Note:

(1) Including the Director representing the employees.

Main missions and activities carried out over 2020 (non-exhaustive list)

Main missions	**Governance**

	• to review the following matters and propose recommendations to the Board of Directors:
	  • periodical review of the independence of Board members,
	  • contracts between the Issuer and a corporate officer (*mandataire social*);
	• to review the gender equality and equality of opportunity policies, including the diversity policy;
	• to carry out the internal performance evaluation of the Board and its Committees, or, as the case may be, proceed with the selection of an external consultant in case of an external evaluation (every three years) and to monitor this pursuant to the process described in this document; to carry out the performance evaluation of the Chief Executive Officer;
	• to review the succession planning process of the Chief Executive Officer and the Executive Leadership team members;
	• to monitor the meetings held with proxy advisors on any governance or remuneration matters.

Remuneration

- to review the following matters and propose recommendations to the Board of Directors:
  - the remuneration policy applicable to the corporate officers (*mandataires sociaux*) and its implementation, including the procedures for setting the variable portion and the long-term portion (stock options and performance shares) of the remuneration, the grant of possible benefits in kind, all provisions relating to the retirement of the corporate officers (*mandataires sociaux*), the other deferred elements of the remuneration packages (pension, severance payment) to be submitted to the General Meeting,
  - the evaluation of financial consequences on the Issuer's financial statements of all remuneration elements for corporate officers (*mandataires sociaux*),
  - the contracts between the Issuer and a corporate officer (*mandataire social*) with respect to remuneration,
  - the amount of Directors' fees level and their allocation rules;
  - the remuneration policy for the Group;
  - the long-term remuneration plans for corporate officers (*mandataires sociaux*) or employees,
  - the realization of capital increases reserved to employees;
- to review remuneration of the Executive Leadership team members and its evolution;
- to review the remuneration data and other related information to be publicly disclosed by the Issuer in its annual reports and any other reports to be issued pursuant to applicable laws and regulations.

Appointment

To review the following matters and propose recommendations to the Board of Directors:

- the terms of office of Directors and potential re-appointment of corporate officers (*mandataires sociaux*) or Directors,
- any possible candidacies for filling Director's positions or positions as corporate officer (*mandataire social*).

The Committee may also review any question which could be raised by its Chairman in relation with any of the above-mentioned topics.

Main activities in 2020 . . . .

- Review of the independence of the Directors and of the Directors' terms of office and re-appointments for 2020 and 2021;
- Implementation and follow up of the internal evaluation process for the Board of Directors for 2020;
- Review of the 2020 leaders' succession plan;
- Review of the report on the Group Policy on equal opportunity for and equal treatment of employees, including the diversity policy;

- Review of the remuneration policy applicable to corporate officers (*mandataires sociaux*) for 2020 further to the negative vote by the 2019 General Meeting and with the intention of submitting this to the 2020 General Meeting; implementation of this remuneration policy in 2020; review of the paragraphs regarding remuneration of the corporate officers (*mandataires sociaux*) to be included in the Universal Registration Document for 2019;
- Review of the meetings held with proxy advisors further to the negative vote on two resolutions at the 2019 General Meeting;
- Proposal of the Chief Executive Officer's performance evaluation and results on her variable remuneration relating to 2019 to the Board of Directors;
- Review of the method of allocation of Directors' fees and of the global annual package to be submitted to the 2020 General Meeting for 2020 and for further amendment by the General Meeting;
- Review of the remuneration of the Chairman of the Board, the Chief Executive Officer (including the determination of the criteria applicable to the variable remuneration and the determination of the achievement of these criteria); review of the remuneration of the other members of the Executive Leadership team, using a benchmark based on international data;
- Review of the impact of the Covid-19 pandemic on remunerations, in particular the variable remuneration of the Chief Executive Officer;
- Review of the contractual termination indemnity of the Chief Executive Officer, the amendment of which was submitted to the 2020 General Meeting;
- Review of the achievement of performance conditions of stock option and performance shares plans in place and review of the stock-options and performance shares plans to be allocated in 2020;
- Review and presentation to the Board of the global 2020 remuneration items (including variable remuneration mechanism).

The work of the Committee is recorded in its minutes. The Committee reports to the Board on its proceedings after each meeting.

Technology/Strategy Committee:

Composition

As of December 31, 2020, the members of the Committee were the following:

- Helen Lee Bouygues (Independent Director), Chairwoman;
- Michael Daly (Independent Director);
- Anne-France Laclide-Drouin (Independent Director); and
- Mario Ruscev (Independent Director).

General Information

	As of December 31, 2020
Number of meetings	4
Average attendance rate	93.75%
Number of Directors	4
Percentage of Independent Directors:	
—Including the Director representing the employees	n.a.
—Excluding the Director representing the employees	100%

Main missions and activities carried out over 2020 (non-exhaustive list)

Main missions

- To review capital expenditures budget as part of the budgeting process, such as:
  - individual proposed and committed capital projects over US$10 million,
  - all other expenditures in aggregate, by business line,
  - net cash exposure on capital expenditure,
  - prior year capital expenditure results,
  - evaluation of internal cost capitalized vs. the market rate for similar services;
- To review quarterly updates on capital expenditure budget, sustaining vs. growth, risked IRR/NPV and discuss all capital projects over US$10 million where there has been an unfavorable and material change in the risk/return of the project;
- To review all authorizations for expenditures over US$100 million and make recommendations to the Chief Executive Officer;
- To review all M&A projects of US$10 million and make recommendations to the Chief Executive Officer;
- The Committee regularly invites other Directors who are interested in its work to participate in its assignments.

Main activities in 2020

- Review of the Group's investment strategy for 2020;
- Review and monitoring of all investment transactions and projects falling into its assignments as described above;
- Review of all impairments on the Group's assets to be included in the financial statements (including but not limited to the impairment on multi-client surveys);
- Review of the multi-client surveys and competition;
- Review of the investments budget for 2021.

The work of the Committee is recorded in its minutes. The Committee reports to the Board on its proceedings after each meeting.

HSE/Sustainable Development Committee:

Composition

As of December 31, 2020, the members of the Committee were the following:

- Michael Daly (Independent Director), Chairman;
- Patrice Guillaume (Director representing the employees), and
- Heidi Petersen (Independent Director);

General Information

	As of December 31, 2020
Number of meetings	3
Average attendance rate	100%%
Number of Directors	3[(1)]
Percentage of Independent Directors:	
—Including the Director representing the employees	66.67%
—Excluding the Director representing the employees	100%

Note:
(1) Including the Director representing the employees.

Main missions and activities carried out over 2020 (non-exhaustive list)

Main missions

- To support the General Management in developing a strategic approach to Health, Safety, Security and Environment ("HSE") & Sustainable Development ("SD"); to determine the main axes for the improvement of HSE performance on an ongoing basis; to encourage, assist and counsel General Management in maintaining and improving HSE & SD performance;
- To monitor the performance of the Group's HSE & SD systems and programs, and at the Committee's discretion; to recommend any changes to the Board;
- To review the Group's HSE & SD performance at each regularly scheduled meeting; to benchmark CGG performance against its peers in the industry;
- To review the Group's high rated HSE & SD operational risks and the controls put in place to manage these risks; to review high impact incidents and near misses such as fatalities and High Potential Incidents ("HPIs");
- To review the Group's SD programs (principally environmental, social and ethical matters) and to provide support and direction concerning the medium-term and long-term direction of our efforts in this area; and to ensure the Group is aware of the changing external social and investor attitudes with respect to sustainability, decarbonization and the energy sector generally;
- To monitor the Group's compliance with applicable laws related to HSE & SD;
- To review the Group's crisis management preparedness; to monitor any major crisis and support the Board and General Management team as necessary in the event of such a crisis;
- To recommend to the Board and to General Management desirable policies and actions from its review and monitoring activity.

Main activities in 2020

- Monitoring of the HSE performance of the Group;
- Review of any operational Lost Time Incidents ("LTIs") and High Potential Incidents ("HPIs"), discussions of the root causes and requested follow up of enquiries on several incidents;
- Follow up of the evolution of the Covid-19 pandemic and of its impact on the Group's business; implementation of an action plan to ensure the employees' safety;

- Review of specific high rated risks, review of controls and mitigations in place to manage them (e.g. in 2020: mental health and risks linked to home office, crisis management);
- Review of the Group's performance in terms of carbon emissions;
- Review of the Statement of non-financial performance of the 2019 Universal Registration Document, and review with the independent third-party auditor of its findings and recommendations on our consolidated non-financial statement presented in the Universal Registration Document;
- Review of the impact of the United Nations SDGs and the Paris Agreement on climate change on CGG and its future direction;
- Follow up of the Group's Care and Protect awards and renewal of the program and its objectives;
- Discussion about the Group's CSR strategy and objectives.

The year was underpinned by our risk-based response to the Covid-19 pandemic. The Committee frequently reviewed the measures deployed by the Issuer's Leadership to prevent exposure and transmission of the virus within the Issuer. As a result of these efforts there were few cases, and no work-related clustered outbreaks. This effort continues into 2021.

The strategic exit from seismic acquisition has reduced the operating risk profile of CGG. This is seen in the improving safety performance in Lost Time Injury (LTIF) and Total Recorded Case Frequency (TRCF), which achieved top quartile in 2020. The strategic change to an Asset Lite company also led the Committee to adopt a focus on sub-contractor management.

The Committee encouraged an accelerated move to define and quantify the Issuer's sustainability goals and support of climate change mitigations. This culminated in December 2020 with the Board endorsing the Group ESG Strategy resulting in a CGG commitment to carbon neutrality of direct emissions by 2050, with a 50% reduction by 2030. A series of KPIs and interim milestones have been developed in support of these goals. This new ESG strategy was announced publicly in January 2021.

The work of the Committee is recorded in its minutes. The Committee reports to the Board on its proceedings after each meeting.

Audit and Risk Management Committee:

Composition

As of December 31, 2020, the members of the Committee were the following:

- Anne France Laclide-Drouin (Independent Director), Chairwoman;
- Helen Lee Bouygues (Independent Director); and
- Colette Lewiner (Independent Director).

All the members of this Committee are Independent Directors with special competencies in financial or accounting matters within the meaning of Article L. 823-19 of the French Commercial Code:

- Mrs. Anne-France Laclide-Drouin and Mrs. Helen Lee-Bouygues developed an extensive financial and accounting expertise through the various financial responsibilities they have held within various international firms and companies;
- Mrs. Colette Lewiner has been and is currently a member of the Audit or Accounts Committee of various large companies listed on Euronext Paris, most of which also operate internationally.

Thanks to their experience, Mrs. Anne-France Laclide-Drouin, Mrs. Helen Lee-Bouygues and Mrs. Colette Lewiner are therefore very familiar with financial and accounting matters of the industrial sector and those linked to international activities, as is the case for us.

Their credentials are set out above in this offering memorandum.

The Issuer complies with the provisions of the AFEP-MEDEF Code requesting that at least two thirds of the Committee be composed of Independent Directors.

The following persons attend the Committee meetings: the Chairman of the Board of Directors, the Chief Executive Officer, the Group Chief Financial Officer, the relevant members of the Executive Leadership team, the SVP Group Chief Accounting Officer, the auditors and the Group Internal Audit Director who presents an update on significant missions at least twice a year.

General Information

	As of December 31, 2020
Number of meetings	8
Average attendance rate	100%
Number of Directors	3
Percentage of Independent Directors:	
—Including the Director representing the employees	n.a.
—Excluding the Director representing the employees	100%

Main missions and activities carried out over 2020 (non-exhaustive list)

Pursuant to its charter, the Audit and Risk Management Committee is responsible for assisting the Board of Directors and, as such, for preparing its assignments.

The Audit and Risk Management Committee shall report regularly on its duties and responsibilities to the Board of Directors. The Committee also reports on the audit process of the financial statements, on how such process contributed to the integrity of the financial statements and the role the Committee played in such process. The Committee is required to immediately inform the Board of any difficulty encountered in the process.

Main missions

Accounts and financial information

In accordance with the provisions of Article L. 823-19 of the French Commercial Code, the Audit and Risk Management Committee shall monitor the effectiveness of the Issuer’s internal control and risk management systems, and, if need be, of internal audit systems, in relation to the preparation and treatment of accounting and financial information, without prejudicing Internal Audit’s independence. In this scope, the Committee is specifically in charge of the following tasks:

- To review and discuss with General Management and the Statutory Auditors the following items:
  - the consistency and appropriateness of the accounting methods adopted for establishment of the corporate and consolidated financial statements,
  - the consolidation perimeter,
  - the draft annual and consolidated accounts, semi-annual and quarterly consolidated financial statements along with their notes, and especially off-balance sheet arrangements,
  - the quality, comprehensiveness, accuracy and veracity of the financial statements of the Group;

- To hear the Statutory Auditors report on their review, including any comments and suggestions they may have made in the scope of their audit;
- To examine the draft press releases related to the Group financial results and propose any modifications deemed necessary;
- To review the "Universal Registration Document" (annual report);

- To raise any financial and accounting question that appears important to it.

Main missions

Risk management and internal control

- To review with the General Management:
  - the Issuer's policy on risk management,
  - the analysis made by the Issuer of its major risks (risk mapping),
  - the programs put in place to monitor these risks,
  - the role and responsibilities with respect to internal control,
  - the principles and rules of internal control defined by the Issuer in its general internal control environment (including governance, ethics, delegation of authority, information systems) and on the key processes (such as treasury, purchase, closing of the accounts, fixed assets),
  - the internal control quality as perceived by the Issuer,
  - significant deficiencies, if any, identified by the Issuer or reported by the external auditors (Article L. 823-16 of the French Commercial Code) as well as the corrective actions put into place.

Internal audit

- To review with General Management and the Group Internal Audit Director:
  - the organization and operation of the Internal Audit,
  - the activities and, in particular, the missions proposed in the scope of the internal audit plan approved by management and presented to the Committee,
  - results of Internal Audit reviews.

External audit

- To review with the Statutory Auditors their annual audit plan;
- To hear, if necessary, the Statutory Auditors without General Management being present;
- To monitor the procedure for selection of the auditors and to issue a recommendation to the Board of Directors on the Statutory Auditors whose appointment or renewal is to be submitted to the General Meeting. Such recommendation is to be prepared in accordance with section 16 of Regulation (EU) no. 537/2014 (the "Regulation"); the Audit and Risk Management Committee is also responsible for issuing a recommendation when the renewal of the auditors is contemplated under the conditions set forth in Article L. 823-3-1 of the French Commercial Code;

- To monitor the auditors' compliance with the independence conditions defined in Articles L. 822-9 to L. 822-16 of the French Commercial Code and to take any measures necessary to the application of paragraph 3 of section 4 (a) of Regulation (EU) no. 537/2014 and make sure that the conditions set forth in section 6 of the Regulation are complied with;
- To follow the way the auditors fulfill their mission and take into account the statements and conclusions issued by the *Haut Conseil du commissariat aux comptes* as a result of their review pursuant to Articles L. 821-9 et seq. of the French Commercial Code;
- To approve the supply of non-audit services referred to in Article L. 822-11-2 of the French Commercial Code, pursuant to the policy prepared by the Audit and Risk Management Committee and ratified by the Board of Directors;
- To discuss, possibly individually, the audit work with the Statutory Auditors and General Management and to review regularly with management the auditors' fees. Within the framework of a procedure that it determines annually, the Committee has sole authority to authorize performance by the auditors and/or by the members of their network of services not directly relating to their auditing mission.

Others

- To review with management and, when appropriate, the external auditors the transactions binding directly or indirectly the Issuer and its executive officers;
- To handle, anonymously, any feedback relating to possible internal control problem or any problems of an accounting or financial nature.

Note:

(a) When the total fees received from a public-interest entity in each of the last three consecutive financial years are more than 15% of the total fees received by the Statutory Auditor or the audit firm or, where applicable, by the Group auditor carrying out the statutory audit, in each of those financial years, such a Statutory Auditor or audit firm or, as the case may be, Group auditor, shall disclose that fact to the Audit and Risk Management Committee and discuss with the Audit and Risk Management Committee the threats to their independence and the safeguards applied to mitigate those threats. The Audit Committee shall consider whether the audit engagement should be subject to an engagement quality control review by another Statutory Auditor or audit firm prior to the issuance of the audit report.

Main activities in 2020

- Review of the annual consolidated financial statements for 2019 (statutory and consolidated accounts, and in particular the impairment tests on assets and goodwill, the accounting classification of the financial debt of the Group as current liabilities, the cash situation, the memo relating to the going concern, the off-balance sheet commitments), and of the first quarter, the first semester and the third quarter of 2020;
- Review of the detailed report from external auditors and analysis of the key audit points identified, with a focus on significant risks which may impact the financial statements;
- Review of the 2019 Universal Registration Document (annual report);
- Review of the 2020 forecasts;
- Meeting with external auditors without General Management being present (overview of the audit work performed for the closing of the 2019 financial statements);

- Monitoring of the Group's situation with respect to cash and cash flow forecasts, especially refinancing and Group hedging policy, as well as impacts of the Covid-19 pandemic on the business and on the cash flow;
- Review of the Multi-Client activity, the composition of its library and the valuation of the related surveys including accounting treatment (depreciation policy and potential depreciations) and monitoring of the impacts of the businesses divested;
- Follow up of the financial costs related to the implementation of the restructuring plans borne by the Issuer;
- Review of the risk mapping, before and after mitigation; review of the risk on cyber-security; alignment of approaches between the Internal Control and Audit departments and the Enterprise Risk Management Department;
- Review of the work to be performed by the Statutory Auditors in the scope of their audit on the 2020 financial statements and approval of their fee estimates for this work with special focus on cyber security;
- Review of non-audit services provided by the members of our auditors' network performed in 2020 and approval as necessary;
- Review of the activities of the Internal Audit team according to a plan established by the Executive Leadership team and submitted to the Committee;
- Review of the tax situation of the Group;
- Review of the report from the Ethics Committee and of the main topics in terms of compliance.

Finally, the General Management of the Issuer must report any suspected fraud of a significant amount to the Committee so that the Committee may proceed with any investigation that it deems appropriate.

The Audit and Risk Management Committee usually meets before each meeting of the Board of Directors. For practical reasons, meetings of the Audit and Risk Management Committee are held in general on the eve of the Board of Directors' meetings. In order that this constraint does not prevent the proper functioning of the Committee, the Chairman of the Board and the Chief Executive Officer ensure that the members of the Committee receive the necessary documents and information sufficiently in advance in order to have sufficient time to be able to review the accounts.

The work of the Committee is recorded in its minutes. The Committee reports to the Board on its proceedings after each meeting. This report is recorded in the minutes of the Board of Directors' meeting.

Stock options

Pursuant to various resolutions adopted by the Board of Directors, the Group has granted options to purchase ordinary shares to certain employees, executive officers and directors.

The details of the beneficiaries and performance conditions for the plans prior to 2018 are not disclosed below, as the related expense recorded in the consolidation statement is not material. Details regarding adjustments to the number of options are not presented for these aforementioned plans.

On June 27, 2018, the Board of Directors allocated:

- 732,558 options to the Chief Executive Officer. These have an exercise price of €2.15 and vest in four batches, in June 2019 (for 25% of the options allocated), June 2020 (for 25% of the options allocated), June 2021 (for 25% of the options allocated) and June 2022 (for 25% of the options allocated). Vesting of these options is subject to performance conditions related to CGG share price. The options have a term of eight years;

- 1,141,088 options to the Executive Leadership members. These have an exercise price of €2.15 and vest in four batches, in June 2019 (for 25% of the options allocated), June 2020 (for 25% of the options allocated), June 2021 (for 25% of the options allocated) and June 2022 (for 25% of the options allocated). Vesting of these options is subject to performance conditions related to CGG share price. The options have a term of eight years;
- 4,670,743 options to certain employees. These have an exercise price of €2.15 and vest in four batches, in June 2019 (for 25% of the options allocated), June 2020 (for 25% of the options allocated), June 2021 (for 25% of the options allocated) and June 2022 (for 25% of the options allocated). The options have a term of eight years.

The exercise price of each option is the average market value of the share during the twenty-day period ending the day before the date the option is allocated.

On December 11, 2018, the Board of Directors allocated:

- 671,171 options to the members of the Executive Committee. These have an exercise price of €1.39 and vest in four batches, in June 2019 (for 25% of the options allocated), June 2020 (for 25% of the options allocated), June 2021 (for 25% of the options allocated) and June 2022 (for 25% of the options allocated). Vesting of these options is subject to performance conditions related to CGG's share price. The options have a term of seven years and seven months.

On June 27, 2019 and November 5, 2019, the Board of Directors allocated:

- 360,000 options to the Chief Executive Officer. These have an exercise price of €1.52 and vest in one batch in June 2022. Vesting of these options is subject to performance conditions related to CGG's share price. The options have a term of eight years;
- 851,330 options to the members of the Executive Committee. These have an exercise price of €1.52 and vest in two batches, in June 2021 (for 50% of the options allocated) and June 2022 (for 50% of the options allocated). Vesting of these options is subject to performance conditions related to CGG's share price. The options have a term of eight years;
- 1,062,190 options to certain Group employees. Their exercise price is €1.52 and vest in two batches, in June 2021 (for 50% of the options allocated) and June 2022 (for 50% of the options allocated). The options have a term of eight years.

The exercise price of each option is the average market value of the share during the twenty-day period ending the day before the date the option is allocated.

On June 25, 2020, the Board of Directors allocated:

- 360,000 options to the Chief Executive Officer. These have an exercise price of €1.10 and vest in one batch, in June 2023, subject to a performance condition relating to CGG's share price. The options have a term of eight years;
- 940,000 options to members of the Executive Leadership members. These have an exercise price of €1.10 and vest in one batch, in June 2023, subject to a performance condition relating to CGG's share price. The options have a term of eight years;
- 968,512 options to certain Group employees. These have an exercise price of €1.10 and vest in two batches, in June 2022 (for 50% of the options allocated) and June 2023 (for 50% of the options allocated). The options have a term of eight years.

Information related to options outstanding at December 31, 2020 is summarized below:

Date of Board of Directors' Resolution	Options granted	Options granted after capital operations[1]	Options outstanding at December 31, 2020[2][3]	Exercise price per share [2][3]	Expiration date	Remaining duration
				(in €)		
June 24, 2013 to June 25, 2015	5,068,307	484,041	221,834	62.92-193.27	June 24, 2021 to June 25, 2023	5.8 to 29.8 months
June 23, 2016	6,658,848	531,281	236,828	8.52	June 23, 2024	41.8 months
June 28, 2018	6,544,389	6,544,389	5,297,130	2.15	June 28, 2026	65.9 months
December 11, 2018	671,171	671,171	604,053	1.39	June 28, 2026	65.9 months
June 27, 2019 & November 5, 2019	2,273,520	2,273,520	2,210,100	1.52	June 27, 2027	77.9 months
January 6, 2020	80,000	80,000	80,000	2.72	June 27, 2027	77.9 months
June 25, 2020	2,268,512	2,268,512	2,268,512	1.10	June 25, 2028	89.9 months
Total	23,564,747	12,852,914	10,919,030			

Notes:

(1) Options granted adjusted following 2012, 2016 and 2018 capital increases and 2016 reverse split.

(2) Following the reverse split in July 2016, the stock options were adjusted as follows:

(3) Following the capital increase in February 2018, the stock option plans were adjusted as follows:

Date of stock option plans	Adjustment of number of options at 20 July, 2016	Exercise price before adjustment per share *(in €)*	Adjusted exercise price per share *(in €)*
June 23, 2016	208,089	0.68	21.76

Date of stock option plans	Adjustment of number of options at February 21, 2018	Exercise price before adjustment per share (in €)	Adjusted exercise price per share (in €)
June 23, 2016	471,856	21.76	8.52

A summary of the Issuer's stock option activity, and related information for the years ended December 31, 2020 follows:

	2020		2019		2018	
	Number of options	Weighted average exercise price	Number of options	Weighted average exercise price	Number of options	Weighted average exercise price
	Weighted average exercise price in €					
Options outstanding at beginning of year	9,171,472	5.99	7,460,676	10.52	424,383	239.72
Granted	2,348,512	1.16	2,273,520	1.52	7,215,560	2.08
Adjustments following the reverse split	—	—	—	—	—	—
Adjustments following the capital increase	—	—	—	—	567,078	199.14
Exercised	—	—	(2,038)	2.15	—	—
Forfeited	(600,954)	18.37	(560,686)	48.16	(746,345)	30.73
Option outstanding at year-end	10,919,030	4.27	9,171,472	5.99	7,460,676	10.52
Exercisable at year-end	3,409,535	10.10	2,077,304	19.76	530,459	116.19

The average price of a CGG share was €1.02 in 2020 and €1.72 in 2019.

Performance shares

(a) Allocation plan dated June 27, 2018

(b) On June 27, 2018, the Board of Directors allocated 157,500 performance shares to the Chief Executive Officer, 242,841 performance shares to the members of the Executive Committee, and 2,708,180 performance shares to certain Group employees.

(c) The performance shares vest in two batches, in June 2020 (for 50% of the shares allocated) and June 2021 (for 50% of the shares allocated). The vesting period for the first batch of these performance shares is due to end on the latest of the following two dates: June 27, 2020 or the date of the Annual Shareholders' Meeting convened to approve the financial statements for fiscal year 2019, provided that the Board of Directors deems the performance conditions to have been fulfilled. The vesting period for the second batch of these performance shares is due to end on the latest of the following two dates: June 27, 2021 or the date of the Annual Shareholders' Meeting convened to approve the financial statements for fiscal year 2020, provided that the Board of Directors deems the performance conditions to have been fulfilled.

(d) Allocation plan dated December 11, 2018

(e) On December 11, 2018, the Board of Directors allocated 132,821 performance shares to the members of the Executive Committee.

(f) The performance shares vest in two batches, in June 2020 (for 50% of the shares allocated) and June 2021 (for 50% of the shares allocated). The vesting period for the first batch of these performance shares is due to end on the latest of the following two dates: June 27, 2020 or the date of the Annual Shareholders' Meeting convened to approve the financial statements for fiscal year 2019, provided that the Board of Directors deems the performance conditions set forth in the plan regulation to have been fulfilled. The vesting period for the second batch of these performance shares is due to end on the latest of the following two dates: June 27, 2021 or the date of the Annual Shareholders' Meeting convened to approve the financial statements for fiscal year 2020, provided that the Board of Directors deems the performance conditions to have been fulfilled.

(g) Allocation plan dated June 27, 2019

On June 27, 2019, the Board of Directors allocated:

- 220,000 performance shares to the Chief Executive Officer. The performance shares vest in one batch, in June 2022. The vesting period for the batch of these performance shares is due to end on the latest of the following two dates: June 27, 2022 or the date of the Annual Shareholders' Meeting convened to approve the financial statements for fiscal year 2021, provided that the Board of Directors deems the performance conditions to have been fulfilled.

- 518,660 performance shares to the members of the Executive Committee. The performance shares vest in two batches, in June 2021 (for 50% of the shares allocated) and June 2022 (for 50% of the shares allocated). The vesting period for the first batch of these performance shares is due to end on the latest of the following two dates: June 27, 2021 or the date of the Annual Shareholders' Meeting convened to approve the financial statements for fiscal year 2020, provided that the Board of Directors deems the performance conditions set forth in the plan regulation to have been fulfilled. The vesting period for the second batch of these performance shares is due to end on the latest of the following two dates: June 27, 2022 or the date of the Annual Shareholders' Meeting convened to approve the financial statements for fiscal year 2021, provided that the Board of Directors deems the performance conditions to have been fulfilled.

- 1,269,060 performance shares to certain Group employees. The performance shares vest in two batches, in June 2021 (for 50% of the shares allocated) and June 2022 (for 50% of the shares allocated). The vesting period for the first batch of these performance shares is due to end on the latest of the following two dates: June 27, 2021 or the date of the Annual Shareholders' Meeting convened to approve the financial statements for fiscal year 2020, provided that the Board of Directors deems the performance conditions set forth in the plan regulation to have been fulfilled. The vesting period for the second batch of these performance shares is due to end on the latest of the following two dates: June 27, 2022 or the date of the Annual Shareholders' Meeting convened to approve the financial statements for fiscal year 2021, provided that the Board of Directors deems the performance conditions to have been fulfilled.

(h) Allocation plan dated June 25, 2020

On June 25, 2020, the Board of Directors allocated:

- 220,000 performance shares to the Chief Executive Officer. The performance shares vest in one batch, in June 2023. The vesting period for the batch of these performance shares is due to end on the latest of the following two dates: June 25, 2023 or the date of the Annual Shareholders' Meeting convened to approve the financial statements for fiscal year 2022, provided that the Board of Directors deems the performance conditions to have been fulfilled.

- 530,000 performance shares to the Chief Executive Officer. The performance shares vest in one batch, in June 2023. The vesting period for the batch of these performance shares is due to end on the latest of the following two dates: June 25, 2023 or the date of the Annual Shareholders' Meeting convened to approve the financial statements for fiscal year 2022, provided that the Board of Directors deems the performance conditions to have been fulfilled.
- 1,203,148 performance shares to certain Group employees. The performance shares vest in two batches, in June 2022 (for 50% of the shares allocated) and June 2023 (for 50% of the shares allocated). The vesting period for the first batch of these performance shares is due to end on the latest of the following two dates: June 25, 2022 or the date of the Annual Shareholders' Meeting convened to approve the financial statements for fiscal year 2021, provided that the Board of Directors deems the performance conditions set forth in the plan regulation to have been fulfilled. The vesting period for the second batch of these performance shares is due to end on the latest of the following two dates: June 25, 2023 or the date of the Annual Shareholders' Meeting convened to approve the financial statements for fiscal year 2022, provided that the Board of Directors deems the performance conditions to have been fulfilled.

(i) The following table lists the assumptions used to value the 2018, 2019 and 2020 options plans and the 2018, 2019 and 2020 performance unit allocation plans in accordance with IFRS 2, and the resulting fair values. The other previous plans have a non-significant impact on IFRS 2 expense. The Group uses the Black & Scholes model to value the options granted. Dividend yield used is nil for all plans.

	Options granted	Volatility (1)	Risk-free rate	Exercise price per share	Estimated maturity	Fair value per share at the grant date	Total cost
				(in €)	*(in years)*	*(in €)*	*(in millions of €)*
June 2018 stock options plan	6,544,389	56%	0%	2.15	2.5	0.63	4.1
December 2018 stock options plan	671,171	56%	0%	1.39	2.5	0.57	0.4
June 2019 stock options plan	2,273,520	57%	0%	1.52	2.5	0.50	1.1
June 2020 stock options plan	2,268,512	65%	(0.6)%	1.10	2.5	0.34	0.8

Note:
(1) Corresponds to restated historical average volatility and implied volatility.

	Free shares granted subject to performance conditions	Performance Conditions fulfilled(1)	Fair value per share at the grant date(2)	Dividend yield
			(in €)	
June 2018 performance units plan	3,108,521	50%	2.15	0
December 2018 performance units plan	132,821	50%	1.39	0
June 2019 performance units plan	2,007,720	100%	1.52	0
June 2020 performance units plan	1,953,148	100%	1.10	0

Notes:
(1) Estimated.
(2) Corresponds to CGG share price on grant date.

(j) Under IFRS 2, the fair value of the stock options granted since November 7, 2002 must be recognized as an expense over the life of the plan. The expenses break down as follows:

	Expense under IFRS 2		In respect of executive managers of the Group	
	2020	2019	2020	2019
	In millions of US$			
2018 stock options plan	0.7	1.7	0.3	0.7
2019 stock options plan	0.5	0.3	0.2	0.1
2020 stock options plan	0.2	—	0.1	—
2018 performance units plans—paid in shares	0.9	3.2	0.1	0.5
2019 performance units plans—paid in shares	1.7	0.8	0.6	0.3
2020 performance units plans—paid in shares	0.5	—	0.2	—
Total expense for equity-settled transactions	4.5	6.0	1.5	1.6

Transactions in the Issuer's shares carried out by corporate officers (*mandataires sociaux*) or their close relatives in the course of 2020 and until March 1, 2021

In accordance with provisions of Article L. 621-18-2 of the French Monetary and Financial Code and Article 223-26 of the General Regulations of the Financial Markets Authority (AMF), the summary of transactions carried out pursuant to the above-mentioned Article L. 621-18-2 in the course of 2020 and until March 1, 2021 is set out below.

Corporate officers (including Directors) and members of the Executive Leadership team are forbidden from carrying out any transactions in the Issuer's shares, whatever the nature, including the exercise of stock options:

(a) during the 30 calendar days preceding the publication of semi-annual or annual results and during the 15 calendar days preceding the publication of quarterly results (transactions in the Issuer's shares can be carried out the day after the date of publication of such results); and

(b) in case such officers, Directors or Committee members hold any information which could have any influence on the share value in case of public disclosure.

Name	Nature of the transaction	Date	Number of shares	Unit price	Amount of the transaction
Colette Lewiner *Director*	Share purchase	Nov. 17, 2020	30,000	€0.9544	€ 28,632
Sophie Zurquiyah *Director and CEO*	Final allocation of performance shares	June 29, 2020	78,750	€ 0.99	€ 77,962.5
Yuri Baidoukov *CFO*	Final allocation of performance shares	Dec. 11, 2020	39,594	€ 0.883	€ 34,961.5
Colin Murdoch *EVP Geoscience*	Final allocation of performance shares	June 29, 2020	26,396	€ 0.99	€26,132.04
	Share sale	June 29, 2020	6,560	€ 0.981	€ 6,435.36
Dechun Lin *EVP Multi-Clients*	Final allocation of performance shares	June 29, 2020	8,148	€ 0.99	€ 8,066.52
	Share sale	June 29, 2020	2,025	€ 0.981	€ 1,986.52
	Final allocation of performance shares	Dec. 11, 2020	11,649	€ 0.883	€10,286.06

Note: Pursuant to Article 223-23 of the General Regulation of the French Market Authority, the transactions reflected in this table are those (i) carried out by the persons referred to in Article L. 621-18-2 of the French Monetary and Financial Code, and (ii) exceeding €20,000 in the total amount of such transactions per calendar year.

PRINCIPAL SHAREHOLDERS

Major shareholders

The table below sets forth certain information with respect to entities known to us or ascertained from public filings to beneficially own at least 5 per cent. of our voting securities as of March 1, 2021 and December 31, 2020, 2019 and 2018:

	March 1, 2021		December 31, 2020		December 31, 2019		December 31, 2018	
	% of shares	% of voting rights*	% of shares	% of voting rights*	% of shares	% of voting rights*	% of shares	% of voting rights*
Contrarian Capital Management LLC[(1)]	9.23	9.22	9.23	9.22	9.24	9.24	9.24	9.24
River & Mercantile[(2)]	7.19	7.18	7.19	7.18	5.00	5.00	5.01	5.01
Boussard & Gavaudan[(3)]	7.02	7.02	7.02	7.02	6.05	6.05	—	—
Norges Bank[(4)]	—	—	—	—	5.16	5.16	—	—
Thunderbird Partners LLP[(5)]	—	—	—	—	5.72	5.71	5.05	5.05
Morgan Stanley[(6)]	—	—	—	—	5.39	5.39	5.23	5.23
UBS Group AG[(7)]	—	—	—	—	5.00	5.00	—	—
Treasury stock[(8)]	0.00	0.00	0.00	0.00	0.0035	0.0035	0.0035	0.0035
FCPE CGG Actionnariat[(9)]	0.00	0.00	0.00	0.00	0.00004	0.00008	0.00004	0.00010
Public	76.56	76.58	76.56	76.58	58.44	58.45	75.47	75.47
Total	100	100	100	100	100	100	100	100
Total number of shares outstanding and voting rights	711,393,503	711,645,969	711,392,383	711,643,049	709,956,358	710,094,886	709,944,816	709,999,163

Note:

* Theoretical voting rights.

(1) Calculated on the basis of the number of shares held by Contrarian Capital Management LLC as indicated in the notice of threshold crossing dated August 12, 2018.

(2) Calculated on the basis of the number of shares held by River & Mercantile as indicated in the notice of threshold crossing dated November 18, 2020.

(3) Calculated on the basis of the number of shares held by Boussard et Gavaudan as indicated in the notice of threshold crossing dated April 7, 2020.

(4) Calculated on the basis of the number of shares held by Norges Bank as indicated in the notice of threshold crossing dated January 13, 2021.

(5) Calculated on the basis of the number of shares held by Thunderbird Partners LLP as indicated in the notice of threshold crossing dated December 7, 2020.

(6) Calculated on the basis of the number of shares held by Morgan Stanley as indicated in the notice of threshold crossing dated June 18, 2020.

(7) Calculated on the basis of the number of shares held by UBS Group AG as indicated in the notice of threshold crossing dated March 13, 2020.

(8) As of December 31, 2020 and February 28, 2021 the 24,996 shares held by the Company represented 0.0035% of the capital and of the theoretical voting rights. These shares are deprived of voting rights for all General Meetings. The corresponding voting rights are reflected to provide theoretical voting rights only. For the sake of clarity of this table, they have been rounded to 0.00%

(9) As of December 31, 2020 and February 28, 2021, the 273 shares held by FCPE CGG Actionnariat (all benefiting from double voting rights) represented 0,00004% of the capital and 0.00008% of the voting rights (either theoretical or to be exercised during General Meeting). For the sake of clarity of this table, they have been rounded to 0.00%

To our knowledge, on March 1, 2021, there was no other shareholder holding, on an individual basis or pursuant to any agreement with another shareholder, more than 5 per cent. of the share capital or of the voting rights.

Dilutive instruments

Stock options

As of December 31, 2020 and as of the date of this offering memorandum, the only dilutive instruments issued were stock options and performance shares as well as warrants described below.

The number of shares that could derive from our dilutive instruments in circulation on December 31, 2020, on the basis of their terms in force as of this date, as well as the corresponding percentage of dilution are presented in the table below.

	December 31, 2020	Dilution %
Stock-options	10,919,030(1)	1.53%
Performance shares	5,403,887	0.76%
Warrants #1	29,419,884	4.14%
Warrants #2	47,925,114	6.74%

Note:

(1) Number of shares adjusted further to the share capital increase dated February 5, 2016, to the stock reverse split dated July 20, 2016 and to the share capital increase dated February 21, 2018.

Warrants

The following table sets out some of the key characteristics of the warrants issued in the framework of the implementation of our financial restructuring on February 21, 2018:

	Warrants #1	Warrants #2	Warrants #3	Coordination Warrants	Backstop Warrants
Number of warrants issued	22,133,149	71,932,731	113,585,276	7,099,079	10,648,619
Exercise ratio	3 Warrants #1 for 4 new shares	3 Warrants #2 for 2 new shares	1 Warrant #3 for 1 new share	1 Coordination Warrant for 1 new share	1 Backstop Warrant for 1 new share
Exercise price	€3.12 per new share	€4.02 per new share	€0.01 per new share	€0.01 per new share	€ 0.01 per new share
Maximum number of shares to be issued upon exercise of the warrants (subject to adjustments)	29,477,536(1)	47,955,154	113,585,276	7,099,079	10,648,619
Expiry date of the warrants(2)	February 21, 2022	February 21, 2023	August 21, 2018	August 21, 2018	August 21, 2018

Notes:

(1) The 24,996 Warrants #1 allocated to the Company in connection with the treasury shares were cancelled.

(2) Subject to extension cases.

- **Warrants #1**: warrants allocated to the shareholders of CGG;
- **Warrants #2**: warrants associated to new shares (“ABSA”), all of which were subscribed by holders of preferential subscription rights;
- **Warrants #3**: warrants in favor of the subscribers of the second lien notes;
- **Coordination Warrants**: warrants allocated to the members of the ad hoc Committee of Holders of senior notes;
- **Backstop Warrants**: warrants allocated to the members of the ad hoc Committee of Holders of senior notes.

These warrants can be exercised pursuant to the terms and conditions described in the prospectuses no. 17-551 dated October 13, 2017 and no. 18-018 dated January 16, 2018.

Warrants #3, Coordination Warrants and Backstop Warrants expired on August 21, 2018.

Related party transactions

The following table presents the transactions with our joint ventures and associates.

As of December 31, 2019, the majority of our joint ventures and associates belonged to the Contractual Data Acquisition business. With the exit of this activity on January 8, 2020 and the sale of shares in Global Seismic Shipping AS (“GSS”), which indirectly owned five high-end vessels, and CGG’s divestment from the Seabed Geosolutions BV (“Seabed”) joint venture on April 1, 2020, the volume of these transactions was reduced during the year 2020.

As of December 31, 2020, CGG Group's joint ventures and associates are mostly belonging to the Land Contractual Data Acquisition business.

	December 31								
	2020			2019			2018		
	Joint ventures(1)	Associates(2)	Total	Joint ventures(1)	Associates(2)	Total	Joint ventures(1)	Associates(2)	Total
	In millions of U.S.$								
Sales of geophysical equipment	—	23.1	23.1	—	21.0	21.0	—	14.5	14.5
Equipment rentals and services rendered	—	1.0	1.0	(0.1)	10.9	10.8	4.5	10.9	15.4
Operating Revenue	—	24.1	24.1	(0.1)	31.9	31.8	4.5	25.4	29.9
Charter expenses	—	—	—	(28.8)	—	(28.8)	(31.7)	—	(31.7)
Shipmanagement expenses	—	—	—	(18.4)	—	(18.4)	(32.4)	—	(32.4)
Costs of services rendered	(2.6)	(0.3)	(2.9)	(1.6)	(0.5)	(2.1)	(6.1)	(0.5)	(6.6)
Cost of operations	(2.6)	(0.3)	(2.9)	(48.8)	(0.5)	(49.3)	(70.2)	(0.5)	(70.7)
Other financial income (loss)	—	(13.3)	(13.3)	(4.4)	19.6)	(15.2)	(35.0)	—	(35.0)
Trade accounts and notes receivable, including agency arrangements	2.3	21.9	24.2	9.4	30.3	39.7	15.9	14.9	(30.8)
Financial assets							2.9	—	2.9
Right of use-assets	—	—	—	156.2	—	156.2	—	—	—
Receivables and assets	2.3	21.9	24.2	165.6	30.3	195.9	18.8	14.9	33.7
Trade accounts and notes payable, including agency arrangements	—	0.9	0.9	4.6	2.4	7.0	6.0	3.9	9.9
Provisions for onerous contracts	—	—	—	61.0	—	61.0	—	—	—
Lease liabilities	—	—	—	190.7	—	190.7	—	—	—
Payables and liabilities	—	0.9	0.9	256.3	2.4	258.7	6.0	3.9	9.9
Future leases commitments	—	—	—	—	—	—	358.2	—	358.2
Future ship management costs	—	—	—	—	—	—	94.6	—	94.6
Contractual obligations	—	—	—	—	—	—	452.8	—	452.8

Notes:

(1) Mainly correspond to investments in companies accounted for under the equity method at our Marine Data Acquisition business and presented as held for sale (see note 5) or as being in liquidation.

(2) Mainly correspond to investments in companies accounted for under the equity method at our Land Data Acquisition business and classified as held for sale (see note 5).

No credit facility or loan was granted to the Company by shareholders during the last two years.

DESCRIPTION OF CERTAIN FINANCING ARRANGEMENTS

The following is a summary of certain provisions of our indebtedness and certain financial arrangements to which we and certain of our Subsidiaries are or will be a party. It does not purport to be complete and is subject to, and qualified in its entirety by reference to, the underlying documents.

The Revolving Credit Facility Agreement

The Issuer will enter into a super senior revolving credit facility agreement (the "Revolving Credit Facility Agreement") with, amongst others, the Issuer as company, original borrower and original guarantor, Barclays Bank Ireland PLC, Goldman Sachs Bank Europe SE, J.P. Morgan AG and Morgan Stanley Bank AG as the mandated lead arrangers, Lucid Agency Services Limited as agent (for the purposes of this section, the "Agent"), The Bank of New York Mellon, London Branch, as security agent and the entities listed therein as lenders.

Capitalized terms used and not defined in this section shall, unless contrary indication appears, have the meaning given to them elsewhere in this offering memorandum or otherwise in the Revolving Credit Facility Agreement.

The Revolving Credit Facility Agreement will provide for revolving credit facilities (the "Revolving Credit Facilities") up to an aggregate principal amount of US$100,000,000 on a committed basis (which will be available to be drawn in cash or by way of letters of credit, subject, in relation to utilizations made by way of letters of credit, to a cap equal to US$20,000,000) which may be drawn in U.S. dollars, euros (in relation to letters of credit only) or any other readily available and agreed currency. The Revolving Credit Facilities may be used for financing or refinancing the working capital and/or the general corporate purposes of the Issuer and its Restricted Subsidiaries (the "Restricted Group"). All or part of the Revolving Credit Facilities may also be made available by way of ancillary facilities.

The Revolving Credit Facility Agreement will also include customary mechanics in relation to incremental facilities ("Additional Facilities") which may be made available to the Restricted Group following the Issue Date. The Issuer and the lenders may agree to certain terms in relation to the Additional Facility Commitments, including the margin and the termination date (each subject to conditions as set out in the Revolving Credit Facility Agreement) and the availability period.

Utilization

The Revolving Credit Facilities may be initially utilized by the Issuer. Any member of the Restricted Group organized under the laws of France, or any member of the Restricted Group approved by all relevant lenders under the Revolving Credit Facility Agreement, may become an additional borrower of the Revolving Credit Facilities, subject to the conditions contained in the Revolving Credit Facility Agreement with respect thereto.

The Revolving Credit Facility Agreement contains various conditions that must be satisfied in order for the lenders under the Revolving Credit Facility Agreement (the "RCF Lenders") to make (or rollover) a loan under the Revolving Credit Facilities, with new loans subject to the requirement that no event of default under the Revolving Credit Facility Agreement is then continuing or would result from the proposed loan.

In addition, subject to the approval of the relevant issuing bank, the Revolving Credit Facilities may be utilized by way of the issue of letters of credit, and the RCF Lenders may also allocate their commitments by way of ancillary facilities on customary market terms for such matters.

Availability

The Revolving Credit Facilities may, subject to satisfaction of customary conditions precedent, be utilized from the date of the Revolving Credit Facility Agreement until the date falling one month prior to the maturity date of the relevant Revolving Credit Facilities.

Repayments and Prepayments

The Revolving Credit Facilities will have an initial final maturity date which is 4.5 years after the Issue Date. Amounts still outstanding at the relevant maturity date will be immediately due and payable. There is no clean down requirement during the life of the Revolving Credit Facilities. Any borrower may re-borrow amounts repaid, subject to certain conditions, until one month prior to maturity.

Subject to certain conditions, any borrower under the Revolving Credit Facility Agreement may voluntarily prepay the utilizations under the Revolving Credit Facilities in a minimum amount of US$5,000,000 in respect of loans made available in cash and US$1,000,000 in respect of letters of credit, and/or permanently cancel all or part of the available commitments under the Revolving Credit Facilities in a minimum amount of US$1,000,000, in each case by giving not less than three business days' (or five business days, in relation to the prepayment of compounded rate loans) (or, in each case, such shorter period as may be agreed) prior notice to the Agent.

In addition to voluntary prepayments and cancellation, the Revolving Credit Facility Agreement requires mandatory prepayment (or, as the case may be, an offer to do so) in full or in part in certain circumstances, including:

- with respect to any Lender or Issuing Bank, if it becomes unlawful for such Lender or Issuing Bank to perform any of its obligations under the Revolving Credit Facility Agreement or to maintain its participation in any utilization of the Revolving Credit Facilities and such Lender or Issuing Bank has not transferred its participation; and
- if a Lender or Issuing Bank so requires in respect of that Lender's or that Issuing Bank's participation in an outstanding utilization upon an Exit Event (as defined in the Revolving Credit Facility Agreement).

Interest and Fees

The Revolving Credit Facilities will initially bear interest at a rate per annum equal to LIBOR (with a zero floor) plus an initial margin of 5.00 per cent. per annum. The margin is subject to margin ratchets based on corporate ratings and sustainability criteria. The ratchet linked to corporate ratings provides for three step downs of 0.25 per cent. to a minimum margin of 4.25 per cent. The sustainability adjustment provides for an annual margin increase or reduction of a maximum of 10bps according to whether the Issuer and its Restricted Subsidiaries over or under perform by 10 per cent. against certain greenhouse gas emission reduction targets. Default interest is calculated as an additional 1 per cent. on the overdue amount. In light of the anticipated cessation of LIBOR, the Revolving Credit Facility Agreement also includes a switch mechanism to a non-cumulative, compounded SOFR-based rate, effective no later than 6 July 2021. The margin in respect of any Additional Facility will be determined at the time such facility is made available subject to certain restrictions in the Revolving Credit Facilities.

The Issuer is also required to pay a commitment fee, quarterly in arrears, on available but unused commitments under the Revolving Credit Facilities at a rate of 35 per cent. of the applicable margin for the period commencing on the Issue Date and ending on the last day of the relevant availability period. The commitment fee in respect of any Additional Facility will be determined at the time such facility is made available.

The Issuer may also be required to pay certain fees and other amounts in respect of Letters of Credit issued under the Revolving Credit Facility Agreement.

The Issuer is also required to pay an upfront fee to the arrangers and customary agency fees to the Agent and the Security Agent in connection with the Revolving Credit Facilities and to pay other customary fees including fees in connection with any Additional Facility.

Security and Guarantees

The Revolving Credit Facilities will be guaranteed on a senior basis (i) as from the Issue Date, by CGG S.A., CGG Holding (U.S.) Inc., CGG Services (U.S.) Inc. and CGG Land (U.S.) Inc. and (ii) within 90 days after the Issue Date, by the Post-Issue Date Guarantors. It will benefit from the same Collateral as certain providers of ancillary facilities and the hedging banks under any secured hedging agreements and the Notes (excluding any Escrow Security) as set out under "*Description of the Notes—Security*."

The Revolving Credit Facility will be secured by the same Collateral as the Notes, which will be subject to certain limitations, certain agreed security principles, and to the requirements of applicable law and regulations. The Collateral will secure the Revolving Credit Facility on a super senior basis pursuant to the Intercreditor Agreement; in the event of an enforcement of the Collateral, the holders of the Notes will receive proceeds from such Collateral only after the lenders under the Revolving Credit Facility and holders of other indebtedness that is permitted to be secured on a super priority basis have been repaid in full. See "*Description of the Notes" and "Risk Factors—Risks Related to the Notes, the Guarantees and the Collateral.*"

Representations

The Revolving Credit Facility Agreement will require all of the Obligors to make a number of customary representations and warranties (subject to certain exceptions and qualifications and with certain representations

and warranties being repeated at certain times), including status, binding obligations, non-conflict with other obligations, power and authority, validity and admissibility in evidence, governing law, tax liabilities, absence of non-prohibited security, absence of insolvency and insolvency proceedings, center of main interests ("COMI"), no default, no misleading information, *pari passu* ranking, sanctions and anti-corruption laws.

Covenants

The Revolving Credit Facility Agreement contains certain positive, negative and incurrence covenants. The incurrence covenants will largely follow those set forth in the section entitled "*Description of the Notes—Certain Covenants*," subject to certain agreed exceptions. In addition, the Revolving Credit Facility Agreement contains a financial covenant (see *"—Financial Covenant*") and a notes purchase condition (see *"—Notes purchase condition*").

The Revolving Credit Facility Agreement also requires certain members of the Restricted Group to observe certain affirmative covenants, including, but not limited to:

- obtaining all necessary authorizations;
- *pari passu* ranking;
- center of main interests ("COMI");
- change of business;
- further assurances; and
- compliance with sanctions, anti-corruption laws and anti-money laundering laws.

The Revolving Credit Facility Agreement contains an information covenant under which, among other things, the Issuer is required to deliver to the Agent annual financial statements, quarterly financial statements and compliance certificates.

Financial Covenant

The Revolving Credit Facility Agreement requires the Issuer to ensure that the Senior Secured Net Leverage Ratio (as defined in the Revolving Credit Facility Agreement) does not exceed 3.50:1.

Compliance is to be tested quarterly (commencing at least nine months after the Issue Date), but only if drawings of cash loans under the Revolving Credit Facilities (and cash loans drawn under ancillary facilities) drawn and not repaid on or prior to that date (other than amounts to fund fees or original issue discounts and, for the avoidance of doubt, excluding ancillary facilities (save for any loans drawn in cash under such ancillary facilities) and letters of credit (save where such letter of credit has been called and not repaid or converted) exceed 40 per cent. of the greater of (i) the original commitments in respect of the Revolving Credit Facilities and (ii) the total commitments under the Revolving Credit Facility Agreement on the relevant quarterly test date.

Note purchase condition

Subject to certain customary carve-outs and exceptions set out in the Revolving Credit Facility Agreement, the Issuer may not, and shall procure that no other member of the Group will, purchase, prepay, redeem, or acquire for value the principal amount of the Notes prior to its scheduled repayment or maturity date in a manner which involves the payment of cash consideration of a member by the Group to a person which is not a member of the Group (a "Note Purchase"). The exceptions to such covenant include (among other things) payments funded from certain funding sources (including the proceeds of new shareholder funding); that do not exceed in aggregate 30% of the aggregate original principal amount of all Notes (or other Senior Secured Debt) issued by the Issuer from time to time; or where the Revolving Credit Facilities is permanently repaid and cancelled on a pro rata basis until the commitments under the Original Revolving Facility (as defined in the Revolving Credit Facility Agreement) have been reduced to an amount which is not more than US$20,000,000.

Events of Default

The Revolving Credit Facility Agreement contains events of default, with certain adjustments, as those applicable to the Notes as set forth in the section entitled "*Risk Factors—Risks Related to Our Indebtedness*." In addition, the Revolving Credit Facility Agreement contains the following specific events of default:

- payment default of fees, costs and indemnities under the Revolving Credit Facility Agreement;

- breach of the financial covenant set out above (subject to equity cure rights);
- inaccuracy of a representation or statement when made;
- unlawfulness, invalidity, rescission and repudiation of the finance documents entered into in connection with the Revolving Credit Facility Agreement; and
- breach of obligations under the Intercreditor Agreement.

Governing Law

The Revolving Credit Facility Agreement will be governed by English law, although certain of the covenants and events of default which are included in the Revolving Credit Facility Agreement which largely replicate those contained in the Indentures governing the Notes will be interpreted in accordance with New York law (without prejudice to the fact that the Revolving Credit Facility Agreement is governed by English law).

The Intercreditor Agreement

To establish the relative rights of the Senior Secured Parties (as defined below), and any Future Second Lien Creditors (as defined below), the Issuer, the Guarantors, any future Guarantors in respect of the Notes (the "Senior Secured Notes") and any obligor in respect of the Revolving Credit Facility (or any other credit facility that ranks on an equal basis with the Revolving Credit Facility (a "Credit Facility")), Hedging Liabilities (as defined below), Operating Facility Liabilities (as defined below), Future Pari Passu Debt (as defined below) and Future Second Lien Debt (as defined below) (collectively, the "Debtors"), Intragroup Lenders (as defined below) and other relevant parties (as further described below) will enter into an intercreditor agreement (the "Intercreditor Agreement") dated on or about the Issue Date.

By accepting a Note, the relevant holder thereof will be deemed to have agreed to, and accepted the terms and conditions of, the Intercreditor Agreement and will be deemed to have authorized the Trustee (the "Senior Secured Notes Trustee") to enter into the Intercreditor Agreement on its behalf.

The following description is a summary of certain provisions, among others, that will be contained in the Intercreditor Agreement and which relate to the rights and obligations of the holders of the Senior Secured Notes. It does not restate the Intercreditor Agreement in its entirety. As such, you are urged to read the Intercreditor Agreement because it, and not the description that follows, defines certain rights of the holders of the Notes. Unless expressly stated otherwise in the Intercreditor Agreement, in the event of a conflict between the terms of the Revolving Credit Facility Agreement and the Intercreditor Agreement, or the Indenture (the "Senior Secured Notes Indenture") and the Intercreditor Agreement, the provisions of the Intercreditor Agreement will prevail, provided that anything permitted by, or consented to or otherwise in accordance with the Revolving Credit Facility Agreement or the Senior Secured Notes Indenture will be binding on the creditors party to the Revolving Credit Facility Agreement or Senior Secured Notes Indenture, as applicable.

Capitalized terms used and not defined herein will have the meaning given to them in the Intercreditor Agreement.

Overview

The Intercreditor Agreement sets out, among other things:

- the relative ranking of certain debt of the Issuer and certain of its subsidiaries in respect of the RCF Liabilities (as defined below) and certain other Credit Facility Lender Liabilities (as defined below), the Priority Arranger Liabilities (as defined below), the Priority Creditor Representative Liabilities (as defined below), the Priority Hedging Liabilities (as defined below), the Senior Secured Notes Liabilities (as defined below), the Non-Priority Hedging Liabilities (as defined below), the Operating Facility Liabilities (as defined below), the Future Pari Passu Liabilities (as defined below), the Future Second Lien Liabilities (as defined below), the Non-Priority Arranger Liabilities (as defined below), the Non-Priority Creditor Representative Liabilities (as defined below), the Senior Secured Notes Trustee Amounts (as defined below) and the Intra-Group Liabilities (as defined below);
- the relative ranking of certain security granted by certain members of the Group (as defined below);
- when payments can be made in respect of certain indebtedness of the Group;

- when enforcement action (including acceleration and/or demand for payment and certain similar actions) ("Enforcement Action") can be taken, including in respect of the Transaction Security (as defined below);
- the terms pursuant to which certain indebtedness will be subordinated upon the occurrence of certain insolvency events;
- the requirement to turnover amounts received from enforcement of the Transaction Security and certain guarantees, and the equalization of certain losses;
- when the Transaction Security and guarantees issued by certain Debtors will be released to permit an enforcement sale and certain other permitted transactions;
- the circumstances in which creditors' claims (including noteholders' claims against the Issuer) might be required to be transferred to third parties or released to assist in enforcement; and
- the order for applying proceeds from the enforcement of the Transaction Security, certain guarantees and other amounts received by the Security Agent.

Parties

The initial senior secured parties (together the "Senior Secured Parties") will include, among others, the agent under the Revolving Credit Facility (the "RCF Agent"), the Security Agent, the lenders, issuing banks and ancillary lenders under the Revolving Credit Facility (the "RCF Lenders"), the arrangers of the Revolving Credit Facility and the Senior Secured Notes Trustee on behalf of the holders of the Senior Secured Notes.

The Intercreditor Agreement will also allow for accession by amongst others (a) creditors of future loan or bond indebtedness (that is not subordinated in right of payment to any Super Senior Liabilities or Senior Secured Notes Liabilities) incurred by existing or new Debtors which is permitted, under the terms of the Revolving Credit Facility documents (the "RCF Finance Documents"), the documentation governing any other Credit Facility Lender Liabilities (the "Credit Facility Documents"), the documentation governing the Operating Facility Liabilities (the "Operating Facility Documents") and the documentation governing the Senior Secured Notes (the "Senior Secured Notes Documents"), to share in the Transaction Security shared by the Senior Secured Parties (the "Future Pari Passu Debt"); (b) any lender (as defined in the applicable Credit Facility Document), issuing bank and ancillary lender that is party to a Credit Facility (collectively with the RCF Lenders, the "Credit Facility Lenders"); (c) any person which becomes party as an Operating Facility Lender pursuant to the Intercreditor Agreement, provided that such person has not ceased to be an Operating Facility Lender (the "Operating Facility Lenders"); and (d)(i) hedge counterparties (the "Priority Hedge Counterparties") party to hedging agreements that have been designated as having a super senior hedging amount (the "Priority Hedging Agreements") by virtue of being designated as such and (ii) hedge counterparties (the "Non-Priority Hedge Counterparties" and, together with the Priority Hedge Counterparties, the "Hedge Counterparties") party to hedging agreements that do not constitute Priority Hedging Agreements (the "Non-Priority Hedging Agreements"). Holders of Future Pari Passu Debt, Credit Facility Lenders, Operating Facility Lenders and Hedge Counterparties will also be Senior Secured Parties.

The Intercreditor Agreement will also allow for accession by creditors of future loan or bond indebtedness incurred by existing or new Debtors which is permitted, under the terms of the Credit Facility Documents, the Senior Secured Notes Documents, the documentation governing Future Pari Passu Debt (the "Future Pari Passu Debt Documents") and any other Future Second Lien Debt Documents, to share in the Transaction Security shared by the Senior Secured Parties but on a junior ranking basis as to its position in the Payments Waterfall. Any such future indebtedness that shares in the Transaction Security and is not subordinated in right and priority of payment to the debt owing to the Senior Secured Parties (the "Senior Secured Debt") but is subordinated with respect to the Transaction Security and in the Payments Waterfall to such Senior Secured Debt will be "Future Second Lien Debt" for the purposes of the Intercreditor Agreement. Holders of Future Second Lien Debt are "Future Second Lien Creditors."

There will, subject to the agreement of the Security Agent, be a single Security Agent appointed to act at all times on behalf of all Senior Secured Parties and Future Second Lien Creditors.

None of the Issuer's Restricted Subsidiaries (each a member of the "Group") nor any shareholder of a member of the Group which is not otherwise party to (1) a document creating security in favor of the Senior Secured Parties or Future Second Lien Creditors or (2) the debt documents thereby secured, will be party to the Intercreditor Agreement save for certain members of the Group that lend to a Debtor (each an "Intragroup Lender") that will

in certain circumstances accede to the Intercreditor Agreement with respect to the loans or Indebtedness owed by such Debtor to such member of the Group in respect of intragroup loans (the "Intra-Group Liabilities"). The Intercreditor Agreement will contain subordination provisions relating to any Intra-Group Liabilities. However, Debtors will not be prohibited from incurring, amending or making payments in respect of any Intra-Group Liabilities until an acceleration event under the Revolving Credit Facility or the Senior Secured Notes Indenture (or other relevant debt) is continuing.

Ranking and Priority

Priority of Indebtedness

The Intercreditor Agreement will provide that the present and future moneys, debt, liabilities and obligations (the "Liabilities"), as the case may be, in respect of the Revolving Credit Facility (the "RCF Liabilities"), in respect of the Credit Facility Documents (the "Credit Facility Lender Liabilities"), in respect of the Senior Secured Notes (the "Senior Secured Notes Liabilities"), in respect of the Future Pari Passu Debt (the "Future Pari Passu Debt Liabilities"), owing to the Priority Hedge Counterparties under the Priority Hedging Agreements (the "Priority Hedging Liabilities") and, to the extent not already included, to Non-Priority Hedge Counterparties under Non-Priority Hedging Agreements (the "Non-Priority Hedging Liabilities" and, together with Priority Hedging Liabilities, the "Hedging Liabilities") and in respect of the Operating Facility Documents (the "Operating Facility Liabilities"), and certain costs and expenses of the Senior Secured Notes Trustee (the "Senior Secured Trustee Amounts"), the arrangers of Senior Secured Debt that accede to the Intercreditor Agreement (the "Priority Arranger Liabilities") and the creditor representatives of Senior Secured Debt that accede to the Intercreditor Agreement (the "Priority Creditor Representative Liabilities"), the liabilities of the Debtors, as the case may be, in respect of the Future Second Lien Debt (the "Future Second Lien Debt Liabilities"), the arrangers other than Priority Arranger Liabilities (the "Non-Priority Arranger Liabilities") and the creditor representatives other than the Priority Creditor Representative Liabilities (the "Non-Priority Creditor Representative Liabilities" and, together with the Priority Creditor Representative Liabilities, the "Creditor Representative Liabilities") will rank (i) equally (without preference among them) in right and priority of payment and (ii) senior in right and priority of payment to the Intra-Group Liabilities.

The Intercreditor Agreement does not rank the Intra-Group Liabilities (the "Subordinated Liabilities") as between themselves.

Priority of Security

The Intercreditor Agreement will provide that the Transaction Security will rank and secure the following liabilities (irrespective of when such Transaction Security was granted or of the date of incurrence of any of the Liabilities (but only to the extent that such Transaction Security is expressed to secure those Liabilities)):

- first, the RCF Liabilities and other Credit Facility Lender Liabilities, the Hedging Liabilities, the Senior Secured Notes Liabilities, the Operating Facility Liabilities, the Future Pari Passu Debt Liabilities, the Priority Arranger Liabilities, the Priority Creditor Representative Liabilities and the Senior Secured Trustee Amounts; and
- second, the Future Second Lien Debt Liabilities, the Non-Priority Arranger Liabilities and the Non-Priority Creditor Representative Liabilities.

If security is to be granted for a Credit Facility or Priority Hedging Liabilities, then, to the extent such Credit Facility or Priority Hedging Liabilities cannot be secured on a pari passu basis with the RCF Liabilities without existing security first being released, the parties to the Intercreditor Agreement (the "Parties") agree that such Credit Facility or Priority Hedging Liabilities will (to the extent permitted by applicable law) be secured pursuant to the execution of additional Transaction Security Documents (as defined below) securing the same assets subject to the relevant security on a second- or lesser- ranking basis and such Credit Facility or Priority Hedging Liabilities will nonetheless be deemed and treated for the purposes of the Intercreditor Agreement to be secured by such security pari passu with the RCF Liabilities which would otherwise have the same ranking pari passu with Senior Secured Notes Liabilities which would otherwise have the same ranking as and any amounts to be applied towards such Credit Facility or Priority Hedging Liabilities shall be applied in the same manner and order as the RCF Liabilities. In the event that it is not possible to enter into or permit the creation of additional security documents as referred to above, amendments or release and retaking of security under the relevant existing Transaction Security Documents shall be permitted.

If security is to be granted for Senior Secured Notes, Operating Facility Liabilities, Future Pari Passu Debt Liabilities or Non-Priority Hedging Liabilities, then, to the extent such Senior Secured Notes, Operating Facility

Liabilities, Future Pari Passu Debt Liabilities or Non-Priority Hedging Liabilities cannot be secured on a pari passu basis with the Senior Secured Notes Liabilities without existing security first being released, the Parties agree that such Senior Secured Notes, Operating Facility Liabilities, Future Pari Passu Debt Liabilities or Non-Priority Hedging Liabilities will (to the extent permitted by applicable law) be secured pursuant to the execution of additional Transaction Security Documents (as defined below) securing the same assets subject to the relevant security on a second- or lesser- ranking basis and such Senior Secured Notes, Operating Facility Liabilities, Future Pari Passu Debt Liabilities or Non-Priority Hedging Liabilities will nonetheless be deemed and treated for the purposes of the Intercreditor Agreement to be secured by such security pari passu with Senior Secured Notes Liabilities which would otherwise have the same ranking as contemplated above and any amounts to be applied towards such Senior Secured Notes, Operating Facility Liabilities, Future Pari Passu Debt Liabilities or Non-Priority Hedging Liabilities will be applied accordingly. In the event that it is not possible to enter into or permit the creation of additional security documents as referred to above, amendments or release and retaking of security under the relevant existing Transaction Security Documents shall be permitted.

If security is to be granted for Future Second Lien Debt then, to the extent such Future Second Lien Debt cannot be secured on a second ranking basis behind the Credit Facility Lender Liabilities, the Creditor Representative Liabilities, the Hedging Liabilities, the Senior Secured Notes Liabilities, the Operating Facility Liabilities and the Future Pari Passu Debt Liabilities (collectively, the "Senior Secured Liabilities") and/or on a pari passu basis with other Future Second Lien Debt without existing security first being released, the Parties agree that such Future Second Lien Debt will (to the extent permitted by applicable law) be secured pursuant to the execution of additional Transaction Security Documents securing the same assets subject to the relevant security on a lesser-ranking basis and such Future Second Lien Debt will nonetheless be deemed and treated for the purposes of the Intercreditor Agreement to be secured by such security as contemplated above and any amounts to be applied towards such Future Second Lien Debt will be applied accordingly. In the event that it is not possible to permit the creation of additional security documents as referred to above, amendments or release and retaking of security under the relevant existing Transaction Security Documents shall be permitted.

Payments and Prepayments; Senior Secured Debt

The Debtors may make payments and prepayments in respect of the Revolving Credit Facility and other Credit Facility Lender Liabilities, the Hedging Liabilities, the Senior Secured Notes Liabilities, Operating Facility Liabilities and the Future Pari Passu Liabilities at any time in accordance with their terms, provided that following an acceleration event under the Revolving Credit Facility, any other Credit Facility, the Senior Secured Notes Documents or any Future Pari Passu Debt Documents, payment in respect of such Liabilities may only be made by members of the Group (and received by the creditors) in accordance with the Payments Waterfall (as defined below).

Payments and Prepayments; Subordination of the Future Second Lien Debt

Prior to the discharge of all Senior Secured Liabilities (the "Senior Secured Debt Discharge Date"), no Debtor may make payments in respect of the Future Second Lien Debt Liabilities without the consent of the Majority Super Senior Creditors (as defined below) and, following a Distress Event (as defined below) or when an event of default under the Senior Secured Notes Indenture or an event of default under the Future Pari Passu Debt Documents is continuing, the Majority Senior Secured Creditors (as defined below) except for in each case, among others, the following:

(a) if:

  (i) the payment is of or in respect of:

    (x) any of the principal or interest (including capitalized interest and default interest) amount of the Future Second Lien Debt Liabilities which either (1) is not prohibited from being paid by the Revolving Credit Facility or other Credit Facility, the Senior Secured Notes Indenture or any Future Pari Passu Debt Document or (2) is paid on or after the final maturity date of the Future Second Lien Debt Liabilities in the form of notes (provided that such maturity date is no earlier than that contained in the relevant Future Second Lien Debt Documents as of the first date of incurrence of any Future Second Lien Debt); or

    (y) any other amount (which is not an amount of principal or capitalized interest and default interest on the Future Second Lien Debt Liabilities) accrued, due and payable in cash in accordance with the terms of the relevant Future Second Lien Debt Documents, additional amounts payable as a result of the tax gross up provisions relating to the Future Second Lien Debt Liabilities and amounts in respect of currency indemnities in the relevant Future Second Lien Debt Documents;

(ii) no notice delivered pursuant to the terms of the Intercreditor Agreement blocking payments in respect of the Future Second Lien Liabilities (a "Future Second Lien Debt Payment Stop Notice") is outstanding; and

(iii) no payment event of default under the Revolving Credit Facility or other Credit Facility Document, and no payment event of default of US$100,000 (or its equivalent in other currencies) or more in respect of the Senior Secured Notes Liabilities or Future Pari Passu Debt Liabilities, has occurred and is continuing (a "Senior Secured Debt Payment Default"); or

(b) the payment is in accordance with a provision in a Future Second Lien Debt Document which is substantially equivalent to the illegality provisions, or provisions related to the right to repay individual creditors in certain circumstances, in each case, set out in the Revolving Credit Facility Agreement, and no acceleration event under the Revolving Credit Facility, other Credit Facility Document, the Senior Secured Notes Documents or Future Pari Passu Debt Documents has occurred;

(c) the payment is in respect of costs, commissions, Taxes, consent fees and expenses incurred in respect of (or reasonably incidental to) the Future Second Lien Debt Liabilities (including in relation to reporting or listing requirements);

(d) the payment is in respect of any refinancing of the Future Second Lien Debt Liabilities in compliance with the Intercreditor Agreement and the Credit Facility Documents, the Senior Secured Notes Documents and any Future Pari Passu Debt Documents (including, without limitation, any permitted refinancing indebtedness); provided that any such amendment, consent and/or waiver fees and expenses are in an amount which, when expressed as a percentage of the principal amount of the Future Second Lien Debt Liabilities (or affected principal amount) do not exceed the corresponding amounts which have been paid in respect of any amendment, consent and/or waiver fees and expenses incurred in respect of (or reasonably incidental to) the Credit Facility Liabilities and/or the Senior Secured Liabilities (when expressed as a percentage of the principal amount of the Credit Facility Liabilities and/or Senior Secured Liabilities (or affected principal amount));

(e) the payment is in respect of amounts due under the Future Second Lien Debt Documents to the Future Second Lien Debt Representative (as defined below); or

(f) the payment is in respect of commercially reasonable work fees and professional fees, costs and expenses for restructuring advice and valuations (including legal advice and the advice of other appropriate financial and/or restructuring advisers) incurred by the Future Second Lien Debt Representative not covered in (e) above subject to an aggregate cap of US$1,000,000 (or its equivalent in other currencies) until the Senior Secured Debt Discharge Date.

Prior to the Senior Secured Debt Discharge Date, if a Senior Secured Debt Payment Default has occurred and is continuing, payments in respect of the Future Second Lien Debt Liabilities (other than those consented to by the Majority Super Senior Creditors and, if following a Distress Event or when an event of default under the Senior Secured Notes Indenture or an event of default under the Future Pari Passu Debt Documents is continuing, the Majority Senior Secured Creditors, as well as certain other specified exceptions) are suspended.

Prior to the Senior Secured Debt Discharge Date, if an event of default under any Senior Secured Debt (a "Senior Secured Debt Event of Default") (other than a Senior Secured Debt Payment Default) has occurred and is continuing, and the creditor representative of the Future Second Lien Creditors (the "Future Second Lien Debt Representative") has received a Future Second Lien Debt Payment Stop Notice from either the RCF Agent (or the creditor representative (a "Credit Facility Agent") under other Credit Facilities) or the Senior Secured Notes Trustee or the creditor representative of any Future Pari Passu Debt (the "Future Pari Passu Debt Representative") (as the case may be) (the "Relevant Representative"), from the date such Relevant Representative delivers a notice specifying the relevant Senior Secured Debt Event of Default, payments in respect of the Future Second Lien Debt Liabilities (other than those consented to by the Majority Super Senior Creditors and, following a Distress Event or when an event of default under the Senior Secured Notes Indenture or an event of default under the Future Pari Passu Debt documents is continuing, the Majority Senior Secured Creditors, as well as certain other specified exceptions) are suspended until the earliest of:

(a) the date on which there is a waiver, remedy or cure of such Senior Secured Debt Event of Default;

(b) the date falling 120 days after the receipt by the Future Second Lien Debt Representative of the Future Second Lien Debt Payment Stop Notice;

(c) the date on which the Relevant Representative which issued the Future Second Lien Debt Payment Stop Notice (and, if at such time a Senior Secured Debt Event of Default is continuing (other than in relation to

the Senior Secured Debt in respect of which the notice was given), the Relevant Representative in respect of that other Senior Secured Debt) notifies (among others) the Future Second Lien Debt Representative that the Future Second Lien Debt Payment Stop Notice is cancelled;

(d) the date on which the Security Agent or Future Second Lien Debt Representative takes any Enforcement Action that it is permitted to take in accordance with the Intercreditor Agreement;

(e) if a Future Second Lien Debt Standstill Period (as defined below) is in effect at any time after delivery of a Future Second Lien Debt Payment Stop Notice, the date on which the Future Second Lien Debt Standstill Period expires;

(f) provided no Senior Secured Debt Payment Default is continuing, the original scheduled maturity date of the Future Second Lien Debt issued in the form of notes (**provided that** such maturity date is a date not earlier than the later of the original maturity date of the Senior Secured Notes and the Termination Date (as defined in the Credit Facility Documents) at the time of issuance of such Future Second Lien Debt); or

(g) the date on which the relevant Senior Secured Debt Event of Default is no longer continuing and, if the relevant Senior Secured Liabilities have been accelerated, such acceleration has been rescinded.

Unless the Future Second Lien Debt Representative waives this requirement, (i) no Future Second Lien Debt Payment Stop Notice may be served by a Relevant Representative unless and until 360 days have elapsed since the immediately prior Future Second Lien Debt Payment Stop Notice and (ii) no Future Second Lien Debt Payment Stop Notice may be served in respect of a Senior Secured Debt Event of Default more than 60 days after the date that the Relevant Representative received notice of that Senior Secured Debt Event of Default.

Only one Future Second Lien Debt Payment Stop Notice may be served with respect to the same event or set of circumstances and no such notice may be served by a Relevant Representative in respect of a Senior Secured Debt Event of Default which had been notified to it at the time an earlier such notice was issued. If a Future Second Lien Debt Payment Stop Notice ceases to be outstanding and/or the Senior Secured Debt Payment Default ceases to be continuing, the relevant Debtor may then make those payments it would have otherwise been entitled to pay under the Future Second Lien Debt, and if it does so promptly, any event of default under the Future Second Lien Debt caused by such delayed payment will be waived and any notice commencing a Future Second Lien Debt Standstill Period which may have been issued as a result of such non-payment will be waived. A Senior Secured Debt Payment Default is remedied by the payment of all amounts then due.

Restrictions on Enforcement by the Future Second Lien Debt; Standstill

Prior to the Senior Secured Debt Discharge Date, neither the Future Second Lien Debt Representative nor any other Future Second Lien Creditor may take Enforcement Action with respect to the Future Second Lien Debt without the prior consent of or as required by an Instructing Group (as defined below), except if (1) a Future Second Lien Debt Event of Default has occurred resulting from failure to pay the principal amount of the Future Second Lien Debt Liabilities at final maturity or (2):

(a) an event of default under Future Second Lien Debt Documents (a "Future Second Lien Debt Event of Default") is continuing;

(b) the Credit Facility Agent, the Senior Secured Notes Trustee and the Future Pari Passu Debt Representative have received notice of the Future Second Lien Debt Event of Default from the Future Second Lien Debt Representative;

(c) a Future Second Lien Debt Standstill Period has expired; and

(d) the relevant Future Second Lien Debt Event of Default is continuing at the end of the Future Second Lien Debt Standstill Period,

provided that no such Enforcement Action may be taken if the Security Agent is taking Enforcement Action by acting in accordance with the instructions of an Instructing Group and such Enforcement Action in relation to the Future Second Lien Debt Documents might reasonably be likely to adversely affect such Enforcement Action by the Security Agent.

A "Future Second Lien Debt Standstill Period" means the period starting on the date that the Future Second Lien Debt Representative serves an enforcement notice on the Credit Facility Agent, the Senior Secured Notes Trustee and the Future Pari Passu Debt Representative until the earliest of:

(a) in the case of:

  (i) a non-payment of principal, fees or interest representing the Future Second Lien Liabilities, 90 days after such date;

  (ii) a non-payment of any other amount representing the Future Second Lien Liabilities, 120 days after such date; and

  (iii) any other event of default under the debt documents for the Future Second Lien Debt, 150 days after such date;

(b) the date on which the Security Agent takes Enforcement Action, provided that (i) the Future Second Lien Debt Creditors may only take the same Enforcement Action against the same entity as is taken by the Security Agent and may not take any other Enforcement Action against any other member of the Group and (ii) Enforcement Action for purposes of this paragraph (b) will not include action taken to preserve or protect any security as opposed to realizing it;

(c) the date on which an insolvency event occurs in respect of a particular Debtor owing any Future Second Lien Debt Liabilities against whom Enforcement Action is to be taken;

(d) the date on which a Future Second Lien Debt Event of Default in respect of Future Second Lien Debt in the form of notes occurs for failure to pay principal at the original scheduled maturity of the Future Second Lien Debt; and

(e) the expiration of any other Future Second Lien Debt Standstill Period which was outstanding at the date that the current Future Second Lien Debt Standstill Period commenced (other than as a result of a cure, waiver or permitted remedy thereof).

If an event of default ceases to be continuing then (provided the relevant parties are made aware of such fact) any relevant enforcement process (including any requirement of consultation relating to enforcement) relying solely on that event of default will cease to continue.

Enforcement by Holders of Senior Secured Debt

In relation to instructions with respect to any Enforcement (as defined below), prior to the date upon which all Credit Facility Lender Liabilities are fully discharged and paid in full and all commitments thereunder are irrevocably cancelled (the "Credit Facility Lender Discharge Date"), the Security Agent will act on the instructions of (i) the RCF Lenders, any other Credit Facility Lenders and the Priority Hedge Counterparties whose super senior credit participations represent more than 66⅔% of the aggregate super senior credit participations of all such persons and their relevant representatives (the "Majority Super Senior Creditors") and (ii) the holders of the Senior Secured Notes, the Future Pari Passu Debt Creditors, the Operating Facility Lenders and the Non-Priority Hedge Counterparties whose aggregate senior secured credit participations represent more than 50% of the aggregate senior secured credit participations of all such creditors (the "Majority Senior Secured Creditors"), in each case subject to the consultation period referred to below and provided that such instructions are consistent with the security enforcement principles set forth below.

Following the Credit Facility Lender Discharge Date but prior to the Senior Secured Debt Discharge Date, the Security Agent will act on the instructions of the holders of the Senior Secured Notes, the Future Pari Passu Debt Creditors, the Operating Facility Lenders and the Hedge Counterparties whose aggregate senior secured credit participations represent more than 50% of the aggregate senior secured credit participations of all such creditors.

Following the Senior Secured Debt Discharge Date but prior to the date upon which all Future Second Lien Debt Liabilities are discharged and paid in full and all commitments thereunder are irrevocably cancelled (the "Future Second Lien Debt Discharge Date"), the Security Agent will act on the instructions of the Majority Future Second Lien Creditors (as defined below).

In each of the scenarios outlined in the above three paragraphs, the relevant parties giving instructions to the Security Agent will be the "Instructing Group."

Each creditor (other than certain creditor representatives) will agree in the Intercreditor Agreement that it will cast its vote in any proposal put to the vote by or under the supervision of any judicial or supervisory authority in

respect of any insolvency, pre-insolvency or rehabilitation or similar proceedings relating to any member of the Group as instructed by the Security Agent (acting as directed by an Instructing Group provided that such instructions have been given in accordance with the restrictions in the Intercreditor Agreement).

Consultation

Prior to the Credit Facility Lender Discharge Date and prior to giving any instructions to the Security Agent, as the case may be, to commence enforcement of all or part of the Transaction Security and/or the requesting of a distressed disposal and/or the release or disposal of claims or Transaction Security on a distressed disposal, and the taking of any other actions consequential on (or necessary to effect) the enforcement of the Transaction Security ("Enforcement"), the relevant creditor representative of the Majority Super Senior Creditors, the Majority Senior Secured Creditors or the Majority Future Second Lien Creditors will notify the Security Agent and the creditor representatives for the creditors of the Super Senior Liabilities (the "Super Senior Creditors") and the creditors of the Senior Secured Liabilities (the "Senior Secured Creditors") that the applicable Transaction Security has become enforceable and instructing the Security Agent to solicit instructions to enforce Transaction Security or take other Enforcement Action given by the Majority Super Senior Creditors and/or the Majority Senior Secured Parties and/or the Majority Future Second Lien Creditors (as applicable) (an "Enforcement Notice"). The RCF Agent or other Credit Facility Agent (acting on the instructions of the Majority Super Senior Creditors), the Senior Secured Notes Trustee and the Future Pari Passu Debt Representative will consult in good faith with each other and the Security Agent for a period of 15 days from the date an Enforcement Notice pursuant to the Intercreditor Agreement is received by such persons (or such shorter period as the relevant parties may agree) with a view to coordinating the instructions to be given by an Instructing Group and agreeing an enforcement strategy (the "Consultation Period").

No such consultation will be required (and an Instructing Group will be entitled to give any instructions to the Security Agent to enforce the Transaction Security or take any other Enforcement Action prior to the end of the Consultation Period, in each case provided such instructions comply with the Security Enforcement Principles set forth below ("Qualifying Instructions")):

(a) if any of the Transaction Security has become enforceable as a result of an insolvency event affecting the Issuer, any Debtor or (prior to the discharge of the Super Senior Liabilities (the "Super Senior Discharge Date")) any subsidiary that is a "Material Company" under the Revolving Credit Facility or equivalent term under another Credit Facility Document (each a "Relevant Company"); or

(b) if the Instructing Group or, as applicable, if the Majority Super Senior Creditors or the Majority Senior Secured Creditors determine in good faith (and notify the creditor representatives of the other Super Senior Creditors, the Senior Secured Notes Trustee, the Future Pari Passu Debt Representative and the Security Agent) that any delay caused by such consultation would have a material adverse effect on the Security Agent's ability to enforce the Transaction Security or could reasonably be expected to reduce the amount likely to be realized to a level such that (following application thereof in accordance with the Payments Waterfall described below) the payments then due and payable under the Revolving Credit Facility to the RCF Lenders, and the lenders, ancillary lenders and issuing banks under any other Credit Facility (together, the "Credit Facility Lender Liabilities") and to the Priority Hedge Counterparties in respect of the Priority Hedging Liabilities (together, the "Super Senior Liabilities") would not be discharged in full and, in this case any instructions will be limited to those necessary to protect or preserve the interests of the Senior Secured Creditors, or Super Senior Creditors, as the case may be, on behalf of which the relevant Instructing Group is acting.

If following the Consultation Period, the RCF Agent or other Credit Facility Agent (acting on the instructions of the Majority Super Senior Creditors), the Future Pari Passu Debt Representative and the Senior Secured Notes Trustee have agreed on an enforcement strategy, the Security Agent will be instructed jointly by the RCF Agent or other Credit Facility Agent (acting on the instructions of the Majority Super Senior Creditors), the Future Pari Passu Debt Representative and the Senior Secured Notes Trustee to implement the same. Subject to the paragraph below, in the event that conflicting instructions (and for these purposes silence is deemed to be a conflicting instruction) are received by the Security Agent at the end of the Consultation Period (which have not been resolved), the Security Agent will enforce the Transaction Security and/or refrain from enforcing the Transaction Security and/or take the relevant other Enforcement Action in accordance with the instructions provided by the Majority Senior Secured Creditors, provided such instructions are Qualifying Instructions and the terms of all instructions received by the Majority Super Senior Creditors during the Consultation Period will be deemed revoked.

If prior to the Credit Facility Lender Discharge Date:

(a) the Super Senior Liabilities have not been repaid in full in cash within six months of the end of the Consultation Period (or within six months of the event of default giving rise to the right to commence an Enforcement if no such Consultation Period is required);

(b) the Security Agent has not commenced any Enforcement (or any transaction in lieu) or other Enforcement Action within three months of the end of the Consultation Period (or within three months of the event of default giving rise to the right to commence an Enforcement if no such Consultation Period is required); or

(c) an insolvency event has occurred with respect to a Relevant Company and the Security Agent has not commenced any Enforcement (or any transaction in lieu) or other Enforcement Action at that time with respect to such Relevant Company,

then the Security Agent will thereafter follow any instructions that are subsequently given by the Majority Super Senior Creditors (in each case provided the same are Qualifying Instructions) to the exclusion of those given by the Majority Senior Secured Creditors (to the extent conflicting with any instructions previously given by the Majority Senior Secured Creditors).

Security Enforcement Principles

Unless otherwise provided in the Intercreditor Agreement, enforcement of the Transaction Security must be conducted in accordance with the "Security Enforcement Principles," which are summarized as follows:

(a) It will be the primary and over-riding aim of any enforcement of the Transaction Security to maximize, so far as is consistent with a prompt and expeditious realization of value from Enforcement of the Transaction Security, and in a manner consistent with the Intercreditor Agreement, the recovery by the RCF Lenders and the other Super Senior Creditors, the Hedge Counterparties, the holders of the Senior Secured Notes, the Senior Secured Notes Trustees, the Future Pari Passu Debt Creditors, the Operating Facility Lenders, the Future Second Lien Creditors, the Arrangers, the Security Agent and any receiver or delegate from time to time (the "Security Enforcement Objective") subject to applicable law.

(b) The Security Enforcement Principles may be amended, varied or waived with the prior written consent of the Issuer and the Majority Super Senior Creditors, the Senior Secured Notes Required Holders (as defined below), the Future Pari Passu Debt Required Holders (as defined below) and (to the extent relating to the definition of "Security Enforcement Objective" or paragraph (a) above) the Future Second Lien Debt Required Holders (as defined below).

(c) Without prejudice to the Security Enforcement Objective, the Transaction Security will be enforced and other action as to Enforcement will be taken such that either (1) all proceeds of Enforcement are received by the Security Agent in cash (or substantially all cash) for distribution in accordance with the Payments Waterfall; or (2) sufficient proceeds of Enforcement will be received by the Security Agent in cash to ensure that when the proceeds are applied in accordance with the Payments Waterfall, the Super Senior Liabilities are repaid and discharged in full (unless the Majority Super Senior Creditors agree otherwise).

(d) On (i) a proposed Enforcement of any of the Transaction Security over assets other than shares in a member of the Group, where the aggregate book value of such assets exceeds US$10,000,000 (or its equivalent); or (ii) a proposed Enforcement of any of the Transaction Security over some or all of the shares in a member of the Group over which Transaction Security exists, the Security Agent will (unless such enforcement or sale is made pursuant to a public auction or process supervised by a court of law which makes a determination as to value) obtain an opinion from a reputable internationally recognized investment bank or international accounting firm or other reputable, third-party professional firm that is regularly engaged in providing valuations of businesses or assets similar or comparable to those charged under the Transaction Security to be enforced (a "Financial Advisor") to opine as expert (A) on the optimal method of enforcing the Transaction Security so as to achieve the Security Enforcement Objective and maximize recovery, (B) that the proceeds received from such Enforcement is fair from a financial point of view after taking into account all relevant circumstances, and (C) that such sale is otherwise in accordance with the Security Enforcement Principles, provided that the provider of such opinion may limit its liability in respect of such opinion to the amount of its fees in respect of such engagement.

(e) The Security Agent will be under no obligation to appoint a Financial Advisor or to seek the advice of a Financial Advisor, unless expressly required to do so by the Intercreditor Agreement.

Turnover

The Intercreditor Agreement will also provide that if any creditor receives or recovers from any member of the Group proceeds other than as permitted in accordance with the Intercreditor Agreement, then that creditor will:

- in relation to receipts or recoveries not received or recovered by way of set-off, (i) hold an amount of that receipt or recovery equal to the relevant liabilities owed to such creditor (or if less, the amount received or recovered) on trust for the Security Agent and separate from other assets, property or funds and promptly pay that amount to the Security Agent for application in accordance with the terms of the Intercreditor Agreement; and (ii) promptly pay an amount equal to the amount (if any) by which the receipt or recovery exceeds the relevant liabilities owed to such creditor to the Security Agent for application in accordance with the terms of the Intercreditor Agreement; and
- in relation to receipts and recoveries received or recovered by way of set-off, promptly pay an amount equal to that recovery to the Security Agent for application in accordance with the terms of the Intercreditor Agreement.

Application of Proceeds/Waterfall

All amounts received or recovered by the Security Agent in connection with the realization or Enforcement of all or any part of the Transaction Security or otherwise paid to the Security Agent in accordance with the Intercreditor Agreement for application in accordance with the Payments Waterfall will be held by the Security Agent on trust for application in accordance with the following payments waterfall (the "Payments Waterfall"):

- *first*, in payment of the following amounts in the following order (i) *pari passu* and *pro rata* to any sums owing to the Security Agent (or any receiver or delegate) in respect of their costs and expenses and then (ii) *pari passu* and *pro rata* to each other creditor representative to the extent not included in (i) above in respect of their Creditor Representative Liabilities and other costs and expenses;
- *secondly*, *pari passu* and *pro rata*, in or towards payment of all costs and expenses incurred by the Super Senior Creditors in connection with any realization or enforcement of the Transaction Security taken in accordance with the terms of the Intercreditor Agreement or any action taken at the request of the Security Agent;
- *thirdly*, in payment to the Super Senior Creditors of any Soulte (as defined below) paid or owed but not yet paid by the Super Senior Creditors;
- *fourth*, *pari passu* and *pro rata* (i) to the RCF Agent and other Credit Facility Agents on behalf of the lenders and arrangers under the Revolving Credit Facility and all other Credit Facilities for application towards the discharge of all Credit Facility Lender Liabilities and related arranger liabilities, and (ii) to the Priority Hedge Counterparties in respect of Priority Hedging Liabilities;
- *fifth*, *pari passu* and *pro rata* in or towards payment to the Senior Secured Notes Trustee on behalf of the Senior Secured Noteholders and to each Future Pari Passu Debt Representative on behalf of the Future Pari Passu Debt Creditors it represents for application towards any unpaid costs and expenses incurred by or on behalf of any holder of Senior Secured Notes and Future Pari Passu Debt Creditors in connection with any realization or enforcement of the Transaction Security taken in accordance with the terms of the Transaction Security Documents and the Intercreditor Agreement or any action taken at the request of the Security Agent;
- *sixth*, in payment to the Senior Secured Creditors of any Soulte paid or owed but not yet paid by the Senior Secured Creditors;
- *seventh pari passu* and *pro rata* (i) to the Senior Secured Notes Trustee on behalf of the holders of the Senior Secured Notes for application towards the discharge of all Senior Secured Notes Liabilities, (ii) to the Future Pari Passu Debt Representative on behalf of Future Pari Passu Debt Creditors for application towards the discharge of all Future Pari Passu Debt Liabilities (iii) the Operating Facility Lenders for application towards the discharge of the Operating Facility Liabilities and (iv) to the Non-Priority Hedge Counterparties for application towards the discharge of the Non-Priority Hedging Liabilities;
- *eighth*, (to the extent such Transaction Security secures such Liabilities) *pari passu* and *pro rata* in or towards payment to the Future Second Lien Debt Representative on behalf of any Future Second Lien Creditors for application towards any unpaid costs and expenses incurred by or on behalf of any Future Second Lien Creditors in connection with any realization or enforcement of the Transaction Security taken in accordance with the terms of the Transaction Security Documents and the Intercreditor Agreement or any action taken at the request of the Security Agent;

- *ninth*, (to the extent such Transaction Security secured such Liabilities) in payment to the Future Second Lien Creditors of any Soulte paid or owed but not yet paid by the Future Second Lien Creditors;
- *tenth,* (to the extent such Transaction Security secures such Liabilities) *pari passu* and *pro rata* in or towards payment to the Future Second Lien Debt Representative on behalf of the Future Second Lien Creditors it represents for application towards the discharge of the Future Second Lien Debt Liabilities (in accordance with the Future Second Lien Debt Documents);
- *eleventh*, after the final discharge of all Liabilities under the debt documents governed by the Intercreditor Agreement, to the relevant Debtors to which a Soulte, if any, is payable or has been paid and returned to the Security Agent by the relevant Debtors in accordance with the Intercreditor Agreement up to the amount of such Soulte; and
- *twelth*, in payment of the surplus (if any) to the relevant Debtor or other person entitled to it.

Payments made in breach of the Payments Waterfall will be held in trust by the relevant recipient and turned over to the Security Agent for application in accordance with the "*—Turnover*" paragraph above.

Acceleration

If an event of default occurs under the Revolving Credit Facility or other Credit Facility, the Senior Secured Notes Indenture or any Future Pari Passu Debt Documents, then any decision to accelerate the relevant Liabilities and, subject to the paragraph below, to take any other Enforcement Action will be determined in accordance with the provisions of the Revolving Credit Facility Agreement or other Credit Facility Documents or the Senior Secured Notes Indenture or in accordance with the terms of the Future Pari Passu Debt Documents (as applicable).

The Intercreditor Agreement will contain provisions requiring any Future Pari Passu Debt Representative or Future Second Lien Debt Representative, the RCF Agent or other Credit Facility Agent, the Senior Secured Notes Trustee and the Hedge Counterparties to notify the other representatives of the Super Senior Creditors, the Senior Secured Creditors, the Future Second Lien Creditors and the Hedge Counterparties of any actual or potential event of default or any instructions to accelerate the Revolving Credit Facility or other Credit Facility, Hedging Liabilities, Senior Secured Notes Liabilities, Future Pari Passu Debt Liabilities or Future Second Lien Debt Liabilities (as applicable).

Non-distressed Disposal

In circumstances where a disposal or certain other specified transactions are not being effected pursuant to a Distress Event (as defined below) (a disposal effected pursuant to a Distress Event being a "Distressed Disposal") and are otherwise permitted by the terms of the Revolving Credit Facility Agreement and all other Credit Facility Documents, the Senior Secured Notes Indenture, the Future Pari Passu Debt Documents and the Future Second Lien Debt Documents, the Intercreditor Agreement will provide that the Security Agent is authorized (i) to release the Transaction Security and (ii) if the relevant asset consists of shares in the capital of a Debtor, to release the Transaction Security or any other claim in respect of the Liabilities secured by the Transaction Security over the shares in and assets of that Debtor and the shares in and assets of any of its subsidiaries.

Distressed Disposal

Where a Distressed Disposal of an asset is being effected, the Intercreditor Agreement will provide that the Security Agent is authorized: (a) to release the Transaction Security, or any other claim over that asset; (b) if the asset subject to a Distressed Disposal consists of shares in the capital of a Debtor, to release (i) that Debtor and any subsidiary of that Debtor from all or any part of its borrowing liabilities or guarantee liabilities to the creditors under the Intercreditor Agreement (collectively, the "Primary Liabilities") or other liabilities it may have to Intragroup Lenders or Debtors (the "Other Liabilities"); (ii) any Transaction Security granted by that Debtor or any subsidiary of that Debtor over any of its assets; and (iii) any other claim of an Intragroup Lender or another Debtor over that Debtor's assets or over the assets of any subsidiary of that Debtor; (c) if the asset subject to a Distressed Disposal consists of shares in the capital of any holding company of a Debtor, to release (i) that holding company and any subsidiary of that holding company from all or any part of its Primary Liabilities and Other Liabilities; (ii) any Transaction Security granted by any subsidiary of that holding company over any of its assets; and (iii) any other claim of an Intragroup Lender or another Debtor over the assets of any

subsidiary of that holding company; and (d) if the asset subject to a Distressed Disposal consists of shares in the capital of a Debtor or a holding company of a Debtor and the Security Agent decides to dispose of all or any part of the liabilities owed by that Debtor or holding company of that Debtor, to provide for (i) the transfer of liabilities to another Debtor and/or (ii) the disposal, to third parties, of creditors' claims against that Debtor or holding company (which may include claims against the Issuer).

If the Instructing Group is constituted by the Majority Senior Secured Creditors (or a Distressed Disposal is conducted pursuant to their instructions), Super Senior Liabilities may not be released or disposed of unless sufficient cash proceeds are received from the relevant Distressed Disposal and applied towards the irrevocable discharge in full of all Super Senior Liabilities.

If before the Future Second Lien Discharge Date, and provided that the Issuer or any guarantor of Future Second Lien Debt has outstanding Future Second Lien Debt Liabilities, a Distressed Disposal is being effected such that Future Second Lien Debt Liabilities owed by such guarantors and the Transaction Security over the assets of the Issuer or the shares in or assets of any such guarantor will be released, it is a further condition to the release that either:

(a) the Future Second Lien Debt Representative has approved the release on the instructions of the Majority Future Second Lien Creditors; or

(b) each of the following conditions is satisfied:

  (i) the proceeds of such sale or disposal are in cash (or substantially in cash);

  (ii) all present and future obligations owed to the Super Senior Creditors and Senior Secured Creditors by a member of the Group all of whose shares that are pledged in favor of the Super Senior Creditors and the Senior Secured Creditors are sold or disposed of pursuant to such Enforcement Action are unconditionally released and discharged or sold or disposed of or transferred concurrently with such sale or disposal (and such obligations are not assumed by the purchaser or one of its affiliates), and all Transaction Security granted by a member of the Group in respect of the Liabilities owed to the Super Senior Creditors and Senior Secured Creditors in respect of the assets that are so sold or disposed of is simultaneously and unconditionally released and discharged concurrently with such sale; and

  (iii) such sale or disposal is made:

    (x) pursuant to a public auction or public offering in which the Future Second Lien Creditors have a right to participate (including as part of a consortium and as prospective buyers and/or financiers); or

    (y) in circumstances where (1) the Security Agent considers that a sale or disposal pursuant to a public auction is not reasonably practicable taking into account all relevant circumstances or (2) following an attempted sale or disposal pursuant to a public auction, the highest final bid or offer received by the Security Agent pursuant to the public auction is less than par value of the outstanding Senior Secured Liabilities, where an internationally recognized investment bank or an internationally recognized firm of accountants selected by the Security Agent has delivered an opinion in respect of such sale or disposal that the amount received in connection therewith is fair from a financial point of view taking into account all relevant circumstances including the method of enforcement and the circumstances giving rise to such sale, provided that the liability of such investment bank or internationally recognized firm of accountants in giving such opinion may be limited to the amount of its fees in respect of such engagement.

The Intercreditor Agreement will also provide for a mechanism whereby, in circumstances where such Liabilities would otherwise be released, such Liabilities may instead, upon notice, be transferred to another Debtor.

Application of Proceeds of a Distressed Disposal

The net proceeds of a Distressed Disposal (and the net proceeds of any disposal of liabilities) will be paid to the Security Agent for application in accordance with the provisions set forth under "*—Application of Proceeds/ Waterfall*" as if those proceeds were the proceeds of an Enforcement of the Transaction Security and, to the extent that any disposal of Liabilities has occurred, as if any reduction in the secured obligations resulting from that disposal, had not occurred.

Voting and Amendments

The Security Agent may (subject to certain exceptions in the Intercreditor Agreement), if authorized by the Instructing Group, and if the Issuer consents, amend the terms of, waive any of the requirements of, or grant consents or releases under, any of the Transaction Security Documents.

Definitions

The Intercreditor Agreement will provide that:

(a) "Future Pari Passu Debt Required Holders" means, in respect of any direction, approval, consent or waiver, the Future Pari Passu Creditors holding the principal amount of Future Pari Passu Debt required to vote in favor of such direction, consent or waiver under the terms of the relevant documents or, if the required amount is not specified, the holders holding at least the majority of the principal amount of the then outstanding Future Pari Passu Debt, in accordance with the relevant Future Pari Passu Debt documents;

(b) "Future Second Lien Debt Required Holders" means in respect of any direction, approval, consent or waiver, the Future Second Lien Creditors holding the principal amount of Future Second Lien Debt required to vote in favor of such direction, consent or waiver under the terms of the relevant Future Second Lien Debt Documents or, if the required amount is not specified, the holders holding at least the majority of the principal amount of the then outstanding Future Second Lien Debt, in accordance with the relevant Future Second Lien Debt Documents;

(c) "Majority Future Second Lien Creditors" means Future Second Lien Creditors whose aggregate second lien credit participations represent more than:

    (i) in the case where the Future Second Lien Debt is in the form of loans only, 66⅔% of the aggregate second lien credit participations of all Future Second Lien Creditors; and

    (ii) in the case where the Future Second Lien Debt is in the form of notes only or is both notes and loans, 50% of the aggregate second lien credit participations of all Future Second Lien Creditors;

(d) "Senior Secured Notes Required Holders" means, in respect of any direction, approval, consent or waiver, the holders of the Senior Secured Notes holding in aggregate a principal amount of Senior Secured Notes which is not less than the principal amount of Senior Secured Notes required to vote in favor of such direction, consent or waiver under the terms of the Senior Secured Notes Indenture or, if the required amount is not specified, the holders holding at least the majority of the principal amount of the then outstanding Senior Secured Notes (as applicable);

(e) "Soulte" means, in relation to any appropriation by, or attribution to, the Secured Parties of any assets which from time to time are, or are expressed to be, the subject of the Transaction Security (the "Charged Property"), as a result of the enforcement of any French Transaction Security (a "Relevant Security Enforcement") occurring by way of appropriation (including pursuant to a *pacte commissoire* or any similar enforcement mechanism) or judicial foreclosure of any French Transaction Security Document, the amount by which the value of the Charged Property, appropriated, foreclosed or transferred pursuant to that Relevant Security Enforcement (as determined in accordance with the relevant French Transaction Security Document or any applicable law) exceeds the amount of the obligations secured by that French Security Document which is discharged as a result of such Relevant Security Enforcement;

(f) "Transaction Security" means the security created or expressed to be created under or pursuant to the Transaction Security Documents; and

(g) "Transaction Security Documents" means: (i) each "Transaction Security Document" as defined (or equivalent term) in the Revolving Credit Facility, any Credit Facility and/or Future Pari Passu Debt Document; (ii) any other document entered into at any time by any member of the Group creating any security in favor of the secured parties as security for any of the secured obligations; (iii) any security granted under any covenant for further assurance in any of the documents set out in paragraphs (i) and (ii) above, and (iv) any other "Transaction Security Document" designated as such by the Issuer and the Security Agent, which in each case, to the extent legally possible and subject to the Agreed Security Principles is created in favor of (x) the Security Agent as agent or trustee for the secured parties in respect of their liabilities; or (y) in the case of any jurisdiction in which effective security cannot be granted in favor of the Security Agent as agent or trustee for the secured parties, the secured parties in respect of their Liabilities or the Security Agent under a parallel debt structure for the benefit of the secured parties.

Option to Purchase

Following:

(a) any notice that the Transaction Security has become enforceable; or

(b) either (i) an acceleration of the Revolving Credit Facility or other Credit Facility, the Senior Secured Notes, the Future Pari Passu Debt or the Future Second Lien Debt or (ii) the enforcement of any Transaction Security (a "Distress Event"),

(c) then the holders of the Senior Secured Notes and Future Pari Passu Debt will have an option (subject to certain terms and conditions set out in the Intercreditor Agreement) to purchase all (but not part) of the relevant lenders' (or their affiliates') commitments under the Revolving Credit Facility and other Credit Facility and all the Priority Hedging Liabilities at par plus accrued interest and all other amounts owing under the Revolving Credit Facility and other Credit Facility and Hedging Agreements, with such purchase to occur all at the same time.

Following any notice that the Transaction Security has become enforceable or of a Distress Event, each of the holders of the Future Second Lien Debt will have an option (subject to certain terms and conditions set out in the Intercreditor Agreement) to purchase all (but not part) of the Super Senior Liabilities and Senior Secured Liabilities at par plus accrued interest and all other amounts owing in respect of such Super Senior Liabilities and Senior Secured Liabilities, with such purchase to occur all at the same time.

Hedging

All scheduled and certain other payments permitted under a Hedging Agreement (other than payments when a scheduled payment from the Hedge Counterparty is due and unpaid) are permitted payments for the purposes of the Intercreditor Agreement.

The Intercreditor Agreement will contain provisions in relation to the circumstances in which a Hedge Counterparty may take Enforcement Action in relation to its hedging, together with other customary rights and obligations.

Intra-Group Liabilities

If any member of the Group makes, in favor of any Debtor, any loan to or grants any credit (subject to certain exceptions) that equals or exceeds US$5,000,000 (or its equivalent in other currencies) and matures more than 60 days after the date such loan is made, the Company will procure that such member of the Group will accede to the Intercreditor Agreement as an Intra-Group Lender.

All payments made when due in respect of the Intra-Group Liabilities (whether of principal, interest or otherwise) are permitted payments under the Intercreditor Agreement.

The Intercreditor Agreement will contain provisions providing for Liabilities acquisitions in respect of Intra-Group Liabilities and in relation to the circumstances in which an Intra-Group Lender may take Enforcement Action in relation to the Intra-Group Liabilities.

General

The Intercreditor Agreement will contain provisions dealing with:

(a) close-out rights for the Hedging Liabilities;

(b) permitted payments (including without limitation, the repayment of Intragroup Liabilities in each case to the extent permitted under the terms of the finance documents relating to the Super Senior Liabilities, the Senior Secured Liabilities and the Future Second Lien Debt Liabilities);

(c) provisions regarding the facilitation of the incurrence of permitted additional indebtedness by members of the Group, including, inter alia, obligations for the Security Agent and other Secured Parties to sign certain amendments and security documents;

(d) the appointment of the Security Agent and its related rights and obligations, together with the rights and obligations of any notes trustee of debt which is the subject of the Intercreditor Agreement; and

(e) certain rights and obligations of ancillary lenders and issuing banks under the Revolving Credit Facility documents and other Credit Facility Documents.

Governing law

The Intercreditor Agreement will be governed by and construed in accordance with English law.

DESCRIPTION OF THE NOTES

You will find definitions of certain capitalized terms used in this "Description of the Notes" under the heading "Certain Definitions". For purposes of this "Description of the Notes", references to "we", "our", and "us" refer to CGG S.A. and its subsidiaries and references to the "Issuer" refer only to CGG S.A.

The Issuer will issue $500 million aggregate principal amount of 8.75% Senior Secured Notes due 2027 (the "*Dollar Notes*") and €585 million aggregate principal amount of 7.75% Senior Secured Notes due 2027 (the "*Euro Notes*" and, together with the Dollar Notes, the "*Notes*") under an indenture, to be dated as of the Issue Date (the "*Indenture*"), between, *inter alios*, the Issuer, the Guarantors (as defined below), BNY Mellon Corporate Trustee Services Limited as trustee (the "*Trustee*"), The Bank of New York Mellon, London Branch, as security agent, The Bank of New York Mellon SA/NV, Paris Branch, as security agent in France, and The Bank of New York Mellon, London Branch, as paying agent. The Indenture will not be qualified under, incorporate or include, or be subject to, any of the provisions of the U.S. Trust Indenture Act of 1939, as amended. The Dollar Notes and the Euro Notes will each be issued as a separate series of Notes but, except as otherwise provided below, will be treated as a single class for all purposes under the Indenture.

On the Issue Date (immediately following the issuance of the Notes on such date), the Notes and the Issue Date Guarantees (as defined under "*—Guarantees*") will be secured by the Issue Date Collateral (as defined under "*—Security*") and, as soon as reasonably practicable and in any event within 90 days following the Issue Date (the "*Post-Issue Date*"), the Notes and the Guarantees will additionally be secured by the Post-Issue Date Collateral (as defined under *—Security)*. See "*—Security*".

Upon initial issuance of the Notes, the Issue Date Guarantors (as defined under "*—Guarantees*") will jointly and severally guarantee the Notes on a senior secured basis. On the Post-Issue Date, the Post-Issue Date Guarantors (as defined under "*—Guarantees*") will become parties to the Indenture and will jointly and severally guarantee the Notes on a senior secured basis. See "*—Guarantees*".

The Indenture will be subject to the terms of the Intercreditor Agreement and any Additional Intercreditor Agreements (as defined below). The terms of the Intercreditor Agreement are important to understanding the terms and ranking of the Liens on the Collateral securing the Notes. See "*Description of Other Indebtedness—Intercreditor Agreement*" for a description of the material terms of the Intercreditor Agreement. This "*Description of the Notes*" is intended to be an overview of the material provisions of the Notes, the Indenture and the Security Documents. Since this description of the terms of the Notes is only a summary, you should refer to the Notes, the Indenture and the Security Documents for complete descriptions of the obligations of the Issuer and your rights. Copies of the Indenture are available from us upon request.

The registered Holder of a Note will be treated as the owner of it for all purposes. Only registered Holders will have rights under the Indenture, including, without limitation, with respect to enforcement and the pursuit of other remedies. The Notes have not been, and will not be, registered under the Securities Act and are subject to certain transfer restrictions.

General

The Notes

The Notes will:

- be general senior obligations of the Issuer;
- be secured, as set forth under "*—Security*", on the Collateral on a *pari passu* basis with the interests granted in favor of the Revolving Credit Facility, except that Holders of the Notes will receive proceeds from enforcement of the Collateral and certain distressed disposals only after any obligations secured on a super-priority basis, including obligations under the Revolving Credit Facility and certain Hedging Obligations, have been repaid in full;
- rank *pari passu* in right of payment with any existing and future Indebtedness of the Issuer that is not subordinated in right of payment to the Notes, including obligations under the Revolving Credit Facility;
- rank senior in right of payment to any existing and future Indebtedness of the Issuer that is expressly subordinated in right of payment to the Notes;

- be effectively subordinated to any existing or future Indebtedness or obligation (including obligations to trade creditors) of the Issuer and its Subsidiaries that is secured by property or assets that do not secure the Notes, to the extent of the value of the property and assets securing such Indebtedness;
- be structurally subordinated to any existing or future Indebtedness of the Subsidiaries of the Issuer that are not Guarantors, including obligations owned to trade creditors; and
- be guaranteed on a senior secured basis by the Guarantors, subject to the limitations described herein and in "*Risk Factors—Risks Related to the Notes, the Guarantees and the Collateral—Applicable laws may limit amounts recoverable under the Guarantees and the security interests in the Collateral*" and "*Limitations on Validity and Enforceability of the Note Guarantees and the Security Interests and Certain Insolvency Law Considerations*".

The Guarantees

Each Guarantee of a Guarantor will:

- be a general senior obligation of the applicable Guarantor;
- be secured, as set forth under "*—Security*", on the Collateral on a *pari passu* basis with the interests granted in favor of the Revolving Credit Facility, except that Holders of the Notes will receive proceeds from enforcement of the Collateral and certain distressed disposals only after any obligations secured on a super-priority basis, including obligations under the Revolving Credit Facility and certain Hedging Obligations, have been repaid in full;
- rank *pari passu* in right of payment with any existing and future Indebtedness of the applicable Guarantor that is not subordinated in right of payment to the applicable Guarantee, including obligations under the Revolving Credit Facility;
- rank senior in right of payment to any existing and future Indebtedness of such Guarantor that is expressly subordinated in right of payment to a Guarantor's Guarantee;
- be effectively subordinated to any existing or future Indebtedness or obligation of the applicable Guarantor that is secured by property or assets that do not secure its Guarantee, to the extent of the value of the property and assets securing such Indebtedness or obligation;
- be structurally subordinated to any existing and future Indebtedness of Subsidiaries of such Guarantor that do not Guarantee the Notes; and
- be subject to the limitations described herein and in "*Risk Factors—Risks Related to the Notes, the Guarantees and the Collateral—Applicable laws may limit amounts recoverable under the Guarantees and the security interests in the Collateral*" and "*Limitations on Validity and Enforceability of the Security Interests and Guarantees and Certain Insolvency Law Considerations*".

Principal, Maturity and Interest

The Issuer will issue $500 million in aggregate principal amount of Dollar Notes and €585 million in aggregate principal amount of Euro Notes on the Issue Date. The Dollar Notes will mature on April 1, 2027 and the Euro Notes will mature on April 1, 2027. The Dollar Notes will be issued in minimum denominations of $200,000 and in integral multiples of $1,000 in excess thereof and the Euro Notes will be issued in minimum denominations of €100,000 and in integral multiples of €1,000 in excess thereof.

The Euro Notes and the Dollar Notes will constitute separate series of Notes under the Indenture but, except as otherwise provided herein, will be treated as a single class for all purposes under the Indenture, including for the purposes of voting and taking all other actions permitted by Holders of the Notes.

The rights of Holders to receive the payments on the Notes are subject to applicable procedures of, in respect of the Dollar Notes, DTC and, in respect of the Euro Notes, Euroclear and Clearstream. If the due date for any payment in respect of any Notes is not a Business Day at the place at which such payment is due to be paid, the Holder thereof will not be entitled to payment of the amount due until the next succeeding Business Day at such place, and will not be entitled to any further interest or other payment as a result of any such delay.

Interest on the Dollar Notes will accrue at the rate of 8.75% per annum. Interest on the Euro Notes will accrue at the rate of 7.75% per annum. Interest on the Notes will be payable semi-annually in arrears on each April 15 and

October 15, commencing on October 15, 2021. While the Notes are in global form, the Issuer will make each interest payment to the Holders of record on the immediately preceding Business Day. If the Notes are in the form of Definitive Registered Notes, they will be paid to the Holders of record on the 15th day preceding the relevant interest payment date. Interest on the Notes will accrue from the date of original issuance or, if interest has already been paid, from the date it was most recently paid. Interest will be computed on the basis of a 360-day year comprised of twelve 30-day months. Each interest period shall end on (but not include) the relevant interest payment date.

Methods of Receiving Payments on the Notes

Principal, interest, premium and Additional Amounts, if any, on the Dollar Notes will be payable at the specified office or agency maintained by the Issuer for such purpose (the "*Dollar Paying Agent*"); *provided* that (i) all cash payments with respect to the Dollar Notes represented by one or more global notes registered in the name of or held by DTC or its nominee will be made through the Dollar Paying Agent by wire transfer of immediately available funds to the accounts specified by the registered Holder or Holders thereof and (ii) all cash payments with respect to certificated Dollar Notes ("*Definitive Registered Dollar Notes*" and, together with the Definitive Registered Euro Notes, the "*Definitive Registered Notes*") may be made by check or, at the option of the Issuer, by wire transfer to the person entitled thereto as shown on the register for the Definitive Registered Dollar Notes.

Principal, interest, premium and Additional Amounts, if any, on the Euro Notes will be payable at the specified office or agency maintained by the Issuer for such purpose (the "*Euro Paying Agent*" and, together with the Dollar Paying Agent, the "*Paying Agents*"); *provided* that (i) all cash payments with respect to the Euro Notes represented by one or more global notes registered in the name of or held by the common depositary of Euroclear and Clearstream or its nominee will be made through the Euro Paying Agent by wire transfer of immediately available funds to the accounts specified by the registered Holder or Holders thereof and (ii) all cash payments with respect to certificated Euro Notes ("*Definitive Registered Euro Notes*") may be made by check or, at the option of the Issuer, by wire transfer to the person entitled thereto as shown on the register for the Definitive Registered Euro Notes.

Paying Agents, Registrar and Transfer Agents for the Notes

The Issuer will maintain one or more Paying Agents for the Notes. The initial Dollar Paying Agent will be The Bank of New York Mellon, London Branch. The initial Euro Paying Agent will be The Bank of New York Mellon, London Branch.

The Issuer will also maintain one or more registrars (the "*Registrar*") and transfer agents (the "*Transfer Agent*"). The initial Registrar (the "*Registrar*") will be The Bank of New York Mellon SA/NV, Dublin Branch, the initial dollar transfer agent (the "*Dollar Transfer Agent*") will be The Bank of New York Mellon SA/NV, Dublin Branch and the initial euro transfer agent (the "*Euro Transfer Agent*") will be The Bank of New York Mellon SA/NV, Dublin Branch. The Registrar will maintain a register reflecting ownership of the Notes outstanding from time to time, if any. The applicable Paying Agent will facilitate payments on, and the applicable Transfer Agent will facilitate transfers of, the Notes on behalf of the Issuer.

The Issuer may change any Paying Agent, Registrar or Transfer Agent for any Notes without prior notice to the Holders of such Notes. However, for so long as any Notes are listed on the Luxembourg Stock Exchange and the rules of the Luxembourg Stock Exchange so require, the Issuer will publish notice of any change of Paying Agent, Registrar or Transfer Agent in a daily newspaper with general circulation in Luxembourg (which is expected to be the *Luxemburger Wort*). Such notice of the change in a Paying Agent, Registrar or Transfer Agent may also be published on the official website of the Luxembourg Stock Exchange (*www.bourse.lu*), to the extent and in the manner permitted by the rules of the Luxembourg Stock Exchange. The Issuer or any of its Subsidiaries may act as Paying Agent or Registrar in respect of the Notes.

Guarantees

On the Issue Date, the obligations of the Issuer under the Notes will be guaranteed (the "*Issue Date Guarantees*"), jointly and severally, on a senior secured basis by the following Subsidiaries of the Issuer (the "*Issue Date Guarantors*"): CGG Holding (U.S.) Inc., CGG Services (U.S.) Inc. and CGG Land (U.S.) Inc.

On the Post-Issue Date, the obligations of the Issuer under the Notes will be additionally guaranteed, jointly and severally, on a senior secured basis by the following Subsidiaries of the Issuer (the "*Post-Issue Date Guarantors*" and, together with the Issue Date Guarantors, the "*Initial Guarantors*"): Sercel-GRC Corp., Sercel Inc., CGG Holding B.V., CGG Services (UK) Limited, CGG Services (Norway) AS and CGG do Brasil Participações.

The obligations of the Guarantors will be contractually limited under the applicable Guarantees to reflect limitations under applicable law with respect to maintenance of share capital, corporate benefit, fraudulent conveyance and other legal restrictions applicable to the Guarantors and their respective shareholders, directors and general partners. For a description of such contractual limitations, see "*Risk Factors—Risks Related to the Notes, the Guarantees and the Collateral—The insolvency laws of applicable jurisdictions may not be as favorable to you as the insolvency laws of the jurisdiction with which you are familiar*" and "*Limitations on Validity and Enforceability of the Security Interests and Guarantees and Certain Insolvency Law Considerations*".

The Issuer and the Guarantors (excluding their subsidiaries that have not guaranteed the Notes), after elimination of intragroup transactions, collectively generated US$469.3 million of operating revenues representing 53% of our total consolidated revenues and US$175.3 million of EBITDAs representing 60% of our total consolidated EBITDAs and had US$2,256.2 million of total assets representing 69% of our total consolidated assets (excluding assets held for sale), in each case as of and for the year ended December 31, 2020. As of December 31, 2020, on an as adjusted basis after giving effect to the Transactions, the Issuer and its consolidated subsidiaries would have had $1,355.9 million principal amount of indebtedness (including lease liabilities), of which equivalent $1,200.0 million is represented by the Notes, and there would have been no drawings under the Revolving Credit Facility.

Most of the Issuer's revenue and EBITDA are generated by the contribution of its Subsidiaries. Claims of creditors of non-Guarantor Subsidiaries, including trade creditors, secured creditors and creditors holding debt and guarantees issued by those Subsidiaries, and claims of preferred and minority stockholders (if any) of those Subsidiaries generally will have priority with respect to the assets and earnings of those Subsidiaries over the claims of creditors of the Issuer and the Guarantors, including Holders of the Notes. The Notes and each Guarantee therefore will be effectively subordinated to creditors (including trade creditors) and preferred and minority stockholders (if any) of Subsidiaries of the Issuer (other than the Guarantors). On an as adjusted basis, after giving effect to the Transactions, as of December 31, 2020, the Subsidiaries of the Issuer that will not guarantee the Notes would have had $25.1 million of third-party indebtedness outstanding (excluding trade payables). Although the Indenture will limit the incurrence of Indebtedness, Disqualified Stock and Preferred Stock of Restricted Subsidiaries, the limitation is subject to a number of significant exceptions. Moreover, the Indenture will not impose any limitation on the incurrence by Restricted Subsidiaries of liabilities that are not considered Indebtedness, Disqualified Stock or Preferred Stock under the Indenture. See "*—Certain Covenants—Limitation on Indebtedness*".

In addition, as described below under "*—Certain Covenants—Additional Guarantees*" and subject to the Intercreditor Agreement and the Agreed Security Principles, each Restricted Subsidiary that guarantees the Revolving Credit Facility, any Credit Facility or any Public Debt, in each case, of the Issuer or a Guarantor shall also enter into a supplemental indenture as a Guarantor of the Notes and accede to the Intercreditor Agreement.

The Agreed Security Principles apply to the granting of guarantees and security in favor of obligations under the Revolving Credit Facility and the Notes. The Agreed Security Principles include restrictions on the granting of guarantees where, among other things, such grant would be restricted by general statutory or other legal limitations or requirements, financial assistance, corporate benefit, fraudulent preference, "thin capitalization" rules, retention of title claims and similar principles.

Each Guarantee will be limited to the maximum amount that would not render the Guarantor's obligations subject to avoidance under applicable fraudulent conveyance provisions of the United States Bankruptcy Code or any comparable provision of foreign or state law, or as otherwise required under the Agreed Security Principles to comply with corporate benefit, financial assistance and other laws. By virtue of this limitation, a Guarantor's obligation under its Guarantee could be significantly less than amounts payable with respect to the Notes, or a Guarantor may have effectively no obligation under its Guarantee. See "*Risk Factors—Risks Related to the Notes, the Guarantees and the Collateral—Applicable laws may limit amounts recoverable under the Guarantees and the security interests in the Collateral*" and "*Limitations on Validity and Enforceability of the Security Interests and Guarantees and Certain Insolvency Law Considerations*".

Releases of Guarantees

The Guarantee of a Guarantor will terminate and release:

(1) upon a sale or other disposition (including by way of consolidation or merger) of the Capital Stock of the relevant Guarantor (whether by direct sale or sale of a holding company) (as a result of which such Guarantor ceases to be a Restricted Subsidiary) or the sale or disposition of all or substantially all the assets of the Guarantor (other than to the Issuer or a Restricted Subsidiary) otherwise permitted by the Indenture;

(2) upon the designation in accordance with the Indenture of the Guarantor as an Unrestricted Subsidiary;

(3) upon payment in full of principal, interest and other obligations under the Notes or defeasance or discharge of the Notes, as provided in "*—Defeasance*" and "*—Satisfaction and Discharge*";

(4) in accordance with an enforcement action pursuant to the Intercreditor Agreement or any Additional Intercreditor Agreement;

(5) as described under "*—Amendments and Waivers*";

(6) as described in the second paragraph of the covenant described below under "*—Certain Covenants—Additional Guarantees*"; or

(7) pursuant to a Permitted Reorganization or as a result of a transaction permitted by "*—Certain Covenants—Merger and Consolidation—The Guarantors*".

Upon the request of, and at the expense of the Issuer, the Trustee shall take all reasonable action necessary, including the granting of releases or waivers under the Indenture or the Intercreditor Agreement or any Additional Intercreditor Agreement, to effectuate any release of a Guarantee in accordance with these provisions, subject to customary protections and indemnifications. Each of the releases set forth above shall be effected by Trustee without the consent of the Holders or any other action or consent on the part of the Trustee.

Transfer and Exchange

The Notes will be issued in the form of several registered notes in global form without interest coupons, as follows:

- Dollar Notes sold within the United States to qualified institutional buyers pursuant to Rule 144A under the Securities Act will initially be represented by one or more global notes in registered form without interest coupons attached (the "*144A Global Dollar Notes*") and Euro Notes sold within the United States to qualified institutional buyers pursuant to Rule 144A under the Securities Act will initially be represented by one or more global notes in registered form without interest coupons attached (the "*144A Global Euro Notes*", and together with the 144A Global Dollar Notes, the "*144A Global Notes*"). On the Issue Date, the 144A Global Dollar Notes will be deposited with a custodian of DTC and registered in the name of Cede & Co., as nominee of DTC, and the 144A Global Euro Notes will be deposited with and registered in the name of the nominee of the common depositary for the accounts of Euroclear and Clearstream.
- Dollar Notes sold outside the United States pursuant to Regulation S under the Securities Act will initially be represented by one or more global notes in registered form without interest coupons attached (the "*Regulation S Global Dollar Notes*") and Euro Notes sold outside the United States pursuant to Regulation S under the Securities Act will initially be represented by one or more global notes in registered form without interest coupons attached (the "*Regulation S Global Euro Notes*" and, together with the Regulation S Global Dollar Notes, the "*Regulation S Global Notes*" and, together with the 144A Global Notes, the "*Global Notes*"). On the Issue Date, the Regulation S Global Dollar Notes will be deposited with a custodian of DTC and registered in the name of Cede & Co., as nominee of DTC, and the Regulation S Global Euro Notes will be deposited with and registered in the name of the nominee of the common depositary for the accounts of Euroclear and Clearstream.

Ownership of interests in the Global Notes ("*Book-Entry Interests*") will be limited to persons that have accounts with, in the case of Dollar Notes, DTC or, in the case of Euro Notes, Euroclear and Clearstream, or persons that may hold interests through such participants.

Ownership of interests in the Book-Entry Interests and transfers thereof will be subject to the restrictions on transfer and certification requirements summarized below and described more fully under the section "*Transfer Restrictions*" in the Offering Memorandum. In addition, in respect of Dollar Notes, transfers of Book-Entry Interests between participants in DTC will be effected by DTC, pursuant to customary procedures and subject to the applicable rules and procedures established by DTC and their respective participants. In respect of Euro Notes, transfers of Book-Entry Interests between participants in Euroclear or participants in Clearstream will be effected by Euroclear and Clearstream pursuant to customary procedures and subject to the applicable rules and procedures established by Euroclear or Clearstream and their respective participants.

Book-Entry Interests in the 144A Global Notes (the "*144A Book-Entry Interests*") may be transferred to a person who takes delivery in the form of Book-Entry Interests in the Regulation S Global Notes (the "*Regulation S*

Book-Entry Interests") denominated in the same currency only upon delivery by the transferor of a written certification (in the form provided in the Indenture) to the effect that such transfer is being made in accordance with Regulation S under the Securities Act.

No Book-Entry Interest in any Global Note representing the Dollar Notes, and no Definitive Registered Dollar Note issued in exchange for a Book-Entry Interest in the Global Note representing Dollar Notes, may be transferred or exchanged for any Book-Entry Interest in any Global Note representing Euro Notes or any Definitive Registered Euro Note issued in exchange for a Book-Entry Interest in the Global Note representing Euro Notes, and no Book-Entry Interest in any Global Note representing Euro Notes, and no Definitive Registered Euro Note issued in exchange for a Book-Entry Interest in the Global Note representing Euro Notes, may be transferred or exchanged for any Book-Entry Interest in any Global Note representing Dollar Notes or any Definitive Registered Dollar Note issued in exchange for a Book-Entry Interest in the Global Note representing Dollar Notes.

Prior to 40 days after the Issue Date of the Notes, any sale or transfer of Regulation S Book-Entry Interests to US persons shall not be permitted unless such resale or transfer is made pursuant to Rule 144A under the Securities Act. Subject to the foregoing, Regulation S Book-Entry Interests may be transferred to a person who takes delivery in the form of 144A Book-Entry Interests only upon delivery by the transferor of a written certification (in the form provided in the Indenture) to the effect that such transfer is being made to a person who the transferor reasonably believes is a "qualified institutional buyer" within the meaning of Rule 144A in a transaction meeting the requirements of Rule 144A or otherwise in accordance with the transfer restrictions described under the section "*Transfer Restrictions*" in the Offering Memorandum and in accordance with any applicable securities law of any other jurisdiction.

Any Book-Entry Interest that is transferred as described in the immediately preceding paragraphs will, upon transfer, cease to be a Book-Entry Interest in the Global Note from which it was transferred and will become a Book-Entry Interest in the Global Note to which it was transferred. Accordingly, from and after such transfer, it will become subject to all transfer restrictions, if any, and other procedures applicable to Book-Entry Interests in the Global Note to which it was transferred.

If Definitive Registered Notes are issued, they will be issued only in minimum denominations of, with respect to the Dollar Notes, $200,000 principal amount and integral multiples of $1,000 in excess thereof and, with respect to the Euro Notes, €100,000 principal amount and integral multiples of €1,000 in excess thereof, upon receipt by the Registrar of instructions relating thereto and any certificates, opinions and other documentation required by the Indenture. It is expected that such instructions will be based upon directions received by DTC, Euroclear or Clearstream, as applicable, from the participant which owns the relevant Book-Entry Interests. Definitive Registered Notes issued in exchange for a Book-Entry Interest will, except as set forth in the Indenture or as otherwise determined by the Issuer in compliance with applicable law, be subject to, and will have a legend with respect to, the restrictions on transfer summarized below and described more fully under the section "*Transfer Restrictions*" in the Offering Memorandum.

Subject to the restrictions on transfer referred to above, Notes issued as Definitive Registered Notes may be transferred or exchanged, in whole or in part, in minimum denominations of, with respect to the Dollar Notes, $200,000 in principal amount and integral multiples of $1,000 in excess thereof and, with respect to the Euro Notes, €100,000 in principal amount and integral multiples of €1,000 in excess thereof. In connection with any such transfer or exchange, the Indenture will require the transferring or exchanging Holder to, among other things, furnish appropriate endorsements and transfer documents, to furnish information regarding the account of the transferee at DTC, Euroclear or Clearstream, as applicable, where appropriate, to furnish certain certificates and opinions, and to pay any Taxes in connection with such transfer or exchange. Any such transfer or exchange will be made without charge to the Holder, other than any Taxes payable in connection with such transfer.

Notwithstanding the foregoing, the Issuer is not required to register the transfer or exchange of any Definitive Registered Notes:

(1) for a period of 15 days prior to any date fixed for the redemption of the Notes;

(2) for a period of 15 days immediately prior to the date fixed for selection of Notes to be redeemed in part;

(3) for a period of 15 days prior to the record date with respect to any interest payment date; or

(4) which the Holder has tendered (and not withdrawn) for repurchase in connection with a Change of Control Offer or an Asset Disposition Offer.

The Issuer, the Trustee, the Paying Agent, the Transfer Agent and the Registrar will be entitled to treat the Holder of a Notes as the owner of it for all purposes.

Additional Notes

From time to time, subject to the Issuer's compliance with the covenants described under the headings "*—Certain Covenants—Limitation on Indebtedness*" and "*—Certain Covenants—Limitation on Liens*", the Issuer is permitted to issue additional Notes (the "*Additional Notes*"), which shall have terms substantially identical to the Notes except in respect of any of the following terms which shall be set forth in an Officer's Certificate delivered to the Trustee:

(1) the title of such Additional Notes;

(2) the aggregate principal amount of such Additional Notes;

(3) the date or dates on which such Additional Notes will be issued;

(4) the rate or rates (which may be fixed or floating) at which such Additional Notes shall bear interest and, if applicable, the interest rate basis, formula or other method of determining such interest rate or rates, the date or dates from which such interest shall accrue, the interest payment dates on which such interest shall be payable or the method by which such dates will be determined, the record dates for the determination of Holders thereof to whom such interest is payable and the basis upon which such interest will be calculated;

(5) the currency or currencies in which such Additional Notes shall be denominated and the currency in which cash or government obligations in connection with such series of Additional Notes may be payable;

(6) the date or dates and price or prices at which, the period or periods within which, and the terms and conditions upon which, such Additional Notes may be redeemed, in whole or in part;

(7) if other than denominations of $200,000 and in integral multiples of $1,000 in excess thereof, in respect of Additional Notes denominated in Dollars, and of €100,000 and in integral multiples of €1,000 in excess thereof, in respect of Additional Notes denominated in Euros, the denominations in which such Additional Notes shall be issued and redeemed; and

(8) the ISIN, Common Code, CUSIP or other securities identification numbers with respect to such Additional Notes.

Unless the context otherwise requires, for all purposes of the Indenture and this "*Description of the Notes*", references to "Notes" shall be deemed to include references to the Notes initially issued on the Issue Date as well as any Additional Notes. Additional Notes may be designated to be of the same series as the Notes initially issued on the Issue Date, but only if they have terms substantially identical in all material respects to such Notes, and shall be deemed to form one series with such Notes and references to the Notes shall be deemed to include the Notes initially issued on the Issue Date as well any such Additional Notes, as applicable.

If any Additional Notes are not (i) issued with a de minimis amount of original issue discount, (ii) issued in a qualified reopening and (iii) otherwise fungible with the Notes issued on the Issue Date, in each case, for US federal income tax purposes, such Additional Notes will have a separate CUSIP, ISIN or Common Code (as applicable) so that they are distinguishable from such Notes.

Restricted Subsidiaries and Unrestricted Subsidiaries

As of the Issue Date, all of the Issuer's Subsidiaries will be "Restricted Subsidiaries" for purposes of the Indenture. However, under the circumstances described below under "*—Certain Definitions—Unrestricted Subsidiary*", the Issuer will be permitted to designate certain of its Subsidiaries as "*Unrestricted Subsidiaries*". The Issuer's Unrestricted Subsidiaries will not be subject to any of the restrictive covenants in the Indenture.

Security

General

On the Issue Date, the Notes and the Issue Date Guarantees will be secured, subject to the Intercreditor Agreement and certain perfection requirements, by security interests granted on an equal and ratable first-ranking basis over the following property, rights and assets (collectively, the "*Issue Date Collateral*"):

- the shares held by the Issuer in CGG Holding B.V., CGG Services SAS, Sercel SAS and Sercel Holding SAS, the shares held by CGG Holding (U.S.) Inc. in CGG Services (U.S.) Inc. and Sercel Inc., and the shares held by CGG Services (U.S.) Inc. in CGG Land (U.S.) Inc.;

- U.S. general asset security over the assets, including certain intellectual property rights and intercompany loan receivables, of CGG Holding (U.S.) Inc., CGG Services (U.S.) Inc. and CGG Land (U.S.) Inc., in each case, other than real estate and certain other excluded assets; and
- certain intercompany loan receivables owed to the Issuer.

On the Post-Issue Date, the Notes and the Guarantees will be secured, subject to the Intercreditor Agreement and certain perfection requirements, by security interests granted on an equal and ratable first-ranking basis over the following property, rights and assets (collectively, the "*Post-Issue Date Collateral*"):

- the shares held by CGG Holding B.V. in CGG Services (UK) Limited, CGG Services (Norway) AS and CGG Holding (U.S.) Inc., and the shares held by Sercel Inc. in Sercel-GRC Corp. and STX Corp.; and
- U.S. general asset security over the assets, including certain intellectual property rights and intercompany loan receivables, of Sercel Inc. and Sercel-GRC Corp., in each case, other than real estate and certain other excluded assets.

Subject to certain conditions, including compliance with the covenants described under "*—Certain Covenants—Impairment of Security Interest*" and "*—Certain Covenants—Liens*", the Issuer and its Restricted Subsidiaries are permitted to grant security over the Collateral in connection with future issuances of Indebtedness of the Issuer or the Restricted Subsidiaries, including any Additional Notes issued by the Issuer as permitted under the Indenture and the Intercreditor Agreement. See "*Risk Factors—Risks Related to the Notes, the Guarantees and the Collateral—We may incur other indebtedness secured on a pari passu basis with the Notes. In addition, creditors under the Revolving Credit Facility and certain hedging obligations will be entitled to be repaid with the proceeds of the Collateral sold in any enforcement sale in priority to the Notes"* and *"Risk Factors–Risks Related to the Notes, the Guarantees and the Collateral— The proceeds from the enforcement of the Collateral may not be sufficient to satisfy the obligations under the Notes*".

The Issue Date Collateral and the Post-Issue Date Collateral and any other security interests that may in the future be granted to secure obligations under the Notes, any Guarantee and the Indenture are collectively referred to herein as the "*Collateral*". All Collateral will be subject to the operation of the Agreed Security Principles and any Permitted Collateral Liens.

Notwithstanding the foregoing and the provisions of the covenant described below under "*—Certain Covenants—Additional Guarantees*", certain property, rights and assets (other than the Collateral described in the first and second paragraphs of this section) may not be pledged, and any pledge over property, rights and assets constituting Collateral may be limited (or the Liens not perfected), in accordance with the Agreed Security Principles. The following is a non-exhaustive summary of certain terms of the Agreed Security Principles:

- general legal and statutory limitations, financial assistance, corporate benefit, "thin capitalization" rules, fraudulent preference, tax restrictions or costs, retention of title claims and similar principles may prevent or limit the ability of a member of the Group (as defined below) to provide a Guarantee or Security Interest or may require that the Guarantee or Security Interest be limited as to amount or otherwise;
- a key factor in determining whether or not a Security Interest shall be taken or the extent of its perfection is the applicable time and cost of granting such Security Interest, which, in the good faith determination of the Issuer, shall not be disproportionate to the benefit of obtaining such Security Interest;
- none of the Issuer or its Restricted Subsidiaries will be required to provide a Guarantee or enter into Security Documents if the same would conflict with the fiduciary or statutory duties of the directors of such Person, would contravene any legal, regulatory or contractual prohibition or would result in a risk of personal or criminal liability on the part of any director or other officer of any such Person, provided that the relevant person shall use reasonable endeavors to overcome any such obstacle;
- the maximum guaranteed or secured amount may be limited to minimize stamp duty, notarization, registration or other applicable fees, taxes and duties where the benefit of increasing the guaranteed or secured amount is, in the good faith determination of the Issuer, disproportionate to the level of such fee, taxes and duties;
- where a class of assets to be secured includes material and immaterial assets, if the cost of granting security over the immaterial assets is, in the good faith determination of the Issuer, disproportionate to the benefit of such security, security shall be granted over the material assets only;
- any assets not legally or beneficially owned by the relevant security provider, or subject to legal, contractual or other third party arrangements which may prevent those assets from being charged, or which, if charged,

would give a third party the right to terminate or otherwise amend any rights, benefits and/or obligations with respect to any member of the Group in respect of those assets, or require the security provider to take any action materially adverse to the interests of the Issuer and its Subsidiaries (the "Group") or any member thereof, will be excluded from any relevant Security Document provided that the relevant security provider will use reasonable endeavors to obtain consent to charging those assets if the relevant security provider is satisfied that such endeavors will not involve placing relationships with third parties in jeopardy;

- the granting of security or the perfection of the security granted will not be required if it would have a material adverse effect on the ability of the relevant member of the Group to conduct its operations and business in the ordinary course as otherwise not prohibited by the Indenture;
- no member of the Group shall bear or otherwise be liable for any taxes, any notarial, registration or perfection fees or any other costs, fees or expenses that result from any assignment or transfer by a secured party;
- no guarantee or security shall be required to be given by acquired or newly established persons or over (and no consent shall be required to be sought with respect to) acquired assets (save as described in the covenant entitled "*—Grant of the Guarantees and the Collateral*") which are required to support acquired indebtedness to the extent such acquired indebtedness is not prohibited by the Indenture to remain outstanding after an acquisition;
- no Guarantor incorporated in the United States ("*U.S.*") shall be required to grant security over certain categories of assets, such 'excluded assets' including, inter alia, (i) assets located outside the United States; (ii) any vehicle covered by a certificate of title or ownership; (iii) certain equity interests, any rights in any letter of credit to the extent the proceeds of a drawing of such letter of credit are required by applicable law to be applied for a specified purpose; (iv) any lease, license or other agreement to the extent that a grant of a Security Interest therein would result in a breach or termination of the terms of, or constitute a default under or termination of any such license, contract or agreement after giving effect to the applicable anti-assignment provisions of the Uniform Commercial Code (the "UCC") or other applicable U.S. laws; and (v) any fee-owned or leasehold interests in real estate;
- in no event shall any grantor under a U.S. law Security Document be required to, inter alia, (i) seek any landlord lien waiver, estoppel, warehouseman waiver or other Collateral access or similar letter or agreement; (ii) enter into any control agreement; (iii) otherwise take any perfection steps with respect to any asset other than (A) the filing of UCC-1 financing statements, (B) delivery to the Security Agent to be held in its possession of collateral consisting of (1) as applicable, instruments with a principal amount in excess of US$5,000,000 individually and (2) as applicable, certificated securities that shall be accompanied by undated stock powers duly executed in blank or other undated instruments of transfer duly executed in blank and (C) as regards grantors under the NY Law Pledge and Security Agreement, the filing of short form intellectual property security agreements with the U.S. Patent and Trademark Office or U.S. Copyright Office, as applicable, in each case only in respect of intellectual property owned by the grantor on the date on which such grantor becomes a party to the NY Law Pledge and Security Agreement; or (iv) provide or update schedules of patents, trademarks and copyrights attached to the applicable collateral document or provided in a separate perfection certificate, or file any short form intellectual property security agreements with the U.S. Patent and Trademark Office or U.S. Copyright Office, as applicable, in respect of intellectual property developed or acquired by the grantor after the date on which such grantor becomes a party to the NY Law Pledge and Security Agreement;
- no security shall be granted over or in respect of any asset of or interest in any Person that is a joint venture, an Unrestricted Subsidiary or not a member of the Group, and no security shall be granted on the Issue Date or the Post-Issue Date over or in respect of any asset located outside of France, the Netherlands, the United States, England or Norway;
- subject to specified exceptions, all security shall be governed by the law of, and secure only assets located in, the jurisdiction of incorporation of the applicable grantor of the security; and no action in relation to Security (including any perfection step, further assurance step, filing or registration) shall be required in jurisdictions where the grantor of the security is not incorporated;
- "parallel debt" provisions will be used where necessary;
- security shall not be enforceable or crystallize until the occurrence of an acceleration event or, if required by law, until such later point specified under such law;
- Security Documents should only operate to create security rather than to impose new commercial obligations or a repeat of clauses in the Indenture or elsewhere; accordingly (i) representations and

undertakings shall only be included to confirm validity, enforceability and any registration or perfection of security (unless otherwise expressly required by local law); (ii) the provisions of each Security Document shall not be unduly burdensome on any security provider or other member of the Group or interfere unreasonably with the operation of its business and shall be limited to those required to create or maintain effective security and not impose commercial obligations; and (iii) information, such as lists of assets, shall be provided if required by local law or necessary to be provided to perfect or register the security and be provided annually (and to the extent required to be provided by local law more frequently) or, following an Event of Default which is outstanding, on the Security Agent's reasonable request;

- nothing in any Security Document shall (or be construed to) prohibit any transaction, matter or other step if not prohibited by the terms of the Indenture;
- subject to specified exceptions, no supplemental pledges, notices, filings or certificates will be required to be made or delivered to the Security Agent or any other person in respect of assets acquired by the relevant pledgor after the date of the relevant Security Document;
- as regards security over bank accounts, the relevant security provider shall be free to deal, operate and transact business in relation to those accounts and to close those accounts in the course of its business until the occurrence of an acceleration event which is continuing; provided that, with respect to any French law pledge of securities account agreement, the relevant security provider shall not close or transfer the cash proceeds account unless the Security Agent has been informed in writing of the new account number and/or the name of the new account holder;
- any security over bank accounts shall be subject to any prior Security Interests in favor of the account bank which are created either by law or in the standard terms and conditions of the account bank;
- no security shall be required to be granted over (i) payroll accounts or withholding tax accounts; (ii) escrow, fiduciary and trust accounts to the extent held for other persons; or (iii) cash pooling, cash collateral or factoring accounts;
- if a security provider grants security over any of its receivables it shall be free to deal with, amend, waive or terminate those receivables in the course of its business, and the security will not prohibit or restrict any capitalization, forgiveness, write-off, waiver, release, transfer, repayment, prepayment or discharge thereof, until the occurrence of an acceleration event which is continuing;
- as regards security over shares, until the occurrence of an acceleration event which is continuing, the legal title of the shares shall remain with the relevant grantor of the security and such grantor shall be permitted to retain and to exercise voting rights and powers in relation to any shares and other related rights charged by it and receive, own and retain all assets and proceeds in relation thereto without restriction or condition and the company whose shares have been charged shall be permitted to pay dividends without restriction; as long as the grantor exercises voting rights and powers in relation to any shares and other related rights charged by it, it shall exercise them in a manner which does not adversely affect the validity or enforceability of the security over the shares or cause an Event of Default to occur;
- in the event of any transfer or disposition to any member of the Group of Specified Pledged Assets that, immediately prior to such transfer or disposition, are subject to general asset security or floating charge security in any jurisdiction and in respect of which perfection steps (other than the filing of a UCC financing statement or other analogous general filing of the relevant Security Interest) are not required by the terms of the relevant Security Documents, such member of the Group shall not be required to grant fixed security over such Specified Pledged Assets if such member is organized in a jurisdiction the applicable law of which does not provide for general asset security or floating charge security;
- share security shall extend to any new shares issued by the company whose shares have been charged and subscribed by the grantor from time to time, to the extent not unreasonably burdensome; and
- if the Issuer or a Guarantor grants security over all of the shares it holds in a member of the Group, in respect of which there is also one or several minority shareholders (due to mandatory requirements in the relevant jurisdiction due to minimum detention rules, directors shares or for any other reason), there will be no requirement for any such minority shareholder to grant security over its shares or otherwise to be party to the relevant Security Document.

As described above, all of the Collateral will also secure the liabilities under the Revolving Credit Facility as well as certain Hedging Obligations and may also secure certain future indebtedness; *provided*, *however*, that the lenders under the Revolving Credit Facility and counterparties to certain Hedging Obligations will receive the proceeds from the enforcement of the Collateral and certain distressed disposals in priority to the holders of the

Notes and any Additional Notes. See "—*Priority*" below. See also, "*Risk Factors—Risks related to the Notes, the Guarantees and the Collateral—We may incur other indebtedness secured on a pari passu basis with the Notes. In addition, creditors under the New Revolving Credit Facility and certain hedging obligations will be entitled to be repaid with the proceeds of the Collateral sold in any enforcement sale in priority to the Notes*". The proceeds from the enforcement of the Collateral may not be sufficient to satisfy the obligations owed to the holders of the Notes.

Subject to the terms of the Indenture and the Security Documents, the Issuer and the Guarantors have the right to remain in possession and retain exclusive control of the Collateral securing the Notes, to freely operate the Collateral and to collect, invest and dispose of any income therefrom.

The Intercreditor Agreement will provide for the creation of "parallel debt" obligations in favor of the Security Agent, and the security interests in relevant jurisdictions will secure the parallel debt (and not the Indebtedness directly under the Notes or any Notes Guarantees). The parallel debt construct has not been fully tested under French law. See "*Risk Factors—Risks Related to the Notes, the Guarantees and the Collateral—The security over the Collateral will not be granted directly to the holders of the Notes*" and "*Certain Insolvency Law Considerations and Limitations on the Validity and Enforceability of the Guarantees and the Security Interests*".

No appraisals of the Collateral have been made in connection with this Offering of the Notes. By its nature, some or all of the Collateral will be illiquid and may have no readily ascertainable market value. Accordingly, the Collateral may not be able to be sold in a short period of time, or at all. See "*Risk Factors—Risks Related to the Notes, the Guarantees and the Collateral—The Collateral may not be sufficient to satisfy the obligations under the Notes*".

Priority

The relative priority with regard to the security interest in the Collateral that is created by the Security Documents (the "*Security Interest*") as between, *inter alios*, (a) the lenders under the Revolving Credit Facility, (b) the counterparties under certain Hedging Obligations, and (c) the Trustee and the Holders of the Notes under the Indenture, respectively, is established by the terms of the Intercreditor Agreement, the Indenture, the Security Documents and the security documents relating to the Revolving Credit Facility and such Hedging Obligations which provide, among other things, that the obligations under the Notes will receive proceeds on enforcement of security over the Collateral only after the claims of the Revolving Credit Facility and certain Hedging Obligations and any future Indebtedness permitted to be secured on a super priority basis in accordance with the terms of the Indenture and the Intercreditor Agreement are satisfied.

See "*Description of Certain Financing Arrangements—Intercreditor Agreement*". In addition, pursuant to the Indenture, the Intercreditor Agreement or any Additional Intercreditor Agreements entered into after the Issue Date, the Collateral may be pledged to secure other Indebtedness. See "*—Release of Liens*", "*—Certain Covenants—Impairment of Security Interest*" and "*—Certain Definitions—Permitted Collateral Liens*".

Security Documents

Under the Security Documents, security will be granted over the Collateral to secure the payment when due of the Issuer's and the Guarantors' payment obligations under the Notes and the Indenture. The Security Documents will be entered into among, *inter alios*, the relevant security provider and the Security Agent, who will act as security agent, or in certain jurisdictions as parallel debt creditor, for the Trustee and the Holders.

The Indenture and the Intercreditor Agreement will provide that, to the extent permitted by the applicable laws, only the Security Agent will have the right to enforce the Security Documents on behalf of the Trustee and the Holders. As a consequence of such contractual provisions, holders of the Notes will not be entitled to take enforcement action in respect of the Collateral securing the Notes, except through the Security Agent or the Trustee (as applicable) under the Indenture, who will (subject to the provisions of the Indenture and the Intercreditor Agreement) provide instructions to the Security Agent for the Collateral. Under the Intercreditor Agreement, the Security Agent will also act on behalf of the lenders under the Revolving Credit Facility, the counterparties under certain hedging agreements and certain other future indebtedness in relation to the Security Interests in favor of such parties.

The Indenture will provide that, subject to the terms thereof and of the Intercreditor Agreement, the Notes and the Indenture, as applicable, will be secured by Security Interests in the Collateral until all obligations under the

Notes and the Indenture have been discharged. See "*Risk Factors—Risks Related to the Notes, the Guarantees and the Collateral*". The validity and enforceability of the Security Interests will be subject to, *inter alia*, the limitations described in "*Risk Factors—Risks Related to the Notes, the Guarantees and the Collateral* " and "*Limitations on Validity and Enforceability of the Security Interests and Guarantees and Certain Insolvency Law Considerations*".

The Security Documents will provide that the rights under the Security Documents and the Indenture must be exercised by the Security Agent. The Holders may only act through the Trustee, who will instruct the Security Agent in accordance with the terms of the Indenture and the Intercreditor Agreement. In performing its role as Security Agent under the Indenture, the Security Agent shall be entitled to require and rely absolutely on such evidence as it deems appropriate, including Officer's Certificates and Opinions of Counsel addressed to it.

In the event that the Issuer or any of its Subsidiaries enters into insolvency, bankruptcy or similar proceedings, the Security Interest created under the Security Documents or the rights and obligations enumerated in the Intercreditor Agreement could be subject to potential challenges. If any challenge to the validity of the Security Interest or the terms of the Intercreditor Agreement was successful, the Holders may not be able to recover any amounts under the Security Documents. See "*Risk Factors—Risks Related to the Notes, the Guarantees and the Collateral*".

Enforcement of Security Interest

The Security Documents will provide that the rights under the Security Documents must be exercised by the Security Agent. Since the Holders are not a party to the Security Documents, Holders may not, individually or collectively, take any direct action to enforce any rights in their favor under the Security Documents. The Holders may only act through the Trustee, who will instruct the Security Agent subject to and in accordance with the terms of the Indenture and the Intercreditor Agreement.

The creditors under the Revolving Credit Facility, the holders of Notes, the counterparties to certain Hedging Obligations secured by the Collateral and the Trustee have, and by accepting a Note, each Holder will be deemed to have, appointed the Security Agent to act as its agent under the Intercreditor Agreement and the security documents securing such Indebtedness, including the Security Documents. The creditors under the Revolving Credit Facility, the Holders of Notes, the counterparties to certain Hedging Obligations secured by the Collateral and the Trustee have, and by accepting a Note, each Holder will be deemed to have, authorized the Security Agent to (i) perform the duties and exercise the rights and powers that are specifically given to it under the Intercreditor Agreement and the security documents securing such Indebtedness, including the Security Documents, together with any other incidental rights and powers; and (ii) execute each Security Document, waiver, modification, amendment, renewal, release or replacement expressed to be executed by the Security Agent on its behalf.

Intercreditor Agreement; Additional Intercreditor Agreements; Agreement to be Bound

The Indenture will provide that the Issuer and the Guarantors and the Trustee will be authorized (without any further consent of the holders of the Notes) to accede to the Intercreditor Agreement to give effect to the provisions described in the section entitled "*Description of Certain Financing Arrangements—Intercreditor Agreement*".

The Indenture will also provide that each Holder of the Notes, by accepting such Note, will be deemed to have:

(1) appointed and authorized the Security Agent and the Trustee to give effect to the provisions in the Intercreditor Agreement and any Additional Intercreditor Agreements;

(2) agreed to be bound by the provisions of the Intercreditor Agreement and the Security Documents;

(3) agreed and acknowledged that the Security Agent will administer the Collateral in accordance with the Intercreditor Agreement; and

(4) appointed the Security Agent and the Trustee to act on its behalf to enter into and comply with the provisions of the Intercreditor Agreement.

Please see the sections entitled "*Risk Factors—Risks Related to the Notes, the Guarantees and the Collateral—Pursuant to the Intercreditor Agreement, the holders of the Notes may not control certain decisions regarding the Collateral*" and "*Description of Certain Financing Arrangements—Intercreditor Agreement*".

Similar provisions to those described above may be included in any Additional Intercreditor Agreement (as defined below) entered into in compliance with the covenant described under "*—Certain Covenants—Additional Intercreditor Agreements*".

Release of Liens

The Issuer and its Subsidiaries will be entitled to the release of the Security Interest in respect of Collateral under any one or more of the following circumstances:

(1) in connection with any sale or other disposition of Collateral to (a) a Person that is not the Issuer or a Restricted Subsidiary (but excluding any transaction subject to "*—Certain Covenants—Merger and Consolidation*"), if such sale or other disposition does not violate the covenant described under "*—Certain Covenants—Limitation on Sales of Assets and Subsidiary Stock*" or is otherwise permitted in accordance with the Indenture or (b) the Issuer or any Guarantor *provided* that this clause 1(b) shall not be relied upon unless the relevant property and assets remain subject to, or otherwise become subject to, a Lien of the same ranking in favor of the Notes following such sale or disposal after giving effect to the Intercreditor Agreement or any Additional Intercreditor Agreement;

(2) in the case of a Guarantor that is released from its Guarantee pursuant to the terms of the Indenture, the release of the property and assets, and Capital Stock, of such Guarantor;

(3) as described under "*—Amendments and Waivers*";

(4) upon payment in full of principal, interest and all other obligations on the Notes or defeasance or discharge of the Notes, as provided in "*—Defeasance*" and "*—Satisfaction and Discharge*";

(5) if the Issuer designates any Restricted Subsidiary to be an Unrestricted Subsidiary in accordance with the applicable provisions of the Indenture, the release of the property and assets, and Capital Stock, of such Unrestricted Subsidiary;

(6) pursuant to a Permitted Reorganization or in the case of a merger, consolidation or other transfer of assets in compliance with the covenant described below under "*—Certain Covenants—Merger and Consolidation*"; or

(7) as otherwise permitted in accordance with the Indenture.

In addition, the Security Interest created by the Security Documents will be released (a) in accordance with the Intercreditor Agreement or any Additional Intercreditor Agreement and (b) as may be permitted by the covenant described under "*—Certain Covenants—Impairment of Security Interest*".

At the request of and at the expense of the Issuer, the Security Agent and the Trustee (if required) will take all reasonable action necessary to effectuate any release of Collateral securing the Notes and the Guarantees, in accordance with the provisions of the Indenture, the Intercreditor Agreement or any Additional Intercreditor Agreement or the relevant Security Document. Each of the releases set forth above shall be effected by the Security Agent without the consent of the Holders or any action on the part of the Trustee.

Optional Redemption

Dollar Notes

Except as described below and except as described under "*Redemption for Taxation Reasons*", the Dollar Notes are not redeemable until April 1, 2024. On and after April 1, 2024, the Issuer may redeem all or, from time to time, part of the Dollar Notes upon not less than 10 nor more than 60 days' notice, at the following redemption prices (expressed as a percentage of principal amount) plus accrued and unpaid interest to, but not including, the applicable redemption date (subject to the right of Holders of record on the relevant record date to receive interest due on the relevant interest payment date), and Additional Amounts (as defined below), if any, if redeemed during the twelve-month period beginning on April 1 of the year indicated below:

Year	Dollar Notes Redemption Price
2024	104.375%
2025	102.188%
2026 and thereafter	100.000%

At any time and from time to time prior to April 1, 2024, the Issuer may redeem the Dollar Notes with the Net Cash Proceeds received by the Issuer from any Equity Offering, upon not less than 10 nor more than 60 days' prior notice at a redemption price equal to 108.750% of the principal amount of the Dollar Notes so redeemed, plus accrued and unpaid interest and Additional Amounts, if any, to the applicable redemption date (subject to the right of Holders of record on the relevant record date to receive interest due on the relevant interest payment date), in an aggregate principal amount for all such redemptions not to exceed 40% of the original aggregate principal amount of the Dollar Notes (including the principal amount of any additional Dollar Notes ("*Additional Dollar Notes*")); *provided that*:

(1) in each case the redemption takes place not later than 180 days after the closing of the related Equity Offering, and

(2) not less than 50% of the original aggregate principal amount of the Dollar Notes (including the principal amount of any Additional Dollar Notes but excluding any Dollar Notes held by the Issuer or its Subsidiaries) remains outstanding immediately thereafter.

At any time prior to April 1, 2024, upon not less than 10 nor more than 60 days' notice, the Issuer may at its option from time to time redeem during each twelve-month period commencing with the Issue Date up to 10% of the then-outstanding aggregate principal amount of the Dollar Notes at a redemption price equal to 103% of the principal amount of the Dollar Notes redeemed, plus accrued and unpaid interest and Additional Amounts, if any, to the date of redemption (subject to the rights of Holders of record on the relevant record date to receive interest due on the relevant interest payment date).

Prior to April 1, 2024, the Issuer may redeem all or, from time to time, a part of the Dollar Notes upon not less than 10 nor more than 60 days' notice at a redemption price equal to 100% of the principal amount of the Dollar Notes, plus the Applicable Premium and accrued and unpaid interest to, but not including, the applicable redemption date (subject to the right of Holders of record on the relevant record date to receive interest due on the relevant interest payment date) and Additional Amounts, if any.

Euro Notes

Except as described below and except as described under "*Redemption for Taxation Reasons*", the Euro Notes are not redeemable until April 1, 2024. On and after April 1, 2024, the Issuer may redeem all or, from time to time, part of the Euro Notes upon not less than 10 nor more than 60 days' notice, at the following redemption prices (expressed as a percentage of principal amount) plus accrued and unpaid interest to, but not including, the applicable redemption date (subject to the right of Holders of record on the relevant record date to receive interest due on the relevant interest payment date), and Additional Amounts (as defined below), if any, if redeemed during the twelve-month period beginning on April 1 of the year indicated below:

Year	Euro Notes Redemption Price
2024	103.875%
2025	101.938%
2026 and thereafter	100.000%

At any time and from time to time prior to April 1, 2024, the Issuer may redeem the Euro Notes with the Net Cash Proceeds received by the Issuer from any Equity Offering, upon not less than 10 nor more than 60 days' prior notice at a redemption price equal to 107.750% of the principal amount of the Euro Notes so redeemed, plus accrued and unpaid interest and Additional Amounts, if any, to the applicable redemption date (subject to the right of Holders of record on the relevant record date to receive interest due on the relevant interest payment date), in an aggregate principal amount for all such redemptions not to exceed 40% of the original aggregate principal amount of the Euro Notes (including the principal amount of any additional Euro Notes ("*Additional Euro Notes*")); *provided that*:

(1) in each case the redemption takes place not later than 180 days after the closing of the related Equity Offering, and

(2) not less than 50% of the original aggregate principal amount of the Euro Notes (including the principal amount of any Additional Euro Notes but excluding any Euro Notes held by the Issuer or its Subsidiaries) remains outstanding immediately thereafter.

At any time prior to April 1, 2024, upon not less than 10 nor more than 60 days' notice, the Issuer may at its option from time to time redeem during each twelve-month period commencing with the Issue Date up to 10% of

the then outstanding aggregate principal amount of the Euro Notes at a redemption price equal to 103% of the principal amount of the Euro Notes redeemed, plus accrued and unpaid interest and Additional Amounts, if any, to the date of redemption (subject to the rights of Holders of record on the relevant record date to receive interest due on the relevant interest payment date).

Prior to April 1, 2024, the Issuer may redeem all or, from time to time, a part of the Euro Notes upon not less than 10 nor more than 60 days' notice at a redemption price equal to 100% of the principal amount of the Euro Notes, plus the Applicable Premium and accrued and unpaid interest to, but not including, the applicable redemption date (subject to the right of Holders of record on the relevant record date to receive interest due on the relevant interest payment date) and Additional Amounts, if any.

General

Notwithstanding the foregoing, in connection with any tender offer for the Notes of any series, if Holders of not less than 90% in aggregate principal amount of the then outstanding Notes of such series validly tender and do not withdraw such Notes in such tender offer and the Issuer, or any third party making such a tender offer in lieu of the Issuer, purchases all of the Notes of such series validly tendered and not withdrawn by Holders of the Notes of such series, the Issuer or such third party will have the right upon not less than 10 nor more than 60 days' prior notice to the Holders of the Notes of such series, given not more than 30 days following such purchase date, to redeem all of the Notes of that series that remain outstanding following such purchase at a price equal to the price paid to each other Holder in such tender offer (other than any incentive payment for early tenders and provided that such price is not less than 100% of the principal amount), plus, to the extent not included in the tender offer payment, accrued and unpaid interest and Additional Amounts, if any, thereon, to, but not including, the redemption date. In determining whether the Holders of at least 90% of the aggregate principal amount of the then outstanding Notes of such series have validly tendered and not withdrawn Notes in a tender offer or other offer to purchase for all of the Notes of such series, as applicable, Notes owned by an Affiliate of the Issuer or by funds controlled or managed by any Affiliate of the Issuer, or any successor thereof, shall be deemed to be outstanding and to have been tendered for the purposes of such tender offer or other offer, as applicable.

Any redemption other than a redemption pursuant to "—*Redemption for Taxation Reasons*" may, in the Issuer's discretion, be subject to the satisfaction of one or more conditions precedent. If any such redemption is subject to satisfaction of one or more conditions precedent, such notice shall state that, in the Issuer's discretion, the redemption date may be delayed until such time as any or all such conditions shall be satisfied, or such redemption may not occur and such notice may be rescinded in the event that any or all such conditions shall not have been satisfied by the redemption date, or by the redemption date so delayed; *provided* that in no case shall the notice have been delivered less than 10 days or more than 60 days prior to the date on which such redemption (if any) occurs. In addition, the Issuer may provide in such notice that payment of the redemption price and performance of the Issuer's obligations with respect to such redemption may be performed by another Person.

If a redemption date is not a Business Day, payment may be made on the next succeeding days that is a Business Day, and no interest shall accrue on any amount that would have been otherwise payable on such redemption date if it were a Business Day for the intervening period.

We may repurchase the Notes at any time and from time to time in the open market or otherwise.

Notice of redemption will be provided as set forth under "—*Selection and Notice*" below. Notwithstanding anything else in the Indenture, redemption notices may be given more than 60 days prior to a redemption date if the notice is in connection with a defeasance of the Notes of any series or a satisfaction and discharge of the Indenture.

If the Issuer effects an optional redemption of Notes, it will, for so long as the Notes are listed on the Luxembourg Stock Exchange and the rules of the Luxembourg Stock Exchange so require, inform the Luxembourg Stock Exchange of such optional redemption and confirm the aggregate principal amount of the Notes that will remain outstanding immediately after such redemption.

If the optional redemption date is on or after an interest record date and on or before the related interest payment date, the accrued and unpaid interest will be paid to the Person in whose name the Note is registered at the close of business on such record date, and no additional interest will be payable to Holders whose Notes will be subject to redemption by the Issuer.

Sinking Fund

The Issuer is not required to make mandatory redemption payments or sinking fund payments with respect to the Notes.

Redemption at Maturity

On April 1, 2027, the Issuer will redeem the Notes, that have not been previously redeemed or purchased and canceled at 100% of their principal amount plus accrued and unpaid interest thereon and Additional Amounts, if any, to the redemption date (subject to the right of Holders of record on the relevant record date to receive interest due on the relevant interest payment date).

Selection and Notice

If fewer than all of the Notes of any series are to be redeemed at any time, selection of the Notes of such series to be redeemed will be made by the Trustee on a *pro rata* basis or based on a method that most nearly approximates a *pro rata* selection (such as by way of pool factor) in accordance with the applicable procedures of Euroclear, Clearstream or DTC, as applicable, unless otherwise required by law or applicable stock exchange, clearing system or depositary requirements; provided, however, that no Book-Entry Interest of less than $200,000 in principal amount, with respect to Dollar Notes, or €100,000 in principal amount, with respect to Euro Notes, may be redeemed in part.

For so long as the Notes are listed on the Luxembourg Stock Exchange and the rules of the Luxembourg Stock Exchange so require, the Issuer shall publish notice of redemption in a daily newspaper with general circulation in Luxembourg (which is expected to be the *Luxemburger Wort*) and in addition to such publication, not less than 10 nor more than 60 days prior to the redemption date, mail such notice to Holders by first-class mail, postage prepaid, at their respective addresses as they appear on the registration books of the Registrar. While in global form, notices to Holders may be delivered via DTC, Euroclear and Clearstream, as applicable, in lieu of notice via first-class mail. Such notice of redemption may also be published on the website of the Luxembourg Stock Exchange (*www.bourse.lu*) in lieu of publication in the *Luxemburger Wort* so long as the rules of the Luxembourg Stock Exchange are complied with.

If any Note is to be redeemed in part only, the notice of redemption that relates to that Note shall state the portion of the principal amount thereof to be redeemed. In the case of a Definitive Registered Note, a new Definitive Registered Note in principal amount equal to the unredeemed portion of any Definitive Registered Note redeemed in part will be issued in the name of the Holder thereof upon cancellation of the original Definitive Registered Note. In the case of a Global Note, an appropriate notation will be made on such Note to decrease the principal amount thereof to an amount equal to the unredeemed portion thereof. Subject to the terms of the applicable redemption notice, Notes called for redemption become due on the date fixed for redemption. On and after the redemption date, interest ceases to accrue on Notes or portions of Notes called for redemption.

Redemption for Taxation Reasons

The Issuer may redeem the Notes of any series in whole, but not in part, at any time upon giving not less than 30 nor more than 60 days' prior written notice to the Holders of the Notes of the applicable series (which notice will be irrevocable) at a redemption price equal to 100% of the principal amount thereof, together with accrued and unpaid interest, if any, to the date fixed for redemption (a "*Tax Redemption Date*") (subject to the right of Holders of record on the relevant record date to receive interest due on the relevant interest payment date) and all Additional Amounts (as defined below under "*Withholding Taxes*"), if any, then due and which will become due on the Tax Redemption Date as a result of the redemption or otherwise, if any, if the Issuer determines in good faith that, as a result of:

(1) any change in, or amendment to, the law or treaties (or any regulations or rulings promulgated thereunder) of a Relevant Taxing Jurisdiction (as defined below) affecting taxation; or

(2) any amendment to, or change in an official application or interpretation of such laws, treaties, regulations or rulings (including a holding, judgment or order by a court of competent jurisdiction or a change in published administrative practice) (each of the foregoing in clauses (1) and (2), a "*Change in Tax Law*"),

a Payor (as defined below) is, or on the next interest payment date in respect of the Notes of such series would be, required to pay Additional Amounts with respect to such Notes (but, in the case of a Guarantor, only if the

payment giving rise to such requirement cannot be made by the Issuer or another Guarantor who can make such payment without the obligation to pay Additional Amounts) and such obligation cannot be avoided by taking reasonable measures available to the Payor (including, for the avoidance of doubt, the appointment of a new Paying Agent where this would be reasonable). Such Change in Tax Law must become effective on or after the date of this Offering Memorandum (or if the applicable Relevant Taxing Jurisdiction became a Relevant Taxing Jurisdiction on a date after the date of this Offering Memorandum, such later date). The foregoing provisions shall apply *mutatis mutandis* to any successor Person, after such successor Person becomes a party to the Indenture, with respect to a Change in Tax Law occurring after the time such successor Person becomes a party to the Indenture.

Notice of redemption for taxation reasons will be published in accordance with the procedures described under "*Selection and Notice*". Notwithstanding the foregoing, no such notice of redemption will be given (a) earlier than 60 days prior to the earliest date on which the Payor would be obligated to make such payment of Additional Amounts and (b) unless at the time such notice is given, such obligation to pay such Additional Amounts remains in effect. Prior to the publication or mailing of any notice of redemption of the Notes of the applicable series pursuant to the foregoing, the Issuer will deliver to the Trustee (a) an Officer's Certificate stating that it is entitled to effect such redemption and setting forth a statement of facts showing that the conditions precedent to its right so to redeem have been satisfied and (b) an opinion of an independent tax counsel of recognized standing to the effect that the Issuer has been or will become obligated to pay Additional Amounts as a result of a Change in Tax Law. The Trustee will accept and shall be entitled to rely on such Officer's Certificate and opinion as sufficient evidence of the satisfaction of the conditions precedent described above, without further inquiry, in which event it will be conclusive and binding on the Holders.

Withholding Taxes

All payments made by or on behalf of the Issuer or any Guarantor (each, a "*Payor*") under or with respect to the Notes or any Guarantee, as applicable, will be made free and clear of and without withholding or deduction for, or on account of, any Taxes unless such withholding or deduction is required by law. If any deduction or withholding for, or on account of, any Taxes imposed or levied by or on behalf of:

(a) the Republic of France or any political subdivision or Governmental Authority thereof or therein having power to tax;

(b) any jurisdiction from or through which payment on any such Note or any Guarantee is made by or on behalf of a Payor, or any political subdivision or Governmental Authority thereof or therein having the power to tax; or

(c) any other jurisdiction in which a Payor is incorporated, organized, engaged in business for tax purposes, or otherwise considered to be a resident for tax purposes, or any political subdivision or Governmental Authority thereof or therein having the power to tax (each of clause (a), (b) and (c), a "*Relevant Taxing Jurisdiction*"),

will at any time be required by law to be made from any payments made by or on behalf of the Payor or the Paying Agent under or with respect to any Note or any Guarantee, including, without limitation, payments of principal, redemption price, interest or premium, if any, the Payor will pay (together with such payments) such additional amounts (the "*Additional Amounts*") as may be necessary in order that the net amounts received in respect of such payments by the relevant Holder, after such withholding, or deduction, will not be less than the amounts which would have been received in respect of such payments in the absence of such withholding or deduction; *provided*, *however*, that no such Additional Amounts will be payable for or on account of:

(1) any Taxes that would not have been so imposed but for the existence of any present or former connection between the relevant Holder (or between a fiduciary, settlor, beneficiary, partner, member or shareholder of, or possessor of power over the relevant Holder, if the relevant Holder is an estate, nominee, trust, partnership, limited liability company or corporation) and the Relevant Taxing Jurisdiction (including, without limitation, being resident for tax purposes, or being a citizen or resident or national of, or carrying on a business for tax purposes, or maintaining a permanent establishment in, or being physically present in, the Relevant Taxing Jurisdiction, or concurrently holding shares of the Issuer or being otherwise related party of the Issuer) but excluding, in each case, any connection arising solely from the acquisition, ownership, holding or sale of such Note or the receipt of any payment or the exercise or enforcement of rights under such Note, the Indenture or a Guarantee;

(2) any Tax that is imposed or withheld solely by reason of the failure by the Holder or the beneficial owner of the Note to comply with a written request of the Payor addressed to the Holder, after reasonable notice (at

least 60 days before any such withholding would be payable), to provide certification, information, documents or other evidence concerning the nationality, residence or identity of the Holder or such beneficial owner or to make any declaration or similar claim or satisfy any other reporting requirement relating to such matters, which is required by a statute, treaty, regulation or administrative practice of the Relevant Taxing Jurisdiction as a precondition to exemption from all or part of such Tax;

(3) any Taxes, to the extent that such Taxes were imposed as a result of the presentation of the Note for payment (where presentation is required) more than 30 days after the relevant payment is first made available for payment to the Holder (except to the extent that the Holder would have been entitled to Additional Amounts had the Note been presented on the last day of such 30 day period);

(4) any Taxes that are payable otherwise than by deduction or withholding from a payment made under or with respect to the Notes or any Guarantee;

(5) any estate, inheritance, gift, sales, transfer, personal property or similar tax, assessment or other governmental charge;

(6) any Taxes imposed in connection with a Note presented for payment by or on behalf of a Holder or beneficial owner who would have been able to avoid such Tax by presenting the relevant Note to, or otherwise accepting payment from, another Paying Agent in a member state of the European Union;

(7) any withholding or deduction required to be made by reason of the Holder or the beneficial owner of the Note concurrently being a shareholder of the Payor;

(8) any Taxes that are payable with respect to a Holder who is a fiduciary or a partnership or any person other than the beneficial owner of the Notes, to the extent that the beneficiary or settler with respect to such fiduciary, the member of such partnership or the beneficial owner would not have been entitled to Additional Amounts had such beneficiary, settler, member or beneficial owner held such Notes directly; or

(9) any combination of the items (1) through (8) above.

Notwithstanding any other provision of the Indenture, any amounts to be paid on the Notes by or on behalf of the Issuer will be paid net of any deduction or withholding imposed or required pursuant to an agreement described in Section 1471(b) of the Code, or otherwise imposed pursuant to Sections 1471 through 1474 of the Code (or any regulations thereunder or official interpretations thereof) or an intergovernmental agreement between the United States and another jurisdiction facilitating the implementation thereof (or any fiscal or regulatory legislation, rules or practices implementing such an intergovernmental agreement) (any such withholding or deduction, a "*FATCA Withholding*"). Neither the Issuer nor any other person will be required to pay any Additional Amounts in respect of FATCA Withholding.

The Payor will (i) make any required withholding or deduction and (ii) remit the full amount deducted or withheld to the Relevant Taxing Jurisdiction in accordance with applicable law. The Payor will use all reasonable efforts to obtain certified copies of tax receipts evidencing the payment of any Taxes so deducted or withheld from each Relevant Taxing Jurisdiction imposing such Taxes and will provide such certified copies, or if, notwithstanding the Payor's reasonable efforts to obtain such tax receipts, such tax receipts are not available, certified copies of other reasonable evidence of such payments as soon as reasonably practicable to the Trustee. Such copies shall be made available to the Holders upon request and will be made available at the offices of the Paying Agent.

If any Payor is obligated to pay Additional Amounts under or with respect to any payment made on any Note or any Guarantee, at least 45 days prior to the date of such payment, the Payor will deliver to the Trustee an Officer's Certificate stating the fact that Additional Amounts will be payable and the amount estimated to be so payable and such other information necessary to enable the Paying Agent to pay Additional Amounts on the relevant payment date (unless such obligation to pay Additional Amounts arises less than 30 days prior to the relevant payment date, in which case the Payor may deliver such Officer's Certificate as promptly as practicable after the date that is 30 days prior to the payment date). The Trustee and the Paying Agent shall be entitled to rely solely on such Officer's Certificate as conclusive proof that such payments are necessary.

Wherever in the Indenture, the Notes or this "*Description of the Notes*" there is mentioned, in any context:

(1) the payment of principal;

(2) purchase prices in connection with a redemption or repurchase of Notes;

(3) interest; or

(4) any other amount payable on or with respect to any of the Notes or any Guarantee,

such reference shall be deemed to include payment of Additional Amounts to the extent that, in such context, Additional Amounts are, were or would be payable in respect thereof.

The Payor will pay (and will indemnify the Holder or beneficial owner for) any present or future stamp, issue, registration, transfer, court or documentary taxes, or similar charges or levies (including any related interest, penalties or additions to tax) or any other excise, property or similar taxes or similar charges or levies (including any related interest, penalties or additions to tax) that arise in a Relevant Taxing Jurisdiction from the execution, delivery or registration of any Notes, any Guarantee, the Indenture or any other document or instrument in relation thereto including the Collateral and the Security Documents (other than, in each case, (A) in connection with a transfer of the Notes after this Offering or (B) to the extent that such stamp, issue, registration, transfer, court or documentary taxes, or any other excise, property or similar taxes or similar charges or levies becomes payable upon a voluntary registration made by the Holder if such registration is not required by any applicable law or not necessary to enforce the rights or obligations of any Holder in relation to the Notes, any Guarantees, the Indenture, or any other document or instrument in relation thereto) or the receipt of any payments with respect thereto or any such taxes or similar charges or levies (including any related interest, penalties or additions to tax) imposed by any jurisdiction as a result of, or in connection with, the enforcement of the Notes or any Guarantee or any other document or instrument in relation thereto including the Collateral and the Security Documents (limited, solely in the case of any such taxes or similar charges or levies attributable to the receipt of any payments with respect thereto, to any such taxes imposed in a Relevant Taxing Jurisdiction in respect of which the payment of Additional Amounts is not excluded under clauses (1) through (8) of the first paragraph of this covenant or any combination thereof).

The foregoing obligations will survive any termination, defeasance or discharge of the Indenture or any transfer by a Holder or beneficial owner of its Notes, and will apply *mutatis mutandis* to any jurisdiction in which any successor to a Payor is incorporated, organized, engaged in business for tax purposes or otherwise resident for tax purposes, or any jurisdiction from or through which any payment under, or with respect to the Notes is made by or on behalf of such Payor, or any political subdivision or taxing authority or agency thereof or therein.

Change of Control

If a Change of Control occurs, subject to the terms of the covenant described under this heading "*Change of Control*", each Holder will have the right to require the Issuer to repurchase all or any part (in integral multiples of $1,000 for Dollar Notes and €1,000 for Euro Notes and provided that Dollar Notes of $200,000 or less and Euro Notes of €100,000 or less may only be repurchased in whole and not in part) of such Holder's Notes at a purchase price in cash equal to 101% of the principal amount of the Notes, plus accrued and unpaid interest to the date of purchase (subject to the right of Holders of record on the relevant record date to receive interest due on the relevant interest payment date); *provided*, *however*, that the Issuer shall not be obligated to repurchase the Notes as described under this heading "*Change of Control*" in the event and to the extent that it has unconditionally exercised its right to redeem all of the Notes as described under "*—Optional Redemption*" or all conditions to such redemption have been satisfied or waived.

Unless the Issuer has unconditionally exercised its right to redeem all the Notes as described under "*—Optional Redemption*" or all conditions to such redemption have been satisfied or waived, no later than the date that is 60 days after any Change of Control, the Issuer will mail a notice (the "*Change of Control Offer*") to each Holder of Notes, with a copy to the Trustee:

(1) stating that a Change of Control has occurred or may occur and that such Holder has the right to require the Issuer to purchase all or any part (in integral multiples of $1,000 for Dollar Notes and €1,000 for Euro Notes and provided that Dollar Notes of $200,000 or less and Euro Notes of €100,000 or less may only be repurchased in whole and not in part) of such Holder's Notes at a purchase price in cash equal to 101% of the principal amount of such Notes plus accrued and unpaid interest to, but not including, the date of purchase (subject to the right of Holders of record on a record date to receive interest on the relevant interest payment date) and Additional Amounts, if any (the "*Change of Control Payment*");

(2) stating the repurchase date (which shall be no earlier than 10 days nor later than 60 days from the date such notice is mailed) and the record date (the "*Change of Control Payment Date*");

(3) stating that any Note accepted for payment pursuant to the Change of Control Offer will cease to accrue interest on the Change of Control Payment Date unless the Change of Control Payment is not paid, and that any Notes or any part thereof not tendered will continue to accrue interest;

(4) describing the circumstances and relevant facts regarding the transaction or transactions that constitute the Change of Control;

(5) describing the procedures determined by the Issuer, consistent with the Indenture, that a Holder must follow in order to have its Notes repurchased; and

(6) if such notice is mailed prior to the occurrence of a Change of Control, stating that the Change of Control Offer is conditional on the occurrence of such Change of Control.

On or before 3:00 p.m. London time, on the Business Day immediately preceding the Change of Control Payment Date, if the Change of Control shall have occurred, the Issuer will, to the extent lawful:

(1) accept for payment all Notes or portion thereof properly tendered pursuant to the Change of Control Offer;

(2) deposit with the Paying Agent an amount equal to the Change of Control Payment in respect of all Notes so tendered;

(3) deliver or cause to be delivered to the Trustee an Officer's Certificate stating the aggregate principal amount of Notes or portions of the Notes being purchased by the Issuer in the Change of Control Offer;

(4) in the case of Global Notes, deliver, or cause to be delivered, to the Paying Agent the Global Notes in order to reflect thereon the portion of such Notes or portions thereof that have been tendered to and purchased by the Issuer; and

(5) in the case of Definitive Registered Notes, deliver, or cause to be delivered, to the Registrar for cancellation all Definitive Registered Notes accepted for purchase by the Issuer.

If any Definitive Registered Notes have been issued, the Paying Agent will promptly mail to each Holder of Definitive Registered Notes so tendered the Change of Control Payment for such Notes, and the Trustee (or an authenticating agent) will, at the cost of the Issuer, promptly authenticate and mail (or cause to be transferred by book-entry) to each Holder of Definitive Registered Notes a new Definitive Registered Note equal in principal amount to the unpurchased portion of the Notes surrendered, if any; *provided* that that each such new Dollar Note will be in a principal amount that is at least $200,000 and integral multiples of $1,000 in excess thereof and each such new Euro Note will be in a principal amount that is at least €100,000 and integral multiples of €1,000 in excess thereof.

For so long as the Notes are listed on the Luxembourg Stock Exchange and the rules of such exchange so require, the Issuer will publish notices relating to the Change of Control Offer in a daily newspaper with general circulation in Luxembourg (which is expected to be the *Luxemburger Wort*) or to the extent and in the manner permitted by such rules, post such notices on the official website of the Luxembourg Stock Exchange (*www.bourse.lu*).

Except as described above with respect to a Change of Control, the Indenture does not contain provisions that permit the Holders to require that the Issuer repurchase or redeem the Notes in the event of a takeover, recapitalization or similar transaction. The existence of a Holder's right to require the Issuer to repurchase such Holder's Notes upon the occurrence of a Change of Control may deter a third party from seeking to acquire the Issuer or its Subsidiaries in a transaction that would constitute a Change of Control.

The Issuer will not be required to make a Change of Control Offer upon a Change of Control if a third party makes the Change of Control Offer in the manner, at the times and otherwise in compliance with the requirements set forth in the Indenture applicable to a Change of Control Offer made by the Issuer and purchases all Notes validly tendered and not withdrawn under such Change of Control Offer. Notwithstanding anything to the contrary contained herein, a Change of Control Offer may be made in advance of a Change of Control, conditioned upon the consummation of such Change of Control, if a definitive agreement is in place providing for the Change of Control at the time the Change of Control Offer is made.

The Issuer will comply, to the extent applicable, with the requirements of Section 14(e) of the Exchange Act and any other securities laws or regulations in connection with the repurchase of Notes pursuant to this covenant. To the extent that the provisions of any securities laws or regulations conflict with provisions of the Indenture, the Issuer will comply with the applicable securities laws and regulations and will not be deemed to have breached its obligations under the Change of Control provisions of the Indenture by virtue of the conflict.

The Issuer's ability to repurchase Notes issued by it pursuant to a Change of Control Offer may be limited by a number of factors. The occurrence of the events that constitute a Change of Control would allow each lender under the Revolving Credit Facility to cancel its commitments and require repayment of all amounts owing to it under or in connection with the Revolving Credit Facility (or, in relation to letters of credit issued under the

Revolving Credit Facility Agreement, each issuing bank will be entitled to require that any such letters of credit issued by it are prepaid and cancelled). Future Indebtedness of the Issuer or its Subsidiaries may also contain prohibitions of certain events that would constitute a Change of Control or require such Indebtedness to be repurchased upon a Change of Control. Moreover, the exercise by the Holders of their right to require the Issuer to repurchase the Notes could cause a default under, or require a repurchase of, such Indebtedness, even if the Change of Control itself does not, due to the financial effect of such repurchase on the Issuer. Finally, the Issuer's ability to pay cash to the Holders upon a repurchase may be limited by the Issuer's then existing financial resources. There can be no assurance that sufficient funds will be available when necessary to make any required repurchases. See "*Risk Factors—Risks Related to the Notes, the Guarantees and the Collateral—We may not have the ability to raise the funds necessary to finance a change of control offer*".

If Holders of not less than 90% in aggregate principal amount of the outstanding Notes validly tender and do not withdraw such Notes in a Change of Control Offer and the Issuer, or any third party making a Change of Control Offer in lieu of the Issuer as described above, purchases all of the Notes validly tendered and not withdrawn by such Holders, the Issuer or such third party will have the right, upon not less than 10 days' nor more than 60 days' notice (*provided* that such notice is given not more than 30 days following such purchases pursuant to the Change of Control Offer described above) to redeem all Notes that remain outstanding following such purchase at a redemption price in cash equal to the applicable Change of Control Payment plus, to the extent not included in the Change of Control Payment, accrued and unpaid interest, if any, to, but not including, the date of redemption.

The definition of "Change of Control" includes a disposition of all or substantially all of the property and assets of the Issuer and its Restricted Subsidiaries taken as a whole to specified other Persons. Although there is a limited body of case law interpreting the phrase "substantially all", there is no precise established definition of the phrase "substantially all" under applicable law. Accordingly, in certain circumstances there may be a degree of uncertainty as to whether a particular transaction would involve a disposition of "all or substantially all" of the property or assets of a Person. As a result, it may be unclear as to whether a Change of Control has occurred and whether a Holder may require the Issuer to make an offer to repurchase the Notes as described above.

The provisions of the Indenture relating to the Issuer's obligation to make an offer to repurchase the Notes as a result of a Change of Control may be waived or modified with the written consent of Holders of a majority in outstanding principal amount of the Notes.

Certain Covenants

Limitation on Indebtedness

The Issuer will not, and will not permit any of its Restricted Subsidiaries to, Incur any Indebtedness (including Acquired Indebtedness); *provided, however*, that the Issuer and any Restricted Subsidiary may Incur Indebtedness (including Acquired Indebtedness) if on the date of such Incurrence and after giving *pro forma* effect thereto (including *pro forma* application of the proceeds thereof), the Fixed Charge Coverage Ratio for the Issuer and its Restricted Subsidiaries would have been at least 2.0 to 1.0.

The first paragraph of this covenant will not prohibit the Incurrence of the following Indebtedness ("*Permitted Debt*"):

(1) Indebtedness Incurred by the Issuer or any Restricted Subsidiary pursuant to any Credit Facility (including in respect of letters of credit or bankers' acceptances issued or created thereunder), and any Refinancing Indebtedness in respect thereof and guarantees in respect of such Indebtedness in a maximum aggregate principal amount at any time outstanding not exceeding the greater of (a) $100.0 million and (b) 25.0% of Consolidated EBITDA, *plus* (c) in the case of any refinancing of any Indebtedness permitted under this clause (1) or any portion thereof, the aggregate amount of fees, underwriting discounts, premiums and other costs and expenses Incurred in connection with such refinancing;

(2) (a) Guarantees by the Issuer or any Restricted Subsidiary of Indebtedness of the Issuer or any Restricted Subsidiary, so long as the Incurrence of such Indebtedness is permitted under the terms of the Indenture; or

(b) without limiting the covenant described under "*—Limitation on Liens*", Indebtedness arising by reason of any Lien granted by or applicable to any Person securing Indebtedness of the Issuer or any Restricted Subsidiary so long as the Incurrence of such Indebtedness is permitted under the terms of the Indenture;

(3) Indebtedness of the Issuer owing to and held by any Restricted Subsidiary or Indebtedness of a Restricted Subsidiary owing to and held by the Issuer or any Restricted Subsidiary; *provided*, *however*, that:

   (a) in the case of Indebtedness owing by the Issuer or a Guarantor to and held by any Restricted Subsidiary that is not a Guarantor (except in respect of intercompany current liabilities incurred in the ordinary course of business in connection with cash management, cash pooling or foreign exchange management of the Issuer and its Restricted Subsidiaries), such Indebtedness shall be unsecured and expressly subordinated in right of payment to the prior payment in full in cash of all obligations with respect to the Notes, in the case of the Issuer, and the respective Guarantee, in the case of a Guarantor, in each case, solely if, and to the extent, required by the Intercreditor Agreement; and

   (b) (i) any subsequent issuance or transfer of Capital Stock or any other event which results in any such Indebtedness being beneficially held by a Person other than the Issuer or a Restricted Subsidiary of the Issuer; and (ii) any sale or other transfer of any such Indebtedness to a Person other than the Issuer or a Restricted Subsidiary of the Issuer shall be deemed, in each case, to constitute an Incurrence of such Indebtedness by the Issuer or such Restricted Subsidiary, as the case may be, not permitted by this clause (3);

(4) (a) Indebtedness represented by the Notes (other than any Additional Notes) outstanding on the Issue Date, the related Guarantees, and any related "parallel debt" obligations under the Intercreditor Agreement, any Additional Intercreditor Agreement and the Security Documents, (b) any Indebtedness (other than Indebtedness described in clause (3) of this paragraph) outstanding on the Issue Date after giving effect to the Transactions, (c) Refinancing Indebtedness Incurred in respect of any Indebtedness described in this clause (4) or clause (5) of this paragraph or Incurred pursuant to the first paragraph of this covenant and (d) Management Advances;

(5) Indebtedness of any Person (a) outstanding on the date on which such Person becomes a Restricted Subsidiary or is merged, consolidated, amalgamated or otherwise combined with (including pursuant to any acquisition of assets and assumption of related liabilities) the Issuer or any Restricted Subsidiary or (b) Incurred to provide all or a portion of the funds utilized to consummate the transaction or series of related transactions pursuant to which any Person became a Restricted Subsidiary or was otherwise merged, consolidated amalgamated or otherwise combined with the Issuer or a Restricted Subsidiary, in the case of this clause (5), in an aggregate principal amount not to exceed the sum of: (I) the greater of $40.0 million and 10.0% of Consolidated EBITDA at the time of Incurrence *plus* (II) an additional aggregate principal amount so long as, at the time of Incurrence, after giving *pro forma* effect to such Incurrence or acquisition, merger, consolidation, amalgamation or other combination, (x) the Issuer would have been able to Incur $1.00 of additional Indebtedness pursuant to the Fixed Charge Coverage Ratio for the Issuer and its Restricted Subsidiaries in the first paragraph of this covenant or (y) the Fixed Charge Coverage Ratio for the Issuer and its Restricted Subsidiaries would not be less than it was immediately prior to giving effect to such Incurrence or acquisition, merger, consolidation, amalgamation or other combination (with any Indebtedness Incurred under subclause (I) on the date of determination of the Fixed Charge Coverage Ratio being excluded from the calculation of such ratio under this subclause (II) and with the Issuer's or any Restricted Subsidiary's ability to Incur Indebtedness under subclause (II) before utilizing subclause (I)); *provided*, *however*, that the aggregate principal amount of Indebtedness Incurred by Restricted Subsidiaries that are not Guarantors pursuant to subclause (b) of this clause (5) and, without double-counting, all Refinancing Indebtedness in respect thereof shall not exceed $150.0 million;

(6) Indebtedness under Hedging Obligations not for speculative purposes (as determined in good faith by the Issuer);

(7) Indebtedness consisting of (a) Capitalized Lease Obligations, Purchase Money Obligations or mortgage financings or (b) Indebtedness otherwise Incurred to finance the purchase, lease, rental or cost of design, construction, installation or improvement of property (real or personal) or equipment that is used or useful in a Similar Business, whether through the direct purchase of assets or the Capital Stock of any Person owning such assets, and, in the case of (a) and (b), any Indebtedness which refinances, replaces or refunds such Indebtedness, in an aggregate outstanding principal amount which, when taken together with the principal amount of all other Indebtedness Incurred pursuant to this clause (7) and then outstanding, will not exceed at any time outstanding the greater of $250.0 million and 62.5% of Consolidated EBITDA;

(8) Indebtedness in respect of (a) workers' compensation claims, self-insurance obligations, bid, performance, indemnity, surety, judgment, appeal, advance payment, customs, VAT or other tax or other guarantees or other similar bonds, instruments or obligations and completion guarantees and warranties provided by the Issuer or a Restricted Subsidiary or relating to liabilities, obligations, indemnities or guarantees Incurred in

the ordinary course of business or in respect of any governmental or legal or regulatory requirement, (b) letters of credit, bankers' acceptances, guarantees or other similar instruments or obligations issued or relating to liabilities or obligations Incurred in the ordinary course of business or in respect of any governmental or legal or regulatory requirement, *provided*, *however*, that upon the drawing of such letters of credit or other similar instruments, the obligations are reimbursed within 30 days following such drawing, (c) the financing of insurance premiums in the ordinary course of business and (d) any customary treasury and/or cash management services, including treasury, depository, overdraft, credit card processing, credit or debit card, purchase card, electronic funds transfer, the collection of checks and direct debits, cash pooling and other cash management arrangements, in each case, in the ordinary course of business;

(9) Indebtedness arising from agreements providing for customary guarantees, indemnification, obligations in respect of earnouts or other adjustments of purchase price or, in each case, similar obligations, in each case, Incurred or assumed in connection with the acquisition or disposition of any business or assets or Person or any Capital Stock of a Subsidiary (other than Guarantees of Indebtedness Incurred by any Person acquiring or disposing of such business or assets or such Subsidiary for the purpose of financing such acquisition or disposition); *provided* that, in the case of a disposition, the maximum liability of the Issuer and its Restricted Subsidiaries in respect of all such Indebtedness shall at no time exceed the gross proceeds, including the fair market value of non-cash proceeds (measured at the time received and without giving effect to any subsequent changes in value), actually received by the Issuer and its Restricted Subsidiaries in connection with such disposition;

(10) (a) Indebtedness arising from (i) Bank Products and/or (ii) the honoring by a bank or other financial institution of a check, draft or similar instrument drawn against insufficient funds; *provided, however*, that, in the case of this clause (ii), such Indebtedness is extinguished within five Business Days of Incurrence;

(b) customer deposits and advance payments received in the ordinary course of business from customers for goods or services purchased in the ordinary course of business;

(c) Indebtedness owed on a short-term basis of no longer than 30 days to banks and other financial institutions incurred in the ordinary course of business of the Issuer and its Restricted Subsidiaries with such banks or financial institutions that arises in connection with ordinary banking arrangements to manage cash balances of the Issuer and its Restricted Subsidiaries; and

(d) Indebtedness incurred by a Restricted Subsidiary in connection with bankers' acceptances, discounted bills of exchange or the discounting or factoring of receivables for credit management of bad debt purposes, in each case incurred or undertaken in the ordinary course of business;

(11) Indebtedness in an aggregate outstanding principal amount which, when taken together with any Refinancing Indebtedness in respect thereof and the principal amount of all other Indebtedness Incurred pursuant to this clause (11) and then outstanding, will not exceed the greater of $100.0 million and 25.0% of Consolidated EBITDA;

(12) Indebtedness Incurred by the Issuer or any Restricted Subsidiary under a Qualified Receivables Financing;

(13) Indebtedness of the Issuer or any Guarantor in an aggregate outstanding principal amount which, when taken together with any Refinancing Indebtedness in respect thereof and the principal amount of all other Indebtedness Incurred pursuant to this clause (13) and then outstanding, will not exceed 100% of the Net Cash Proceeds received by the Issuer from the issuance or sale (other than to a Restricted Subsidiary) of its Capital Stock (other than Disqualified Stock or an Excluded Contribution) or otherwise contributed to the equity (other than through the issuance of Disqualified Stock or an Excluded Contribution) of the Issuer, in each case, subsequent to the Issue Date; *provided, however*, that (i) any such Net Cash Proceeds that are so received or contributed shall be excluded for purposes of making Restricted Payments under the first paragraph and clauses (1), (6) and (10) of the third paragraph of the covenant described below under "*Certain Covenants—Limitation on Restricted Payments*" to the extent the Issuer and its Restricted Subsidiaries Incur Indebtedness in reliance thereon and (ii) any Net Cash Proceeds that are so received or contributed shall be excluded for purposes of Incurring Indebtedness pursuant to this clause (13) to the extent the Issuer or any of its Restricted Subsidiaries makes a Restricted Payment under the first paragraph and clauses (1), (6) and (10) of the third paragraph of the covenant described below under "*—Certain Covenants—Limitation on Restricted Payments*" in reliance thereon;

(14) Indebtedness under daylight borrowing facilities incurred in connection with any refinancing of Indebtedness (including by way of set-off or exchange) so long as any such Indebtedness is repaid within five days of the date on which such Indebtedness is Incurred; and

(15) Indebtedness constituting (a) Acquired Indebtedness Incurred as a result of an exercise by the Issuer or any Restricted Subsidiary of the GSS Purchase Option or (b) Capitalized Lease Obligations Incurred as a result

of the Issuer or any Restricted Subsidiary entering into a vessel charter agreement as a result of the occurrence of a Step-In Event in an aggregate principal amount, with respect to (a) and (b), not to exceed at any time outstanding $150.0 million.

Notwithstanding the foregoing, the aggregate principal amount of outstanding Indebtedness Incurred by Restricted Subsidiaries that are not Guarantors pursuant to the first paragraph of this covenant and clauses (1) and (11) of the definition of Permitted Debt and, without double counting, all Refinancing Indebtedness in respect of any of the foregoing, in each case, Incurred by Restricted Subsidiaries that are not Guarantors shall not exceed the greater of $100.0 million and 25.0% of Consolidated EBITDA.

For purposes of determining compliance with, and the outstanding principal amount of any particular Indebtedness Incurred pursuant to and in compliance with, this covenant:

(1) in the event that Indebtedness meets the criteria of more than one of the types of Indebtedness described in the first and second paragraphs of this covenant, the Issuer, in its sole discretion, will classify, and may from time to time reclassify, such item of Indebtedness and only be required to include the amount and type of such Indebtedness in one of the clauses of the second paragraph or the first paragraph of this covenant;

(2) all Indebtedness under the Revolving Credit Facility shall be deemed initially Incurred under clause (1) of the second paragraph of this covenant and not the first paragraph or clause (4)(b) of the second paragraph of this covenant, and may not be reclassified;

(3) Guarantees of, or obligations in respect of Bank Products, letters of credit, bank guarantees, surety, performance bonds, appeal bonds, completion guarantees, cost-overrun guarantees, advance payment bonds, bankers' acceptances or other similar instruments or obligations relating to, or Liens securing, Indebtedness that is otherwise included in the determination of a particular amount of Indebtedness shall not be included;

(4) if obligations in respect of letters of credit, bankers' acceptances or other similar instruments are Incurred pursuant to any Credit Facility and are being treated as Incurred pursuant to the first paragraph above or pursuant to clause (1), (7) or (11) of the second paragraph above and the letters of credit, bankers' acceptances or other similar instruments relate to other Indebtedness, then such other Indebtedness shall not be included;

(5) the principal amount of any Disqualified Stock of the Issuer or a Restricted Subsidiary, or Preferred Stock of a Restricted Subsidiary, will be equal to the greater of the maximum mandatory redemption or repurchase price (not including, in either case, any redemption or repurchase premium) or the liquidation preference thereof;

(6) Indebtedness permitted by this covenant need not be permitted solely by reference to one provision permitting such Indebtedness but may be permitted in part by one such provision and in part by one or more other provisions of this covenant permitting such Indebtedness;

(7) the amount of Indebtedness issued at a price that is less than the principal amount thereof will be equal to the amount of the liability in respect thereof determined on the basis of IFRS;

(8) (a) in the case of any Indebtedness Incurred to refinance any other Indebtedness, any Indebtedness Incurred to fund accrued and/or capitalization interest, accreted value or original issue discount, or any fees, costs and expenses, including premiums, defeasance costs, indemnity fees, upfront fees or any required additional tax gross-up amounts, will not be deemed to be Indebtedness for the purpose of calculating any basket, permission or threshold under which such refinancing Indebtedness is permitted to be Incurred and (b) notwithstanding anything in this covenant to the contrary, in the case of any Indebtedness Incurred to refinance Indebtedness initially Incurred in reliance on a clause of the second paragraph of this covenant, or the third paragraph of this covenant, in each case, measured by reference to a percentage of Consolidated EBITDA, if such refinancing would cause the percentage of Consolidated EBITDA restriction to be exceeded if calculated based on the percentage of Consolidated EBITDA on the date of such refinancing, such percentage of Consolidated EBITDA restriction shall not be deemed to be exceeded so long as the principal amount of such refinancing Indebtedness does not exceed the principal amount of such Indebtedness being refinanced, *plus* accrued and/or capitalized interest, accreted value or original issue discount or any fees, costs and expenses, including premiums, defeasance costs, indemnity fees, upfront fees or any required additional tax gross-up amounts, in connection with such refinancing; and

(9) in the event that the Issuer or a Restricted Subsidiary enters into or increases commitments under a revolving credit facility, enters into any commitment to Incur or issue Indebtedness or commits to Incur any Lien pursuant to clause (30) of the definition of "Permitted Liens" or any Permitted Collateral Lien, the Incurrence or issuance thereof for all purposes under the Indenture, including, without limitation, for

purposes of calculating the Fixed Charge Coverage Ratio, the Consolidated Net Leverage Ratio or the Consolidated Senior Secured Net Leverage Ratio, as applicable, or use of clauses (1) through (15) of the second paragraph of this covenant (if any) for borrowings and re-borrowings thereunder (and including issuance and creation of letters of credit and bankers' acceptances thereunder) will, at the Issuer's option, either (a) be determined on the date of such revolving credit facility or such entry into or increase in commitments (assuming that the full amount thereof has been borrowed as of such date) or other Indebtedness, Disqualified Stock or Preferred Stock, and, if such Fixed Charge Coverage Ratio, Consolidated Net Leverage Ratio or Consolidated Senior Secured Net Leverage Ratio, as applicable, test or other provision of the Indenture is satisfied with respect thereto at such time, any borrowing or re-borrowing thereunder (and the issuance and creation of letters of credit and bankers' acceptances thereunder) will be permitted under this covenant and under the covenant described under "*—Limitation on Liens*" irrespective of the Fixed Charge Coverage Ratio, Consolidated Net Leverage Ratio, Consolidated Senior Secured Net Leverage Ratio, as applicable, or other provision of the Indenture at the time of any borrowing or re-borrowing (or issuance or creation of letters of credit or bankers' acceptances thereunder) (the committed amount permitted to be borrowed or reborrowed (and the issuance and creation of letters of credit and bankers' acceptances) on a date pursuant to the operation of this clause (a) shall be the "*Reserved Indebtedness Amount*" as of such date for purposes of the Fixed Charge Coverage Ratio, Consolidated Net Leverage Ratio, Consolidated Senior Secured Net Leverage Ratio, as applicable, or other provision of the Indenture, and, to the extent of the usage of clauses (1) through (15) of the second paragraph of this covenant (if any), shall be deemed to be Incurred and outstanding under such clauses) or (b) be determined on the date such amount is borrowed pursuant to any such facility or increased commitment, and, in each case, the Issuer may revoke such determination at any time and from time to time.

Accrual of interest, accrual of dividends, the accretion of accreted value, the accretion or amortization of original issue discount, the payment of interest in the form of additional Indebtedness, the payment of dividends in the form of additional shares of Preferred Stock or Disqualified Stock or the reclassification of commitments or obligations not treated as Indebtedness due to a change in IFRS will not be deemed to be an Incurrence of Indebtedness for purposes of the covenant described under this "*—Limitation on Indebtedness*". Except as otherwise specified, the amount of any Indebtedness outstanding as of any date shall be (a) the accreted value thereof in the case of any Indebtedness issued with original issue discount and (b) the principal amount, or liquidation preference thereof, in the case of any other Indebtedness.

If at any time an Unrestricted Subsidiary becomes a Restricted Subsidiary, any Indebtedness of such Subsidiary shall be deemed to be Incurred by a Restricted Subsidiary as of such date (and, if such Indebtedness is not permitted to be Incurred as of such date under the covenant described under this "*—Limitation on Indebtedness*", the Issuer shall be in Default of this covenant).

For purposes of determining compliance with any U.S. dollar-denominated restriction on the Incurrence of Indebtedness, the Dollar Equivalent of the principal amount of Indebtedness denominated in another currency shall be calculated based on the relevant currency exchange rate in effect on (i) the date such Indebtedness was Incurred, in the case of term Indebtedness, or, at the option of the Issuer, first committed, in the case of Indebtedness Incurred under a revolving credit facility or (ii) at the Issuer's option, solely with respect to Indebtedness under any leases, the date of the historical consolidated financial statements of the Issuer contained in the most recent annual or quarterly report provided by the Issuer to the Trustee pursuant to the covenant entitled "*—Reports*" prior to the relevant compliance determination date (the date of such historical financial statements being referred to as the "*Relevant Financial Statements Date*"); *provided* that (a) if such Indebtedness is Incurred to refinance other Indebtedness denominated in a currency other than U.S. dollars, and such refinancing would cause the applicable U.S. dollar-denominated restriction to be exceeded if calculated at the relevant currency exchange rate in effect on the date of such refinancing or such historical financial statements, as applicable, such U.S. dollar-denominated restriction shall be deemed not to have been exceeded so long as the principal amount of such refinancing Indebtedness does not exceed the amount set forth in clause (2) of the definition of Refinancing Indebtedness; (b) the Dollar Equivalent of the principal amount of any such Indebtedness outstanding on the Issue Date shall be calculated based on the relevant currency exchange rate in effect on the Issue Date or, at the Issuer's option, solely with respect to Indebtedness under any leases, the Relevant Financial Statements Date; and (c) if any such Indebtedness that is denominated in a different currency is subject to a Currency Agreement (with respect to the U.S. dollar) covering principal amounts payable on such Indebtedness, the amount of such Indebtedness expressed in U.S. dollars will be adjusted to take into account the effect of such agreement.

Notwithstanding any other provision of this covenant, the maximum amount of Indebtedness that the Issuer or a Restricted Subsidiary may Incur pursuant to this covenant shall not be deemed to be exceeded solely as a result

of fluctuations in the exchange rate of currencies. The principal amount of any Indebtedness Incurred to refinance other Indebtedness, if Incurred in a different currency from the Indebtedness being refinanced, shall be calculated based on the currency exchange rate applicable to the currencies in which such refinancing Indebtedness is denominated that is in effect on the date of such refinancing.

Neither the Issuer nor any Guarantor will Incur any Indebtedness (including Permitted Debt) that is contractually subordinated in right of payment to any other Indebtedness of the Issuer or any Guarantor unless such Indebtedness is also contractually subordinated in right of payment to the Notes and the applicable Guarantee, if any, on substantially identical terms; *provided, however,* that no Indebtedness will be deemed to be contractually subordinated in right of payment to any other Indebtedness of the Issuer or any Guarantor solely by virtue of being unsecured or by virtue of being secured with different collateral or by virtue of being secured on a junior priority basis or by virtue of the application of waterfall or other payment ordering provisions affecting different tranches of Indebtedness.

Limitation on Restricted Payments

The Issuer will not, and will not permit any of its Restricted Subsidiaries, directly or indirectly, to:

(1) declare or pay any dividend or make any other payment or distribution on or in respect of the Issuer's or any Restricted Subsidiary's Capital Stock (including any payment in connection with any merger or consolidation involving the Issuer or any of its Restricted Subsidiaries) except:

  (i) dividends or distributions payable in Capital Stock of the Issuer (other than Disqualified Stock) or in options, warrants or other rights to purchase such Capital Stock of the Issuer; and

  (ii) dividends or distributions payable to the Issuer or a Restricted Subsidiary (and, in the case of any such Restricted Subsidiary making such dividend or distribution, to holders of its Capital Stock other than the Issuer or another Restricted Subsidiary on no more than a *pro rata* basis, measured by value);

(2) purchase, redeem, retire or otherwise acquire for value any Capital Stock of the Issuer held by Persons other than the Issuer or a Restricted Subsidiary (other than in exchange for Capital Stock of the Issuer (other than Disqualified Stock));

(3) make any principal payment on or with respect to, or purchase, repurchase, redeem, defease or otherwise acquire or retire for value, prior to the scheduled maturity, scheduled repayment or scheduled sinking fund payment, any Subordinated Indebtedness (other than any such payment, purchase, repurchase, redemption, defeasance or other acquisition or retirement (a) in anticipation of satisfying a sinking fund obligation, principal installment or final maturity, in each case, due within one year of the date of payment, purchase, repurchase, redemption, defeasance or other acquisition or retirement and (b) of or with respect to any Indebtedness Incurred pursuant to clause (3) of the second paragraph of the covenant described under "*—Limitation on Indebtedness*")); or

(4) make any Restricted Investment in any Person,

(any such dividend, distribution, payment, purchase, redemption, repurchase, defeasance, other acquisition, retirement or Restricted Investment referred to in clauses (1) through (4) above are referred to herein as a "*Restricted Payment*"), if at the time the Issuer or such Restricted Subsidiary makes such Restricted Payment:

  (a) a Default or Event of Default shall have occurred and be continuing (or would result immediately thereafter therefrom);

  (b) the Issuer is not able to Incur $1.00 of additional Indebtedness pursuant to the first paragraph of the covenant described under "*—Limitation on Indebtedness*" after giving effect, on a *pro forma* basis, to such Restricted Payment; or

  (c) the aggregate amount of such Restricted Payment and all other Restricted Payments made subsequent to the Issue Date (and not returned or rescinded) (including Permitted Payments permitted below by clause (5) (without duplication), clause (10), clause (11) and clause (18) of the third paragraph of this covenant, but excluding all other Restricted Payments permitted by the third paragraph of this covenant) would exceed the sum of (without duplication):

    (i) 50% of Consolidated Net Income for the period (treated as one accounting period) from the first day of the fiscal quarter commencing immediately prior to the Issue Date to the end of the most recent fiscal quarter ending prior to the date of such Restricted Payment for which internal consolidated financial statements of the Issuer are available (or, in the case such Consolidated Net Income is a deficit, minus 100% of such deficit);

(ii) 100% of the aggregate Net Cash Proceeds, and the fair market value (as determined in accordance with the next succeeding paragraph) of property or assets or marketable securities, received by the Issuer from the issue or sale of its Capital Stock (other than Disqualified Stock) subsequent to the Issue Date or otherwise contributed to the equity (other than through the issuance of Disqualified Stock) of the Issuer subsequent to the Issue Date (other than (v) Capital Stock in each case sold to a Subsidiary of the Issuer, (w) Net Cash Proceeds or property or assets or marketable securities received from an issuance or sale of such Capital Stock to a Restricted Subsidiary or an employee stock ownership plan or trust established by the Issuer or any Subsidiary of the Issuer for the benefit of its employees to the extent funded by the Issuer or any Restricted Subsidiary, (x) Net Cash Proceeds or property or assets or marketable securities to the extent that any Restricted Payment has been made from such proceeds in reliance on clause (6) of the third paragraph of this covenant or (y) an Excluded Contribution);

(iii) 100% of the aggregate Net Cash Proceeds, and the fair market value (as determined in accordance with the next succeeding paragraph) of property or assets or marketable securities, received by the Issuer or any Restricted Subsidiary from the issuance or sale (other than to the Issuer or a Restricted Subsidiary or an employee stock ownership plan or trust established by the Issuer or any Subsidiary of the Issuer for the benefit of its employees to the extent funded by the Issuer or any Restricted Subsidiary) by the Issuer or any Restricted Subsidiary subsequent to the Issue Date of any Indebtedness that has been converted into or exchanged for Capital Stock of the Issuer (other than Disqualified Stock) (plus the amount of any cash, and the fair market value (as determined in accordance with the next succeeding paragraph) of property or assets or marketable securities, received by the Issuer or any Restricted Subsidiary upon such conversion or exchange) but excluding (v) Disqualified Stock or Indebtedness issued or sold to a Subsidiary of the Issuer, (w) Net Cash Proceeds to the extent that any Restricted Payment has been made from such proceeds in reliance on clause (6) of the third paragraph of this covenant and (x) an Excluded Contribution;

(iv) 100% of the aggregate Net Cash Proceeds, and the fair market value (as determined in accordance with the next succeeding paragraph) of property or assets or marketable securities, received by the Issuer or any Restricted Subsidiary by means of the disposition (other than to the Issuer or a Restricted Subsidiary) of any Unrestricted Subsidiary or repurchases, redemptions or other acquisitions or retirements of, or other returns on Investments from, any Restricted Investment or the disposition (other than to the Issuer or a Restricted Subsidiary) of any Restricted Investment;

(v) in the case of the designation of an Unrestricted Subsidiary as a Restricted Subsidiary or all of the assets of such Unrestricted Subsidiary are transferred to the Issuer or a Restricted Subsidiary, or the Unrestricted Subsidiary is merged or consolidated into the Issuer or a Restricted Subsidiary, 100% of such amount received in cash and the fair market value of any property or marketable securities received by the Issuer or any Restricted Subsidiary in respect of such redesignation, merger, consolidation or transfer of assets, excluding the amount of any Investment in such Unrestricted Subsidiary that constituted a Permitted Investment made pursuant to clause (11) of the definition of "Permitted Investment"; and

(vi) 100% of any dividends or distributions received by the Issuer or a Restricted Subsidiary after the Issue Date from an Unrestricted Subsidiary.

The fair market value of property or assets (other than cash) covered by the preceding sentence shall be the fair market value thereof as determined in good faith by an Officer of the Issuer.

The foregoing provisions will not prohibit any of the following (collectively, "*Permitted Payments*"):

(1) any Restricted Payment made by exchange (including any such exchange pursuant to the exercise of a conversion right or privilege in connection with which cash is paid in lieu of the issuance of fractional shares) for, or out of the proceeds of the substantially concurrent sale (other than to a Subsidiary of the Issuer) of, Capital Stock of the Issuer (other than Disqualified Stock) or a substantially concurrent contribution to the equity of the Issuer (other than through the issuance of Disqualified Stock or through an Excluded Contribution); *provided*, *however*, that to the extent so applied, the Net Cash Proceeds, or fair market value (as determined in accordance with the preceding sentence) of property or assets or of marketable securities, from such sale of Capital Stock or such contribution will be excluded from clause (c)(ii) of the first paragraph of this covenant and clause (6) of this paragraph and shall not be considered an Excluded Contribution or Net Cash Proceeds from an Equity Offering for purposes of the "Optional Redemption" provisions of the Indenture;

(2) any purchase, repurchase, redemption, defeasance or other acquisition or retirement of Subordinated Indebtedness made by exchange for, or out of the proceeds of the substantially concurrent sale of, Refinancing Indebtedness permitted to be Incurred pursuant to the covenant described under "*—Limitation on Indebtedness*" above;

(3) any purchase, repurchase, redemption, defeasance or other acquisition or retirement of Preferred Stock of the Issuer or a Restricted Subsidiary made by exchange for or out of the proceeds of the substantially concurrent sale of Preferred Stock of the Issuer or a Restricted Subsidiary, as the case may be, that, in each case, is permitted to be Incurred pursuant to the covenant described under "*—Limitation on Indebtedness*" above, and that in each case, constitutes Refinancing Indebtedness;

(4) any purchase, repurchase, redemption, defeasance or other acquisition or retirement of Subordinated Indebtedness:

(a) (i) from Net Available Cash to the extent permitted under "*—Limitation on Sales of Assets and Subsidiary Stock*" below, but only if the Issuer shall have first complied with the covenant described under "*—Limitation on Sales of Assets and Subsidiary Stock*" and purchased all Notes tendered pursuant to any offer to repurchase all the Notes required thereby, prior to purchasing, repurchasing, redeeming, defeasing or otherwise acquiring or retiring such Subordinated Indebtedness and (ii) at a purchase price not greater than 100% of the principal amount of such Subordinated Indebtedness plus accrued and unpaid interest;

(b) following the occurrence of a Change of Control (or other similar event described as a "change of control"), but only (i) if the Issuer shall have first complied with the covenant described under "*—Change of Control*" and purchased all Notes tendered pursuant to the offer to repurchase all the Notes required thereby, prior to purchasing, repurchasing, redeeming, defeasing or otherwise acquiring or retiring such Subordinated Indebtedness and (ii) at a purchase price not greater than 101% of the principal amount of such Subordinated Indebtedness plus accrued and unpaid interest; or

(c) (i) consisting of Acquired Indebtedness (other than Indebtedness Incurred (A) to provide all or any portion of the funds utilized to consummate the transaction or series of related transactions pursuant to which such Person became a Restricted Subsidiary or was otherwise acquired by the Issuer or a Restricted Subsidiary or (B) otherwise in connection with or contemplation of such acquisition) and (ii) at a purchase price not greater than 100% of the principal amount of such Subordinated Indebtedness plus accrued and unpaid interest and any premium required by the terms of any Acquired Indebtedness;

(5) any dividends paid within 60 days after the date of declaration if at such date of declaration such dividend would have complied with this covenant;

(6) the purchase, repurchase, redemption, defeasance or other acquisition, cancellation or retirement for value of Capital Stock of the Issuer or any Restricted Subsidiary (including any options, warrants or other rights in respect thereof), or payments to purchase, repurchase, redeem, defease or otherwise acquire, cancel or retire for value Capital Stock of the Issuer or any Restricted Subsidiary (including any options, warrants or other rights in respect thereof), in each case from Management Investors; *provided* that such payments, loans, advances, dividends or distributions do not exceed an amount (net of repayments of any such loans or advances) equal to (1) the greater of $10.0 million and 3.0% of Consolidated EBITDA per calendar year (with unused amounts being carried over to the next two succeeding calendar years) *plus* (2) amounts not to exceed the Net Cash Proceeds received during such calendar year by the Issuer or its Restricted Subsidiaries from, or as a contribution to the equity (in each case under this clause (2), other than through the issuance of Disqualified Stock) of the Issuer from, the issuance or sale to Management Investors of Capital Stock (including any options, warrants or other rights in respect thereof) *plus* (3) the Net Cash Proceeds of any key man life insurance policies, to the extent such Net Cash Proceeds have not otherwise been designated as Excluded Contributions and are not included in any calculation under clause (c)(ii) of the first paragraph of this covenant or clause (1) of this paragraph;

(7) the declaration and payment of dividends to holders of any class or series of Disqualified Stock, or of any Preferred Stock of a Restricted Subsidiary, Incurred in accordance with the terms of the covenant described under "*—Limitation on Indebtedness*";

(8) purchases, repurchases, redemptions, defeasances or other acquisitions or retirements of Capital Stock deemed to occur upon the exercise of stock options, warrants or other rights in respect thereof if such Capital Stock represents a portion of the exercise price thereof;

(9) dividends, loans, advances or distributions or other payments by the Issuer or any Restricted Subsidiary in amounts equal to (without duplication)amounts constituting or to be used for purposes of making payments

to the extent specified in clauses (2), (3) and (5) of the second paragraph under "—*Limitation on Affiliate Transactions*;"

(10) the declaration or payment of dividends or distributions, or the making of any cash payments, advances, loans or expense reimbursements on the Capital Stock, of the Issuer; *provided* that the aggregate amount of all such dividends or distributions shall not exceed in any fiscal year an amount equal to 6.0% of the Market Capitalization, provided that, after giving *pro forma* effect to such dividends, distributions, cash payments, loans or expense reimbursements, the Consolidated Net Leverage Ratio for the Issuer and its Restricted Subsidiaries shall be equal to or less than 2.0 to 1.0;

(11) so long as no Default or Event of Default has occurred and is continuing (or would result therefrom), Restricted Payments in an aggregate amount outstanding at any time not to exceed the greater of $50.0 million and 12.5% of Consolidated EBITDA;

(12) payments by the Issuer to holders of Capital Stock of the Issuer in lieu of the issuance of fractional shares of such Capital Stock, *provided*, *however*, that any such payment shall not be for the purpose of evading any limitation of this covenant or otherwise to facilitate any dividend or other return of capital to the holders of such Capital Stock (as determined in good faith by the Board of Directors or an Officer of the Issuer);

(13) Restricted Payments in an aggregate amount outstanding at any time not to exceed the aggregate cash amount of Excluded Contributions, or consisting of non-cash Excluded Contributions, or Investments in exchange for or using as consideration Investments previously made under this clause (13);

(14) payment of any Receivables Fees, purchases of Receivables Assets pursuant to a Receivables Repurchase Obligation and contributions and other transfers of Receivables Assets, in each case, in connection with a Qualified Receivables Financing;

(15) [*Reserved*];

(16) [*Reserved*];

(17) advances or loans to (a) any future, present or former officer, director, employee or consultant of the Issuer or a Restricted Subsidiary to pay for the purchase or other acquisition for value of Capital Stock of the Issuer (other than Disqualified Stock), or any obligation under a forward sale agreement, deferred purchase agreement or deferred payment arrangement pursuant to any management equity plan or stock option plan or any other management or employee benefit or incentive plan or other agreement or arrangement or (b) any management equity plan or stock option plan or any other management or employee benefit or incentive plan or unit trust or the trustees of any such plan or trust to pay for the purchase or other acquisition for value of Capital Stock of the Issuer (other than Disqualified Stock); *provided* that the total aggregate amount of Restricted Payments made under this clause (17) does not exceed the greater of $5.0 million and 1.5% of Consolidated EBITDA in any calendar year; and

(18) so long as no Default or Event of Default has occurred and is continuing (or would result therefrom), any Restricted Payment; *provided* that the Consolidated Net Leverage Ratio for the Issuer and its Restricted Subsidiaries on a *pro forma* basis after giving effect to any such Restricted Payment does not exceed 1.5 to 1.0.

The amount of all Restricted Payments (other than cash) shall be the fair market value on the date of such Restricted Payment of the asset(s) or securities proposed to be paid, transferred or issued by the Issuer or such Restricted Subsidiary, as the case may be, pursuant to such Restricted Payment. The fair market value of any cash Restricted Payment shall be its face amount, and the fair market value of any non-cash Restricted Payment shall be determined conclusively by the Board of Directors of the Issuer acting in good faith.

Limitation on Liens

The Issuer will not, and will not permit any Restricted Subsidiary to, directly or indirectly, create, Incur or suffer to exist any Lien upon any of its property or assets (including Capital Stock of a Restricted Subsidiary), whether owned on the Issue Date or acquired after that date, or any interest therein or any income or profits therefrom, which Lien is securing any Indebtedness (such Lien, the "*Initial Lien*"), except (a) in the case of any property or assets that do not constitute Collateral, (1) Permitted Liens or (2) Liens on property or assets that are not Permitted Liens if, subject to the Agreed Security Principles, the Notes and the Indenture (or a Guarantee of the Notes in the case of Liens of a Guarantor) are directly secured equally and ratably with, or prior to (in the case of Liens with respect to Subordinated Indebtedness), the Indebtedness secured by such Initial Lien for so long as such Indebtedness is so secured, and (b) in the case of any property or assets that constitute Collateral, Permitted Collateral Liens.

Any such Lien created in favor of the Notes will be automatically and unconditionally released and discharged upon (i) the release and discharge of the Initial Lien to which it relates, and (ii) otherwise as set forth under "*—Security—Release of Liens*".

Neither the Issuer nor any Restricted Subsidiary will permit any Lien on any Collateral granted by the Issuer or any Restricted Subsidiary to any other Person to become perfected (or the equivalent in any jurisdiction) unless (a) the Security Agent, on behalf of the Holders of the Notes, has a prior perfected Lien on such Collateral or (b) such Lien is subject to the provisions of the Intercreditor Agreement.

With respect to any Lien securing Indebtedness that was permitted to secure such Indebtedness at the time of the Incurrence of such Indebtedness, such Lien shall also be permitted to secure any Increased Amount of such Indebtedness. The "*Increased Amount*" of any Indebtedness shall mean any increase in the amount of such Indebtedness in connection with any accrual of interest, the accretion of accreted value, the amortization of original issue discount, the payment of interest in the form of additional Indebtedness with the same terms, accretion of original issue discount or liquidation preference and increases in the amount of Indebtedness outstanding solely as a result of fluctuations in the exchange rate of currencies or increases in the value of property or assets securing Indebtedness.

Limitation on Restrictions on Distributions from Restricted Subsidiaries

The Issuer will not, and will not permit any Restricted Subsidiary to, create or otherwise cause or permit to exist or become effective any consensual encumbrance or consensual restriction on the ability of any Restricted Subsidiary to:

(A) pay dividends or make any other distributions in cash or otherwise on its Capital Stock or pay any Indebtedness or other obligations owed to the Issuer or any Restricted Subsidiary, or with respect to any other interest or participation in, or measured by, its profits;

(B) make any loans or advances to the Issuer or any Restricted Subsidiary; or

(C) sell, lease or transfer any of its property or assets to the Issuer or any Restricted Subsidiary,

provided that (x) the priority of any Preferred Stock in receiving dividends or liquidating distributions prior to dividends or liquidating distributions being paid on common stock and (y) the subordination of (including the application of any payment blockage or standstill requirements to) loans or advances made to the Issuer or any Restricted Subsidiary to other Indebtedness Incurred by the Issuer or any Restricted Subsidiary shall not be deemed to constitute such an encumbrance or restriction.

The provisions of the preceding paragraph will not prohibit:

(1) any encumbrance or restriction pursuant to (a) any Credit Facility (other than the Revolving Credit Facility) or any other agreement or instrument, in each case, in effect at or entered into on the Issue Date or (b) the Indenture, the Notes, the Intercreditor Agreement, the Revolving Credit Facility, the Security Documents or any security documents related to any of the foregoing;

(2) any encumbrance or restriction pursuant to an agreement or instrument of a Person or relating to any Capital Stock or Indebtedness of a Person, entered into on or before the date on which such Person was acquired by or merged, consolidated or otherwise combined with or into the Issuer or any Restricted Subsidiary, or on which such agreement or instrument is assumed by the Issuer or any Restricted Subsidiary in connection with an acquisition of assets (other than Capital Stock or Indebtedness Incurred as consideration in, or to provide all or any portion of the funds utilized to consummate, the transaction or series of related transactions pursuant to which such Person became a Restricted Subsidiary or was acquired by the Issuer or was merged, consolidated or otherwise combined with or into the Issuer or any Restricted Subsidiary) and outstanding on such date; *provided* that, for the purposes of this clause (2), if another Person is the Successor Company (as defined under "*—Merger and Consolidation*"), any Subsidiary thereof or agreement or instrument of such Person or any such Subsidiary shall be deemed acquired or assumed by the Issuer or any Restricted Subsidiary when such Person becomes the Successor Company;

(3) any encumbrance or restriction pursuant to an agreement or instrument effecting a refinancing of Indebtedness Incurred pursuant to, or that otherwise refinances, an agreement or instrument referred to in clause (1) or (2) of this paragraph or this clause (3) (an "*Initial Agreement*") or contained in any amendment, supplement or other modification to an agreement referred to in clause (1) or (2) of this paragraph or this clause (3); *provided*, *however*, that the encumbrances and restrictions with respect to such

Restricted Subsidiary contained in any such agreement or instrument, amendment, supplement or other modification are no less favorable in any material respect to the Holders taken as a whole than the encumbrances and restrictions contained in the Initial Agreement or Initial Agreements to which such refinancing or amendment, supplement or other modification relates (as determined in good faith by the Board of Directors or an Officer of the Issuer);

(4) any encumbrance or restriction:

  (a) that restricts in a customary manner the subletting, assignment or transfer of any property or asset that is subject to a lease, license or similar contract, or the assignment or transfer of any lease, license or other contract;

  (b) contained in mortgages, charges, pledges or other security agreements permitted under the Indenture or securing Indebtedness of the Issuer or a Restricted Subsidiary permitted under the Indenture to the extent such encumbrances or restrictions restrict the transfer of the property or assets subject to such mortgages, charges, pledges or other security agreements; or

  (c) pursuant to customary provisions restricting dispositions of real property interests set forth in any reciprocal easement agreements of the Issuer or any Restricted Subsidiary;

(5) any encumbrance or restriction pursuant to Purchase Money Obligations and Capitalized Lease Obligations permitted under the Indenture, in each case, that impose encumbrances or restrictions on the property so acquired, constructed, improved, leased, rented or installed or any encumbrance or restriction pursuant to a joint venture agreement that imposes restrictions on the distribution or transfer of the assets or Capital Stock of the joint venture;

(6) any encumbrance or restriction with respect to a Restricted Subsidiary (or any of its property or assets) imposed pursuant to an agreement entered into for the direct or indirect sale or disposition to a Person of all or substantially all the Capital Stock or assets of such Restricted Subsidiary (or the property or assets that are subject to such restriction) pending the closing of such sale or disposition;

(7) customary provisions in leases, licenses, joint venture agreements and other similar agreements and instruments entered into in the ordinary course of business;

(8) encumbrances or restrictions arising or existing by reason of applicable law or any applicable rule, regulation or order, or required by any regulatory authority;

(9) any encumbrance or restriction on cash or other deposits or net worth imposed by customers under agreements entered into in the ordinary course of business;

(10) any encumbrance or restriction pursuant to Currency Agreements, Interest Rate Agreements or Commodity Hedging Agreements;

(11) any encumbrance or restriction arising pursuant to an agreement or instrument (a) relating to any Indebtedness permitted to be Incurred subsequent to the Issue Date pursuant to the provisions of the covenant described under "—*Limitation on Indebtedness*" if (1) the encumbrances and restrictions contained in any such agreement or instrument taken as a whole are not materially less favorable to the Holders of the Notes than (i) the encumbrances and restrictions contained in the Revolving Credit Facility, together with the security documents associated therewith, and the Intercreditor Agreement, in each case, as in effect on the Issue Date or (ii) as is customary in comparable financings (as determined in good faith by the Board of Directors or an Officer of the Issuer) or (2) the Issuer determines in good faith at the time such Indebtedness is Incurred that such encumbrances or restrictions will not adversely affect, in any material respect, the Issuer's ability to make principal or interest payments on the Notes or (b) constituting an Additional Intercreditor Agreement;

(12) restrictions effected in connection with a Qualified Receivables Financing that, in the good faith determination of the Board of Directors or an Officer of the Issuer, are necessary or advisable to effect such Qualified Receivables Financing; and

(13) any encumbrance or restriction existing by reason of any Lien permitted under "—*Limitation on Liens*".

Limitation on Sales of Assets and Subsidiary Stock

The Issuer will not, and will not permit any Restricted Subsidiary to, consummate any Asset Disposition unless:

(1) the consideration the Issuer or such Restricted Subsidiary receives for such Asset Disposition is not less than the fair market value of the assets sold (such fair market value to be determined on the date of contractually agreeing to such Asset Disposition), as determined by the Issuer's Board of Directors; and

(2) other than with respect to a Permitted Asset Swap, at least 75% of the consideration the Issuer or such Restricted Subsidiary receives in respect of such Asset Disposition consists of:

(i) cash (including any Net Available Cash received from the conversion within 180 days of such Asset Disposition of securities, notes or other obligations received in consideration of such Asset Disposition);

(ii) Cash Equivalents, Temporary Cash Investments or Investment Grade Securities;

(iii) the assumption by the purchaser of (x) any liabilities recorded on the Issuer's or such Restricted Subsidiary's balance sheet or the notes thereto (or, if incurred since the date of the latest balance sheet, that would be recorded on the next balance sheet or the notes thereto) (other than Subordinated Debt), as a result of which neither the Issuer nor any of the Restricted Subsidiaries remains obligated in respect of such liabilities or (y) Indebtedness of a Restricted Subsidiary that is no longer a Restricted Subsidiary as a result of such Asset Disposition, if the Issuer and each other Restricted Subsidiary is released from any guarantee of such Indebtedness as a result of such Asset Disposition;

(iv) Replacement Assets;

(v) any Capital Stock or assets of the kind referred to in clause (D), (E) or (F) of the second paragraph of this covenant;

(vi) consideration consisting of Indebtedness of the Issuer or any Guarantor received from Persons who are not the Issuer or any Restricted Subsidiary, but only to the extent that such Indebtedness is not Subordinated Indebtedness of the Issuer or such Guarantor;

(vii) any Designated Non-Cash Consideration received by the Issuer or any Restricted Subsidiary, having an aggregate fair market value, taken together with all other Designated Non-Cash Consideration received pursuant to this covenant that is at any one time outstanding, not to exceed the greater of $45.0 million and 11.5% of Consolidated EBITDA at the time of the receipt of such Designated Non-Cash Consideration (with the fair market value of each issue of Designated Non-Cash Consideration being measured at the time received and without giving effect to subsequent changes in value); or

(viii) a combination of the consideration specified in clauses (i) through (vii) of this clause (2).

If the Issuer or any Restricted Subsidiary consummates an Asset Disposition, the Net Available Cash of the Asset Disposition, within 365 days (or 545 days in the circumstances described in clause (H) below) of the later of (i) the date of the consummation of such Asset Disposition and (ii) the receipt of such Net Available Cash, may be used by the Issuer or such Restricted Subsidiary to:

(A) (i) prepay, repay, purchase or redeem any Indebtedness incurred under clause (1) of the second paragraph of the covenant described under "—*Limitation on Indebtedness*" or any Refinancing Indebtedness in respect thereof; (ii) unless included in (A)(i), prepay, repay, purchase or redeem Notes or Indebtedness that is secured by a Lien on the Collateral (except for Liens on the Collateral ranking junior to the Liens securing the Notes) and that is not subordinated in right of payment to the Notes ("*First Lien Pari Passu Indebtedness*") at a price of no more than 100% of the principal amount of the Notes or such applicable Indebtedness, plus accrued and unpaid interest to the date of such prepayment, repayment, purchase or redemption; (iii) purchase Notes through open market purchases or in privately negotiated transactions at market prices (which may be below par); or (iv) prepay, repay, purchase or redeem any Indebtedness of a Restricted Subsidiary that is not a Guarantor or any Indebtedness that is secured on assets which do not constitute Collateral (in each case other than Subordinated Indebtedness of the Issuer or a Guarantor or Indebtedness owed to the Issuer or any Restricted Subsidiary); *provided* that the Issuer shall prepay, repay, purchase or redeem Public Debt (other than the Notes) pursuant to clause (ii) only if the Issuer (a) makes (at such time or in compliance with this covenant) an offer to Holders to purchase their Notes in accordance with the provisions set forth below for an Asset Disposition Offer for an aggregate principal amount of Notes equal to the proportion that (x) the total aggregate principal amount of Notes outstanding bears to (y) the sum total aggregate principal amount of the Notes outstanding plus the total aggregate principal amount outstanding of such Indebtedness (other than the Notes) or (b) reduces the aggregate principal amount of the Notes on an equal or ratable basis with any such Public Debt repaid pursuant to this clause (ii) by, at its option, (x) redeeming Notes as provided under "—*Optional Redemption*" and/or (y) purchasing Notes through open market purchases or in privately negotiated transactions at market prices (which may be below par);

(B) purchase Notes pursuant to an offer to all Holders of such Notes at a purchase price in cash equal to at least 100% of the principal amount thereof, plus accrued and unpaid interest and Additional Amounts, if any, to,

but not including, the date of purchase (subject to the right of Holders of record on the record date to receive interest due on the interest payment date) or redeem Notes pursuant to the redemption provisions of the Indenture or by making an Asset Disposition Offer to all Holders of the Notes (in accordance with the procedures set out below);

(C) invest in any Replacement Assets;

(D) acquire all or substantially all of the assets of, or any Capital Stock of, another Similar Business, if, after giving effect to any such acquisition of Capital Stock, the Similar Business is or becomes a Restricted Subsidiary;

(E) make a capital expenditure (including capitalized research and development costs);

(F) acquire other assets (other than Capital Stock and cash or Cash Equivalents) that are used or useful in a Similar Business;

(G) consummate any combination of the foregoing; or

(H) enter into a binding commitment to apply the Net Available Cash pursuant to clause (A), (C), (D), (E) or (F) of this paragraph or a combination thereof, *provided* that a binding commitment shall be treated as a permitted application of the Net Available Cash from the date of such commitment until the earlier of (x) the date on which such prepayment, repayment, purchase, redemption, investment, acquisition or capital expenditure is consummated, (y) the 180th day following the expiration of the aforementioned 365 day period, if such prepayment, repayment, purchase, redemption, investment, acquisition or capital expenditure has not been consummated by that date.

The amount of such Net Available Cash not so used as set forth in this paragraph constitutes "*Excess Proceeds*". Pending the final application of any such Net Available Cash, the Issuer may temporarily reduce revolving credit borrowings or otherwise apply such Net Available Cash in any manner that is not prohibited by the terms of the Indenture.

On the 366th day (or the 546th day if a binding commitment as described in clause (H) is entered into) after an Asset Disposition, or such earlier time if the Issuer elects, if the aggregate amount of Excess Proceeds exceeds $20.0 million, the Issuer will be required within 10 Business Days thereof to make an offer ("*Asset Disposition Offer*") to all Holders and, to the extent the Issuer elects, to holders of other outstanding First Lien Pari Passu Indebtedness, to purchase the maximum principal amount of Notes and any such First Lien Pari Passu Indebtedness to which the Asset Disposition Offer applies that may be purchased out of the Excess Proceeds, at an offer price in respect of the Notes in an amount equal to (and, in the case of any First Lien Pari Passu Indebtedness, an offer price of no more than) 100% of the principal amount of the Notes and 100% of the principal amount of First Lien Pari Passu Indebtedness, in each case, plus accrued and unpaid interest, if any, to, but not including, the date of purchase, in accordance with the procedures set forth in the Indenture or the agreements governing the First Lien Pari Passu Indebtedness, as applicable, in minimum denominations of, in the case of Dollar Notes, $200,000 and in integral multiples of $1,000 in excess thereof and, in the case of Euro Notes, €100,000 and in integral multiples of €1,000 in excess thereof.

To the extent that the aggregate amount of Notes and First Lien Pari Passu Indebtedness so validly tendered and not properly withdrawn pursuant to an Asset Disposition Offer is less than the Excess Proceeds, the Issuer may use any remaining Excess Proceeds for any purpose not prohibited by the Indenture, subject to other covenants contained in the Indenture. If the aggregate principal amount of the Notes surrendered in any Asset Disposition Offer by Holders and other First Lien Pari Passu Indebtedness surrendered by holders or lenders, collectively, exceeds the amount of Excess Proceeds, the Excess Proceeds shall be allocated among the Notes and First Lien Pari Passu Indebtedness to be repaid or purchased on a *pro rata* basis on the basis of the aggregate principal amount of tendered Notes and First Lien Pari Passu Indebtedness. For the purposes of calculating the principal amount of any such Indebtedness not denominated in U.S. dollars, such Indebtedness shall be calculated by converting any such principal amounts into their Dollar Equivalent determined as of a date selected by the Issuer that is within the Asset Disposition Offer Period (as defined below). Upon completion of any Asset Disposition Offer, the amount of Excess Proceeds shall be reset at zero.

To the extent that any portion of Net Available Cash payable in respect of the Notes is denominated in a currency other than the currency in which the relevant Notes are denominated, the amount thereof payable in respect of such Notes shall not exceed the net amount of funds in the currency in which such Notes are denominated that is actually received by the Issuer upon converting such portion of the Net Available Cash into such currency.

The Asset Disposition Offer, in so far as it relates to the Notes, will remain open for a period of not less than 20 Business Days following its commencement (the "*Asset Disposition Offer Period*"). No later than five Business Days after the termination of the Asset Disposition Offer Period (the "*Asset Disposition Purchase Date*"), the Issuer will purchase the principal amount of Notes and, to the extent it elects, First Lien Pari Passu Indebtedness required to be repaid or purchased by it pursuant to this covenant (the "*Asset Disposition Offer Amount*") or, if less than the Asset Disposition Offer Amount has been so validly tendered, all Notes and First Lien Pari Passu Indebtedness validly tendered in response to the Asset Disposition Offer.

On or before the Asset Disposition Purchase Date, the Issuer will, to the extent lawful, accept for payment, on a *pro rata* basis to the extent necessary, the Asset Disposition Offer Amount of Notes and First Lien Pari Passu Indebtedness or portions of Notes and First Lien Pari Passu Indebtedness so validly tendered and not properly withdrawn pursuant to the Asset Disposition Offer, or if less than the Asset Disposition Offer Amount has been validly tendered and not properly withdrawn, all Notes and First Lien Pari Passu Indebtedness so validly tendered and not properly withdrawn and in minimum denominations of, in the case of Dollar Notes, $200,000 and in integral multiples of $1,000 in excess thereof and, in the case of Euro Notes, €100,000 and in integral multiples of €1,000 in excess thereof. The Issuer will deliver to the Trustee an Officer's Certificate stating that such Notes or portions thereof were accepted for payment by the Issuer in accordance with the terms of this covenant. The Issuer or the Paying Agent, as the case may be, will promptly (but in any case not later than five Business Days after termination of the Asset Disposition Offer Period) mail or deliver to each tendering Holder an amount equal to the purchase price of the Notes so validly tendered and not properly withdrawn by such Holder, and accepted by the Issuer for purchase, and the Issuer will promptly issue a new Note (or amend the applicable Global Note), and the Trustee (or an authenticating agent), upon delivery of an Officer's Certificate from the Issuer, will authenticate and mail or deliver (or cause to be transferred by book-entry) such new Note to such Holder, in a principal amount equal to any unpurchased portion of the Note surrendered; *provided* that each such new Dollar Note will be in a principal amount with a minimum denomination of $200,000 and each such new Euro Note will be in a principal amount with a minimum denomination of €100,000. Any Note not so accepted will be promptly mailed or delivered (or transferred by book-entry) by the Issuer to the Holder thereof.

The Issuer will comply, to the extent applicable, with the requirements of Section 14(e) of the Exchange Act and any other securities laws or regulations in connection with the repurchase of Notes pursuant to the Indenture. To the extent that the provisions of any securities laws or regulations conflict with provisions of this covenant, the Issuer will comply with the applicable securities laws and regulations and will not be deemed to have breached its obligations under the Indenture by virtue of such compliance.

Limitation on Affiliate Transactions

The Issuer will not, and will not permit any of its Restricted Subsidiaries to, directly or indirectly, enter into or conduct any transaction or series of related transactions (including the purchase, sale, lease or exchange of any property or the rendering of any service) with any Affiliate of the Issuer (any such transaction or series of related transactions being an "*Affiliate Transaction*") involving aggregate value in excess of $5.0 million unless:

(1) the terms of such Affiliate Transaction taken as a whole are not materially less favorable to the Issuer or such Restricted Subsidiary, as the case may be, than those that could be obtained in a comparable transaction at the time of such transaction or the execution of the agreement providing for such transaction in arm's-length dealings with a Person who is not such an Affiliate;

(2) in the event such Affiliate Transaction involves an aggregate value in excess of $10.0 million, the Issuer shall have delivered to the Trustee an Officer's Certificate to the effect that such transaction complies with clause (1) above; and

(3) in the event such Affiliate Transaction involves an aggregate value in excess of $25.0 million, the terms of such transaction or series of related transactions have been approved by a resolution of the majority of the disinterested members of the Board of Directors of the Issuer.

The provisions of the preceding paragraph will not apply to:

(1) any Restricted Payment permitted to be made pursuant to the covenant described under "*—Limitation on Restricted Payments*", any Permitted Payments (other than pursuant to clause (9) of the third paragraph of the covenant described under "*—Limitation on Restricted Payments*") or any Permitted Investment (other than Permitted Investments as defined in paragraphs (1)(b), (2) and (11) of the definition thereof);

(2) any issuance or sale of Capital Stock, options, other equity-related interests or other securities, or other payments, awards or grants in cash, securities or otherwise pursuant to, or the funding of, or entering into, or

maintenance of, any employment, consulting, collective bargaining or benefit plan, program, agreement or arrangement, related trust or other similar agreement and other compensation arrangements, options, warrants or other rights to purchase Capital Stock of the Issuer, any Restricted Subsidiary, restricted stock plans, long-term incentive plans, stock appreciation rights plans, participation plans or similar employee benefits or consultants' plans (including valuation, health, insurance, deferred compensation, severance, retirement, savings or similar plans, programs or arrangements) or indemnities provided on behalf of officers, employees, directors or consultants approved by the Board of Directors of the Issuer, in each case in the ordinary course of business;

(3) any Management Advances and any waiver or transaction with respect thereto;

(4) any transaction between or among the Issuer and any Restricted Subsidiary (or entity that becomes a Restricted Subsidiary as a result of such transaction), or between or among Restricted Subsidiaries or any Receivables Subsidiary;

(5) the payment of reasonable fees and reimbursement of costs, taxes and expenses to, and customary indemnities (including under customary insurance policies) and employee benefit and pension expenses provided on behalf of, directors, officers, consultants or employees of the Issuer, any Restricted Subsidiary (whether directly or indirectly and including through any Person owned or controlled by any of such directors, officers or employees);

(6) (i) the Transactions, (ii) the entry into and performance of obligations of the Issuer or any of its Restricted Subsidiaries under the terms of any transaction pursuant to or contemplated by, and any payments pursuant to or for purposes of funding, any agreement or instrument in effect as of or on the Issue Date or described in "*Principal Shareholders—Related party transactions*" in the Offering Memorandum, as these agreements and instruments may be amended, modified, supplemented, extended, renewed, replaced or refinanced from time to time in accordance with the other terms of this covenant or to the extent not more disadvantageous to the Holders in any material respect, and (iii) the entry into and performance of any registration rights or other listing agreement;

(7) transactions with customers, clients, suppliers or purchasers or sellers of goods or services, in each case in the ordinary course of business, which are fair to the Issuer or the relevant Restricted Subsidiary in the reasonable determination of the Board of Directors or an Officer of the Issuer or the relevant Restricted Subsidiary, or are on terms no less favorable than those that could reasonably have been obtained at such time from an unaffiliated party;

(8) any transaction in the ordinary course of business between or among the Issuer or any Restricted Subsidiary and any Affiliate of the Issuer or an Associate or similar entity that would constitute an Affiliate Transaction solely because the Issuer or a Restricted Subsidiary or any Affiliate of the Issuer or a Restricted Subsidiary owns an equity interest in or otherwise controls such Affiliate, Associate or similar entity;

(9) any transaction with a Person that is an Affiliate of the Issuer or any Restricted Subsidiary solely due to the fact that a director or officer or member of management of such Person is also a director, officer or member of management of, or employee of, the Issuer or any Restricted Subsidiary; *provided*, *however*, that such director or officer abstains from voting as a director or officer of the Issuer or any Restricted Subsidiary (as the case may be) on any matter involving such other Person;

(10) issuances or sales of Capital Stock (other than Disqualified Stock) of the Issuer, or options, warrants or other rights to acquire such Capital Stock;

(11) any transaction effected as part of a Qualified Receivables Financing; and

(12) any transactions in respect of which the Issuer or a Restricted Subsidiary delivers a written opinion (in form reasonably satisfactory to the Trustee) to the Trustee from an Independent Financial Advisor stating that such transaction is (i) fair to the Issuer or such Restricted Subsidiary from a financial point of view or (ii) on terms not less favorable than could reasonably have been obtained in a comparable transaction at such time on an arm's-length basis from a Person who is not an Affiliate.

Reports

So long as any Notes are outstanding, the Issuer will furnish to the Trustee the following reports:

(1) within 120 days after the end of the Issuer's fiscal year beginning with the fiscal year ending December 31, 2021, annual reports containing, to the extent applicable: (i) an operating and financial review of the audited

financial statements, including a discussion of the results of operation, financial condition, segment EBITDA and liquidity and capital resources; (ii) unaudited *pro forma* income statement and balance sheet information of the Issuer, together with explanatory footnotes, for any material acquisitions, dispositions or recapitalizations that have occurred since the beginning of the most recently completed fiscal year as to which such annual report relates (unless such *pro forma* financial information has been provided in a previous report pursuant to clause (2) or (3) of this paragraph) (*provided* that such *pro forma* financial information will be provided only to the extent available without unreasonable expense, in which case the Issuer will provide, in the case of a material acquisition, acquired company financial statements); (iii) the audited consolidated balance sheet of the Issuer as at the end of the most recent fiscal year and audited consolidated income statements and statements of cash flow of the Issuer for the most recent fiscal year, including appropriate footnotes to such financial statements, for and as at the end of such fiscal year and the report of the independent auditors on the financial statements; (iv) a description of the business, management and shareholders of the Issuer and all material affiliate transactions; and a description of all material debt instruments; and (v) a description of material operational risk factors;

(2) within 60 days following the end of the first and third fiscal quarters in each fiscal year of the Issuer beginning with the fiscal quarter ending March 31, 2021, and within 75 days following the end of the second fiscal quarter in each fiscal year of the Issuer beginning with the fiscal quarter ending June 30, 2021, quarterly financial statements of the Issuer containing the following information: (i) the Issuer's unaudited condensed consolidated balance sheet as at the end of such quarter and unaudited condensed statements of income and cash flow for the most recent quarter year-to-date period ending on the unaudited condensed balance sheet date and the comparable prior period, together with condensed footnote disclosure; (ii) unaudited *pro forma* income statement and balance sheet information of the Issuer, together with explanatory footnotes, for any material acquisitions, dispositions or recapitalizations that have occurred since the beginning of the most recently completed fiscal year as to which such quarterly report relates (unless such *pro forma* financial information has been provided in a previous report pursuant to clause (1) or (3) of this paragraph) (*provided* that such *pro forma* financial information will be provided only to the extent available without unreasonable expense, in which case the Issuer will provide, in the case of a material acquisition, acquired company financial statements); (iii) an operating and financial review of the unaudited financial statements, including a discussion of the consolidated financial condition, results of operations, segment EBITDA and material changes in liquidity and capital resources of the Issuer; (iv) a discussion of material changes in material debt instruments since the most recent report; and (v) any material changes to the risk factors disclosed in the most recent annual report; and

(3) promptly after the occurrence of a material event that the Issuer announces publicly or any acquisition, disposition or restructuring, merger or similar transaction that is material to the Issuer and the Restricted Subsidiaries, taken as a whole, or a senior executive officer or director changes at the Issuer or a change in auditors of the Issuer, a report containing a description of such event,

provided, however, the reports set forth in clauses (1), (2) and (3) above will not be required to: (i) include separate financial statements for any Restricted Subsidiaries or any disclosure with respect to the results of operations or any other financial or statistical disclosure not of a type included in the Offering Memorandum or (ii) contain any reconciliation to U.S. generally accepted accounting principles, and, *provided further* that the Issuer shall be deemed to have provided the information set forth in clauses (1) through (3) of this covenant if it has posted such information to its company website and such information is publicly available within the meaning of the French Listed Company Requirements.

For purposes of this covenant, an acquisition or disposition shall be deemed to be material if the entity or business acquired or disposed of represents greater than 20% of the Issuer's total revenue or segment EBITDA for the most recently-completed four full consecutive fiscal quarters for which annual or quarterly financial reports have been furnished to Holders.

In addition, for so long as the Notes remain outstanding and during any period during which the Issuer is not subject to Section 13 or 15(d) of the Exchange Act or exempt therefrom pursuant to Rule 12g3-2(b) under the Exchange Act, the Issuer shall furnish to the Holders and to prospective investors, upon the request of such parties, any information required to be delivered pursuant to Rule 144A(d)(4) under the Securities Act.

The Issuer shall also make available to Holders and prospective holders of the Notes copies of all reports furnished to the Trustee on the Issuer's website and if and so long as the Notes are listed on the Official List of the Luxembourg Stock Exchange and admitted to trading on the Euro MTF Market thereof and to the extent that the rules and regulations of the Luxembourg Stock Exchange so require, by posting such reports on the official website of the Luxembourg Stock Exchange (*www.bourse.lu*).

All financial statement information shall be prepared in accordance with IFRS as in effect on the date of such report or financial statement (or otherwise on the basis of IFRS as then in effect) and on a consistent basis for the periods presented, except as may otherwise be described in such information; *provided*, *however*, that the reports set forth in clauses (1), (2) and (3) above may, in the event of a change in IFRS, present earlier periods on a basis that applied to such periods.

At any time that any of the Issuer's subsidiaries are Unrestricted Subsidiaries and any such Unrestricted Subsidiary or a group of Unrestricted Subsidiaries, taken as a whole, constitutes a Significant Subsidiary of the Issuer, then the quarterly and annual financial information required by the first paragraph of this "*Reports*" covenant will include (i) a reasonably detailed presentation, either on the face of the financial statements or in the footnotes thereto, of the financial condition and results of operations of the Issuer and its Restricted Subsidiaries separate from the financial condition and results of operations of the Unrestricted Subsidiaries of the Issuer or (ii) stand-alone audited or unaudited financial statements, as the case may be, of such Unrestricted Subsidiary or Unrestricted Subsidiaries, together with an unaudited reconciliation to the financial information of the Issuer and its subsidiaries, which reconciliation shall include the following items: revenues, consolidated EBITDA, net income, cash, total assets, total debt, shareholder equity, capital expenditures and interest expense.

For the purposes of this covenant, IFRS shall be deemed to be IFRS as in effect from time to time, without giving effect to the proviso in the second sentence of the definition thereof.

All reports provided pursuant to this "*Reports*" covenant shall be made in the English language.

In the event that (i) the Issuer becomes subject to the reporting requirements of Section 13(a) or 15(d) of the Exchange Act, or elects to comply with such provisions, for so long as it continues to file the reports required by Section 13(a) with the SEC or (ii) the Issuer elects to provide to the Trustee reports which, if filed with the SEC, would satisfy (in the good faith judgment of the Issuer) the reporting requirements of Section 13(a) or 15(d) of the Exchange Act (other than the provision of U.S. GAAP information, certifications, exhibits or information as to internal controls and procedures), for so long as it elects, the Issuer will make available to the Trustee such annual reports, information, documents and other reports that the Issuer is, or would be, required to file with the SEC pursuant to such Section 13(a) or 15(d). Upon complying with the foregoing requirement, the Issuer will be deemed to have complied with the provisions contained in the preceding paragraphs.

Merger and Consolidation

The Issuer

The Issuer will not consolidate with or merge with or into, or assign, convey, transfer, lease or otherwise dispose of all or substantially all the assets of the Issuer and its Restricted Subsidiaries, taken as a whole, in one transaction or a series of related transactions to, any Person, unless:

(1) the resulting, surviving or transferee Person (the "*Successor Issuer*") will be a Person organized and existing under the laws of any member state of the European Union, or the United States of America, any State of the United States or the District of Columbia, Canada or any province of Canada, Norway or Switzerland and the Successor Issuer (if not the Issuer) will expressly assume (a) by supplemental indenture, executed and delivered to the Trustee, in form reasonably satisfactory to the Trustee, all the obligations of the Issuer under the Notes and the Indenture and (b) all obligations of the Issuer under the Intercreditor Agreement, any Additional Intercreditor Agreement and the applicable Security Documents, as applicable;

(2) immediately after giving effect to such transaction (and treating any Indebtedness that becomes an obligation of the Successor Issuer or any Subsidiary of the Successor Issuer as a result of such transaction as having been Incurred by the Successor Issuer or such Subsidiary at the time of such transaction), no Default or Event of Default shall have occurred and be continuing;

(3) immediately after giving effect to such transaction, either (a) the Successor Issuer would be able to Incur at least $1.00 of additional Indebtedness pursuant to the first paragraph of the covenant described under "*—Limitation on Indebtedness*" or (b) the Fixed Charge Coverage Ratio for the Issuer and its Restricted Subsidiaries would not be less than it was immediately prior to giving effect to such transaction; and

(4) the Issuer shall have delivered to the Trustee an Officer's Certificate and an Opinion of Counsel, each to the effect that such consolidation, merger or transfer and such supplemental indenture (if any) comply with the Indenture and an Opinion of Counsel to the effect that such supplemental indenture (if any) has been duly authorized, executed and delivered and is a legal, valid and binding agreement enforceable against the Successor Issuer (in each case, in form reasonably satisfactory to the Trustee), *provided* that in giving an Opinion of Counsel, counsel may rely on an Officer's Certificate as to any matters of fact.

Any Indebtedness that becomes an obligation of the Issuer or any Restricted Subsidiary (or that is deemed to be Incurred by any Restricted Subsidiary that becomes a Restricted Subsidiary) as a result of any such transaction undertaken in compliance with this covenant, and any Refinancing Indebtedness with respect thereto, shall be deemed to have been Incurred in compliance with the covenant described under "*—Limitation on Indebtedness*".

For purposes of this covenant, the sale, lease, conveyance, assignment, transfer or other disposition of all or substantially all of the properties and assets of one or more Subsidiaries of the Issuer, which properties and assets, if held by the Issuer instead of such Subsidiaries, would constitute all or substantially all of the properties and assets of the Issuer on a consolidated basis, shall be deemed to be the transfer of all or substantially all of the properties and assets of the Issuer.

The Successor Issuer will succeed to, and be substituted for, and may exercise every right and power of, the Issuer under the Indenture; *provided*, *however*, that in the case of a lease of all or substantially all its assets, the predecessor company will not be released from its obligations under the Indenture or the Notes.

There is no precise established definition of the phrase "substantially all" under applicable law. Accordingly, in certain circumstances there may be a degree of uncertainty as to whether a particular transaction would involve "all or substantially all" of the property or assets of a Person.

The foregoing provisions shall not apply to (i) any transactions which constitute an Asset Disposition if the Issuer has complied with the covenant described under "*—Limitation on Sales of Assets and Subsidiary Stock*" or (ii) the creation of a new Subsidiary as a Restricted Subsidiary.

The Guarantors

No Guarantor (other than a Guarantor whose Guarantee is to be released in accordance with the terms of the Indenture or the Intercreditor Agreement) may:

(1) consolidate with or merge with or into any Person (whether or not such Guarantor is the surviving person);

(2) sell, assign, convey, transfer, lease or otherwise dispose of all or substantially all of the assets of such Guarantor and its Restricted Subsidiaries taken as a whole, in one transaction or a series of related transactions, to any Person; or

(3) permit any Person to merge with or into it unless (in the case of (1), (2) or (3)):

    (A) the other Person is the Issuer or any Restricted Subsidiary that is a Guarantor or becomes a Guarantor;

    (B) (1) either (x) a Guarantor is the continuing Person or (y) the resulting, surviving or transferee Person expressly assumes all of the obligations of the Guarantor under its Guarantee and the Indenture (pursuant to a supplemental indenture executed and delivered in a form reasonably satisfactory to the Trustee) (subject to the Agreed Security Principles) and its obligations under the Intercreditor Agreement, any Additional Intercreditor Agreement and the relevant Security Documents; and (2) immediately after giving effect to the transaction, no Default or Event of Default shall have occurred and is continuing; or

    (C) the transaction constitutes a sale or other disposition (including by way of consolidation or merger) of a Guarantor or the sale or disposition of all or substantially all the assets of a Guarantor (in each case other than to the Issuer or a Restricted Subsidiary) otherwise permitted by the Indenture,

provided, however, that the prohibitions in clauses (1), (2) and (3) of this paragraph shall not apply to the extent that compliance with clauses (A) and (B)(1) could give rise to or result in: (1) any breach or violation of statutory limitations, corporate benefit, financial assistance, fraudulent preference, thin capitalization rules, capital maintenance rules, guidance and coordination rules or the laws, rules or regulations (or analogous restriction) of any applicable jurisdiction; (2) any risk or liability for the officers, directors or (except in the case of a Restricted Subsidiary that is a partnership) shareholders of such Restricted Subsidiary (or, in the case of a Restricted Subsidiary that is a partnership, directors or shareholders of the partners of such partnership); or (3) any cost, expense, liability or obligation (including with respect to any Taxes) other than reasonable out-of-pocket expenses.

The provisions set forth in this "*Merger and Consolidation*" covenant shall not restrict (and shall not apply to): (i) any Restricted Subsidiary that is not a Guarantor from consolidating with, merging or liquidating into or transferring all or substantially all of its properties and assets to the Issuer, a Guarantor or any other Restricted

Subsidiary that is not a Guarantor; (ii) a Guarantor from merging or liquidating into or transferring all or part of its properties and assets to the Issuer or another Guarantor; (iii) any consolidation or merger of the Issuer into any Guarantor; *provided* that, if the Issuer is not the surviving entity of such merger or consolidation, the relevant Guarantor will assume all of the obligations of the Issuer under the Notes, the Indenture (pursuant to a supplemental indenture executed and delivered in a form reasonably satisfactory to the Trustee) and its obligations under the Intercreditor Agreement, any Additional Intercreditor Agreement and the relevant Security Documents and clauses (1) and (4) under the heading "*—Issuer*" shall apply to such transaction; and (iv) the Issuer or any Guarantor consolidating into or merging or combining with an Affiliate incorporated or organized for the purpose of changing the legal domicile of such entity, reincorporating such entity in another jurisdiction, or changing the legal form of such entity, *provided* that clauses (1), (2) and (4) under the heading "*—The Issuer*" or clauses (A) and (B) under the heading "*—The Guarantors*", as the case may be, shall apply to any such transaction. The provisions set forth in this "*—Merger and Consolidation—The Guarantors*" covenant shall not restrict (and shall not apply to) a Permitted Reorganization.

Lines of Business

The Issuer will not, and will not permit any Restricted Subsidiary to, engage in any business other than a Similar Business, except to such extent as would not be material to the Issuer and its Restricted Subsidiaries, taken as a whole.

Impairment of Security Interest

The Issuer shall not, and shall not permit any Restricted Subsidiary to, take or knowingly or negligently omit to take any action that would have the result of materially impairing the Security Interest with respect to the Collateral (it being understood that (x) the Incurrence of Permitted Collateral Liens and (y) the implementation of any Permitted Reorganization shall under no circumstances be deemed to materially impair the Security Interest with respect to the Collateral) for the benefit of the Trustee and the Holders, and the Issuer shall not, and shall not permit any Restricted Subsidiary to, grant to any Person other than the Security Agent, for the benefit of the Trustee and the Holders and the other beneficiaries described in the Security Documents and the Intercreditor Agreement or any Additional Intercreditor Agreement, any interest whatsoever in any of the Collateral, except that (i) the Issuer and its Restricted Subsidiaries may Incur Permitted Collateral Liens and the Collateral may be discharged (including a discharge followed by a release and retaking), if applicable, in accordance with the Indenture, the applicable Security Documents, the Intercreditor Agreement or any Additional Intercreditor Agreement, (ii) the Issuer and the Restricted Subsidiaries may effect a Permitted Reorganization and (iii) the applicable Security Documents may be amended, extended, renewed, restated, supplemented or otherwise modified or replaced, from time to time, to cure any ambiguity, mistake, omission, defect or inconsistency therein; *provided*, *however*, that, except with respect to any discharge or release in accordance with the Indenture, the Intercreditor Agreement or any Additional Intercreditor Agreement, the Incurrence of Permitted Collateral Liens, the implementation of any Permitted Reorganization or any action expressly permitted by the Indenture or the Intercreditor Agreement or any Additional Intercreditor Agreement, the Security Documents may not be amended, extended, renewed, restated, supplemented, released and retaken, if applicable, or otherwise modified or replaced, unless contemporaneously with any such action, the Issuer delivers to the Trustee, either (1) a solvency opinion, in form and substance reasonably satisfactory to the Trustee from an Independent Financial Advisor confirming the solvency of the Issuer and its Subsidiaries, taken as a whole, after giving effect to any transactions related to such amendment, extension, renewal, restatement, supplement, release, modification or replacement, (2) a certificate from the Board of Directors of the relevant Person which confirms the solvency of the person granting such Security Interest after giving effect to any transactions related to such amendment, extension, renewal, restatement, supplement, modification or replacement, or (3) an Opinion of Counsel, in form and substance reasonably satisfactory to the Trustee, confirming that, after giving effect to any transactions related to such amendment, extension, renewal, restatement, supplement, modification or replacement, the Lien or Liens created under the Security Documents, so amended, extended, renewed, restated, supplemented, modified or replaced, are valid Liens not otherwise subject to any limitation, imperfection or new hardening period, at law or (to the extent legally applicable) in equity that such Lien or Liens were not otherwise subject to immediately prior to such amendment, extension, renewal, restatement, supplement, modification or replacement.

In the event that the Issuer complies with the requirements of this covenant, the Trustee and the Security Agent shall (subject to customary protections and indemnifications) consent to such amendments without the need for instructions from the Holders.

Suspension of Covenants on Achievement of Investment Grade Status

If on any date following the Issue Date, the Notes have achieved Investment Grade Status and no Default or Event of Default has occurred and is continuing (a "*Suspension Event*"), then, beginning on that day and continuing until such time, if any, at which the Notes cease to have Investment Grade Status (the "*Reversion Date*"), the provisions of the Indenture summarized under the following captions will not apply to the Notes:

(1) "*—Limitation on Restricted Payments*";

(2) "*—Limitation on Indebtedness*";

(3) "*—Limitation on Restrictions on Distributions from Restricted Subsidiaries*";

(4) "*—Limitation on Affiliate Transactions*";

(5) "*—Limitation on Sales of Assets and Subsidiary Stock*";

(6) the provisions of clause (3) of the first paragraph of the covenant described under "*—Merger and Consolidation—the Issuer*";

(7) "*—Lines of Business*"; and

(8) "*—Additional Guarantees*".

and, in each case, any related default provision of the Indenture will cease to be effective and will not be applicable to the Issuer and its Restricted Subsidiaries.

Such covenants and any related default provisions will again apply according to their terms from the Reversion Date. Such covenants will not, however, be of any effect with regard to actions of the Issuer or any of its Restricted Subsidiaries properly taken during the continuance of the Suspension Event, and no action taken prior to the Reversion Date will constitute a Default or Event of Default. The "*Limitation on Restricted Payments*" covenant will be interpreted as if it has been in effect since the date of the Indenture but not during the continuance of the Suspension Event. On the Reversion Date, all Indebtedness Incurred during the continuance of the Suspension Event will be deemed to have been outstanding on the Issue Date, so that it is classified as permitted under clause (4)(b) of the second paragraph of the covenant described under "*—Limitation on Indebtedness*". In addition, the Indenture will also permit, without causing a Default or Event of Default, the Issuer or any of the Restricted Subsidiaries to honor any contractual commitments or take actions in the future after the Reversion Date as long as the contractual commitments were entered into during the continuance of the Suspension Event and not in anticipation of the Notes no longer having an Investment Grade Status. The Issuer shall notify the Trustee that the conditions set forth in the first paragraph under this caption have been satisfied, *provided* that no such notification shall be a condition for the suspension of the covenants described under this caption to be effective. The Trustee shall not be obligated to notify Holders of such event. There can be no assurance that the Notes will ever achieve or maintain an Investment Grade Status.

Additional Intercreditor Agreements

The Indenture will provide that, at the request of the Issuer, in connection with the Incurrence by the Issuer or its Restricted Subsidiaries of any Indebtedness permitted to be Incurred pursuant to the covenant described under "*—Limitation on Indebtedness*" and permitted to be secured on the Collateral pursuant to the covenant described under "*—Limitation on Liens*", the Issuer, the relevant Restricted Subsidiaries, the Trustee and the Security Agent shall enter into with the holders of such Indebtedness (or their duly authorized Representatives) an intercreditor agreement (an "*Additional Intercreditor Agreement*") or a restatement, amendment or other modification of the existing Intercreditor Agreement on substantially the same terms as the Intercreditor Agreement (or terms not materially less favorable to the Holders), including containing substantially the same terms with respect to release of Guarantees and priority and release of the Security Interest; *provided* that such Additional Intercreditor Agreement will not impose any personal obligations on the Trustee or Security Agent or, in the opinion of the Trustee or Security Agent, as applicable, adversely affect the rights, duties, liabilities or immunities of the Trustee or Security Agent under the Indenture or the Intercreditor Agreement.

The Indenture will also provide that, at the direction of the Issuer and without the consent of Holders, the Trustee and the Security Agent shall from time to time enter into one or more amendments to the Intercreditor Agreement or any Additional Intercreditor Agreement to: (1) cure any ambiguity, omission, defect or inconsistency of any such agreement, (2) increase the amount or types of Indebtedness covered by any such agreement that may be Incurred by the Issuer or any Restricted Subsidiary that is subject to any such agreement (including, with respect

to the Intercreditor Agreement or any Additional Intercreditor Agreement, the addition of provisions relating to new Indebtedness ranking junior in right of payment to the Notes), (3) add Restricted Subsidiaries to the Intercreditor Agreement or any Additional Intercreditor Agreement, (4) further secure the Notes (including Additional Notes), (5) make provision for equal and ratable pledges of the Collateral to secure Additional Notes, (6) implement any Permitted Collateral Liens, (7) amend the Intercreditor Agreement or any Additional Intercreditor Agreement in accordance with the terms thereof or (8) make any other change to any such agreement that does not adversely affect the Holders in any material respect. The Issuer shall not otherwise direct the Trustee or the Security Agent to enter into any amendment to the Intercreditor Agreement or any Additional Intercreditor Agreement without the consent of the Holders of the majority in aggregate principal amount of the Notes then outstanding, except as otherwise permitted below under "*—Amendments and Waivers*" or as permitted by the terms of the Intercreditor Agreement or any Additional Intercreditor Agreement, and the Issuer may only direct the Trustee and the Security Agent to enter into any amendment to the extent such amendment does not impose any personal obligations on the Trustee or Security Agent or, in the opinion of the Trustee or Security Agent, adversely affect their respective rights, duties, liabilities or immunities under the Indenture or the Intercreditor Agreement or any Additional Intercreditor Agreement.

The Indenture will also provide that, in relation to the Intercreditor Agreement or any Additional Intercreditor Agreement, the Trustee (and Security Agent, if applicable) shall consent on behalf of the Holders to the payment, repayment, purchase, repurchase, defeasance, acquisition, retirement or redemption of any obligations subordinated to the Notes thereby; *provided*, *however*, that such transaction would comply with the covenant described under "*—Limitation on Restricted Payments*".

The Indenture will also provide that each Holder, by accepting a Note, shall be deemed to have agreed to and accepted the terms and conditions of the Intercreditor Agreement or any Additional Intercreditor Agreement (whether then entered into or entered into in the future pursuant to the provisions described in the Indenture) and to have directed the Trustee and the Security Agent to enter into any such Additional Intercreditor Agreement. A copy of the Intercreditor Agreement or any Additional Intercreditor Agreement shall be made available for inspection during normal business hours on any Business Day upon prior written request at the offices of the Issuer or at the offices of the listing agent.

Additional Guarantees

Notwithstanding anything to the contrary in this covenant, (i) no Restricted Subsidiary shall Guarantee any Indebtedness outstanding under the Revolving Credit Facility, any Credit Facility or any Public Debt, in each case, of the Issuer or a Guarantor unless such Restricted Subsidiary is or becomes a Guarantor on the date on which the Guarantee is incurred and (ii) no U.S. Guarantor shall (A) acquire a Wholly-Owned Subsidiary with assets equal to or greater than $100 million as of the date of such Subsidiary's most recent annual financial statements immediately prior to the completion of such acquisition (an "*Acquired Material New U.S. Subsidiary*") unless such Acquired Material New U.S. Subsidiary becomes a Guarantor within 60 days following the date of completion of such acquisition or (B) establish a direct or indirect Wholly-Owned Subsidiary into which are transferred (or which otherwise accumulates or acquires) assets equal to or greater than $100 million (an "*Established Material New U.S. Subsidiary*" and, together with Acquired Material New U.S. Subsidiaries, "*Material New U.S. Subsidiaries*") unless such Established Material New U.S. Subsidiary becomes a Guarantor within 60 days following the publication of annual financial statements evidencing such assets and, in the case of each of clause (i) and clause (ii), as applicable, such Restricted Subsidiary or Material New U.S. Subsidiary, as applicable, executes and delivers to the Trustee a supplemental indenture pursuant to which it will provide a Guarantee, which Guarantee (in the case of clause (i)) will be senior to or *pari passu* with such Restricted Subsidiary's guarantee of such other Indebtedness; *provided*, *however*, that (x) such Restricted Subsidiary or Material New U.S. Subsidiary, as applicable, shall not be obligated to become such a Guarantor to the extent and for so long as the Incurrence of such Guarantee is contrary to the Agreed Security Principles or could give rise to or result in: (1) any breach or violation of statutory limitations, corporate benefit, financial assistance, fraudulent preference, thin capitalization rules, capital maintenance rules, guidance and coordination rules or the laws, rules or regulations (or analogous restriction) of any applicable jurisdiction; (2) any risk or liability for the officers, directors or (except in the case of a Restricted Subsidiary that is a partnership) shareholders of such Restricted Subsidiary (or, in the case of a Restricted Subsidiary that is a partnership, directors or shareholders of the partners of such partnership); or (3) any cost, expense, liability or obligation (including with respect to any Taxes) other than reasonable out of pocket expenses; and (y) any Established Material New U.S. Subsidiary shall not be obligated to become a Guarantor if, at the applicable date on which a determination is to be made as to whether such Established Material New U.S. Subsidiary is required to become a Guarantor, such Subsidiary is a holding company for which the Capital Stock of its Subsidiaries accounts for at least 95% of the fair market

value of its assets. At the option of the Issuer (and in accordance with the Agreed Security Principles), any Guarantee may contain limitations on Guarantor liability to the extent reasonably necessary.

Additional Guarantees granted pursuant to this provision shall be released as set forth under "—*Guarantees—Releases of the Guarantees*". A Guarantee of an additional Guarantor provided pursuant to clause (i) of the first paragraph of this covenant may also be released at the option of the Issuer if at the date of such release either (i) there is no Indebtedness of such Guarantor outstanding which was Incurred after the Issue Date and which could not have been Incurred in compliance with the Indenture if such Guarantor had not been designated as a Guarantor, or (ii) there is no Indebtedness of such Guarantor outstanding which was Incurred after the Issue Date and which could not have been Incurred in compliance with the Indenture as at the date of such release if such Guarantor were not designated as a Guarantor as at that date. The Trustee and the Security Agent shall each take all reasonable actions, including the granting of releases, consents or waivers under the Indenture and the Intercreditor Agreement or any Additional Intercreditor Agreement, to effectuate any release of a Guarantee in accordance with these provisions, subject to customary protections and indemnifications.

The validity and enforceability of the Guarantees and the Security Interests and the liability of each Guarantor will be subject to the limitations as described and set out in "*Limitations on Validity and Enforceability of the Security Interests and Guarantees and Certain Insolvency Law Considerations*".

Maintenance of Listing

The Issuer will use its commercially reasonable efforts to obtain and maintain the listing of the Notes on the Euro MTF market for so long as such Notes are outstanding; *provided* that, if at any time the Issuer determines that it will not maintain such listing, it will obtain prior to the delisting of the Notes from the Euro MTF market, and thereafter use its commercially reasonable efforts to maintain, a listing of such Notes on another recognized stock exchange.

Financial Calculations for Limited Condition Transactions

When calculating the availability under any basket or ratio under the Indenture, in each case in connection with a Limited Condition Transaction, the date of determination of such basket or ratio and of any Default or Event of Default shall, at the option of the Issuer, be the date the definitive agreements for such Limited Condition Transaction are entered into and such baskets or ratios shall be calculated on a *pro forma* basis after giving effect to such Limited Condition Transaction and the other transactions to be entered into in connection therewith (including any Incurrence of Indebtedness and the use of proceeds thereof) as if they occurred at the beginning of the applicable reference period for purposes of determining the ability to consummate any such Limited Condition Transaction (and not for purposes of any subsequent availability of any basket or ratio). For the avoidance of doubt, (x) if any of such baskets or ratios are exceeded as a result of fluctuations in such basket or ratio (including due to fluctuations in Consolidated EBITDA of the Issuer or the target company) subsequent to such date of determination and at or prior to the consummation of the relevant Limited Condition Transaction, such baskets or ratios will not be deemed to have been exceeded as a result of such fluctuations solely for purposes of determining whether the Limited Condition Transaction and the related transactions are permitted under the Indenture and (y) such baskets or ratios shall not be tested at the time of consummation of such Limited Condition Transaction or related transactions; *provided further* that if the Issuer elects to have such determinations occur at the time of entry into such definitive agreement, any such transactions (including any Incurrence of Indebtedness and the use of proceeds thereof) shall be deemed to have occurred on the date the definitive agreements are entered and outstanding thereafter for purposes of calculating any baskets or ratios under the Indenture after the date of such agreement and before the consummation of such Limited Condition Transaction.

Grant of the Guarantees and the Collateral.

The Issuer shall ensure that as soon as reasonably practicable after the Issue Date and, in any event within 90 days following the Issue Date, (i) all obligations under the Notes and the Indenture will be Guaranteed, subject to the Agreed Security Principles, by Guarantees granted by each of the Post-Issue Date Guarantors pursuant to one or more supplemental indentures and (ii) all obligations under the Notes, the Indenture and the Guarantees will be secured, subject to the Agreed Security Principles, by security interests granted pursuant to Security Documents on an equal and ratable first-priority basis over the Post-Issue Date Collateral.

The Issuer shall further ensure that, on the date on which any Material New U.S. Subsidiary becomes a Guarantor, (x) such Material New U.S. Subsidiary shall accede to the NY Law Pledge and Security Agreement

and (y) the shares in such Material New U.S. Subsidiary held by a U.S. Guarantor shall be pledged (subject to the Agreed Security Principles) for the benefit of the Security Agent on behalf of the Holders of the Notes.

The Issuer shall ensure that each of the supplemental indentures and Security Documents required to grant the Guarantees and create security interests in the Collateral shall be entered into as appropriate and cause the relevant Guarantor to deliver such agreements, instruments, certificates and opinions of counsel that may be required in connection therewith be delivered to the Trustee and the Security Agent.

Certain Transfers to Unrestricted Subsidiaries

Notwithstanding anything to the contrary contained herein, the Issuer will not, and will not permit any of its Restricted Subsidiaries to, transfer, directly or indirectly, to any Unrestricted Subsidiary any intellectual property if the fair market value of such intellectual property as measured at the time of such transfer (as determined in good faith by the Board of Directors or an Officer of the Issuer), when aggregated with the fair market value, as so determined, of all other intellectual property theretofore transferred, directly or indirectly, by the Issuer and its Restricted Subsidiaries to Unrestricted Subsidiaries, exceeds $2.0 million.

Events of Default

Each of the following is an "Event of Default" under the Indenture:

(1) default in any payment of interest or Additional Amounts on any Note issued under the Indenture when due and payable, continued for 30 days;

(2) default in the payment of the principal amount of or premium, if any, on any Note issued under the Indenture when due at its Stated Maturity, upon optional redemption, upon required repurchase, upon declaration or otherwise;

(3) failure by the Issuer or any Guarantor to comply with the provisions described under the caption "*—Certain Covenants—Merger and Consolidation*";

(4) failure by the Issuer or any of its Restricted Subsidiaries to comply for 30 days after written notice by the Trustee or the Holders of at least 25% in principal amount of the outstanding Notes with the provisions described under the caption "*—Change of Control*" (other than the failure to purchase Notes which will constitute an Event of Default under clause (2) above);

(5) failure by the Issuer or any of its Restricted Subsidiaries to comply for 60 days after written notice by the Trustee or the Holders of at least 25% in principal amount of the outstanding Notes with its other agreements contained in the Indenture (other than a default in performance, or breach, of a covenant or agreement which is specifically addressed in clauses (1), (2), (3) or (4) above) or the Notes;

(6) default under any mortgage, indenture or instrument under which there may be issued or by which there may be secured or evidenced any Indebtedness for money borrowed by the Issuer or any of its Restricted Subsidiaries (or the payment of which is Guaranteed by the Issuer or any of its Restricted Subsidiaries), other than Indebtedness owed to the Issuer or a Restricted Subsidiary, whether such Indebtedness or Guarantee now exists or is created after the Issue Date, which default:

    (a) is caused by a failure to pay principal at stated maturity on such Indebtedness, immediately upon the expiration of the grace period provided in such Indebtedness ("*payment default*"); or

    (b) results in the acceleration of such Indebtedness prior to its maturity (the "*cross acceleration provision*"),

    and, in each case, the principal amount of any such Indebtedness, together with the principal amount of any other such Indebtedness under which there has been a payment default or the maturity of which has been so accelerated, aggregates $40.0 million or more;

(7) certain events of bankruptcy, insolvency or court protection of the Issuer or a Significant Subsidiary or group of Restricted Subsidiaries that, taken together (as of the latest audited consolidated financial statements for the Issuer and its Restricted Subsidiaries), would constitute a Significant Subsidiary (the "*bankruptcy provisions*");

(8) failure by the Issuer or any Significant Subsidiary or group of Restricted Subsidiaries that, taken together (as of the latest audited consolidated financial statements for the Issuer and its Restricted Subsidiaries), would constitute a Significant Subsidiary to pay final judgments aggregating in excess of $40.0 million (exclusive of any amounts that a solvent insurance company has acknowledged liability for), which judgments are not paid, discharged or stayed for a period of 60 days after the judgment becomes final (the "*judgment default provision*");

(9) any security interest under the Security Documents shall, at any time, cease to be in full force and effect (other than in accordance with the terms of the relevant Security Document, the Intercreditor Agreement, any Additional Intercreditor Agreement and the Indenture) with respect to Collateral having a fair market value in excess of $10.0 million for any reason other than the satisfaction in full of all obligations under the Indenture or the release of any such security interest in accordance with the terms of the Indenture, the Intercreditor Agreement, any Additional Intercreditor Agreement or the Security Documents or any such security interest created thereunder shall be declared invalid or unenforceable or the Issuer or any Restricted Subsidiary shall assert in writing that any such security interest is invalid or unenforceable and any such Default continues for 10 days (the "*security default provision*"); and

(10) any Guarantee of a Significant Subsidiary ceases to be in full force and effect (other than in accordance with the terms of such Guarantee or the Indenture) or is declared invalid or unenforceable in a judicial proceeding or any Guarantor denies or disaffirms in writing its obligations under its Guarantee and such Default continues for 10 days (the "*guarantee default provision*").

However, a Default under clause (6) or clause (8) of this paragraph will not constitute an Event of Default until the Trustee or the Holders of 25% in principal amount of the outstanding Notes under the Indenture notify the Issuer of the Default and, with respect to such clause (6) or clause (8), the Issuer does not cure such Default within the time specified in such clause (6) or clause (8), as applicable, after receipt of such notice.

If an Event of Default (other than an Event of Default described in clause (7) above) occurs and is continuing, the Trustee by notice to the Issuer or the Holders of at least 25% in principal amount of the outstanding Notes by written notice to the Issuer and the Trustee, may, and the Trustee at the request of such Holders shall, declare the principal of, premium, if any, and accrued and unpaid interest on all the Notes to be due and payable. Upon such a declaration, such principal, premium and accrued and unpaid interest will be due and payable immediately. In the event of a declaration of acceleration of the Notes because an Event of Default described in clause (6) under "Events of Default" has occurred and is continuing, the declaration of acceleration of the Notes shall be automatically annulled if the event of default or payment default triggering such Event of Default pursuant to clause (6) shall be remedied or cured, or waived by the holders of the relevant Indebtedness, or the Indebtedness that gave rise to such Event of Default shall have been discharged in full, within 30 days after the declaration of acceleration with respect thereto and if (1) the annulment of the acceleration of the Notes would not conflict with any judgment or decree of a court of competent jurisdiction and (2) all existing Events of Default, except nonpayment of principal, premium or interest on the Notes that became due solely because of the acceleration of the Notes, have been cured or waived.

If an Event of Default described in clause (7) above occurs and is continuing, the principal of, premium, if any, and accrued and unpaid interest on all the Notes will become and be immediately due and payable without any declaration or other act on the part of the Trustee or any Holders.

Holders of the Notes may not enforce the Indenture or the Notes except as provided in the Indenture and may not enforce the Security Documents except as provided in such Security Documents and the Intercreditor Agreement or any Additional Intercreditor Agreement.

The Holders of a majority in principal amount of the outstanding Notes under the Indenture may waive all past or existing Defaults or Events of Default (except with respect to non-payment of principal, premium, interest or Additional Amounts, if any, other than pursuant to a rescission of acceleration of the Notes by Holders of at least a majority in aggregate principal amount of such Notes and a waiver of the payment default that resulted from such acceleration) and rescind any acceleration with respect to such Notes and its consequences if rescission would not conflict with any judgment or decree of a court of competent jurisdiction.

Subject to the provisions of the Indenture relating to the duties of the Trustee, if an Event of Default occurs and is continuing, the Trustee will be under no obligation to exercise any of the rights or powers under the Indenture at the request or direction of any of the Holders unless such Holders have offered to the Trustee indemnity and/or security satisfactory to the Trustee against any loss, liability or expense. Except to enforce the right to receive payment of principal or interest when due, no Holder may pursue any remedy with respect to the Indenture or the Notes unless:

(1) such Holder has previously given the Trustee notice that an Event of Default is continuing;

(2) Holders of at least 25% in principal amount of the outstanding Notes have requested the Trustee to pursue the remedy;

(3) such Holders have offered the Trustee security and/or indemnity satisfactory (including by way of prefunding) to it against any loss, liability or expense;

(4) the Trustee has not complied with such request within 60 days after the receipt of the offer of security and/or indemnity (including by way of prefunding); and

(5) the Holders of a majority in principal amount of the outstanding Notes have not given the Trustee a direction that, in the opinion of the Trustee, is inconsistent with such request within such 60-day period.

Subject to certain restrictions, the Holders of a majority in principal amount of the outstanding Notes are given the right to direct the time, method and place of conducting any proceeding for any remedy available to the Trustee or of exercising any trust or power conferred on the Trustee.

The Indenture will provide that, in the event an Event of Default has occurred and is continuing of which a responsible officer of the Trustee has received written notice, the Trustee will be required in the exercise of its powers to use the degree of care that a prudent person would use in the conduct of its own affairs. The Trustee, however, may refuse to follow any direction that conflicts with law or the Indenture or that the Trustee determines is unduly prejudicial to the rights of any other Holder or that would involve the Trustee in personal liability. Prior to taking or omitting to take any action under the Indenture, the Trustee will be entitled to indemnification and/or security (including by way of prefunding) satisfactory to it in its sole discretion against all losses and expenses caused by taking or omitting to take such action. The Indenture will provide that if a Default occurs and is continuing and the Trustee is informed of such occurrence in writing by the Issuer, the Trustee must give notice of the Default to the Holders within 60 days after being notified by the Issuer. Except in the case of a Default in the payment of principal of, or premium, if any, or interest on any Note, the Trustee may withhold notice if and so long as the Trustee determines that withholding notice is in the interests of the Holders. The Issuer is required to deliver to the Trustee, within 120 days after the end of each fiscal year, an Officer's Certificate indicating whether the signers thereof know of any Default or Event of Default that occurred during the previous year. The Issuer is required to deliver to the Trustee, within 30 days after the occurrence thereof, written notice of any events of which it is aware which would constitute certain Defaults, their status and what action the Issuer is taking or proposes to take in respect thereof.

The Indenture will provide that (i) if a Default occurs for a failure to deliver a required certificate in connection with another Default (an "*Initial Default*"), then at the time such Initial Default is cured, such Default for a failure to report or deliver a required certificate in connection with the Initial Default will also be cured without any further action and (ii) any Default or Event of Default for the failure to comply with the time periods prescribed in the covenant entitled "*—Reports*" or otherwise to deliver any notice or certificate pursuant to any other provision of the Indenture shall be deemed to be cured upon the delivery of any such report required by such covenant or notice or certificate, as applicable, even though such delivery is not within the prescribed period specified in the Indenture.

The Indenture will provide for the Trustee to take action on behalf of the Holders in certain circumstances, but only if the Trustee is indemnified and/or secured (including by way of prefunding) to its satisfaction. It may not be possible for the Trustee to take certain actions in relation to the Notes and, accordingly, in such circumstances the Trustee will be unable to take action, notwithstanding the provision of an indemnity to it, and it will be for Holders to take action directly.

Amendments and Waivers

The Notes Documents may be amended, supplemented or otherwise modified with the consent of Holders of at least a majority in principal amount of the Notes then outstanding (including consents obtained in connection with a purchase of, or tender offer or exchange offer for, Notes) and any Default or compliance with any provisions thereof may be waived with the consent of the Holders of at least a majority in principal amount of the Notes then outstanding (including consents obtained in connection with a purchase of, or tender offer or exchange offer for, Notes). If any amendment, supplement or waiver will affect solely the Dollar Notes or the Euro Notes, only the Holders of a majority in aggregate principal amount of the then outstanding Dollar Notes or Euro Notes (as the case may be), and not the consent of the Holders of a majority in aggregate principal amount of all of the Notes, shall be required.

However, without the consent of Holders holding not less than 90% of the then outstanding principal amount of the Notes affected (*provided*, *however,* that if any amendment, supplement, waiver or other modification or consent will affect solely the Dollar Notes or the Euro Notes, only the consent of the Holders of at least 90% of the aggregate principal amount of the then outstanding Dollar Notes affected or Euro Notes affected (as the case may be), and not the consent of the Holders of 90% of the principal amount of all of the Notes affected, shall be required), an amendment or waiver may not, with respect to any Notes held by a non-consenting Holder:

(1) reduce the principal amount of Notes whose Holders must consent to an amendment, waiver or modification;

(2) reduce the stated rate of or extend the stated time for payment of interest on any Note;

(3) reduce the principal of or extend the Stated Maturity of any Note;

(4) reduce the premium payable upon the redemption of any Note or change the time at which any Note may be redeemed, in each case as described above under "—*Optional Redemption*";

(5) make any Note payable in currency other than that stated in the Note;

(6) impair the right of any Holder to receive payment of principal of and interest or Additional Amounts, if any, on such Holder's Notes on or after the due dates therefor or to institute suit for the enforcement of any such payment on or with respect to such Holder's Notes;

(7) make any change in the provision of the Indenture described under "—*Withholding Taxes*" that adversely affects the right of any Holder of such Notes in any material respect or amends the terms of such Notes in a way that would result in a loss of an exemption from any of the Taxes described thereunder or an exemption from any obligation to withhold or deduct Taxes so described thereunder unless the Issuer or the applicable Payor agrees to pay Additional Amounts, if any, in respect thereof;

(8) release any security interests granted for the benefit of the Holders in the Collateral other than in accordance with the terms of the Intercreditor Agreement, any Additional Intercreditor Agreement, the Indenture or the applicable Security Documents;

(9) waive a Default or Event of Default with respect to the nonpayment of principal, premium or interest or Additional Amounts, if any, on the Notes (except pursuant to a rescission of acceleration of the Notes by the Holders of at least a majority in aggregate principal amount of such Notes and a waiver of the payment default that resulted from such acceleration);

(10) release any Guarantor from any of its obligations under its Guarantee or the Indenture, except in accordance with the terms of the Indenture, the Intercreditor Agreement or any Additional Intercreditor Agreement;

(11) make any change in the amendment or waiver provisions which require the Holders' consent described in this sentence.

Notwithstanding the foregoing, without the consent of any Holder, the Issuer, the Guarantors, the Trustee and the Security Agent, may amend or supplement any Notes Documents to:

(1) cure any ambiguity, omission, defect, error or inconsistency;

(2) provide for the assumption by a successor Person of the obligations of the Issuer or any Restricted Subsidiary under any Notes Document;

(3) add to the covenants or provide for a Guarantee for the benefit of the Holders or surrender any right or power conferred upon the Issuer or any Restricted Subsidiary;

(4) make any change that would provide additional rights or benefits to the Trustee or the Holders or that does not adversely affect the rights or benefits to the Trustee or any of the Holders in any material respect under the Notes Documents;

(5) make such provisions as necessary (as determined in good faith by the Board of Directors or an Officer of the Issuer) for the issuance of Additional Notes;

(6) provide for any Restricted Subsidiary to provide a Guarantee in accordance with the covenants described under "*Certain Covenants—Limitation on Indebtedness*" or "*Certain Covenants—Additional Guarantees*", to add Guarantees with respect to the Notes, to add security to or for the benefit of the Notes, or to confirm and evidence the release, termination, discharge or retaking of any Guarantee or Lien (including the Collateral and the Security Documents) or any amendment with respect to or securing the Notes when such release, termination, discharge or retaking or amendment is provided for under the Indenture, the Security Documents, the Intercreditor Agreement or any Additional Intercreditor Agreement;

(7) conform the text of the Indenture, the Security Documents or the Notes to any provision of this "*Description of the Notes*" to the extent that such provision in this "*Description of the Notes*" was intended to be a verbatim recitation of a provision of the Indenture, the Security Documents or the Notes;

(8) evidence and provide for the acceptance and appointment under the Indenture or the Intercreditor Agreement or any Additional Intercreditor Agreement of a successor Trustee or Security Agent pursuant to the requirements thereof or to provide for the accession by the Trustee or Security Agent to any Notes Document;

(9) in the case of the Security Documents, to mortgage, pledge, hypothecate or grant a security interest in favor of the Security Agent for the benefit of the Holders or parties to the Revolving Credit Facility, in any property which is required by the Security Documents or the Revolving Credit Facility (in each case, as in

effect on the Issue Date) to be mortgaged, pledged or hypothecated, or in which a security interest is required to be granted to the Security Agent, or to the extent necessary to grant a security interest in the Collateral for the benefit of any Person; *provided* that the granting of such security interest is not prohibited by the Indenture or the Intercreditor Agreement or any Additional Intercreditor Agreement and the covenant described under "*—Certain Covenants—Impairment of Security Interest*" is complied with; or

(10) as provided in "*—Certain Covenants—Additional Intercreditor Agreements*" or "*—Certain Covenants—Impairment of Security Interest*".

In formulating its decision on such matters, the Trustee shall be entitled to require and rely absolutely on such evidence as it deems necessary, including Officer's Certificates and Opinions of Counsel.

The consent of the Holders is not necessary under the Indenture to approve the particular form of any proposed amendment of any Notes Document. It is sufficient if such consent approves the substance of the proposed amendment. A consent to any amendment or waiver under the Indenture by any Holder of Notes given in connection with a tender of such Holder's Notes will not be rendered invalid by such tender.

For so long as the Notes are listed on the Luxembourg Stock Exchange and the rules of such exchange so require, the Issuer will publish notice of any amendment, supplement and waiver in Luxembourg in a daily newspaper with general circulation in Luxembourg (which is expected to be the *Luxemburger Wort*). Such notice of any amendment, supplement and waiver may also be published on the website of the Luxembourg Stock Exchange (*www.bourse.lu*).

Acts by Holders

The Indenture will provide that, for purposes of determining whether holders of the requisite principal amount of outstanding Notes have voted in favor of or consented to a particular matter, or undertaken any other act related to any Notes Document, the principal amount of Euro Notes shall be deemed to be the Dollar Equivalent of such principal amount of Euro Notes. In determining whether the Holders of the required principal amount of the Notes have concurred in any direction, waiver or consent, the Notes owned by the Issuer or by any Person directly or indirectly controlling, or controlled by, or under direct or indirect common control with, the Issuer will be disregarded and deemed not to be outstanding.

Defeasance

The Issuer at any time may terminate all obligations of the Issuer and the Guarantors under any series of Notes and the Indenture ("*legal defeasance*") and cure all then existing Defaults and Events of Default, except for certain obligations, including those respecting the defeasance trust (as defined below), the rights, powers, trusts, duties, immunities and indemnities of the Trustee and the obligations of the Issuer in connection therewith and obligations concerning issuing temporary Notes of the applicable series, registration of Notes of the applicable series, mutilated, destroyed, lost or stolen Notes of such series and the maintenance of an office or agency for payments in respect of the Notes and the segregation and holding of such payments in trust. Subject to the foregoing, if the Issuer exercises its legal defeasance option, the rights of the Trustee and the Holders under the Intercreditor Agreement or any Additional Intercreditor Agreement in effect at such time will terminate (other than with respect to the defeasance trust).

The Issuer at any time may terminate its and the Guarantors' obligations under the covenants described under "*Certain Covenants*" (other than clauses (1) and (2) of the first paragraph under "*—Certain Covenants—Merger and Consolidation—The Issuer*") and "*Change of Control*" and the default provisions relating to such covenants described under "Events of Default" above, the operation of the cross-default upon a payment default, the cross acceleration provisions, the bankruptcy provisions with respect to Significant Subsidiaries, the judgment default provision, the guarantee provision and the security default provision described under "Events of Default" above ("*covenant defeasance*").

The Issuer at its option at any time may exercise its legal defeasance option notwithstanding its prior exercise of its covenant defeasance option. If the Issuer exercises its legal defeasance option, payment of a series of Notes may not be accelerated because of an Event of Default with respect to such series of Notes. If the Issuer exercises its covenant defeasance option with respect to a series of Notes, payment of such series of Notes may not be accelerated because of an Event of Default specified in clause (5), (6), (7) (with respect only to the Significant Subsidiaries), (8), (9) or (10) under "*Events of Default*" above.

In order to exercise either defeasance option, the Issuer must irrevocably deposit in trust (the "*defeasance trust*") with the Trustee (or another entity designated by the Trustee for this purpose), with respect to Dollar Notes, cash

in U.S. dollars or U.S. dollar-denominated U.S. Government Obligations or a combination thereof and, with respect to Euro Notes, cash in euros or euro-denominated European Government Obligations or a combination thereof, in each case, for the payment of principal, premium, if any, and interest on the applicable series of Notes to redemption or maturity, as the case may be, and must comply with certain other conditions, including delivery to the Trustee of:

(1) an Opinion of Counsel in the United States to the effect that the beneficial owners of the Notes will not recognize income, gain or loss for U.S. federal income tax purposes as a result of such deposit and defeasance and will be subject to U.S. federal income tax on the same amount and in the same manner and at the same times as would have been the case if such deposit and defeasance had not occurred (and in the case of legal defeasance only, such Opinion of Counsel in the United States must be based on a ruling of the U.S. Internal Revenue Service or other change in applicable U.S. federal income tax law);

(2) an Officer's Certificate stating that the deposit was not made by the Issuer with the intent of defeating, hindering, delaying, defrauding or preferring any creditors of the Issuer;

(3) an Officer's Certificate and an Opinion of Counsel (which opinion of counsel may be subject to customary assumptions and exclusions), each stating that all conditions precedent provided for or relating to legal defeasance or covenant defeasance, as the case may be, have been complied with;

(4) an Opinion of Counsel to the effect that the trust resulting from the deposit does not constitute, or is qualified as, a regulated investment company under the U.S. Investment Company Act of 1940, as amended; and

(5) all other documents or other information that the Trustee may reasonably require in connection with either defeasance option.

Satisfaction and Discharge

The Indenture, and the rights of the Trustee and the Holders under the Intercreditor Agreement and any Additional Intercreditor Agreement and the Security Documents will be discharged and cease to be of further effect (except as to surviving rights of conversion or transfer or exchange of the Notes, as expressly provided for in the Indenture, and as to any other matters which are expressly stated to survive satisfaction and discharge) as to all outstanding Notes of a series when (1) either (a) all the Notes of such series previously authenticated and delivered (other than certain lost, stolen or destroyed Notes, and certain Notes for which provision for payment was previously made and thereafter the funds have been released to the Issuer) have been delivered to the Paying Agent for cancellation; or (b) all Notes of such series not previously delivered to the Paying Agent for cancellation (i) have become due and payable, (ii) will become due and payable at their Stated Maturity within one year or (iii) are to be called for redemption within one year under arrangements reasonably satisfactory to the Trustee for the giving of notice of redemption by the Paying Agent in the name, and at the expense, of the Issuer; (2) the Issuer has deposited or caused to be deposited with the Trustee (or another entity designated by the Trustee for this purpose), with respect to Dollar Notes, cash in U.S. dollars or U.S. dollar denominated U.S. Government Obligations or a combination thereof and, with respect to Euro Notes, cash in euros or euro-denominated European Government Obligations or a combination thereof, in each case, in an amount sufficient to pay and discharge the entire indebtedness on the Notes of such series not previously delivered to the Paying Agent for cancellation, for principal, premium, if any, and interest to the date of deposit (in the case of Notes that have become due and payable), or to the Stated Maturity or redemption date, as the case may be; (3) the Issuer has paid or caused to be paid all other sums payable under the Indenture; (4) the Issuer has delivered irrevocable instructions to the Trustee to apply the funds deposited towards the payment of the Notes of such series at maturity or on the redemption date, as the case may be; and (5) the Issuer has delivered to the Trustee an Officer's Certificate and an Opinion of Counsel each to the effect that all conditions precedent under the "*Satisfaction and Discharge*" section of the Indenture relating to the satisfaction and discharge of the Indenture with respect to such series of Notes have been complied with, *provided* that any such counsel may rely on any Officer's Certificate as to matters of fact (including as to compliance with the foregoing clauses (1), (2) and (3)).

No Personal Liability of Directors, Officers, Employees and Shareholders

No director, officer, employee, incorporator or shareholder of the Issuer or any of its Subsidiaries or Affiliates, as such, shall have any liability for any obligations of the Issuer or any Guarantor under the Notes Documents or for any claim based on, in respect of, or by reason of, such obligations or their creation. Each Holder by accepting a Note waives and releases all such liability. The waiver and release are part of the consideration for issuance of the Notes. Such waiver may not be effective to waive liabilities under the U.S. federal securities laws and it is the view of the SEC that such a waiver is against public policy.

Concerning the Trustee and Certain Agents

BNY Mellon Corporate Trustee Services Limited is to be appointed as Trustee under the Indenture. The Indenture will provide that, except during the continuance of an Event of Default of which a responsible officer of the Trustee has received written notice, the Trustee will perform only such duties as are set forth specifically in the Indenture. During the existence of an Event of Default of which a responsible officer of the Trustee has received written notice, the Trustee will exercise such of the rights and powers vested in it under the Indenture and use the same degree of care that a prudent Person would use in conducting its own affairs. The permissive rights of the Trustee to take or refrain from taking any action enumerated in the Indenture will not be construed as an obligation or duty.

The Indenture will impose certain limitations on the rights of the Trustee, should it become a creditor of the Issuer, to obtain payment of claims in certain cases, or to realize on certain property received in respect of any such claim as security or otherwise. The Trustee will be permitted to engage in other transactions with the Issuer and its Affiliates and Subsidiaries.

The Indenture will set out the terms under which the Trustee may retire or be removed, and replaced. Such terms will include, among others, (1) that the Trustee may be removed at any time by the Holders of a majority in principal amount of the then outstanding Note, or may resign at any time by giving written notice to the Issuer and (2) that if the Trustee at any time (a) has or acquires a conflict of interest that is not eliminated or (b) becomes incapable of acting as Trustee or becomes insolvent or bankrupt, then the Issuer may remove the Trustee, or any Holder who has been a bona fide Holder for not less than six months may petition any court for removal of the Trustee and appointment of a successor Trustee.

Any removal or resignation of the Trustee shall not become effective until the acceptance of appointment by the successor Trustee.

The Indenture will contain provisions for the indemnification of the Trustee for any loss, liability, taxes, charges or expenses incurred without gross negligence or willful misconduct on its part, arising out of or in connection with the acceptance or administration of the Indenture.

Notices

For so long as any of the Notes are listed on the Luxembourg Stock Exchange and the rules of the Luxembourg Stock Exchange so require, notices of the Issuer with respect to the Notes will be published in a daily newspaper with general circulation in Luxembourg (which is expected to be the *Luxemburger Wort*) or if, in the opinion of the Issuer such publication is not practicable, in an English language newspaper having general circulation in Europe. In addition, for so long as any Notes are represented by Global Notes, all notices to Holders of the Notes will be delivered by or on behalf of the Issuer to DTC, Euroclear or Clearstream, as applicable. Such notices may also be published on the website of the Luxembourg Stock Exchange *(www.bourse.lu*) in lieu of publication in the *Luxemburger Wort* so long as the rules of the Luxembourg Stock Exchange allow.

Each such notice shall be deemed to have been given on the date of such publication or, if published more than once on different dates, on the first date on which publication is made; *provided* that, if notices are mailed, such notice shall be deemed to have been given on the later of such publication and the seventh day after being so mailed. Any notice or communication mailed to a Holder shall be mailed to such Person by first-class mail or other equivalent means and shall be sufficiently given to such Holder if so mailed within the time prescribed. Failure to mail a notice or communication to a Holder or any defect in it shall not affect its sufficiency with respect to other Holders.

If a notice or communication is mailed in the manner provided above, it is duly given, whether or not the addressee receives it. For so long as any Notes are represented by Global Notes, notices to Holders of the Notes may be delivered via DTC, Euroclear or Clearstream, as applicable in lieu of notice via first-class mail.

Prescription

Claims against the Issuer and the Guarantors for the payment of principal or premium, if any, on the Notes will be prescribed ten years after the applicable due date for payment thereof. Claims against the Issuer and the Guarantors for the payment of interest on the Notes will be prescribed five years after the applicable due date for payment of interest.

Currency Indemnity and Calculation of Euro-Denominated Restrictions

The U.S. dollar, with respect to the Dollar Notes, and the euro, with respect to the Euro Notes, are the required currencies (each a "*Required Currency*") of account and payment for all sums payable by the Issuer and the Guarantors under or in connection with the Dollar Notes and the Euro Notes, respectively, and the related Guarantees, including damages. Any amount received or recovered in a currency other than the U.S. dollar (in respect of the Dollar Notes) or euro (in respect of the Euro Notes), whether as a result of, or the enforcement of, a judgment or order of a court of any jurisdiction, in the winding-up or dissolution of the Issuer or any Guarantor or otherwise by any Holder or by the Trustee, in respect of any sum expressed to be due to it from the Issuer or a Guarantor will only constitute a discharge to the Issuer or such Guarantor, as applicable, to the extent of the amount of the applicable Required Currency which the recipient is able to purchase with the amount so received or recovered in that other currency on the date of that receipt or recovery (or, if it is not practicable to make that purchase on that date, on the first date on which it is practicable to do so).

If the amount of the applicable Required Currency is less than the amount of such currency expressed to be due to the recipient or the Trustee under any Note or the Indenture, the Issuer and the Guarantors, if any, will indemnify them against any loss sustained by such recipient or the Trustee as a result. In any event, the Issuer and the Guarantors, if any, will indemnify the recipient or the Trustee on a joint and several basis against the cost of making any such purchase. For the purposes of this currency indemnity provision, it will be *prima facie* evidence of the matter stated therein for the Holder of a Note or the Trustee to certify in a manner reasonably satisfactory to the Issuer (indicating the sources of information used) the loss it Incurred in making any such purchase. These indemnities constitute a separate and independent obligation from the Issuer's and the Guarantors' other obligations, will give rise to a separate and independent cause of action, will apply irrespective of any waiver granted by any Holder of a Note or the Trustee (other than a waiver of the indemnities set out herein) and will continue in full force and effect despite any other judgment, order, claim or proof for a liquidated amount in respect of any sum due under any Note or any Guarantee, or to the Trustee.

Except as otherwise specifically set forth herein, for purposes of determining compliance with any U.S. dollar-denominated restriction herein, the Dollar Equivalent amount for purposes hereof that is denominated in a non-U.S. dollar currency shall be calculated based on the relevant currency exchange rate in effect on the date such non-euro amount is Incurred or made, as the case may be.

Listing

Application has been made to list the Notes on the Official List of the Luxembourg Stock Exchange and to admit the Notes to trading on the Euro MTF Market thereof.

Enforceability of Judgments

Since a substantial portion of the assets of the Issuer and the Guarantors (other than the U.S. Guarantors) are located outside the United States, any judgment obtained in the United States against the Issuer or any Guarantor (other than the U.S. Guarantors), including judgments with respect to the payment of principal, premium, interest, Additional Amounts, if any, and any redemption price and any purchase price with respect to the Notes, may not be collectable within the United States.

Consent to Jurisdiction and Service

In relation to any legal action or proceedings arising out of or in connection with the Indenture and the Notes, the Issuer and the Guarantors will in the Indenture irrevocably submit to the jurisdiction of the federal and state courts in the Borough of Manhattan in the City of New York, County and State of New York, United States.

Governing Law

The Indenture and the Notes, and the rights and duties of the parties thereunder shall be governed by and construed in accordance with the laws of the State of New York. The Intercreditor Agreement and the rights and duties of the parties thereunder shall be governed by and construed in accordance with the laws of England and Wales. The Security Documents will be governed by the laws of England and Wales, France, the Netherlands, Norway and the State of New York, as applicable.

Certain Definitions

"*Acquired Indebtedness*" means Indebtedness (1) of a Person or any of its Subsidiaries existing at the time such Person becomes a Restricted Subsidiary, or (2) assumed in connection with the acquisition of assets from such Person, in each case whether or not Incurred by such Person in connection with such Person becoming a Restricted Subsidiary or such acquisition or (3) of a Person or any of its Subsidiaries at the time such Person merges with or into or consolidates or otherwise combines with the Issuer or any Restricted Subsidiary. Acquired Indebtedness shall be deemed to have been Incurred, with respect to clause (1) of the preceding sentence, on the date such Person becomes a Restricted Subsidiary and, with respect to clause (2) of the preceding sentence, on the date of consummation of such acquisition of assets and, with respect to clause (3) of the preceding sentence, on the date of the relevant merger, consolidation or other combination.

"*Affiliate*" of any specified Person means any other Person, directly or indirectly, controlling or controlled by or under direct or indirect common control with such specified Person. For the purposes of this definition, "control" when used with respect to any Person means the power to direct the management and policies of such Person, directly or indirectly, whether through the ownership of voting securities, by contract or otherwise; and the terms "controlling" and "controlled" have meanings correlative to the foregoing.

"*Agreed Security Principles*" means the agreed security principles as set out in an annex to the Indenture as in effect on the Issue Date, as applied reasonably and in good faith by the Issuer.

"*Applicable Premium*" means,

(A) with respect to any Dollar Note, the greater of:

(1) 1% of the principal amount of such Dollar Note; and

(2) the excess (to the extent positive) of:

  (x) the present value at such redemption date of (i) the redemption price of such Dollar Note at April 1, 2024 (such redemption price (expressed in percentage of principal amount) being set forth in the table under the heading "*Optional Redemption—Dollar Notes*" (excluding accrued and unpaid interest)), *plus* (ii) all required interest payments due on such Dollar Note to and including April 1, 2024 (excluding accrued but unpaid interest), computed upon the redemption date using a discount rate equal to the Treasury Rate at such redemption date *plus* 50 basis points; over

  (y) the outstanding principal amount of such Dollar Note; or

(B) with respect to any Euro Note the greater of:

(1) 1% of the principal amount of such Euro Note; and

(2) the excess (to the extent positive) of:

  (x) the present value at such redemption date of (i) the redemption price of such Euro Note at April 1, 2024 (such redemption price (expressed in percentage of principal amount) being set forth in the table under the heading "*Optional Redemption—Euro Notes*" (excluding accrued and unpaid interest)), *plus* (ii) all required interest payments due on such Euro Note to and including April 1, 2024 (excluding accrued but unpaid interest), computed upon the redemption date using a discount rate equal to the Bund Rate at such redemption date *plus* 50 basis points; over

  (y) the outstanding principal amount of such Euro Note,

in each case, as calculated by the Issuer or on behalf of the Issuer by such Person as the Issuer shall designate.

For the avoidance of doubt, calculation of Applicable Premium shall not be an obligation or duty of the Trustee or the Security Agent, or any Paying Agent, Transfer Agent or Registrar.

"*Asset Disposition*" means any direct or indirect sale, lease (other than any sublease or Non-Capital Lease), transfer, issuance or other disposition, or a series of related sales, leases (other than subleases or Non-Capital Leases), transfers, issuances or dispositions that are part of a common plan, of shares of Capital Stock of a Subsidiary of the Issuer (other than directors' qualifying shares and shares required by any applicable law to be held by a Person other than the Issuer or a Restricted Subsidiary), property or other assets (each referred to for the purposes of this definition as a "*disposition*") by the Issuer or any of its Restricted Subsidiaries, including any

disposition by means of a merger, consolidation or similar transaction. Notwithstanding the preceding provisions of this definition, the following items shall not be deemed to be Asset Dispositions:

(1) a disposition by a Restricted Subsidiary to the Issuer or by the Issuer or a Restricted Subsidiary to a Restricted Subsidiary;

(2) a disposition of cash, Cash Equivalents, Temporary Cash Investments or Investment Grade Securities;

(3) a disposition of inventory, trading stock, work-in progress, security equipment or other equipment or assets in the ordinary course of business;

(4) a disposition of obsolete, damaged, retired, surplus or worn out equipment or assets or equipment, facilities or other assets that are no longer useful in the conduct of the business of the Issuer and its Restricted Subsidiaries and any transfer, termination, unwinding or other disposition of hedging instruments or arrangements not for speculative purposes;

(5) transactions permitted under "—*Certain Covenants—Merger and Consolidation*" or a transaction that constitutes a Change of Control;

(6) an issuance of Capital Stock by a Restricted Subsidiary to the Issuer or to another Restricted Subsidiary or as part of or pursuant to an equity incentive or compensation plan approved by the Board of Directors or the issuance of directors' qualifying shares and shares issued to individuals as required by applicable law;

(7) any dispositions of Capital Stock, properties or assets in a single transaction or series of related transactions with a fair market value (as determined in good faith by the Board of Directors or an Officer of the Issuer) of less than the greater of $10.0 million and 3.0% of Consolidated EBITDA;

(8) any Restricted Payment that is permitted to be made, and is made, under the covenant described above under "—*Certain Covenants—Limitation on Restricted Payments*", the making of any Permitted Payment, Permitted Investment or any other transaction specifically excluded from the definition of Restricted Payment;

(9) the granting of Liens not prohibited by the covenant described above under the caption "—*Certain Covenants—Limitation on Liens*";

(10) dispositions of receivables in connection with the compromise, settlement or collection thereof in the ordinary course of business or in bankruptcy or similar proceedings and exclusive of factoring or similar arrangements or any sale of assets received by the Issuer or a Restricted Subsidiary upon the foreclosure of a Lien granted in favor of the Issuer or any Restricted Subsidiary;

(11) the licensing or sub-licensing of intellectual property or other general intangibles and licenses, sub-licenses, leases or subleases of other property, in each case, in the ordinary course of business;

(12) foreclosure, condemnation, taking by eminent domain or any similar action with respect to any property or other assets;

(13) the sale or discount (with or without recourse, and on customary or commercially reasonable terms) of accounts receivable or notes receivable arising in the ordinary course of business, or the conversion or exchange of accounts receivable for notes receivable;

(14) sales or dispositions of receivables in connection with any Qualified Receivables Financing or any factoring transaction or in the ordinary course of business;

(15) [*Reserved*];

(16) any disposition of Capital Stock of a Restricted Subsidiary pursuant to an agreement or other obligation with or to a Person (other than the Issuer or a Restricted Subsidiary) from whom such Restricted Subsidiary was acquired, or from whom such Restricted Subsidiary acquired its business and assets (having been newly formed in connection with such acquisition), made as part of such acquisition and in each case comprising all or a portion of the consideration in respect of such sale or acquisition;

(17) any surrender or waiver of contract rights or the settlement, release or surrender of contract, tort or other claims of any kind;

(18) an issuance or sale by a Restricted Subsidiary of Preferred Stock that is permitted by the covenant described above under "*—Limitation on Indebtedness*";

(19) sales, transfers or other dispositions of Investments in joint ventures to the extent required by, or made pursuant to, customary buy/sell arrangements between the joint venture parties set forth in joint venture

arrangements and similar binding agreements; *provided* that any cash or Cash Equivalents received in such sale, transfer or disposition is applied in accordance with the "*—Limitation on Sales of Assets and Subsidiary Stock*" covenant;

(20) any disposition with respect to property or assets built, owned or otherwise acquired by the Issuer or any Restricted Subsidiary pursuant to customary sale and lease-back transactions, asset securitizations and other similar financings permitted by the Indenture;

(21) the disposition of assets to a Person who is providing services (the provision of which have been or are to be outsourced by the Issuer or any Restricted Subsidiary to such Person) related to such assets; *provided* that the Board of Directors or a member of senior management of the Issuer will certify that in the opinion of the Board of Directors or such member of senior management of the Issuer, the outsourcing transaction will be economically beneficial to the Issuer and its Restricted Subsidiaries (considered as a whole);

(22) the disposition of any assets (including Capital Stock) made in connection with the approval of any applicable antitrust authority or otherwise necessary or advisable in the good faith determination of the Issuer to consummate any acquisition, provided that any cash or Cash Equivalents received in such disposition are applied in accordance with the "*—Limitation on Sales of Assets and Subsidiary Stock*" covenant; and

(23) the disposition by the Issuer or any of its Restricted Subsidiaries of all intellectual property rights owned by it in, or related to, the Dynamic Source Steering Patents to Shearwater Geoassets AS and/or any of its Affiliates.

"*Associate*" means (i) any Person engaged in a Similar Business of which the Issuer or its Restricted Subsidiaries are the legal and beneficial owners of between 20% and 50% of all outstanding Voting Stock and (ii) any joint venture entered into by the Issuer or any Restricted Subsidiary.

"*Bank Products*" means any facilities or services related to (i) cash management, cash pooling, tax, treasury, payroll depository, overdraft, BACS, CHAPS, payment lines, credit or debit card, purchase card, electronic funds transfer, daylight exposures, open credits, contingent obligation lines, letters of credit, the collection of cheques, deposits and direct debits, cash or other cash management and cash pooling arrangements and (ii) daylight or treasury exposures of the Issuer or any of its Restricted Subsidiaries in respect of banking and treasury arrangements.

"*Board of Directors*" means (1) with respect to the Issuer or any corporation, the board of directors or managers, as applicable, of the corporation, or any duly authorized committee thereof; (2) with respect to any partnership, the board of directors or other governing body of the general partner of the partnership or any duly authorized committee thereof; and (3) with respect to any other Person, the board or any duly authorized committee of such Person serving a similar function. Whenever any provision of the Indenture requires any action or determination to be made by, or any approval of, a Board of Directors, such action, determination or approval shall be deemed to have been taken or made if approved by a majority of the directors (excluding employee representatives, if any) on any such Board of Directors (whether or not such action or approval is taken as part of a formal board meeting or as a formal board approval). The obligations of the "Board of Directors of the Issuer" under the Indenture may be exercised by the Board of Directors of a Restricted Subsidiary pursuant to a delegation of powers of the Board of Directors of the Issuer.

"*Bund Rate*" means, with respect to the Euro Notes as of the applicable redemption date, the yield to maturity at the time of computation of direct obligations of the Federal Republic of Germany (*Bunds* or *Bundesanleihen*) with a constant maturity (as officially compiled and published in the most recent financial statistics that has become publicly available at least two business days in Frankfurt (but not more than five business days in Frankfurt) prior to the redemption date (or, if such financial statistics are not so published or available, any publicly available source of similar market data selected in good faith by the Board of Directors or an Officer of the Issuer) most nearly equal to the period from the redemption date to April 1, 2024; *provided, however*, that if the period from the redemption date to April 1, 2024 is not equal to the constant maturity of a direct obligation of the Federal Republic of Germany for which a weekly average yield is given, the Bund Rate shall be obtained by linear interpolation (calculated to the nearest one-twelfth of a year) from the weekly average yields of direct obligations of the Federal Republic of Germany for which such yields are given, except that if the period from such redemption date to April 1, 2024 is less than one year, the weekly average yield on actually traded direct obligations of the Federal Republic of Germany adjusted to a constant maturity of one year shall be used; provided that, if such rate is less than zero, the Bund Rate shall be deemed to be zero.

"*Business Day*" means each day that is not a Saturday, Sunday or other day on which banking institutions in Paris, France or London, United Kingdom are authorized or required by law to close and, with respect to payments to be made under the Indenture, other than any day which is not a TARGET Settlement Day.

"*Capacity Agreement*" has the meaning assigned to such term in this Offering Memorandum under the caption "*Operating and Financial Review—Group organization—Exit of Contractual Data Acquisition business—Marine Exit and Streamer NewCo Transaction*".

"*Capital Stock*" of any Person means any and all shares of, rights to purchase, warrants or options for, or other equivalents of or partnership or other interests in (however designated), equity of such Person, including any Preferred Stock, but excluding any debt securities convertible into such equity.

"*Capitalized Lease Obligations*" means an obligation that is required to be classified and accounted for as a lease on the relevant obligor's balance sheet for financial reporting purposes on the basis of IFRS. The amount of Indebtedness will be, at the time any determination is to be made, the amount of such obligation required to be recognized on a balance sheet (excluding any notes thereto) prepared in accordance with IFRS, and the stated maturity thereof will be the date of the last payment of rent or any other amount due under such lease prior to the first date such lease may be terminated without penalty.

"*Cash Equivalents*" means:

(1) securities issued or directly and fully Guaranteed or insured by the United States or Canadian governments, a Permissible Jurisdiction, Switzerland or Norway or, in each case, any agency or instrumentality thereof (*provided* that the full faith and credit of such country or such member state is pledged in support thereof), having maturities of not more than two years from the date of acquisition;

(2) certificates of deposit, time deposits, eurodollar time deposits, overnight bank deposits or bankers' acceptances having maturities of not more than one year from the date of acquisition thereof (a "*Deposit*") or cash in credit balance or deposit which are freely transferable or convertible within 90 days, in each case, issued or held by any lender party to the Revolving Credit Facility or by any bank or trust company (a) whose commercial paper is rated at least "A-3" or the equivalent thereof by S&P or at least "P-3" or the equivalent thereof by Moody's (or if at the time neither is issuing comparable ratings, then a comparable rating of another Nationally Recognized Statistical Rating Organization) or (b) (in the event that the bank or trust company does not have commercial paper which is rated) having combined capital and surplus in excess of $250 million;

(3) repurchase obligations with a term of not more than 30 days for underlying securities of the types described in clauses (1) and (2) entered into with any bank meeting the qualifications specified in clause (2) above;

(4) commercial paper rated at the time of acquisition thereof at least "A-3" or the equivalent thereof by S&P or "P-3" or the equivalent thereof by Moody's or carrying an equivalent rating by a Nationally Recognized Statistical Rating Organization, if both of the two named rating agencies cease publishing ratings of investments or, if no rating is available in respect of the commercial paper, the issuer of which has an equivalent rating in respect of its long-term debt, and in any case maturing within one year after the date of acquisition thereof;

(5) readily marketable direct obligations issued by any state of the United States of America, any province of Canada, a Permissible Jurisdiction, Switzerland or Norway or any political subdivision thereof, in each case, having one of the two highest rating categories obtainable from either Moody's or S&P (or, if at the time, neither is issuing comparable ratings, then a comparable rating of another Nationally Recognized Statistical Rating Organization) with maturities of not more than two years from the date of acquisition;

(6) Indebtedness or preferred stock issued by Persons with a rating of "BBB-" or higher from S&P or "Baa3" or higher from Moody's (or, if at the time, neither is issuing comparable ratings, then a comparable rating of another Nationally Recognized Statistical Rating Organization) with maturities of 12 months or less from the date of acquisition;

(7) bills of exchange issued in the United States, Canada, a Permissible Jurisdiction, Switzerland, Norway or Japan eligible for rediscount at the relevant central bank and accepted by a bank (or any dematerialized equivalent);

(8) interests in investment funds at least 95% of the assets of which constitute Cash Equivalents of the kinds described in clauses (1) through (7) of this definition;

(9) the marketable securities portfolio owned by the Issuer and its Subsidiaries on the Issue Date;

(10) all items treated as cash and cash equivalents under IFRS; and

(11) other short-term investments in accordance with normal investment practices for cash management in investments of a type analogous to the foregoing.

"*Change of Control*" means the occurrence of any of the following:

(1) the Issuer becoming aware (by way of a report or any other filing pursuant to Section 13(d) of the Exchange Act, proxy, vote, written notice or otherwise) of any "person" or "group" of related persons (as such terms are used in Sections 13(d) and 14(d) of the Exchange Act as in effect on the Issue Date) becoming the "beneficial owner" (as defined in Rules 13d-3 and 13d-5 under the Exchange Act as in effect on the Issue Date), directly or indirectly, of more than 50% of the total voting power of the Voting Stock of the Issuer; or

(2) the sale, lease, transfer, conveyance or other disposition (other than by way of merger, consolidation or other business combination transaction), in one or a series of related transactions, of all or substantially all of the assets of the Issuer and its Restricted Subsidiaries taken as a whole to any Person, other than a Restricted Subsidiary.

"*Clearstream*" means Clearstream Banking, S.A. as currently in effect or any successor securities clearing agency.

"*Commodity Hedging Agreements*" means, in respect of a Person, any commodity purchase contract, commodity futures or forward contract, commodities option contract or other similar contract (including commodities derivative agreements or arrangements), to which such Person is a party or a beneficiary.

"*Consolidated EBITDA*" for the period of the four most recent fiscal quarters ending prior to the relevant date of determination for which internal consolidated financial statements are available, means, without duplication, the Consolidated Net Income for such period, plus the following to the extent deducted in calculating such Consolidated Net Income:

(1) Consolidated Interest Expense;

(2) Consolidated Income Taxes;

(3) depreciation, amortization (including, without limitation, amortization of intangibles and deferred financing fees) and other non-cash charges and expenses (including without limitation write-downs and impairment of property, plant, equipment and intangibles and other assets and the impact of purchase accounting on the Issuer and its Restricted Subsidiaries for such period) of the Issuer and its Restricted Subsidiaries (excluding any such non-cash charge or expense to the extent that it represents an accrual of or reserve for cash charges or expenses in any future period) for such period;

(4) any expenses, charges or other costs related to any issuance of Capital Stock, listing of Capital Stock, Investment, acquisition (including amounts paid in connection with the acquisition or retention of one or more individuals comprising part of a management team retained to manage the acquired business and any expenses, charges or other costs related to deferred or contingent payments), disposition, recapitalization or the Incurrence, issuance, redemption or refinancing of any Indebtedness permitted by the Indenture or any amendment, waiver, consent or modification to any document governing any such Indebtedness (whether or not successful) (including any such fees, expenses or charges related to the Transactions), in each case, as determined in good faith by the Board of Directors or an Officer of the Issuer;

(5) any minority interest expense consisting of income attributable to minority equity interests of third parties in such period or any prior period or any net earnings, income or share of profit of any Associates, associated company or undertaking, except to the extent of dividends declared or paid on, or other cash payments in respect of, equity interests held by such parties;

(6) [*Reserved*];

(7) other non-cash charges, write-downs or items reducing Consolidated Net Income (excluding any such non-cash charge, write-down or item to the extent it represents an accrual of or reserve for cash charges expected to be paid in any future period) or other items classified by the Issuer as special, extraordinary, exceptional, unusual or nonrecurring items less other non-cash items of income increasing Consolidated Net Income (excluding any such non-cash item of income to the extent it represents a receipt of cash expected to be paid, or the reversal of a reserve for cash charges, in each case, in any future period);

(8) the proceeds of any business interruption insurance received or that become receivable during such period to the extent the associated losses arising out of the event that resulted in the payment of such business interruption insurance proceeds were included in computing Consolidated Net Income;

(9) payments received, or that become receivable with respect to, expenses that are covered by the indemnification provisions in any agreement entered into by such Person in connection with an acquisition to the extent such expenses were included in computing Consolidated Net Income; and

(10) any Receivables Fees and discounts on the sale of accounts receivables in connection with any Qualified Receivables Financing representing, in the Issuer's reasonable determination, the implied interest component of such discount for such period.

Consolidated EBITDA for purposes of the percentage grower component of any basket set forth in any covenant of the Indenture, and for purposes of the last paragraph of the definition of "Fixed Charge Coverage Ratio", shall be measured for the Issuer and its Restricted Subsidiaries and for the period of the most recent four consecutive fiscal quarters ending prior to the date of determination for which internal consolidated financial statements of the Issuer are available, with such pro forma adjustments giving effect to such Investments, acquisitions, dispositions, mergers, amalgamations, consolidations, discontinued operations, operational changes or other transactions, as applicable, as are consistent with the pro forma adjustments set forth in the definition of "Fixed Charge Coverage Ratio".

"*Consolidated Income Taxes*" means Taxes, including deferred Taxes, based on income, profits or capital of any of the Issuer and its Restricted Subsidiaries whether or not paid, estimated, accrued or required to be remitted to any governmental authority.

"*Consolidated Interest Expense*" means, for any period (in each case, determined on the basis of IFRS), the consolidated net interest income/expense of the Issuer and its Restricted Subsidiaries, whether paid or accrued, plus or including (without duplication) any interest, costs and charges consisting of:

(1) interest expense attributable to Capitalized Lease Obligations (with interest in respect of a Capitalized Lease Obligation being deemed to accrue at an interest rate reasonably determined by a responsible financial or accounting officer of the Issuer to be the rate of interest implicit in such Capitalized Lease Obligation in accordance with IFRS);

(2) amortization of original issue discount but excluding amortization of debt issuance costs, fees and expenses and the expensing of any finance costs;

(3) non-cash interest expense;

(4) costs associated with Hedging Obligations (excluding amortization of fees or any non-cash interest expense attributable to the movement in mark-to-market valuation of such obligations);

(5) the consolidated interest expense that was capitalized during such period;

(6) interest actually paid by the Issuer or any Restricted Subsidiary under any Guarantee of Indebtedness or other obligation of any other Person; and

(7) the consolidated interest expense that would have arisen from the Reserved Indebtedness Amount had such Reserved Indebtedness Amount been Incurred as of the date of its classification as a Reserved Indebtedness Amount,

minus, to the extent included above, (i) accretion or accrual of discounted liabilities other than Indebtedness, (ii) any expense resulting from the discounting of any Indebtedness in connection with the application of purchase accounting in connection with any acquisition, and (iii) any Additional Amounts with respect to the Notes included in interest expense under IFRS or other similar tax gross up on any Indebtedness included in interest expense under IFRS.

"*Consolidated Net Income*" means, for any period, the net income (loss) of the Issuer and its Restricted Subsidiaries determined on a consolidated basis on the basis of IFRS; *provided, however*, that there will not be included in such Consolidated Net Income:

(1) subject to the limitations contained in clause (3) below, any net income (loss) of any Person if such Person is not a Restricted Subsidiary, except that the Issuer's equity in the net income of any such Person for such

period will be included in such Consolidated Net Income up to the aggregate amount of cash or Cash Equivalents actually distributed by such Person during such period to the Issuer or a Restricted Subsidiary as a dividend or other distribution or return on investment, as reasonably determined by an Officer (subject, in the case of a dividend or other distribution or return on investment to a Restricted Subsidiary, to the limitations contained in clause (2) below);

(2) solely for the purpose of determining the amount available for Restricted Payments under clause (c)(i) of the first paragraph of the covenant described under "*—Certain Covenants—Limitation on Restricted Payments*", any net income (loss) of any Restricted Subsidiary (other than a Guarantor) if such Subsidiary is subject to restrictions on the payment of dividends or the making of distributions by such Restricted Subsidiary to the Issuer by operation of the terms of such Restricted Subsidiary's charter or any agreement, instrument, judgment, decree, order, statute or governmental rule or regulation applicable to such Restricted Subsidiary or its shareholders (other than (a) restrictions that have been waived or otherwise released, (b) restrictions pursuant to the Notes, the Indenture or the Security Documents, (c) contractual restrictions in effect on the Issue Date with respect to a Restricted Subsidiary (including, without limitation, pursuant to the Revolving Credit Facility, the Intercreditor Agreement and any Additional Intercreditor Agreement), and other restrictions with respect to such Restricted Subsidiary that, taken as a whole, are not materially less favorable to the Holders than such restrictions in effect on the Issue Date, and (d) restrictions specified in clause (11) of the second paragraph of the covenant described under "*—Certain Covenants—Limitation on Restrictions on Distributions from Restricted Subsidiaries*"), except that the Issuer's equity in the net income of any such Restricted Subsidiary for such period will be included in such Consolidated Net Income up to the aggregate amount of cash or Cash Equivalents actually distributed or that could have been distributed by such Restricted Subsidiary during such period to the Issuer or another Restricted Subsidiary as a dividend or other distribution (as reasonably determined by an Officer) (subject, in the case of a dividend to another Restricted Subsidiary, to the limitation contained in this clause);

(3) any net gain (or loss) realized upon the sale or other disposition of any asset or disposed operations of the Issuer or any Restricted Subsidiaries (including pursuant to any sale/leaseback transaction) which is not sold or otherwise disposed of in the ordinary course of business (as determined in good faith by an Officer or the Board of Directors of the Issuer);

(4) any extraordinary, one-off, non-recurring, exceptional or unusual gain, loss, expense or charge, including, without limitation, any charges or reserves in respect of any restructuring, redundancy, relocation, refinancing, integration or severance or other post-employment arrangements, signing, retention or completion bonuses, transaction costs (including costs related to the Transactions or any investments), acquisition costs, business optimization, system establishment, software or information technology implementation or development, costs related to governmental investigations and curtailments or modifications to pension or post-retirement benefits schemes, litigation or any asset impairment charges or the financial impacts of natural disasters (including fire, flood and storm and related events), each as determined in good faith by an Officer or the Board of Directors of the Issuer;

(5) the cumulative effect of a change in accounting principles;

(6) any non-cash compensation charge or expense arising from any grant of stock, stock options or other equity based awards, any non-cash deemed finance charges in respect of any pension liabilities or other provisions, any non-cash net after-tax gains or losses attributable to the termination or modification of any employee pension benefit plan and any charge or expense relating to any payment made to holders of equity based securities or rights in respect of any dividend sharing provisions of such securities or rights to the extent such payment was made pursuant to the covenant described under "*—Certain Covenants—Limitation on Restricted Payments*";

(7) all deferred financing costs written off and premiums paid or other expenses incurred directly in connection with any early extinguishment of Indebtedness or Hedging Obligations and any net gain (loss) from any write-off or forgiveness of Indebtedness;

(8) any foreign currency translation gains or losses (except any foreign currency translation gains or losses in respect of the efficient part of hedging in accordance with IFRS);

(9) any one-time non-cash charges or any amortization or depreciation, in each case to the extent related to any acquisition of, merger or consolidation with, another Person or business or resulting from any reorganization or restructuring or incurrence of Indebtedness involving the Issuer or its Restricted Subsidiaries; and

(10) any goodwill or other intangible asset impairment charge or write-off or write-down.

"*Consolidated Net Leverage*" means the sum of the aggregate outstanding Indebtedness of the Issuer and its Restricted Subsidiaries (excluding Hedging Obligations) *plus* the Reserved Indebtedness Amount *less* cash and Cash Equivalents of the Issuer and its Restricted Subsidiaries, in each case, as of the relevant date of calculation on a consolidated basis on the basis of IFRS.

"*Consolidated Net Leverage Ratio*" means, as of any date of determination, the ratio of (x) Consolidated Net Leverage at such date to (y) the aggregate amount of Consolidated EBITDA for the period of the four most recent fiscal quarters ending prior to such date for which internal consolidated financial statements of the Issuer are available. In the event that the Issuer or any of its Restricted Subsidiaries Incurs, assumes, guarantees, repays, repurchases, redeems, defeases or otherwise discharges any Indebtedness subsequent to the commencement of the period for which the Consolidated Net Leverage Ratio is being calculated and on or prior to the date on which the event for which the calculation of the Consolidated Net Leverage Ratio is made (the "*Calculation Date*"), then the Consolidated Net Leverage Ratio will be calculated giving *pro forma* effect (as determined in good faith by a responsible accounting or financial officer of the Issuer) to such Incurrence, assumption, guarantee, repayment, repurchase, redemption, defeasance or other discharge of Indebtedness, and the use of the proceeds therefrom, as if the same had occurred at the beginning of the applicable reference period; *provided*, *however*, that (other than in connection with making any Restricted Payment pursuant to clause (10) or (18) of the third paragraph of the covenant described under "*—Limitation on Restricted Payments*") the *pro forma* calculation shall not give effect to (i) any Indebtedness incurred on the Calculation Date pursuant to the provisions described in the second paragraph under "*—Certain Covenants—Limitation on Indebtedness*" or (ii) the discharge on the Calculation Date of any Indebtedness to the extent that such discharge results from the proceeds of Indebtedness incurred pursuant to the provisions described in the second paragraph under "*—Certain Covenants—Limitation on Indebtedness".*

In addition, for purposes of calculating the Consolidated Net Leverage Ratio:

(1) acquisitions and Investments (each, a "*Purchase*") that have been made by the Issuer or any of its Restricted Subsidiaries, including through mergers or consolidations, or any Person or any of its Subsidiaries which are Restricted Subsidiaries acquired by the Issuer or any of its Restricted Subsidiaries, and including all related financing transactions and including increases in ownership of Subsidiaries which are Restricted Subsidiaries, during the reference period or subsequent to such reference period and on or prior to the Calculation Date, or that are to be made on the Calculation Date, will be given *pro forma* effect (as determined in good faith by a responsible accounting or financial officer of the Issuer and may include reasonably anticipated expense and cost reduction synergies as specified in the definition of Fixed Charge Coverage Ratio) as if they had occurred on the first day of the reference period; *provided* that, if definitive documentation has been entered into with respect to a Purchase that is part of the transaction causing a calculation to be made hereunder, Consolidated EBITDA for such period will be calculated after giving *pro forma* effect to such Purchase (including reasonably anticipated expense and cost reduction synergies as specified in the definition of Fixed Charge Coverage Ratio) as if such Purchase had occurred on the first day of such period, even if the Purchase has not yet been consummated as of the date of determination;

(2) the Consolidated EBITDA (whether positive or negative) attributable to discontinued operations, as determined in accordance with IFRS, and operations, businesses or group of assets constituting a business or operating unit (and ownership interests therein) disposed of prior to the Calculation Date, will be excluded on a *pro forma* basis as if such disposition occurred on the first day of such period (taking into account reasonably anticipated expense and cost reduction synergies as specified in the definition of Fixed Charge Coverage Ratio resulting from any such disposal, as determined in good faith by a responsible accounting or financial officer of the Issuer);

(3) any Person that is a Restricted Subsidiary on the Calculation Date will be deemed to have been a Restricted Subsidiary at all times during such reference period; and

(4) any Person that is not a Restricted Subsidiary on the Calculation Date will be deemed not to have been a Restricted Subsidiary at any time during such reference period.

"*Consolidated Senior Secured Net Leverage*" means the sum of the aggregate outstanding Senior Secured Indebtedness of the Issuer and its Restricted Subsidiaries (excluding Hedging Obligations and, for the avoidance of doubt, any lease, concession or license of property (or Guarantee thereof) which constitutes a Non-Capital Lease) *plus* the Reserved Indebtedness Amount that upon its Incurrence would constitute Senior Secured Indebtedness *less* cash and Cash Equivalents of the Issuer and its Restricted Subsidiaries, in each case, as of the relevant date of calculation on a consolidated basis on the basis of IFRS.

"*Consolidated Senior Secured Net Leverage Ratio*" means, as of any date of determination, the ratio of (x) Consolidated Senior Secured Net Leverage at such date to (y) the aggregate amount of Consolidated EBITDA for the period of the four most recent fiscal quarters ending prior to such date for which internal consolidated financial statements of the Issuer are available, in each case, calculated with such *pro forma* and other adjustments as are consistent with the *pro forma* provisions set forth in the definition of Consolidated Net Leverage Ratio*, provided*, *however*, that the proviso at the end of the first paragraph of the definition of Consolidated Net Leverage Ratio will be replaced with the proviso at the end of the first paragraph of the definition of Fixed Charge Coverage Ratio *mutatis mutandis*.

"*Contingent Obligations*" means, with respect to any Person, any obligation of such Person guaranteeing in any manner, whether directly or indirectly, any short-term lease or lease of low-value assets, dividend or other obligation that does not constitute Indebtedness ("*primary obligations*") of any other Person (the "*primary obligor*"), including any obligation of such Person, whether or not contingent:

(1) to purchase any such primary obligation or any property constituting direct or indirect security therefor;

(2) to advance or supply funds:

  (a) for the purchase or payment of any such primary obligation; or

  (b) to maintain the working capital or equity capital of the primary obligor or otherwise to maintain the net worth or solvency of the primary obligor; or

(3) to purchase property, securities or services primarily for the purpose of assuring the owner of any such primary obligation of the ability of the primary obligor to make payment of such primary obligation against loss in respect thereof.

"*Credit Facility*" means, with respect to the Issuer or any of its Subsidiaries, one or more debt facilities, arrangements, instruments or indentures (including the Revolving Credit Facility or commercial paper facilities and overdraft facilities) with banks, institutions or investors providing for revolving credit loans, term loans, receivables financing (including through the sale of receivables to such institutions or to special purpose entities formed to borrow from such institutions against such receivables), notes, letters of credit or other Indebtedness, in each case, as amended, restated, modified, renewed, refunded, replaced, restructured, refinanced, repaid, increased or extended in whole or in part from time to time (and whether in whole or in part and whether or not with the original administrative agent and lenders or another administrative agent or agents or other banks, institutions or investors and whether provided under the Revolving Credit Facility or one or more other credit or other agreements, indentures, financing agreements or otherwise) and, in each case, including all agreements, instruments and documents executed and delivered pursuant to or in connection with the foregoing (including any notes and letters of credit issued pursuant thereto and any Guarantee and collateral agreement, patent and trademark security agreement, mortgages or letter of credit applications and other Guarantees, pledges, agreements, security agreements and collateral documents). Without limiting the generality of the foregoing, the term "Credit Facility" shall include any agreement or instrument (1) changing the maturity of any Indebtedness Incurred thereunder or contemplated thereby, (2) adding Subsidiaries of the Issuer as additional borrowers or guarantors thereunder, (3) increasing the amount of Indebtedness Incurred thereunder or available to be borrowed thereunder or (4) otherwise altering the terms and conditions thereof.

"*Currency Agreement*" means, in respect of a Person, any foreign exchange contract, currency swap agreement, currency futures contract, currency option contract, currency derivative or other similar agreement to which such Person is a party or beneficiary.

"*Default*" means any event which is, or after notice or passage of time or both would be, an Event of Default.

"*Designated Non-Cash Consideration*" means the fair market value (as determined in good faith by the Board of Directors or an Officer of the Issuer) of non-cash consideration received by the Issuer or any of its Restricted Subsidiaries in connection with an Asset Disposition that is so designated as Designated Non-Cash Consideration pursuant to an Officer's Certificate, setting forth the basis of such valuation, *less* the amount of cash, Cash Equivalents or Temporary Cash Investments received in connection with a subsequent payment, redemption, retirement, sale or other disposition of such Designated Non-Cash Consideration. A particular item of Designated Non-Cash Consideration will no longer be considered to be outstanding when and to the extent it has been paid, redeemed or otherwise retired or sold or otherwise disposed of in compliance with the covenant described under "*—Certain Covenants—Limitation on Sales of Assets and Subsidiary Stock*".

"*Disqualified Stock*" means any Capital Stock that, by its terms (or by the terms of any security into which it is convertible or for which it is exchangeable, in each case, at the option of the holder of the Capital Stock), or upon

the happening of any event, matures or is mandatorily redeemable, pursuant to a sinking fund obligation or otherwise, or redeemable at the option of the holder of the Capital Stock, in whole or in part, in each case on or prior to the date that is 90 days after the earlier of (a) the Stated Maturity of the Notes or (b) the date on which there are no Notes outstanding. Notwithstanding the preceding sentence, any Capital Stock that would constitute Disqualified Stock solely because the holders of the Capital Stock have the right to require the issuer thereof to repurchase such Capital Stock upon the occurrence of a change of control or an asset disposition will not constitute Disqualified Stock if the terms of such Capital Stock provide that the issuer thereof may not repurchase or redeem any such Capital Stock pursuant to such provisions unless such repurchase or redemption complies with the covenant described above under the caption "*—Certain Covenants—Restricted Payments*". For purposes hereof, the amount of Disqualified Stock which does not have a fixed repurchase price shall be calculated in accordance with the terms of such Disqualified Stock as if such Disqualified Stock were purchased on any date on which Indebtedness shall be required to be determined pursuant to the Indenture, and if such price is based upon, or measured by, the fair market value of such Disqualified Stock, such fair market value shall be determined as set forth herein. Only the portion of Capital Stock which so matures or is mandatorily redeemable, is so convertible or exchangeable or is so redeemable at the option of the holder thereof prior to such date will be deemed to be Disqualified Stock.

"*Dollar Equivalent*" means, with respect to any monetary amount in a currency other than U.S. dollars, at or as of any time for the determination thereof, the amount of U.S. dollars obtained by converting such foreign currency involved in such computation into U.S. dollars at the spot rate for the purchase of U.S. dollars with the applicable foreign currency as quoted by Reuters (or, if Reuters ceases to provide such spot quotations, by any other reputable service that is providing such spot quotations, as selected by the Issuer) at approximately 11:00 a.m. (New York City time) on (i) with respect to any determination of the Dollar Equivalent of any principal amount of Euro Notes for purposes of the first sentence under the caption "*Acts by Holders*", the Issue Date and (ii) with respect to any other determination of the Dollar Equivalent, a date not more than two New York City business days prior to such determination.

"*Dynamic Source Steering Patents*" means certain patents, in each case, entitled "Towable and steerable marine seismic source arrangement" and registered to the Issuer and or certain of its Restricted Subsidiaries in the United States, Norway, the United Kingdom, Australia or the European Union.

"*Equity Offering*" means (x) a sale of Capital Stock of the Issuer or a Restricted Subsidiary (other than Disqualified Stock and other than offerings registered on Form S-8 (or any successor form) under the Securities Act or any similar offering in other jurisdictions and other than offerings to the Issuer or any Restricted Subsidiary), or (y) the sale of Capital Stock or other securities by any Person (other than to the Issuer or a Restricted Subsidiary), the proceeds of which are contributed to the equity (other than through the issuance of Disqualified Stock or through an Excluded Contribution) of the Issuer or any of its Restricted Subsidiaries.

"*Escrowed Proceeds*" means the proceeds from the offering of any debt securities or other Indebtedness paid into escrow accounts with an independent escrow agent on the date of the applicable offering or incurrence pursuant to escrow arrangements that permit the release of amounts on deposit in such escrow accounts upon satisfaction of certain conditions or the occurrence of certain events. The term "*Escrowed Proceeds*" shall include any interest earned on the amounts held in escrow.

"*Euroclear*" means Euroclear Bank SA/NV or any successor securities clearing agency.

"*European Government Obligations*" means any security that is (1) a direct obligation of any country that is a member of the European Monetary Union on the Issue Date, for the payment of which the full faith and credit of such country is pledged or (2) an obligation of a person controlled or supervised by and acting as an agency or instrumentality of any such country the payment of which is unconditionally Guaranteed as a full faith and credit obligation by such country, which, in either case under the preceding clause (1) or (2), is not callable or redeemable at the option of the issuer thereof.

"*European Union*" means all members of the European Union as of January 1, 2004. For the avoidance of doubt, all references to a "member" of the European Union shall include the United Kingdom.

"*Exchange Act*" means the U.S. Securities Exchange Act of 1934, as amended, and the rules and regulations of the SEC promulgated thereunder, as amended.

"*Excluded Contribution*" means Net Cash Proceeds or fair market value of property or assets received by the Issuer as capital contributions to the equity (other than through the issuance of Disqualified Stock) of the Issuer after the Issue Date or from the issuance or sale (other than to a Restricted Subsidiary or an employee stock ownership plan or trust established by the Issuer or any Subsidiary of the Issuer for the benefit of its employees

to the extent funded by the Issuer or any Restricted Subsidiary) of Capital Stock (other than Disqualified Stock) of the Issuer, in each case, to the extent designated as an Excluded Contribution pursuant to an Officer's Certificate of the Issuer.

"*fair market value*" means, with respect to any asset or property, the sale value that would be obtained in an arm's-length free market transaction between an informed and willing seller under no compulsion to sell and an informed and willing buyer under no compulsion to buy, as determined in good faith by the Board of Directors or a member of senior management of the Issuer.

"*Fitch*" means Fitch Ratings Inc., or any of its successors or assigns that is a Nationally Recognized Statistical Rating Organization.

"*Fixed Charge Coverage Ratio*" means, with respect to any Person and as of any date of determination, the ratio of (x) the aggregate amount of Consolidated EBITDA of such Person for the period of the four most recent fiscal quarters prior to such date for which internal consolidated financial statements are available to (y) the Fixed Charges of such Person for such four fiscal quarters. In the event that the specified Person or any of its Restricted Subsidiaries Incurs, assumes, guarantees, repays, repurchases, redeems, defeases, retires, extinguishes or otherwise discharges any Indebtedness (other than Indebtedness incurred under any revolving credit facility unless such Indebtedness has been permanently repaid and has not been replaced) or issues, repurchases or redeems Disqualified Stock or issues, repurchases or redeems Preferred Stock of a Restricted Subsidiary, in each case, subsequent to the commencement of the period for which the Fixed Charge Coverage Ratio is being calculated and on or prior to the date on which the event for which the calculation of the Fixed Charge Coverage Ratio is made (the "*Calculation Date*"), then the Fixed Charge Coverage Ratio will be calculated giving *pro forma* effect (as determined in good faith by a responsible accounting or financial officer of such Person), including in respect of reasonably anticipated expense and cost reduction synergies, to such incurrence, assumption, guarantee, repayment, repurchase, redemption, defeasance, retirement, extinguishment or other discharge of Indebtedness, or such issuance, repurchase or redemption of Disqualified Stock or Preferred Stock, and the use of the proceeds therefrom, as if the same had occurred at the beginning of the applicable four-quarter reference period; *provided, however*, that the *pro forma* calculation of Fixed Charges shall not give effect to (i) any Indebtedness incurred on the Calculation Date pursuant to the provisions described in the second paragraph of the covenant described above under "*—Certain Covenants—Limitation on Indebtedness*" (other than Indebtedness Incurred pursuant to clause (5)(II) of such second paragraph) or (ii) the discharge on the Calculation Date of any Indebtedness to the extent that such discharge results from the proceeds of Indebtedness Incurred pursuant to the provisions described in the second paragraph of the covenant described above under "*—Certain Covenants—Limitation on Indebtedness*" (other than Indebtedness discharged on such Calculation Date from the proceeds of Indebtedness Incurred pursuant to clause (5)(II) of such second paragraph).

In addition, for purposes of calculating the Fixed Charge Coverage Ratio:

(1) acquisitions or Investments (each, a "*Purchase*") that have been made by the specified Person or any of its Restricted Subsidiaries, including through mergers or consolidations, or by any Person or any of its Restricted Subsidiaries acquired by the specified Person or any of its Subsidiaries which are Restricted Subsidiaries, and including all related financing transactions and including increases in ownership of Restricted Subsidiaries, during the four-quarter reference period or subsequent to such reference period and on or prior to the Calculation Date, or that are to be made on the Calculation Date, will be given *pro forma* effect (as determined in good faith by a responsible accounting or financial officer of such Person), including in respect of reasonably anticipated expense and cost reduction synergies, as if they had occurred on the first day of the four-quarter reference period; *provided* that, if definitive documentation has been entered into with respect to a Purchase that is part of the transaction causing a calculation to be made hereunder, Consolidated EBITDA for such period will be calculated after giving *pro forma* effect to such Purchase (including reasonably anticipated expense and cost reduction synergies) as if such Purchase had occurred on the first day of such period, even if the Purchase has not yet been consummated as of the date of determination;

(2) the Consolidated EBITDA (whether positive or negative) attributable to discontinued operations, as determined in accordance with IFRS, and operations or businesses or groups of assets constituting a business or operating unit (and ownership interests therein) disposed of prior to the Calculation Date, will be excluded (taking into account reasonably anticipated expense and cost reduction synergies resulting from any such disposal, as determined in good faith by a responsible accounting or financial officer of the Issuer);

(3) the Fixed Charges attributable to discontinued operations, as determined in accordance with IFRS, and operations or businesses or groups of assets constituting a business or operating unit (and ownership interests therein) disposed of prior to the Calculation Date, will be excluded, but only to the extent that the obligations giving rise to such Fixed Charges will not be obligations of the specified Person or any of its Restricted Subsidiaries following the Calculation Date;

(4) any Person that is a Restricted Subsidiary on the Calculation Date will be deemed to have been a Restricted Subsidiary at all times during such four-quarter period;

(5) any Person that is not a Restricted Subsidiary on the Calculation Date will be deemed not to have been a Restricted Subsidiary at any time during such four-quarter period; and

(6) if any Indebtedness bears a floating rate of interest and is being given *pro forma* effect, the interest expense on such Indebtedness will be calculated as if the rate in effect on the Calculation Date had been the applicable rate for the entire period (taking into account any Hedging Obligation applicable to such Indebtedness if such Hedging Obligation has a remaining term as at the Calculation Date in excess of 12 months, or, if shorter, at least equal to the remaining term of such Indebtedness).

For the purposes of this definition and the definitions of Consolidated Net Leverage Ratio, Consolidated Senior Secured Net Leverage Ratio and Consolidated EBITDA, reasonably anticipated expense and cost reduction synergies will be limited to those that are expected (in the good faith determination of the Issuer) to be realized within 12 months of the Calculation Date, provided that the amount of such anticipated expense and cost reduction synergies in any four-quarter reference period for which Consolidated EBITDA is calculated will not in the aggregate exceed 10.0% of Consolidated EBITDA for such period.

"*Fixed Charges*" means, with respect to any specified Person for any period, the sum, without duplication, of:

(1) the Consolidated Interest Expense of such Person for such period; plus

(2) all dividends, whether paid or accrued and whether or not in cash, on or in respect of all Disqualified Stock of the Issuer or any Restricted Subsidiary or any series of Preferred Stock of any Restricted Subsidiary, other than dividends on Capital Stock payable to the Issuer or a Restricted Subsidiary.

"*French Listed Company Requirements*" means the applicable rules and regulations of the French *Autorité des Marchés Financiers* (or any successor regulator thereto) and Euronext Paris (including, without limitation, applicable provisions in respect of deadlines for making publicly available certain information).

"*Governmental Authority*" means any nation, sovereign or government, any state, province, territory or other political subdivision thereof, and any entity or authority exercising executive, legislative, judicial, regulatory, self-regulatory or administrative functions of or pertaining to government, including a central bank or stock exchange.

"*GSS*" means Global Seismic Shipping AS or any of its successors or assigns.

"*GSS Purchase Option*" means the right of the Issuer or any Restricted Subsidiary to acquire all of the Capital Stock of GSS upon, or at any time following, the occurrence of a Step-In Event.

"*Guarantee*" means any obligation, contingent or otherwise, of any Person directly or indirectly guaranteeing any Indebtedness of any other Person, including any such obligation, direct or indirect, contingent or otherwise, of such Person:

(1) to purchase or pay (or advance or supply funds for the purchase or payment of) such Indebtedness of such other Person (whether arising by virtue of partnership arrangements, or by agreements to keep-well, to purchase assets, goods, securities or services, to take-or-pay or to maintain financial statement conditions or otherwise); or

(2) entered into primarily for purposes of assuring in any other manner the obligee of such Indebtedness of the payment thereof or to protect such obligee against loss in respect thereof (in whole or in part),

provided, *however*, that the term "Guarantee" will not include endorsements for collection or deposit in the ordinary course of business. The term "Guarantee" used as a verb has a corresponding meaning.

"*Guarantor*" means (i) the Initial Guarantors and (ii) any other Restricted Subsidiary that Guarantees the Notes from time to time.

"*Hedging Obligations*" of any Person means the obligations of such Person pursuant to any Interest Rate Agreement, Currency Agreement or Commodity Hedging Agreement.

"*Holder*" means each Person in whose name the Notes are registered on the Registrar's books, which shall initially be the nominee of DTC or the nominee for the common depositary for Euroclear or Clearstream, as applicable.

"*IFRS*" means International Financial Reporting Standards (formerly International Accounting Standards) endorsed from time to time by the European Union or any variation thereof with which the Issuer or its Restricted Subsidiaries are, or may be, required to comply. Except as otherwise set forth in the Indenture, all ratios and calculations contained in the Indenture shall be computed in accordance with IFRS; *provided* that at any date after the Issue Date the Issuer may make an irrevocable election to establish that "IFRS" shall mean (for all purposes under the Indenture or solely for purposes of ratios, baskets, calculations and determinations based upon IFRS to be calculated or made, as the case may be, pursuant to the Indenture), except as otherwise specified herein, IFRS as in effect on a date that is on or prior to the date of such election. Notwithstanding the foregoing, the impact of IFRS 15 Revenue from Contracts with Customers and any successor standard thereto shall be disregarded with respect to all ratios, baskets, calculations and determinations based upon IFRS to be calculated or made, as the case may be, pursuant to the Indenture.

"*Incur*" means issue, create, assume, enter into any Guarantee of, incur or otherwise become liable for; *provided*, *however*, that any Indebtedness or Capital Stock of a Person existing at the time such Person becomes a Restricted Subsidiary (whether by merger, consolidation, acquisition or otherwise) will be deemed to be Incurred by such Restricted Subsidiary at the time it becomes a Restricted Subsidiary and the terms "Incurred" and "Incurrence" have meanings correlative to the foregoing and any Indebtedness pursuant to any revolving credit or similar facility shall, except as otherwise provided in the Indenture, only be "Incurred" at the time any funds are borrowed thereunder.

"*Indebtedness*" means, with respect to any Person on any date of determination (without duplication):

(1) the principal of indebtedness of such Person for borrowed money;

(2) the principal of obligations of such Person evidenced by bonds, debentures, notes or other similar instruments;

(3) all reimbursement obligations of such Person in respect of letters of credit, bankers' acceptances or other similar instruments (the amount of such obligations being equal at any time to the aggregate then undrawn and unexpired amount of such letters of credit or other instruments plus the aggregate amount of drawings thereunder that have been reimbursed) (except to the extent such reimbursement obligations relate to trade payables or other obligations not constituting Indebtedness and such obligations are satisfied within 30 days of Incurrence), in each case only to the extent that the underlying obligation in respect of which the instrument was issued would be treated as Indebtedness;

(4) the principal component of all obligations of such Person to pay the deferred and unpaid purchase price of property (except trade payables), where the deferred payment is arranged primarily as a means of raising finance, which purchase price is due more than one year after the date of placing such property in service or taking final delivery and title thereto;

(5) Capitalized Lease Obligations of such Person;

(6) the principal component of all obligations, or liquidation preference, of such Person with respect to any Disqualified Stock or, with respect to any Restricted Subsidiary, any Preferred Stock (but excluding, in each case, any accrued dividends);

(7) the principal component of all Indebtedness of other Persons secured by a Lien on any asset of such Person, whether or not such Indebtedness is assumed by such Person; *provided, however*, that the amount of such Indebtedness will be the lesser of (a) the fair market value of such asset at such date of determination (as determined in good faith by the Board of Directors or an Officer of the Issuer) and (b) the amount of such Indebtedness of such other Persons;

(8) Guarantees by such Person of the principal component of Indebtedness of other Persons to the extent Guaranteed by such Person; and

(9) to the extent not otherwise included in this definition, net obligations of such Person under Hedging Obligations (the amount of any such obligations to be equal at any time to the termination value of such agreement or arrangement giving rise to such obligation that would be payable by such Person at such time).

The term "Indebtedness" shall not include (i) any lease, concession or license of property (or guarantee thereof) which constitutes a Non-Capital Lease, (ii) prepayments of deposits received from clients or customers in the ordinary course of business, (iii) obligations under any license, permit or other approval (or guarantees given in respect of such obligations) Incurred prior to the Issue Date or in the ordinary course of business, (iv) any obligations of the Issuer or any Restricted Subsidiary arising or resulting from, or pursuant to the terms of, the Capacity Agreement or (v) any asset retirement obligations.

Except as otherwise provided in the Indenture, the amount of Indebtedness of any Person at any time in the case of a revolving credit or similar facility shall be the total amounts of funds borrowed and then outstanding. The amount of Indebtedness of any Person at any date shall be determined as set forth above or otherwise provided in the Indenture, and (other than with respect to letters of credit or Guarantees or Indebtedness specified in clause (7) or (8) above) shall equal the amount thereof that would appear on a balance sheet of such Person (excluding any notes thereto) prepared on the basis of IFRS.

Notwithstanding the above provisions, in no event shall the following constitute Indebtedness:

(1) Contingent Obligations Incurred in the ordinary course of business, obligations under or in respect of Qualified Receivables Financings and accrued liabilities Incurred in the ordinary course of business that are not more than 90 days past due;

(2) in connection with the purchase by the Issuer or any Restricted Subsidiary of any business, any post-closing payment adjustments to which the seller may become entitled to the extent such payment is determined by a final closing balance sheet or such payment depends on the performance of such business after the closing; *provided*, *however*, that, at the time of closing, the amount of any such payment is not determinable and, to the extent such payment thereafter becomes fixed and determined, the amount is paid within 30 days thereafter;

(3) for the avoidance of doubt, any obligations in respect of workers' compensation claims, early retirement or termination obligations, employee benefit and pension plans, pension fund obligations or contributions or similar claims, obligations or contributions or social security or wage Taxes; or

(4) amounts owed to (a) dissenting stockholders pursuant to applicable law (including in connection with, or as a result of, exercise of appraisal rights and the settlement of any claims or action (whether actual, contingent or potential)) or pursuant to or in connection with a consolidation, merger or transfer of all or substantially all of the assets of the Issuer and the Restricted Subsidiaries, taken as a whole, that complies with the covenant described under "*Merger and Consolidation*"; or (b) minority shareholders in connection with any domination and profit and loss transfer agreement.

For the avoidance of doubt, accrued interest and unamortized portion of debt issuance or incurrence costs with respect to any Indebtedness shall not constitute Indebtedness.

"*Independent Financial Advisor*" means an investment banking or accounting firm of international standing or any third-party appraiser of international standing; *provided*, *however*, that such firm or appraiser is not an Affiliate of the Issuer.

"*Intercreditor Agreement*" means the intercreditor agreement to be dated the Issue Date, between, among others, the Issuer, the original debtors named therein, Lucid Agency Services Limited, as the facility agent under the Revolving Credit Facility, the Trustee and the Security Agent, as amended, restated, supplemented, refinanced, replaced or otherwise modified from time to time.

"*Interest Rate Agreement*" means, with respect to any Person, any interest rate protection agreement, interest rate future agreement, interest rate option agreement, interest rate swap agreement, interest rate cap agreement, interest rate collar agreement, interest rate hedge agreement or other similar agreement or arrangement to which such Person is party or a beneficiary.

"*Investment*" means, with respect to any Person, all investments by such Person in other Persons (including Affiliates) in the form of any advance, loan or other extensions of credit (other than advances or extensions of credit to customers, suppliers, directors, officers or employees of any Person in the ordinary course of business, and excluding any debt or extension of credit represented by a bank deposit other than a time deposit) or capital contribution to (by means of any transfer of cash or other property or assets to others or any payment for property or assets or services for the account or use of others), or the Incurrence of a Guarantee of any obligation of, or any purchase or acquisition of Capital Stock, Indebtedness or other similar instruments issued by, such other Persons and all other items that are or would be classified as investments on a balance sheet (excluding any notes thereto) prepared on the basis of IFRS; *provided*, *however*, that endorsements of negotiable instruments and documents in the ordinary course of business will not be deemed to be an Investment. If the Issuer or any Restricted Subsidiary issues, sells or otherwise disposes of any Capital Stock of a Person that is a Restricted Subsidiary such that, after giving effect thereto, such Person is no longer a Restricted Subsidiary, any Investment by the Issuer or any Restricted Subsidiary in such Person remaining after giving effect thereto will be deemed to be a new Investment equal to the fair market value of the Capital Stock of such Subsidiary not sold or disposed of

in an amount determined as provided in the fourth paragraph of the covenant described above under the caption "*—Certain Covenants—Limitation on Restricted Payments*".

For purposes of "*—Certain Covenants—Limitation on Restricted Payments*":

(1) "Investment" will include the portion (proportionate to the Issuer's equity interest in a Restricted Subsidiary to be designated as an Unrestricted Subsidiary) of the fair market value of the net assets of such Restricted Subsidiary at the time that such Restricted Subsidiary is designated an Unrestricted Subsidiary; and

(2) any property transferred to or from an Unrestricted Subsidiary will be valued at its fair market value at the time of such transfer, in each case as determined in good faith by the Board of Directors or an Officer of the Issuer.

The amount of any Investment outstanding at any time shall be the original cost of such Investment, reduced (at the Issuer's option) by any dividend, distribution, interest payment, return of capital, repayment or other amount or value received in respect of such Investment.

"*Investment Grade Securities*" means:

(1) securities issued or directly and fully Guaranteed or insured by the United States or Canadian government or any agency or instrumentality thereof (other than Cash Equivalents);

(2) securities issued or directly and fully guaranteed or insured by a Permissible Jurisdiction, Switzerland or Norway or any agency or instrumentality thereof (other than Cash Equivalents);

(3) debt securities or debt instruments with a rating of "BBB –" or higher from S&P or "Baa3" or higher by Moody's or the equivalent of such rating by such rating organization or, if no rating of Moody's or S&P then exists, the equivalent of such rating by any other Nationally Recognized Statistical Ratings Organization, but excluding any debt securities or instruments constituting loans or advances among the Issuer and its Subsidiaries;

(4) investments in any fund that invests exclusively in investments of the type described in clauses (1), (2) and (3) above which fund may also hold cash and Cash Equivalents pending investment or distribution; and

(5) any investment in repurchase obligations with respect to any securities of the type described in clauses (1), (2) and (3) above which are collateralized at par or over.

"*Investment Grade Status*" shall occur when all of the Notes receive the following from at least two of the three rating agencies:

(1) a rating of "BBB –" or higher from S&P;

(2) a rating of "Baa3" or higher from Moody's; and

(3) a rating of "BBB –" or higher from Fitch.

or the equivalent of such rating by any such rating organization or, if no rating of Moody's, S&P or Fitch, as applicable, then exists, the equivalent of such rating by any other Nationally Recognized Statistical Ratings Organization.

"*ISIN*" means international securities identification number as assigned in accordance with International Organization for Standardization (ISO)-6166.

"*Issue Date*" means April 1, 2021.

"*Issuer*" means CGG S.A. or any Successor Issuer in accordance with the Indenture.

"*Lien*" means any mortgage, pledge, security interest, encumbrance, lien or charge of any kind (including any conditional sale or other title retention agreement or lease in the nature thereof).

"*Limited Condition Transaction*" means any Investment or acquisition, including, without limitation, by way of merger, amalgamation or consolidation, or the acquisition of Capital Stock, in each case, by the Issuer or one or more of its Restricted Subsidiaries the consummation of which is not conditioned upon the availability of, or on obtaining, third-party financing; *provided* that Consolidated EBITDA, other than for purposes of calculating any ratios and baskets in connection with the Limited Condition Transaction and the related transactions, shall not include any Consolidated EBITDA of or attributable to the target company or assets involved in any such Limited Condition Acquisition unless and until the closing of such Limited Condition Transaction shall have actually occurred.

"*Management Advances*" means loans or advances made to, or guarantees with respect to loans or advances made to, directors, officers, employees or consultants of the Issuer or any Restricted Subsidiary:

(1) (a) in respect of travel, entertainment or moving related expenses Incurred in the ordinary course of business or (b) for purposes of funding any such person's purchase of Capital Stock (or similar obligations) of the Issuer or its Subsidiaries, with (in the case of this sub-clause (b)) the approval of the Board of Directors;

(2) in respect of moving related expenses Incurred in connection with any closing or consolidation of any facility or office; or

(3) (in the case of this clause (3)) not exceeding the greater of $5.0 million and 1.5% of Consolidated EBITDA in the aggregate outstanding at any time.

"*Management Investors*" means (i) the officers, directors, employees and other members of the management of the Issuer or any of its Subsidiaries, or spouses, family members or relatives thereof, or any trust, partnership or other entity for the benefit of or the beneficial owner of which (directly or indirectly) is any of the foregoing, or any of their heirs, executors, successors and legal representatives, who at any date beneficially own or have the right to acquire, directly or indirectly, Capital Stock of the Issuer or any Restricted Subsidiary.

"*Market Capitalization*" means an amount equal to (i) the total number of issued and outstanding shares of common stock or common equity interests of the Issuer on the date of the declaration of the relevant dividends or the making of the relevant cash payments, advances, loans or expense reimbursements on Capital Stock multiplied by (ii) the arithmetic mean of the closing prices per share of such common stock or common equity interests for the 30 consecutive trading days immediately preceding such date.

"*Moody's*" means Moody's Investors Service, Inc. or any of its successors or assigns that is a Nationally Recognized Statistical Rating Organization.

"*Nationally Recognized Statistical Rating Organization*" means a nationally recognized statistical rating organization within the meaning of section 3(a)(62) of the Exchange Act.

"*Net Available Cash*" from an Asset Disposition means cash payments received (including any cash payments received by way of deferred payment of principal pursuant to a note or installment receivable or otherwise and net proceeds from the sale or other disposition of any securities received as consideration, but only as and when received, but excluding any other consideration received in the form of assumption by the acquiring person of Indebtedness or other obligations relating to the properties or assets that are the subject of such Asset Disposition or received in any other non-cash form) therefrom, in each case, net of:

(1) all legal, accounting, investment banking, title and recording tax expenses, commissions and other fees and expenses Incurred, and all Taxes paid or required to be paid or accrued as a liability under IFRS (after taking into account any available tax credits or deductions), as a consequence of such Asset Disposition;

(2) all payments made on any Indebtedness which is secured by any assets subject to such Asset Disposition, in accordance with the terms of any Lien upon such assets, or which must by its terms, or in order to obtain a necessary consent for such Asset Disposition, or by applicable law, be repaid out of the proceeds from such Asset Disposition;

(3) all distributions and other payments required to be made to minority interest holders (other than the Issuer or any Subsidiary) in Subsidiaries or joint ventures as a result of such Asset Disposition; and

(4) the deduction of appropriate amounts required to be provided by the seller as a reserve, on the basis of IFRS, against any liabilities associated with the assets disposed of in such Asset Disposition and retained by the Issuer or any Restricted Subsidiary after such Asset Disposition.

"*Net Cash Proceeds*", with respect to any issuance or sale of Capital Stock, means the cash proceeds of such issuance or sale net of attorneys' fees, accountants' fees, underwriters' or placement agents' fees, listing fees, discounts or commissions and brokerage, consultant and other fees and charges actually Incurred in connection with such issuance or sale and net of taxes paid or payable as a result of such issuance or sale (after taking into account any available tax credit or deductions).

"*Non-Capital Lease*" means any lease which would be considered to be a short-term lease or lease of low-value assets under IFRS.

"*Notes Documents*" means the Notes (including Additional Notes issued from time to time), the Indenture, the Security Documents, the Intercreditor Agreement and any Additional Intercreditor Agreement.

"*NY Law Pledge and Security Agreement*" means a New York law-governed first lien pledge and security agreement (U.S.) to be dated as of the Issue Date, by and among, *inter alia*, CGG Holding (U.S.) Inc., CGG Services (U.S.) Inc. and CGG Land (U.S.) Inc., as initial pledgors, and the Security Agent (as amended, restated, supplemented, refinanced, replaced or otherwise modified from time to time).

"*Offering Memorandum*" means this Offering Memorandum in relation to the offering of the Notes issued on the Issue Date.

"*Officer*" means, with respect to any Person, (1) any member of the Board of Directors, the Chief Executive Officer, the President, the Chief Financial Officer, any Vice President, the Treasurer or the Secretary (a) of such Person or (b) if such Person is owned or managed by a single entity, of such entity, or (2) any other individual designated as an "Officer" for the purposes of the Indenture by the Board of Directors of such Person. The obligations of an "Officer of the Issuer" may be exercised by the Officer of any Restricted Subsidiary of the Issuer who has been delegated such authority by the Board of Directors of the Issuer.

"*Officer's Certificate*" means, with respect to any Person, a certificate signed by one Officer of such Person.

"*Opinion of Counsel*" means a written opinion from legal counsel reasonably satisfactory to the Trustee. The counsel may be an employee of or counsel to the Issuer or its Subsidiaries.

"*Paying Agent*" means any Person authorized by the Issuer to pay the principal of (and premium, if any) or interest on any Note on behalf of the Issuer, which shall include the Paying Agent.

"*Permissible Jurisdiction*" means any member state of the European Union.

"*Permitted Asset Swap*" means the concurrent purchase and sale or exchange of assets used or useful in a Similar Business or a combination of such assets and cash, Cash Equivalents or Temporary Cash Investments between the Issuer or any of its Restricted Subsidiaries and another Person; *provided* that any cash or Cash Equivalents received in excess of the value of any cash or Cash Equivalents sold or exchanged must be applied in accordance with the covenant described under "*—Certain Covenants—Limitation on Sales of Assets and Subsidiary Stock*".

"*Permitted Collateral Liens*" means Liens on the Collateral:

(a) that are described in one or more of clauses (2), (3), (4), (5), (6), (8), (9), (11), (12), (18), (20), (23), (24), (33) and (35) of the definition of "Permitted Liens" and, in each case, arising by law or that would not materially interfere with the ability of the Security Agent to enforce the Security Interest in the Collateral; or

(b) to secure:

   (i) the Notes (other than Additional Notes) and the related Guarantees and any related "parallel debt" obligations under the Intercreditor Agreement, any Additional Intercreditor Agreement or the Security Documents;

   (ii) Indebtedness permitted to be Incurred under the first paragraph of the covenant described under "*—Certain Covenants—Limitation on Indebtedness*", provided that, on the date of such Incurrence after giving *pro forma* effect thereto (and the application of the proceeds thereof), the Consolidated Senior Secured Net Leverage Ratio for the Issuer and its Restricted Subsidiaries would have been no greater than 2.7 to 1.0;

   (iii) Indebtedness described under clause (1) of "*—Permitted Debt*", which Indebtedness may have super senior priority status not materially less favorable to the Holders than that accorded to the Revolving Credit Facility on Issue Date pursuant to the Intercreditor Agreement (or equivalent provisions in any Additional Intercreditor Agreement) (and for the avoidance of doubt, subject to customary exemptions for fees, costs, expenses or other similar amounts, including as contemplated by the terms of the Intercreditor Agreement or any Additional Intercreditor Agreement) (such ranking being referred to as "*super senior priority status*");

   (iv) Indebtedness described under clause (2) of "*—Permitted Debt*", to the extent such Guarantee is in respect of Indebtedness otherwise permitted to be secured and specified in this definition of Permitted Collateral Liens;

   (v) Indebtedness described under clauses (5)(I) and (5)(II) of "*—Permitted Debt*", *provided* that, in the case of Indebtedness described under clause (5)(II), on the date of the Incurrence of such Indebtedness

and after giving *pro forma* effect to such Incurrence and the application of the proceeds thereof, (a) the Consolidated Senior Secured Net Leverage Ratio for the Issuer and its Restricted Subsidiaries would have been no greater than 2.7 to 1.0 or (b) the Consolidated Senior Secured Net Leverage Ratio for the Issuer and its Restricted Subsidiaries would have been no greater than it was immediately prior to giving *pro forma* effect to such Incurrence and the application of the proceeds thereof (with any Indebtedness Incurred under clause (5)(I) of "*—Permitted Debt*" on the date of determination of the Consolidated Senior Secured Net Leverage Ratio being excluded from the calculation of such ratio and with the Issuer's or any Restricted Subsidiary's ability to Incur Indebtedness under clause (5)(II) of "*—Permitted Debt*" before utilizing clause (5)(I) thereof);

(vi) Indebtedness described under clause (6) of "*—Permitted Debt*", which Indebtedness may have super senior priority status not materially less favorable to the Holders than that accorded to the Revolving Credit Facility on the Issue Date pursuant to the Intercreditor Agreement;

(vii) Indebtedness Incurred described under clauses (7) (other than Capitalized Lease Obligations), (11) and (13) of "*—Permitted Debt*";

(viii) Indebtedness ranking junior in right of payment and with respect to realization of enforcement proceeds on Collateral to the Notes; and

(ix) any Refinancing Indebtedness in respect of Indebtedness referred to in the foregoing clauses (i) through (viii),

provided that each of the secured parties to any such Indebtedness (acting directly or through its respective creditor representative) will have entered into the Intercreditor Agreement or an Additional Intercreditor Agreement; *provided*, *further* that subject to the Agreed Security Principles (but without regard to any Agreed Security Principles limiting the types of assets that may be pledged to secure the Notes and the related Guarantees under the Indenture), all property and assets (including, without limitation, the Collateral) of the Issuer or any Restricted Subsidiary securing such Indebtedness (including any Guarantees thereof) or Refinancing Indebtedness secure the Notes and related Guarantees and the Indenture on a senior or *pari passu* basis (including by application of payment order, turnover or equalization provisions substantially consistent with the corresponding provisions set forth in the Intercreditor Agreement or any Additional Intercreditor Agreement), except to the extent provided in clauses (b)(iii) and (b)(vi) above; *provided, further, however,* that any Lien incurred under clause (ix) to secure Refinancing Indebtedness in respect of Indebtedness ranking junior in right of payment and with respect to the realization of enforcement proceeds on Collateral to the Notes and which was incurred in reliance on clause (viii) must be junior in priority to the Lien securing the Notes.

"*Permitted Investment*" means (in each case, by the Issuer or any of its Restricted Subsidiaries):

(1) Investments in (a) a Restricted Subsidiary (including the Capital Stock of a Restricted Subsidiary) or the Issuer or (b) a Person (including the Capital Stock of any such Person) and such Person will, upon the making of such Investment, become a Restricted Subsidiary;

(2) Investments in a Person if as a result of such Investment such Person is merged, consolidated or otherwise combined with or into, or transfers or conveys all or substantially all its assets to, the Issuer or a Restricted Subsidiary;

(3) Investments in cash, Cash Equivalents, Temporary Cash Investments or Investment Grade Securities;

(4) Investments in receivables owing to the Issuer or any Restricted Subsidiary created or acquired in the ordinary course of business or Investments in connection with any Qualified Receivables Financing;

(5) Investments in payroll, travel, relocation, entertainment and similar advances to cover matters that are expected at the time of such advances ultimately to be treated as expenses for accounting purposes and that are made in the ordinary course of business;

(6) Management Advances and any advances or loans not to exceed the greater of $5.0 million and 1.5% of Consolidated EBITDA at any one time outstanding to any management equity plan or stock option plan or any other management or employee benefit or incentive plan or unit trust or the trustees of any such plan or trust to pay for the purchase or other acquisition for value of Capital Stock (other than Disqualified Stock) of the Issuer;

(7) Investments in Capital Stock, obligations or securities received in settlement of debts created in the ordinary course of business and owing to the Issuer or any Restricted Subsidiary, or as a result of foreclosure, perfection or enforcement of any Lien, or in satisfaction of judgments or pursuant to any plan of reorganization or similar arrangement including upon the bankruptcy or insolvency of a debtor;

(8) Investments made as a result of the receipt of non-cash consideration from a sale or other disposition of property or assets, including an Asset Disposition, in each case, that was made in compliance with "*—Certain Covenants—Limitation on Sales of Assets and Subsidiary* Stock";

(9) Investments in existence on, or made pursuant to legally binding commitments in existence on, the Issue Date, and any extension, modification or renewal of any such Investment; *provided* that the amount of the Investment may be increased (a) as required by the terms of the Investment as in existence on the Issue Date or (b) as otherwise permitted under the Indenture;

(10) Hedging Obligations Incurred in compliance with "*—Certain Covenants—Limitation on Indebtedness*";

(11) Investments, taken together with all other Investments made pursuant to this clause (11) and at any time outstanding, in an aggregate amount at the time of such Investment (net of any distributions, dividends, payments or other returns in respect of such Investments) not to exceed the greater of $50.0 million and 12.5% of Consolidated EBITDA; *provided* that, if an Investment is made pursuant to this clause in a Person that is not a Restricted Subsidiary and such Person subsequently becomes a Restricted Subsidiary or is subsequently designated a Restricted Subsidiary pursuant to the covenant described under "*—Certain Covenants—Limitation on Restricted Payments*", such Investment shall thereafter be deemed to have been made pursuant to clause (1) or (2) of the definition of "Permitted Investments" and not this clause;

(12) pledges or deposits with respect to leases or utilities provided to third parties in the ordinary course of business or Liens otherwise described in the definition of "Permitted Liens" or made in connection with Liens permitted under the covenant described under "*—Certain Covenants—Limitation on Liens*";

(13) any Investment to the extent made using Capital Stock of the Issuer (other than Disqualified Stock) as consideration;

(14) any transaction to the extent constituting an Investment that is permitted and made in accordance with the provisions of the second paragraph of the covenant described under "*—Certain Covenants—Limitation on Affiliate Transactions*" (except those described in clauses (1), (3), (7), (8), (9) and (12) of that paragraph);

(15) Guarantees not prohibited by the covenant described under "*—Certain Covenants—Limitation on Indebtedness*" and (other than with respect to Indebtedness) guarantees, keepwells and similar arrangements in the ordinary course of business;

(16) Investments consisting of purchases and acquisitions of assets or services, loans or advances made to distributors, suppliers or lessors or customary trade arrangements or Investments made in connection with obtaining, maintaining or renewing client contacts, in each case, made in the ordinary course of business or consistent with past practice;

(17) Investments in loans under the Revolving Credit Facility, the Notes and any Additional Notes and any other Indebtedness of the Issuer and its Restricted Subsidiaries;

(18) Investments acquired after the Issue Date as a result of the acquisition by the Issuer or any of its Restricted Subsidiaries of another Person, including by way of a merger, amalgamation or consolidation with or into the Issuer or any of its Restricted Subsidiaries in a transaction that is not prohibited by the covenant described above under the caption "—Certain *Covenants—Merger and Consolidation*", to the extent that such Investments were not made in contemplation of such acquisition, merger, amalgamation or consolidation and were in existence on the date of such acquisition, merger, amalgamation or consolidation;

(19) Investments in, represented by or in respect of, or constituting, Bank Products; and

(20) Loans or advances by the Issuer or any Restricted Subsidiary to Persons that are or that have agreed to become co-investors with the Issuer or such Restricted Subsidiary in a joint venture, which loans or advances are made for the purpose of enabling such Persons to purchase Capital Stock in such joint venture; *provided* that the aggregate amount of such loans and advances made on or after the Issue Date and outstanding at any time shall not exceed $15.0 million.

"*Permitted Liens*" means, with respect to any Person:

(1) Liens on assets or property of a Restricted Subsidiary that is not a Guarantor securing Indebtedness of any Restricted Subsidiary that is not a Guarantor;

(2) pledges, deposits or Liens under workmen's compensation laws, unemployment insurance laws, social security laws or similar legislation, or insurance related obligations (including pledges or deposits securing liability to insurance carriers under insurance or self-insurance arrangements), or in connection with bids, tenders, completion guarantees, contracts (other than for borrowed money) or leases, or to secure utilities,

licenses, public or statutory obligations, or to secure surety, indemnity, judgment, appeal or performance bonds, guarantees of government contracts (or other similar bonds, instruments or obligations), or as security for contested taxes or import or customs duties or for the payment of rent, or other obligations of like nature, in each case Incurred in the ordinary course of business;

(3) Liens imposed by law, including, without limitation, carriers', warehousemen's, mechanics', landlords', materialmens' and repairmen's or other similar Liens, in each case for sums not yet overdue for a period of more than 60 days or that are bonded or being contested in good faith by appropriate proceedings;

(4) Liens for taxes, assessments or other governmental charges not yet delinquent or which are being contested in good faith by appropriate proceedings; *provided* that appropriate reserves required pursuant to IFRS have been made in respect thereof;

(5) Liens in favor of issuers of surety, performance or other bonds, guarantees or letters of credit or bankers' acceptances (not issued to support Indebtedness for borrowed money) issued pursuant to the request of and for the account of the Issuer or any Restricted Subsidiary in the ordinary course of its business;

(6) encumbrances, ground leases, easements (including reciprocal easement agreements), survey exceptions, or reservations of, or rights of others for, licenses, rights of way, sewers, electric lines, telegraph and telephone lines and other similar purposes, or zoning, building codes or other restrictions (including minor defects or irregularities in title and similar encumbrances) as to the use of real properties or Liens incidental to the conduct of the business of the Issuer and its Restricted Subsidiaries or to the ownership of its properties which do not in the aggregate materially adversely affect the value of said properties or materially impair their use in the operation of the business of the Issuer and its Restricted Subsidiaries;

(7) Liens (a) arising in respect of Bank Products or (b) on property or assets of the Issuer or any Restricted Subsidiary securing Hedging Obligations permitted under the Indenture;

(8) leases, licenses, subleases and sublicenses of assets (including real property and intellectual property rights), in each case entered into in the ordinary course of business;

(9) Liens arising out of judgments, decrees, orders or awards not giving rise to an Event of Default so long as any appropriate legal proceedings which may have been duly initiated for the review of such judgment, decree, order or award have not been finally terminated or the period within which such proceedings may be initiated has not expired;

(10) Liens on assets or property of the Issuer or any Restricted Subsidiary for the purpose of securing Capitalized Lease Obligations or Purchase Money Obligations, or securing the payment of all or a part of the purchase price of, or securing other Indebtedness Incurred to finance or refinance the acquisition, improvement or construction of, or leasing of assets or property acquired or constructed or leased; *provided* that (a) the aggregate principal amount of Indebtedness secured by such Liens is otherwise permitted to be Incurred under the Indenture and (b) any such Lien may not extend to any assets or property of the Issuer or any Restricted Subsidiary other than assets or property acquired, improved, constructed or leased with the proceeds of such Indebtedness and any improvements or accessions to such assets and property (and proceeds, dividends or distributions in respect thereof);

(11) Liens arising by virtue of any statutory or common law provisions relating to banker's Liens, rights of set-off or similar rights and remedies as to deposit accounts or other funds maintained with a depositary or financial institution;

(12) Liens arising from Uniform Commercial Code financing statement filings (or similar filings in other applicable jurisdictions) regarding leases entered into by the Issuer and its Restricted Subsidiaries in the ordinary course of business;

(13) Liens existing on, or provided for or required to be granted under written agreements existing on, the Issue Date;

(14) Liens on property, other assets or shares of Capital Stock of a Person at the time such Person becomes a Restricted Subsidiary (or at the time the Issuer or a Restricted Subsidiary acquires such property, other assets or shares of Capital Stock, including any acquisition by means of a merger, consolidation or other business combination transaction with or into the Issuer or any Restricted Subsidiary); *provided, however*, that such Liens are not created, incurred or assumed in anticipation of or in connection with such other Person becoming a Restricted Subsidiary (or such acquisition of such property, other assets or Capital Stock); *provided*, that such Liens are limited to all or part of the same property, other assets or Capital Stock

(plus improvements, accession, proceeds or dividends or distributions in connection with the original property, other assets or Capital Stock) that secured (or, under the written arrangements under which such Liens arose, could secure) the obligations to which such Liens relate;

(15) Liens on assets or property of the Issuer or any Restricted Subsidiary securing Indebtedness or other obligations of such Restricted Subsidiary owing to the Issuer or another Restricted Subsidiary, or Liens in favor of the Issuer or any Restricted Subsidiary;

(16) Liens securing Refinancing Indebtedness Incurred to refinance Indebtedness that was previously so secured, and permitted to be secured under the Indenture; *provided* that any such Lien is limited to all or part of the same property or assets (plus improvements, accessions, proceeds or dividends or distributions in respect thereof) that secured (or, under the written arrangements under which the original Lien arose, could secure) the Indebtedness being refinanced or is in respect of property that is or could be the security for or subject to a Permitted Lien hereunder;

(17) any interest or title of a lessor under any Capitalized Lease Obligation or any Non-Capital Lease;

(18) (a) mortgages, liens, security interest, restrictions, encumbrances or any other matters of record that have been placed by any government, statutory or regulatory authority, developer, landlord or other third party on property over which the Issuer or any Restricted Subsidiary has easement rights or on any leased property and subordination or similar arrangements relating thereto and (b) any condemnation or eminent domain proceedings affecting any real property;

(19) any Lien, encumbrance or other restriction (including put and call arrangements) with respect to Capital Stock of, or other ownership interests in, any joint venture, minority interest arrangement or similar investment or arrangement (and/or related assets, including shares or other ownership interests in any special purpose vehicle holding any such assets) pursuant to any joint venture, minority interest or other similar agreement;

(20) Liens on property or assets under construction (and related rights) in favor of a contractor or developer or arising from progress or partial payments by a third party relating to such property or assets;

(21) Liens on Receivables Assets Incurred in connection with a Qualified Receivables Financing;

(22) Liens securing or arising by reason of any netting or set-off arrangement entered into in the ordinary course of banking or other trading activities or pursuant to any derivative or hedging transaction, or liens over cash accounts securing cash pooling arrangements;

(23) Liens arising under general business conditions in the ordinary course of business, including without limitation the general business conditions of any bank or financial institution with whom the Issuer or any of its Restricted Subsidiaries maintains a banking relationship in the ordinary course of business (including arising by reason of any treasury and/or cash management, cash pooling, netting or set-off arrangement or other trading activities);

(24) Liens arising out of conditional sale, title retention, hire purchase, consignment or similar arrangements for the sale of goods entered into in the ordinary course of business;

(25) Liens securing Indebtedness or other obligations of a Receivables Subsidiary;

(26) Liens on Capital Stock or other securities or assets of any Unrestricted Subsidiary that secure Indebtedness of such Unrestricted Subsidiary;

(27) any security granted over the marketable securities portfolio described in clause (9) of the definition of "Cash Equivalents" in connection with the disposal thereof to a third party;

(28) (a) Liens created for the benefit of or to secure, directly or indirectly, the Notes and (b) Liens in respect of property and assets securing Indebtedness if the recovery in respect of such Liens is subject to loss-sharing or sharing of recoveries as among the Holders of the Notes and the creditors of such Indebtedness pursuant to the Intercreditor Agreement or an Additional Intercreditor Agreement;

(29) Permitted Collateral Liens;

(30) Liens provided that the maximum amount of Indebtedness secured in the aggregate at any one time pursuant to this clause (30) does not exceed the greater of $140.0 million and 35.0% of Consolidated EBITDA;

(31) Liens on (a) Escrowed Proceeds for the benefit of the related holders of debt securities or other Indebtedness (or the underwriters or arrangers thereof) or (b) on cash set aside at the time of the incurrence of any Indebtedness or government securities purchased with such cash, in either case to the extent such cash or government securities prefund the payment of interest on such Indebtedness and are held in escrow accounts or similar arrangement to be applied for such purpose;

(32) limited recourse Liens in respect of the ownership interests in, or assets owned by, any joint ventures which are not Restricted Subsidiaries securing obligations of such joint ventures;

(33) Liens arising pursuant to an order of attachment or injunction restraining disposal of assets or similar legal process and any other Liens arising in connection with court proceedings which are contested by the Issuer or any Restricted Subsidiary in good faith;

(34) Liens on cash, Cash equivalents or other assets arising in connection with the defeasance, discharge or redemption of Indebtedness;

(35) Liens arising by operation of law (or by agreement to the same effect) in the ordinary course of business and not as a result of any default or omission on the part of the Issuer or any Restricted Subsidiary; and

(36) Liens arising as a result of or in connection with the exercise of the GSS Purchase Option.

"*Permitted Reorganization*" means (1) any Specified Intragroup Asset Transfer or (2) any other amalgamation, merger, demerger, reorganization, reconstruction, consolidation, sale, combination, liquidation, dissolution, winding-up or corporate reconstruction or disposal or transfer of assets or Capital Stock, directly or indirectly, in one or a series of related transactions involving any of the Restricted Subsidiaries of the Issuer that is made on a solvent basis (any such transactions described in clauses (1) and (2) being referred to as a "*Reorganization*"), *provided* that, in the case of clauses (1) and (2), (a) any payments or assets distributed in such Reorganization remain within the Issuer and its Restricted Subsidiaries, (b) if any Capital Stock or assets distributed in such Reorganization form part of the Collateral, substantially equivalent (in the good faith judgment of the Issuer) Liens must be granted (unless already in existence) reasonably promptly following the completion of such Reorganization (subject to the Agreed Security Principles) such that the Capital Stock and assets pledged as Collateral following the Reorganization are substantially equivalent (subject to the Agreed Security Principles) to the pre-existing Collateral (in the good faith judgment of the Issuer), (c) if any Guarantees are released in connection with such Reorganization in accordance with the release provisions of the Indenture, Guarantees must be provided (unless already in existence) reasonably promptly following the completion of such Reorganization (subject to the Agreed Security Principles) such that the Guarantees in place following the Reorganization are substantially equivalent (subject to the Agreed Security Principles) to the pre-existing Guarantees (in the good faith judgment of the Issuer) and (d) (other than in the case of a Reorganization comprising the transfer or other disposition of Specified Pledged Assets) the Issuer will provide to the Trustee and the Security Agent a copy of the resolution of the Board of Directors of the Issuer or the applicable Restricted Subsidiary authorizing such Permitted Reorganization and deliver an Officer's Certificate certifying that such Permitted Reorganization complied or shall comply with the terms of the Indenture and did not result or will not result in a Default or Event of Default, and *provided further*, *however*, that, with respect to any Reorganization described in clause (1) above, the Issuer and/or the relevant Restricted Subsidiary shall, at its/their option, be permitted to delay compliance with the requirements of clauses (b), (c) and (d) above until reasonably promptly following either the termination of the relevant Sale Agreement prior to completion of the sale contemplated thereby or the abandonment of such sale (unless such sale is consummated, in which case no such compliance will be required). The Security Agent and the Trustee shall, at the expense of the Issuer, take any reasonable action necessary to effect any releases of Guarantees or Collateral requested by the Issuer in connection with a Permitted Reorganization.

"*Person*" means any individual, corporation, partnership, joint venture, association, joint-stock company, trust, unincorporated organization, limited liability company, government or any agency or political subdivision thereof or any other entity.

"*Preferred Stock*", as applied to the Capital Stock of any Person, means Capital Stock of any class or classes (however designated) which is preferred as to the payment of dividends or as to the distribution of assets upon any voluntary or involuntary liquidation or dissolution of such Person, over shares of Capital Stock of any other class of such Person.

"*Public Debt*" means any Indebtedness consisting of bonds, debentures, notes or other similar debt securities issued in (1) a public offering registered under the Securities Act or (2) a private placement to institutional investors that is underwritten for resale in accordance with Rule 144A or Regulation S under the Securities Act, whether or not it includes registration rights entitling the holders of such debt securities to registration thereof with the SEC for public resale.

"*Purchase Money Obligations*" means any Indebtedness Incurred to finance or refinance the acquisition, leasing, construction or improvement of property (real or personal) or assets (including Capital Stock), and whether acquired through the direct acquisition of such property or assets or the acquisition of the Capital Stock of any Person owning such property or assets, or otherwise.

"*Qualified Receivables Financing*" means any Receivables Financing that meets the following conditions: (1) all sales of accounts receivable and related assets to the Receivables Subsidiary are made at fair market value (as determined in good faith by the Board of Directors or an Officer of the Issuer), and (2) the financing terms, covenants, termination events and other provisions thereof shall be on market terms (as determined in good faith by the Board of Directors or an Officer of the Issuer) and may include Standard Securitization Undertakings.

"*Receivables Assets*" means any assets that are or will be the subject of a Qualified Receivables Financing.

"*Receivables Fees*" means distributions or payments made directly or by means of discounts with respect to any participation interest issued or sold in connection with, and other fees paid to a Person that is not a Restricted Subsidiary in connection with, any Receivables Financing.

"*Receivables Financing*" means any transaction or series of transactions that may be entered into by the Issuer or any of its Subsidiaries pursuant to which the Issuer or any of its Subsidiaries may sell, convey or otherwise transfer to (a) a Receivables Subsidiary (in the case of a transfer by the Issuer or any of its Subsidiaries), or (b) any other Person (in the case of a transfer by a Receivables Subsidiary), or may grant a security interest in, any accounts receivable (whether now existing or arising in the future) of the Issuer or any of its Subsidiaries, and any assets related thereto, including all collateral securing such accounts receivable, all contracts and all guarantees or other obligations in respect of such accounts receivable, proceeds of such accounts receivable and other assets which are customarily transferred or in respect of which security interests are customarily granted in connection with asset securitization transactions involving accounts receivable and any Hedging Obligations entered into by the Issuer or any such Subsidiary in connection with such accounts receivable.

"*Receivables Repurchase Obligation*" means any obligation of a seller of receivables in a Qualified Receivables Financing to repurchase receivables arising as a result of a breach of a representation, warranty or covenant or otherwise, including as a result of a receivable or portion thereof becoming subject to any asserted defense, dispute, off-set or counterclaim of any kind as a result of any action taken by, any failure to take action by or any other event relating to the seller.

"*Receivables Subsidiary*" means a Subsidiary of the Issuer (or another Person formed for the purposes of engaging in a Qualified Receivables Financing with the Issuer in which the Issuer or any Subsidiary of the Issuer makes an Investment and to which the Issuer or any Subsidiary of the Issuer transfers accounts receivable and related assets) which engages in no activities other than in connection with the financing of accounts receivable of the Issuer and its Subsidiaries, all proceeds thereof and all rights (contractual or other), collateral and other assets relating thereto, and any business or activities incidental or related to such business, and which is designated by the Board of Directors of the Issuer (as provided below) as a Receivables Subsidiary and:

(1) no portion of the Indebtedness or any other obligations (contingent or otherwise) of which (i) is guaranteed by the Issuer or any other Restricted Subsidiary (excluding guarantees of obligations (other than the principal of, and interest on, Indebtedness) pursuant to Standard Securitization Undertakings), (ii) is subject to terms that are substantially equivalent in effect to a guarantee of any losses on securitized or sold receivables by the Issuer or any other Restricted Subsidiary, other than pursuant to Standard Securitization Undertakings, (iii) is recourse to or obligates the Issuer or any other Restricted Subsidiary in any way other than pursuant to Standard Securitization Undertakings, or (iv) subjects any property or asset of the Issuer or any other Restricted Subsidiary, directly or indirectly, contingently or otherwise, to the satisfaction thereof, other than pursuant to Standard Securitization Undertakings;

(2) with which neither the Issuer nor any other Restricted Subsidiary has any contract, agreement, arrangement or understanding other than on terms which the Issuer reasonably believes to be no less favorable to the Issuer or such Restricted Subsidiary than those that might be obtained at the time from Persons that are not Affiliates of the Issuer; and

(3) to which neither the Issuer nor any other Restricted Subsidiary has any obligation to maintain or preserve such entity's financial condition or cause such entity to achieve certain levels of operating results.

Any such designation by the Board of Directors of the Issuer shall be evidenced to the Trustee by filing with the Trustee a copy of the resolution of the Board of Directors of the Issuer giving effect to such designation and an Officer's Certificate certifying that such designation complied with the foregoing conditions.

"*refinance*" means refinance, refund, replace, exchange, renew, repay, modify, restate, defer, substitute, supplement, reissue, resell, extend or increase (including pursuant to any defeasance or discharge mechanism) and the terms "refinances", "refinanced" and "refinancing" as used for any purpose in the Indenture shall have a correlative meaning.

"*Refinancing Indebtedness*" means Indebtedness that is Incurred to refund, refinance, replace, exchange, renew, repay or extend (including pursuant to any defeasance or discharge mechanism) any Indebtedness existing on the Issue Date or Incurred thereafter in compliance with the Indenture (including Indebtedness of the Issuer that refinances Indebtedness of any Restricted Subsidiary and Indebtedness of any Restricted Subsidiary that refinances Indebtedness of the Issuer or another Restricted Subsidiary), including Indebtedness that refinances Refinancing Indebtedness; *provided*, *however*, that:

(1) if the Indebtedness being refinanced constitutes Subordinated Indebtedness, the Refinancing Indebtedness has a final stated maturity at the time such Refinancing Indebtedness is Incurred that is the same as or later than the final stated maturity of the Indebtedness being refinanced or, if shorter, the Notes;

(2) such Refinancing Indebtedness is Incurred in an aggregate principal amount (or if issued with original issue discount, an aggregate issue price) that is equal to or less than the aggregate principal amount (or if issued with original issue discount, the aggregate accreted value) then outstanding of the Indebtedness being refinanced (plus, without duplication, any additional Indebtedness Incurred to pay interest or premiums required by the instruments governing such existing Indebtedness and costs, expenses and fees Incurred in connection therewith);

(3) if the Indebtedness being refinanced constitutes Subordinated Indebtedness, such Refinancing Indebtedness is subordinated to the Notes on terms at least as favorable to the Holders as those contained in the documentation governing the Indebtedness being refinanced,

provided, *however*, that Refinancing Indebtedness shall not include (x) Indebtedness of the Issuer or a Restricted Subsidiary that refinances Indebtedness of an Unrestricted Subsidiary or (y) Indebtedness of a Restricted Subsidiary that is not a Guarantor that refinances Indebtedness of the Issuer or a Guarantor.

Refinancing Indebtedness in respect of any Credit Facility or any other Indebtedness may be Incurred within 180 days after the termination, discharge or repayment of any such Credit Facility or other Indebtedness.

"*Replacement Assets*" means non-current properties and assets that replace the properties and assets that were the subject of an Asset Disposition or non-current properties and assets that will be used or useful in the Issuer's business or in that of the Restricted Subsidiaries or any and all businesses that in the good faith judgment of the Board of Directors or any Officer of the Issuer are reasonably related.

"*Representative*" means any trustee, agent or representative (if any) for an issue of Indebtedness or the provider of Indebtedness (if provided on a bilateral basis), as the case may be.

"*Restricted Investment*" means any Investment other than a Permitted Investment.

"*Restricted Subsidiary*" means any Subsidiary of the Issuer other than an Unrestricted Subsidiary.

"*Revolving Credit Facility*" means the super senior credit facility made available under the Revolving Credit Facility Agreement.

"*Revolving Credit Facility Agreement*" means the super senior credit facilities agreement, to be dated the Issue Date, among, *inter alios*, the Issuer, the original debtors named therein, Barclays Bank Ireland PLC, Goldman Sachs Bank Europe SE, J.P. Morgan AG and Morgan Stanley Bank AG, as mandated lead arrangers, Lucid Agency Services Limited, as facility agent, and the Security Agent, as amended, restated, supplemented, refinanced, replaced or otherwise modified from time to time.

"*S&P*" means S&P Global Ratings or any of its successors or assigns that is a Nationally Recognized Statistical Rating Organization.

"*SEC*" means the U.S. Securities and Exchange Commission.

"*Securities Act*" means the U.S. Securities Act of 1933, as amended, and the rules and regulations of the SEC promulgated thereunder, as amended.

"*Security Agent*" shall mean The Bank of New York Mellon, London Branch, except that, with respect to French security, "*Security Agent*" shall mean The Bank of New York Mellon SA/NV, Paris Branch, as security agent in France.

"*Security Documents*" means the security agreements, pledge agreements, collateral assignments and any other instrument and document executed and delivered pursuant to the Indenture or otherwise or any of the foregoing, as the same may be amended, supplemented or otherwise modified from time to time, creating the security interests in the Collateral as contemplated by the Indenture.

"*Senior Secured Indebtedness*" means, as of any date of determination, (a) any Indebtedness that is secured by a Lien (except for (x) Liens on the Collateral ranking junior to the Liens securing the Notes and (y) Liens securing Indebtedness Incurred under clause (12) of the second paragraph of the covenant described under "*—Certain Covenants—Limitation on Indebtedness*") and (b) any Indebtedness of a Restricted Subsidiary that is not a Guarantor.

"*Significant Subsidiary*" means any Restricted Subsidiary that meets any of the following conditions:

(1) the Issuer's and its Restricted Subsidiaries' investments in and advances to the Restricted Subsidiary exceed 10% of the total assets of the Issuer and its Restricted Subsidiaries on a consolidated basis as of the end of the most recently completed fiscal year;

(2) the Issuer's and its Restricted Subsidiaries' proportionate share of the total assets (after intercompany eliminations) of the Restricted Subsidiary exceeds 10% of the total assets of the Issuer and its Restricted Subsidiaries on a consolidated basis as of the end of the most recently completed fiscal year; or

(3) the Issuer's and its Restricted Subsidiaries' proportionate share of the Consolidated EBITDA of the Restricted Subsidiary exceeds 10% of the Consolidated EBITDA of the Issuer and its Restricted Subsidiaries on a consolidated basis for the most recently completed fiscal year.

"*Similar Business*" means (a) any businesses, services or activities engaged in by the Issuer or any of its Subsidiaries or any Associates on the Issue Date and (b) any businesses, services and activities that are related, complementary, incidental, ancillary or similar to any of the foregoing or are extensions or developments of any thereof (including, but not limited to sustainable health monitoring, carbon capture usage and storage, geothermal energy, mining, energy grid, high power computing, cloud computing, sensors and robotics).

"*Specified Intragroup Asset Transfer*" means any intragroup reorganization of the assets and business forming all or part of the Issuer's Multi-Physics business or GeoSoftware business (in each case, by way of transfer, contribution or disposal of such assets or business to one or more Restricted Subsidiaries) in contemplation of, or in preparation for, the sale of such assets or business or Restricted Subsidiaries to a Person that is not the Issuer or a Restricted Subsidiary in respect of which the Issuer or a Restricted Subsidiary shall have, at the time of or prior to completion of such transfer, contribution or disposal, entered into an agreement (whether in the form of an agreement, memorandum of understanding or put option) in order to effect such sale (the "*Sale Agreement*").

"*Standard Securitization Undertakings*" means representations, warranties, covenants, indemnities and guarantees of performance entered into by the Issuer or any Subsidiary of the Issuer which the Issuer has determined in good faith to be customary in a Receivables Financing, including those relating to the servicing of the assets of a Receivables Subsidiary, it being understood that any Receivables Repurchase Obligation shall be deemed to be a Standard Securitization Undertaking.

"*Specified Pledged Assets*" means property or assets comprising (i) inventory transferred in the ordinary course of business, (ii) obsolete, damaged, retired, surplus or worn-out equipment or assets or equipment, facilities or other assets that are no longer useful in the business of the Issuer and the Restricted Subsidiaries or (iii) other property or assets having a fair market value not greater than $5.0 million.

"*Stated Maturity*" means, with respect to any security, the date specified in such security as the fixed date on which the payment of principal of such security is due and payable, including pursuant to any mandatory redemption provision, but shall not include any contingent obligations, including those described in "*—Change of Control*" and the covenant under "*—Limitation on Sales of Assets and Subsidiary Stock*", to repay, redeem or repurchase any such principal prior to the date originally scheduled for the payment thereof.

"*Step-In Agreements*" has the meaning assigned to such term in this Offering Memorandum under the caption "*Operating and Financial Review—Group organization—Exit of Contractual Data Acquisition business—Marine Exit and Streamer NewCo Transaction*".

"*Step-In Event*" has the meaning assigned to such term in this Offering Memorandum under the caption "*Operating and Financial Review—Group organization—Exit of Contractual Data Acquisition business—Step-In Agreements*".

"*Subordinated Indebtedness*" means, with respect to any person, any Indebtedness (whether outstanding on the Issue Date or thereafter Incurred) which is expressly subordinated in right of payment to the Notes or any Guarantee of the Notes pursuant to a written agreement.

"*Subsidiary*" means, with respect to any Person:

(1) any corporation, association, or other business entity (other than a partnership, joint venture, limited liability company or similar entity) of which more than 50% of the total voting power of shares of Capital Stock entitled (without regard to the occurrence of any contingency) to vote in the election of directors, managers or trustees thereof is at the time of determination owned or controlled, directly or indirectly, by such Person or one or more of the other Subsidiaries of such Person or a combination thereof; or

(2) any partnership, joint venture, limited liability company or similar entity of which:

 (a) more than 50% of the capital accounts, distribution rights, total equity and voting interests or general or limited partnership interests, as applicable, are owned or controlled, directly or indirectly, by such Person or one or more of the other Subsidiaries of such Person or a combination thereof, whether in the form of membership, general, special or limited partnership interests or otherwise; and

 (b) such Person or any Subsidiary of such Person is a controlling general partner or otherwise controls such entity.

"*Taxes*" means all present or future taxes, duties, assessments or governmental charges of whatever nature (including interest and penalties with respect thereto) imposed, levied, collected, withheld or assessed by any Governmental Authority having power to tax.

"*Temporary Cash Investments*" means any of the following:

(1) any investment in:

 (a) direct obligations of, or obligations Guaranteed by, (i) the United States of America or Canada, (ii) a Permissible Jurisdiction, (iii) Switzerland, Norway or Japan, (iv) any country in whose currency funds are being held specifically pending application in the making of an investment or capital expenditure by the Issuer or a Restricted Subsidiary in that country with such funds or (v) any agency or instrumentality of any such country or member state; or

 (b) direct obligations of any country recognized by the United States of America rated at least "A" by S&P or "A-2" by Moody's (or, in either case, the equivalent of such rating by such organization or, if no rating of S&P or Moody's then exists, the equivalent of such rating by any Nationally Recognized Statistical Rating Organization);

(2) overnight bank deposits, and investments in time deposit accounts, certificates of deposit, bankers' acceptances and money market deposits (or, with respect to foreign banks, similar instruments) maturing not more than one year after the date of acquisition thereof issued by:

 (a) any lender under the Revolving Credit Facility;

 (b) any institution authorized to operate as a bank in any of the countries or member states referred to in subclause (1)(a) above; or

 (c) any bank or trust company organized under the laws of any such country or member state or any political subdivision thereof,

 in the case of 2(b) and (c), having capital and surplus aggregating in excess of $250 million (or the foreign currency equivalent thereof) and whose long-term debt is rated at least "A" by S&P or "A-2" by Moody's (or, in either case, the equivalent of such rating by such organization or, if no rating of S&P or Moody's then exists, the equivalent of such rating by any Nationally Recognized Statistical Rating Organization) at the time such Investment is made;

(3) repurchase obligations with a term of not more than 30 days for underlying securities of the types described in clause (1) or (2) above entered into with a Person meeting the qualifications described in clause (2) above;

(4) Investments in commercial paper, maturing not more than 270 days after the date of acquisition, issued by a Person (other than the Issuer or any of its Subsidiaries), with a rating at the time as of which any Investment therein is made of "P-2" (or higher) according to Moody's or "A-2" (or higher) according to S&P (or, in either case, the equivalent of such rating by such organization or, if no rating of S&P or Moody's then exists, the equivalent of such rating by any Nationally Recognized Statistical Rating Organization);

(5) Investments in securities maturing not more than one year after the date of acquisition issued or fully Guaranteed by any state, commonwealth or territory of the United States of America, Canada, a Permissible Jurisdiction, Switzerland, Norway or Japan or by any political subdivision or taxing authority of any such state, commonwealth, territory, country or member state, and rated at least "BBB-" by S&P or "Baa3" by Moody's (or, in either case, the equivalent of such rating by such organization or, if no rating of S&P or Moody's then exists, the equivalent of such rating by any Nationally Recognized Statistical Rating Organization);

(6) bills of exchange issued in the United States, Canada, a Permissible Jurisdiction, Switzerland, Norway or Japan eligible for rediscount at the relevant central bank and accepted by a bank (or any dematerialized equivalent);

(7) any money market deposit accounts issued or offered by a commercial bank organized under the laws of a country that is a member of the Organization for Economic Co-operation and Development, in each case, having capital and surplus in excess of $250 million (or the foreign currency equivalent thereof) or whose long term debt is rated at least "A" by S&P or "A2" by Moody's (or, in either case, the equivalent of such rating by such organization or, if no rating of S&P or Moody's then exists, the equivalent of such rating by any Nationally Recognized Statistical Rating Organization) at the time such Investment is made;

(8) investment funds investing 95% of their assets in securities of the type described in clauses (1) through (7) above (which funds may also hold reasonable amounts of cash pending investment or distribution); and

(9) investments in money market funds substantially all of the assets of which are of the type described in clauses (1) through (8) of the definition of "Cash Equivalents", including, any mutual fund for which the Trustee or an Affiliate of the Trustee serves as investment manager, administrator, shareholder servicing agent, and/or custodian or subcustodian, notwithstanding that the Trustee or an Affiliate of the Trustee receives fees from such funds for services it or its Affiliate renders to such fund in respect of such investment.

"*Transactions*" shall have the meaning assigned to the term "Refinancing" in this Offering Memorandum under the caption "*Offering Memorandum Summary—The Refinancing*".

"*Treasury Rate*" means, with respect to the Dollar Notes as of the applicable redemption date, the yield to maturity as of such redemption date of the United States Treasury securities with a constant maturity (as compiled and published in the most recent Federal Reserve Statistical Release H.15 (519) that has become publicly available at least two business days in New York City (but not more than five business days in New York City) prior to such redemption date (or, if such Statistical Release is no longer published or otherwise available, any publicly available source of similar market data selected by the Issuer in good faith)) most nearly equal to the period from such redemption date to April 1, 2024; *provided, however*, that if the period from the redemption date to April 1, 2024 is not equal to the constant maturity of a United States Treasury security for which a weekly average yield is given, the Treasury Rate shall be obtained by a linear interpolation (calculated to the nearest one-twelfth of a year) from the weekly average yields of the United States Treasury securities for which such yields are given, except that if the period from such redemption date to April 1, 2024, is less than one year, the weekly average yield on actually traded United States Treasury securities adjusted to a constant maturity of one year shall be used; and *provided, further,* that if such rate is less than zero, the Treasury Rate shall be deemed to be zero.

"*U.S. GAAP*" means generally accepted accounting principles in the United States of America as in effect from time to time.

"*U.S. Government Obligations*" means any security that is (1) a direct obligation of United States of America for the payment of which the full faith and credit of such country is pledged or (2) an obligation of a person controlled or supervised by and acting as an agency or instrumentality of such country the payment of which is unconditionally Guaranteed as a full faith and credit obligation by such country, which, in either case under the preceding clause (1) or (2), is not callable or redeemable at the option of the issuer thereof.

"*U.S. Guarantor*" means each of (i) as from the Issue Date, CGG Holding (U.S.) Inc., CGG Services (U.S.) Inc. and CGG Land (U.S.) Inc., (ii) as from the Post-Issue Date, Sercel Inc. and Sercel-GRC Corp., and (iii) at any time, the Material New U.S. Subsidiaries and any other Restricted Subsidiaries organized under the laws of any State of the United States or the District of Columbia that accede to the Indenture as additional Guarantors in accordance with the terms thereof.

"*Uniform Commercial Code*" means the New York Uniform Commercial Code or the equivalent legislation of any other state of the United States.

"*Unrestricted Subsidiary*" means:

(1) any Subsidiary of the Issuer that at the time of determination is an Unrestricted Subsidiary (as designated by the Board of Directors of the Issuer in the manner provided below); and

(2) any Subsidiary of an Unrestricted Subsidiary.

The Board of Directors of the Issuer may designate any Subsidiary of the Issuer (including any newly acquired or newly formed Subsidiary or a Person becoming a Subsidiary through merger, consolidation or other business combination transaction or Investment therein) to be an Unrestricted Subsidiary only if:

(1) such Subsidiary or any of its Subsidiaries does not own any Capital Stock or Indebtedness of, or own or hold any Lien on any property of, the Issuer or any other Subsidiary of the Issuer which is not a Subsidiary of the Subsidiary to be so designated or which is otherwise an Unrestricted Subsidiary; and

(2) such designation and the Investment of the Issuer in such Subsidiary complies with "*—Certain Covenants—Limitation on Restricted Payments*".

Any such designation by the Board of Directors of the Issuer shall be evidenced to the Trustee by filing with the Trustee a copy of the resolution of the Board of Directors of the Issuer giving effect to such designation and an Officer's Certificate certifying that such designation complies with the foregoing conditions.

The Board of Directors of the Issuer may designate any Unrestricted Subsidiary to be a Restricted Subsidiary; *provided* that immediately after giving effect to such designation (1) no Default or Event of Default would result therefrom and (2)(x) the Issuer could Incur at least $1.00 of additional Indebtedness under the Fixed Charge Coverage Ratio in the first paragraph of the covenant described under "*—Certain Covenants—Limitation on Indebtedness*" or (y) the Fixed Charge Coverage Ratio would not be less than it was immediately prior to giving effect to such designation, in each case, on a *pro forma* basis taking into account such designation. Any such designation by the Board of Directors shall be evidenced to the Trustee by promptly filing with the Trustee a copy of the resolution of the Board of Directors giving effect to such designation or an Officer's Certificate certifying that such designation complied with the foregoing provisions.

"*Voting Stock*" of a Person means all classes of Capital Stock of such Person then outstanding and normally entitled to vote in the election of directors of such Person.

"*Wholly-Owned Subsidiary*" means, with respect to any Person, any Subsidiary of such Person all of the outstanding Capital Stock (other than directors' qualifying shares and shares of Subsidiaries required to be owned by third parties pursuant to applicable law) of which are owned by such Person or by one or more other Wholly-Owned Subsidiaries of such Person or by such Person and one or more other Wholly-Owned Subsidiaries of such Person.

BOOK-ENTRY, DELIVERY AND FORM

General

The Dollar Notes sold to qualified institutional buyers ("QIBs") in reliance on Rule 144A under the Securities Act will initially be represented by one or more global notes in registered form without interest coupons attached (the "Dollar Rule 144A Global Notes"), and the Euro Notes sold to QIBs in reliance on Rule 144A under the Securities Act will initially be represented by one or more global notes in registered form without interest coupons attached (the "Euro Rule 144A Global Notes" and, together with the Dollar Rule 144A Global Notes, the "Rule 144A Global Notes"). The Dollar Notes sold to non-U.S. persons outside the United States in reliance on Regulation S under the Securities Act will initially be represented by one or more global notes in registered form without interest coupons attached (the "Dollar Regulation S Global Notes") and the Euro Notes sold to non-U.S. persons outside the United States in reliance on Regulation S under the Securities Act will initially be represented by one or more global notes in registered form without interest coupons attached (the "Euro Regulation S Global Notes" and, together with the Dollar Regulation S Global Notes, the "Regulation S Global Notes"; the Regulation S Global Notes and the Rule 144A Global Notes together, the "Global Notes"; the Euro Rule 144A Global Notes together with the Euro Regulation S Global Notes, the "Euro Global Notes" and the Dollar Rule 144A Global Notes together with the Dollar Regulation S Global Notes, the "Dollar Global Notes"). The Euro Global Notes will be deposited, on the Issue Date, with, or on behalf of, a common depositary for the accounts of Euroclear and Clearstream and registered in the name of the nominee of the common depositary. The Dollar Global Notes will be deposited, on the Issue Date, with the custodian for DTC and registered in the name of Cede & Co., as nominee of DTC.

Ownership of interests in the Rule 144A Global Notes (the "Rule 144A Book-Entry Interests") and ownership of interests in the Regulation S Global Notes (the "Regulation S Book-Entry Interests" and, together with the Rule 144A Book-Entry Interests, the "Book-Entry Interests") will be limited to persons that have accounts with Euroclear and/or Clearstream or DTC, respectively, or persons who hold interests through such participants. Euroclear, Clearstream or DTC, as applicable, will hold interests in the Global Notes on behalf of their participants through customers' securities accounts in their respective names on the books of their respective depositaries. Except under the limited circumstances described below, Book-Entry Interests will not be issued in definitive certificated form.

Book-Entry Interests will be shown on, and transfers thereof will be done only through, records maintained in book-entry form by Euroclear, Clearstream or DTC, as applicable, and their participants. The Issuer will issue the Notes in global form in minimum denominations of: (a) in the case of the Dollar Notes, US$200,000 and integral multiples of US$1,000 in excess thereof maintained in book-entry form and (b) in the case of the Euro Notes, €100,000 and integral multiples of €1,000 in excess thereof maintained in book-entry form. Notes in denominations of less than US$200,000 (in the case of the Dollar Notes) or €100,000 (in the case of the Euro Notes) will not be available. The laws of some jurisdictions, including certain states of the United States, may require that certain purchasers of securities take physical delivery of such securities in definitive certificated form. The foregoing limitations may impair the ability to own, transfer or pledge Book-Entry Interests. In addition, while the notes are in global form, holders of Book-Entry Interests will not be considered the owners or "holders" of Notes for any purpose.

So long as the Notes are held in global form, Euroclear, Clearstream or DTC (or their respective nominees), as applicable, will be considered the sole holders of the Global Notes for all purposes under the indenture governing the Notes. In addition, participants must rely on the procedures of Euroclear, Clearstream or DTC, as applicable, and indirect participants must rely on the procedures of Euroclear, Clearstream or DTC, as applicable, and the participants through which they own Book-Entry Interests, to transfer their interests or to exercise any rights of holders of Notes under the indenture.

Neither we nor the Trustee will have any responsibility, or be liable, for any aspect of the records relating to the Book-Entry Interests.

If the due date for payment of the principal in respect of any note is not a business day at the place in which it is presented for payment, the holder thereof will not be entitled to payment of the amount due until the next succeeding business day at such place and will not be entitled to any further interest or other payment in respect of any such delay.

Redemption of the Global Notes

In the event that any Global Note (or any portion thereof) is redeemed, Euroclear, Clearstream or DTC (or their respective nominees), as applicable, will distribute the amount received by it in respect of the Global Note so redeemed to the holders of the Book-Entry Interests in such Global Note from the amount received by it in respect of the redemption of such Global Note. The redemption price payable in connection with the redemption of such Book-Entry Interests will be equal to the amount received by Euroclear, Clearstream or DTC, as applicable, in connection with the redemption of such Global Note (or any portion thereof). We understand that, under the existing practices of Euroclear, Clearstream and DTC, if fewer than all of the Notes of a series are to be redeemed at any time, Euroclear, Clearstream and DTC will credit their respective participants' accounts on a proportionate basis (with adjustments to prevent fractions) or by lot or on such other basis as they deem fair and appropriate unless otherwise required by law or applicable stock exchange or depositary requirements and, provided that no Book-Entry Interest of less than US$200,000 (in the case of the Dollar Notes) or €100,000 (in the case of the Euro Notes) in principal amount, may be redeemed in part.

Payments on Global Notes

We will make payments of any amounts owing in respect of the Global Notes (including principal, premium, if any, and interest) to the paying agent (the "Paying Agent"). The Paying Agent will, in turn, make such payments to the common depositary or its nominee for Euroclear and Clearstream (in the case of the Euro Notes) and to DTC (in the case of the Dollar Notes), which will distribute such payments to participants in accordance with their customary procedures. We will make payments of all such amounts without deduction or withholding for, or on account of, any present or future taxes, duties, assessments or governmental charges of whatever nature, except as may be required by law and as described under "*Description of the Notes—Redemption for Taxation Reasons—Withholding Taxes*". If any such deduction or withholding is required to be made, then, to the extent described under "*Description of the Notes—Redemption for Taxation Reasons—Withholding Taxes*", we will pay additional amounts as may be necessary in order for the net amounts received by any holder of the Global Notes or owner of Book-Entry Interests after such deduction or withholding will equal the net amounts that such holder or owner would have otherwise received in respect of such Global Note or Book-Entry Interest, as the case may be, absent such withholding or deduction. We expect that standing customer instructions and customary practices will govern payments by participants to owners of Book-Entry Interests held through such participants.

Under the terms of the Indenture, the Issuer, the Paying Agent, the Registrar and the Trustee will treat the registered holders of the Global Notes (i.e., Euroclear, Clearstream or DTC (or their respective nominees)) as the owners thereof for the purpose of receiving payments and for all other purposes. Consequently, none of the Issuer, the Trustee or any of their respective agents has or will have any responsibility or liability for any aspect of the records of Euroclear, Clearstream or DTC, or any participant or indirect participant relating to, or payments made on account of, a Book-Entry Interest, or Euroclear, Clearstream or DTC, or any participant or indirect participant, or the records of the common depositary.

Payments by participants to owners of Book-Entry Interests held through participants are the responsibility of such participants.

Action by Owners of Book-Entry Interests

Euroclear, Clearstream and DTC have advised us that they will take any action permitted to be taken by a holder of Notes (including the presentation of Notes for exchange as described below) only at the direction of one or more participants to whose account the Book-Entry Interests are credited and only in respect of such portion of the aggregate principal amount of Notes as to which such participant or participants has or have given such direction. Euroclear, Clearstream and DTC will not exercise any discretion in the granting of consents, waivers or the taking of any other action in respect of the Global Notes.

Currency of Payment for the Global Notes

The principal of, premium, if any, and interest on, and all other amounts payable in respect of, the Global Notes will be paid to holders of interest in such Notes through Euroclear and/or Clearstream in euros (in the case of the Euro Notes) or through DTC in US dollars (in the case of the Dollar Notes).

Payments will be subject in all cases to any fiscal or other laws and regulations (including any regulations of the applicable clearing system) applicable thereto. Neither we nor the Trustee nor the Initial Purchasers nor any of

our or their respective agents will be liable to any holder of a Global Note or any other person for any commissions, costs, losses or expenses in relation to or resulting from any currency conversion or rounding effected in connection with any such payment. Holders may be subject to foreign exchange risks that may have economic and tax consequences to them.

Transfers

Transfers between participants in Euroclear and Clearstream will be effected in accordance with Euroclear and Clearstream rules and will be settled in immediately available funds. Transfers between participants in DTC will be effected in accordance with DTC rules and will be settled in immediately available funds. If a holder of Notes requires physical delivery of Definitive Registered Notes for any reason, including to sell Notes to persons in jurisdictions that require physical delivery of securities or to pledge such Notes, such holder of Notes must transfer its interests in the Global Notes in accordance with the normal procedures of Euroclear, Clearstream or DTC, as applicable, and in accordance with the procedures set forth in the indenture.

The Rule 144A Global Notes will have a legend to the effect set forth under "Transfer and Selling Restrictions". Book-Entry Interests in the Global Notes will be subject to the restrictions on transfers and certification requirements discussed under "Transfer and Selling Restrictions".

Rule 144A Book-Entry Interests may be transferred to a person who takes delivery in the form of a Regulation S Book-Entry Interest denominated in the same currency only upon delivery by the transferor of a written certification (in the form provided in the indenture) to the effect that such transfer is being made in accordance with Regulation S under the Securities Act.

Regulation S Book-Entry Interests may be transferred to a person who takes delivery in the form of Rule 144A Book-Entry Interests denominated in the same currency only after the expiration of the 40-day compliance period and only upon delivery by the transferor of a written certification (in the form provided in the indenture) to the effect that such transfer is being made to a person who the transferor reasonably believes is a QIB within the meaning of Rule 144A in a transaction meeting the requirements of Rule 144A and in accordance with any applicable securities laws of any other jurisdiction.

In connection with transfers involving an exchange of one type of Book-Entry Interest for another type of Book-Entry Interest, appropriate adjustments will be made to reflect a decrease in the principal amount of the relevant Global Note representing the Book-Entry Interest to be transferred and a corresponding increase in the principal amount of the relevant Global Note representing the Book-Entry Interest to be received.

Any Book-Entry Interest in one of the Global Notes that is transferred to a person who takes delivery in the form of a Book-Entry Interest in any other Global Note of the same denomination will, upon transfer, cease to be a Book-Entry Interest in the first mentioned Global Note and become a Book-Entry Interest in such other Global Note, and accordingly will thereafter be subject to all transfer restrictions, if any, and other procedures applicable to Book-Entry Interests in such other Global Note for as long as it remains such a Book-Entry Interest.

Definitive Registered Notes

Under the terms of the Indenture, owners of the Book-Entry Interests will receive the Definitive Registered Notes only:

(1) if Euroclear, Clearstream or DTC, as applicable, notifies us that it is unwilling or unable to continue to act as depository and a successor depository is not appointed by us within 90 days;

(2) if Euroclear, Clearstream or DTC, as applicable, so requests following an Event of Default under the Indenture; or

(3) at any time, if we, in our sole discretion, so determine.

In such an event, the Registrar will issue Definitive Registered Notes, registered in the name or names and issued in any approved denominations, requested by or on behalf of Euroclear and Clearstream or DTC, as applicable (in accordance with their respective customary procedures and based upon directions received from participants reflecting the beneficial ownership of Book-Entry Interests), and such Definitive Registered Notes will bear the restrictive legend set forth in "Transfer and Selling Restrictions", unless that legend is not required by the indenture or applicable law.

If Definitive Registered Notes are issued, they will be issued only in minimum denominations of: (a) in the case of the Dollar Notes, US$200,000 principal amount and integral multiples of US$1,000 in excess thereof and (b) in the case of the Euro Notes, €100,000 principal amount and integral multiples of €1,000 in excess thereof, in each case, upon receipt by the applicable registrar of instructions relating thereto and any certificates, opinions and other documentation required by the Indenture. It is expected that such instructions will be based upon directions received by Euroclear, Clearstream or DTC, as applicable, from the participant which owns the relevant Book-Entry Interests.

If any Definitive Registered Note at any time is mutilated, destroyed, stolen or lost, such Definitive Registered Note may be replaced at the cost of the applicant at the office of the Trustee or the office of the Registrar in Luxembourg. The applicant for a new Definitive Registered Note must, in the case of any mutilated Definitive Registered Note, surrender such Definitive Registered Note to the Trustee or the Registrar or Transfer Agent in Luxembourg, as applicable, and, in the case of any lost, destroyed or stolen Definitive Registered Note, furnish evidence satisfactory to the Trustee or the Registrar or Transfer Agent in Luxembourg, as applicable, of such loss, destruction or theft, together with such indemnity as the Trustee or the Registrar or Transfer Agent in Luxembourg, as applicable, and we may require.

A holder of the Definitive Registered Notes may transfer or exchange Definitive Registered Notes in accordance with the Indenture. The Registrar and the Trustee may require a holder, among other things, to furnish appropriate endorsements and transfer documents and we may require a holder to pay any transfer tax or similar governmental charge required by law. Neither we nor the Trustee or the Registrar are required to transfer or exchange any Definitive Registered Note selected for redemption. Also, neither we nor the Trustee or the Registrar are required to transfer or exchange any Definitive Registered Note for a period of 15 days before a selection of Notes to be redeemed.

Payment of principal, any repurchase price, premium and interest on Definitive Registered Notes will be payable at the office of the Company's Paying Agent in London.

To the extent permitted by law, the Company, the Trustee, the Paying Agent, the Transfer Agent and the Registrar shall be entitled to treat the registered holder of any Global Note as the absolute owner thereof and no person will be liable for treating the registered holder as such. Ownership of the Global Notes will be evidenced through registration from time to time at the registered office of the Registrar, and such registration is a means of evidencing title to the Notes.

The Company will not impose any fees or other charges in respect of the Notes; however, owners of the Book-Entry Interests may incur fees normally payable in respect of the maintenance and operation of accounts in Euroclear, Clearstream or DTC.

Information Concerning Euroclear, Clearstream and DTC

All Book-Entry Interests will be subject to the operations and procedures of Euroclear, Clearstream or DTC, as applicable. We provide the following summaries of those operations and procedures solely for the convenience of investors. The operations and procedures of each settlement system are controlled by that settlement system and may be changed at any time. Neither we nor the Initial Purchasers are responsible for those operations or procedures.

Euroclear and Clearstream hold securities for participating organizations. They also facilitate the clearance and settlement of securities transactions between their respective participants through electronic book-entry changes in accounts of such participants. Euroclear and Clearstream provide various services to their participants, including the safekeeping, administration, clearance, settlement, lending and borrowing of internationally traded securities. Euroclear and Clearstream interface with domestic securities markets. Euroclear and Clearstream participants are financial institutions such as underwriters, securities brokers and dealers, banks, trust companies and certain other organizations. Indirect access to Euroclear and Clearstream is also available to others such as banks, brokers, dealers and trust companies that clear through or maintain a custodial relationship with a Euroclear or Clearstream participant, either directly or indirectly.

DTC advised us that it is a limited-purpose trust company organized under the New York Banking Law, a "banking organization" within the meaning of the New York Banking Law, a member of the Federal Reserve System, a "clearing corporation" within the meaning of the New York Uniform Commercial Code, and a "clearing agency" registered pursuant to the provisions of Section 17A of the U.S. Exchange Act. DTC holds and

provides asset servicing for issues of US and non-US equity issues, corporate and municipal debt issues, and money market instruments (that DTC's direct participants deposit with DTC). DTC also facilitates the post-trade settlement among direct participants of sales and other securities transactions in deposited securities, through electronic computerized book-entry transfers and pledges between direct participants' accounts. DTC is a wholly owned subsidiary of The Depository Trust & Clearing Corporation ("DTCC"). DTCC is the holding company for DTC, National Securities Clearing Corporation and Fixed Income Clearing Corporation, all of which are registered clearing agencies. DTCC is owned by the users of its regulated subsidiaries. Access to the DTC system is also available to others such as both US and non-US securities brokers and dealers, banks, trust companies, and clearing corporations that clear through or maintain a custodial relationship with a direct participant, either directly or indirectly.

Because Euroclear, Clearstream and DTC can only act on behalf of participants, who in turn act on behalf of indirect participants and certain banks, the ability of an owner of a beneficial interest to pledge such interest to persons or entities that do not participate in the Euroclear, Clearstream or DTC systems, or otherwise take actions in respect of such interest, may be limited by the lack of a definitive certificate for that interest. The laws of some jurisdictions require that certain persons take physical delivery of securities in definitive form. Consequently, the ability to transfer beneficial interests to such persons may be limited. In addition, owners of beneficial interests through the Euroclear, Clearstream or DTC systems will receive distributions attributable to the 144A Global Notes only through Euroclear, Clearstream or DTC participants.

Global Clearance and Settlement Under the Book-Entry System

The Notes represented by the Global Notes are expected to be admitted to the Official List of the Luxembourg Stock Exchange and admitted to trading on the Luxembourg Stock Exchange's Euro MTF market. Transfers of interests in the Global Notes between participants in Euroclear, Clearstream and DTC will be effected in the ordinary way in accordance with their respective rules and operating procedures.

Although Euroclear, Clearstream and DTC currently follow the foregoing procedures in order to facilitate transfers of interests in the Global Notes among participants in Euroclear, Clearstream or DTC, as the case may be, they are under no obligation to perform or continue to perform such procedures, and such procedures may be discontinued or modified at any time. None of us, the Trustee or the Paying Agents will have any responsibility for the performance by Euroclear, Clearstream or DTC, or their respective participants or indirect participants, of their respective obligations under the rules and procedures governing their operations, which rules and operating procedures may change from time to time.

Initial Settlement

Initial settlement for the Notes will be made in euros or US dollars, as applicable. Book-Entry Interests owned through Euroclear, Clearstream or DTC accounts will follow the settlement procedures applicable to conventional bonds in registered form. Book-Entry Interests will be credited to the securities custody accounts of Euroclear, Clearstream and DTC holders, as applicable, on the business day following the settlement date against payment for value on the settlement date.

Secondary Market Trading

The Book-Entry Interests will trade through participants of Euroclear, Clearstream or DTC, as applicable, and will settle in same-day funds. Since the purchase determines the place of delivery, it is important to establish at the time of trading of any Book-Entry Interests where both the purchaser's and the seller's accounts are located to ensure that settlement can be made on the desired value date.

TAXATION

Introduction

The statements herein regarding taxation are based on the laws in force and their interpretation by the tax authorities as of the date of this offering memorandum and are subject to any changes in law occurring after such date, which changes could be made on a retrospective basis. The following summary does not purport to be a comprehensive description of all the tax considerations that may be relevant to a decision to purchase, own or dispose of Notes and does not purport to deal with the tax consequences applicable to all categories of investor, some of which (such as dealers in securities or commodities) may be subject to special rules. Each prospective holder of Notes should be aware that the comments below are of a general nature and do not constitute legal or tax advice and should not be understood as such. Prospective purchasers of Notes are advised to consult their own tax advisors concerning tax consequences of their ownership of Notes, in particular as to which countries' tax law could be relevant to acquiring, holding and disposing of the Notes and receiving payments of interest, principal and/or other amounts under the Notes and the consequences of such actions under the tax laws of those countries.

United States Federal Income Tax Considerations

The following is a summary of certain U.S. federal income tax consequences of the acquisition, ownership and disposition of Notes by a U.S. Holder (as defined below). This summary deals only with U.S. holders that are Initial Purchasers of Notes at the "issue price" (the first price at which a substantial amount of Notes are sold for money, excluding sales to underwriters, placement agents or wholesalers) in the initial offering and that will hold the Notes as capital assets for U.S. federal income tax purposes. The discussion does not cover all aspects of U.S. federal income taxation that may be relevant to, or the actual tax effect that any of the matters described herein will have on, the acquisition, ownership or disposition of Notes by particular investors (such as the U.S. federal Medicare tax on net investment income), and does not address U.S. state, local, non-U.S. or other tax laws (such as the estate and gift tax laws). This summary also does not discuss all of the tax considerations that may be relevant to certain types of investors subject to special treatment under the U.S. federal income tax laws (such as financial institutions, insurance companies, individual retirement accounts and other tax-deferred accounts, tax-exempt organizations, dealers in securities or currencies, investors that will hold the Notes as part of straddles, hedging transactions or conversion transactions for U.S. federal income tax purposes, persons subject to special tax accounting rules as a result of any item of gross income with respect to the Notes being taken into account in an applicable financial statement, persons that have ceased to be U.S. citizens or lawful permanent residents of the United States, U.S. citizens or lawful permanent residents living abroad or investors whose functional currency is not the US dollar).

As used herein, the term "U.S. Holder" means a beneficial owner of Notes that is, for U.S. federal income tax purposes, (i) an individual who is a citizen or resident of the United States, (ii) a corporation created or organized under the laws of the United States, any state thereof or the District of Columbia, (iii) an estate the income of which is subject to U.S. federal income tax without regard to its source or (iv) a trust if a court within the United States is able to exercise primary supervision over the administration of the trust and one or more U.S. persons have the authority to control all substantial decisions of the trust, or the trust has a valid election in effect to be treated as a U.S. person for U.S. federal income tax purposes.

The U.S. federal income tax treatment of a partner in an entity or arrangement treated as a partnership for U.S. federal income tax purposes that holds Notes will depend on the status of the partner and the activities of the partnership. Prospective purchasers that are entities or arrangements treated as partnerships for U.S. federal income tax purposes should consult their tax advisors concerning the U.S. federal income tax consequences to them and their partners of the acquisition, ownership and disposition of Notes by the partnership.

This summary is based on the tax laws of the United States, including the Internal Revenue Code of 1986, as amended (the "Code"), its legislative history, existing and proposed regulations thereunder, published rulings and court decisions, all as of the date hereof and all subject to change at any time, possibly with retroactive effect.

THE SUMMARY OF U.S. FEDERAL INCOME TAX CONSEQUENCES SET OUT BELOW IS FOR GENERAL INFORMATION ONLY. ALL PROSPECTIVE INVESTORS SHOULD CONSULT THEIR TAX ADVISERS AS TO THE PARTICULAR TAX CONSEQUENCES TO THEM OF ACQUIRING, OWNING, AND DISPOSING OF THE NOTES, INCLUDING THE APPLICABILITY AND EFFECT OF U.S. STATE, LOCAL, NON-U.S. AND OTHER TAX LAWS AND POSSIBLE CHANGES IN TAX LAW.

Payments of Interest

General. Payments of stated interest on a Note (including any additional amounts paid in respect of withholding taxes and without reduction for any amounts withheld) will be taxable to a U.S. Holder as ordinary income at the time it is received or accrued, depending on such holder's method of accounting for U.S. federal income tax purposes.

Interest Paid on Euro Notes. The amount of income recognized by a cash basis U.S. Holder receiving an interest payment on a Euro Note will be the US dollar value of the interest payment, based on the exchange rate in effect on the date of receipt, regardless of whether the payment is in fact converted into US dollars. A cash basis U.S. Holder will not recognize exchange gain or loss with respect to the receipt of such interest, but may have exchange gain or loss attributable to the actual disposition of the euros so received.

An accrual basis U.S. Holder may determine the amount of income recognized with respect to an interest payment on a Euro Note in accordance with either of two methods. Under the first method, the amount of income accrued will be based on the average exchange rate in effect during the interest accrual period (or, in the case of an accrual period that spans two taxable years of a U.S. Holder, the part of the period within each taxable year).

Under the second method, the U.S. Holder may elect to determine the amount of income accrued on the basis of the exchange rate in effect on the last day of the accrual period (or, in the case of an accrual period that spans two taxable years, the exchange rate in effect on the last day of the part of the period within each taxable year). Additionally, if a payment of interest is actually received within five business days of the last day of the accrual period, an electing accrual basis U.S. Holder may instead translate the accrued interest into US dollars at the exchange rate in effect on the day of actual receipt. Any such election will apply to all debt instruments held by the U.S. Holder at the beginning of the first taxable year to which the election applies or thereafter acquired by the U.S. Holder, and will be irrevocable without the consent of the Internal Revenue Service (the "IRS").

Upon receipt of the interest payment on a Euro Note (including a payment attributable to accrued but unpaid interest upon the sale, exchange or other taxable disposition of a Euro Note), the accrual basis U.S. Holder may recognize U.S. source exchange gain or loss (taxable as U.S. source ordinary income or loss) equal to the difference, if any, between the US dollar value of the amount received with respect to that accrual period (translated into US dollars at the spot rate on the date of receipt) and the US dollar value of the amount previously accrued with respect to that accrual period, regardless of whether the payment is in fact converted into US dollars.

Foreign Tax Credit. Subject to certain limitations, a U.S. Holder generally may be entitled to a credit against its U.S. federal income tax liability, or a deduction in computing its U.S. federal taxable income, for French income taxes withheld. Interest paid by the Company on the Notes constitutes income from sources outside the United States and, depending on the U.S. Holder's circumstances, will generally be considered "passive" category income for purposes of the rules regarding foreign tax credits. The rules governing foreign tax credits are complex. U.S. Holders should consult their tax advisers concerning the availability of foreign tax credits under their particular circumstances and the foreign tax credit implications of any French withholding taxes.

Sale, Exchange or Other Taxable Disposition of the Notes

A U.S. Holder generally will recognize gain or loss on the sale, exchange or other taxable disposition of a Note equal to the difference between the amount realized on the sale, exchange or other taxable disposition and the U.S. Holder's tax basis in the Note, in each case as determined in US dollars. A U.S. Holder's tax basis in a Note generally will be its US dollar cost. The amount realized does not include any amounts attributable to accrued but unpaid interest, which will be taxable as interest income to the extent not previously included in income. Except to the extent attributable to changes in exchange rates (as discussed below), gain or loss recognized on the sale, exchange or other taxable disposition of a Note will be capital gain or loss and will be long-term capital gain or loss if the U.S. Holder's holding period in the Notes exceeds one year. Long-term capital gain of non-corporate U.S. Holders, including individual U.S. Holders, is generally taxed at reduced rates. The deductibility of capital losses is subject to limitations. Gain or loss realized by a U.S. Holder on the sale, exchange or other taxable disposition of a Note generally will be U.S. source.

The amount realized on a sale, exchange or other taxable disposition of Euro Notes for an amount in euros generally will be the US dollar value of such amount on the settlement date, in the case of a cash basis U.S. Holder, or the trade date, in the case of an accrual basis U.S. Holder, of such sale, exchange or other taxable

disposition. However, in the case of Notes traded on an established securities market, an accrual basis U.S. Holder may elect to determine the US dollar value of the amount realized on the sale, exchange or other taxable disposition of the Euro Notes based on the exchange rate in effect on the settlement date. Such an election must be applied consistently from year to year and cannot be revoked without the consent of the IRS. On the settlement date, an accrual basis U.S. Holder that does not make such an election generally will recognize U.S. source exchange gain or loss (taxable as ordinary income or loss) equal to any difference between the US dollar value of the amount realized based on the exchange rates in effect on the trade date and the settlement date.

A U.S. Holder may recognize U.S. source exchange gain or loss (taxable as ordinary income or loss) with respect to the principal amount of a Euro Note on the sale, exchange or other taxable disposition of such Euro Note generally equal to the difference, if any, between the US dollar values of the U.S. Holder's purchase price for the Euro Note (i) on the date of sale, exchange or other taxable disposition and (ii) on the date on which the U.S. Holder acquired the Euro Note. Any such exchange gain or loss (including any exchange gain or loss with respect to the receipt of accrued but unpaid interest) will be realized only to the extent of total gain or loss realized on the sale, exchange or other taxable disposition.

U.S. Holders should consult their own tax advisors about how to account for proceeds received on the sale, exchange or other taxable disposition of Euro Notes that are not paid in US dollars.

Information Reporting and Backup Withholding

Payments of principal and interest on, and the proceeds of sale, exchange or other taxable disposition of Notes by a U.S. paying agent or other U.S. intermediary will be reported to the IRS and to the U.S. Holder as may be required under applicable regulations. Backup withholding may apply to these payments if the U.S. Holder fails to provide an accurate taxpayer identification number and certification under penalties of perjury that it is not subject to backup withholding, to establish an exempt status or to comply with applicable certification requirements. Any amounts withheld under the backup withholding rules may be allowed as a credit against the U.S. Holder's U.S. federal income tax liability, and may entitle the holder to a refund, provided that the required information is timely furnished to the IRS. Certain U.S. Holders are not subject to backup withholding.

U.S. Holders should consult their tax advisors about these rules and any other reporting obligations that may apply to the ownership or disposition of Notes, including requirements related to the holding of certain "specified foreign financial assets".

Reportable Transactions

A U.S. taxpayer that participates in a "reportable transaction" will be required to disclose its participation to the IRS. Under the relevant rules, a U.S. Holder may be required to treat an exchange loss from the Euro Notes as a reportable transaction if this loss exceeds the relevant threshold in the regulations (US$50,000 in a single taxable year, if the U.S. Holder is an individual or trust, or higher amounts for other non-individual U.S. Holders), and to disclose its investment by filing Form 8886 with the IRS. A penalty in the amount of US$10,000 in the case of a natural person and US$50,000 in all other cases generally is imposed on any taxpayer that fails to timely file an information return with the IRS with respect to a transaction resulting in a loss that is treated as a reportable transaction. U.S. Holders are urged to consult their tax advisers regarding the application of these rules.

France

The following is only addressed to holders of Notes who do not concurrently hold shares of the Issuer nor are otherwise related parties of the Issuer.

This summary is for general information only and does not deal with any aspects of tax other than the withholding and income taxes described below (in particular, this does not address any French estate or gift tax considerations and does not address the French tax treatment of payments potentially made under the Guarantees).

Withholding taxes on payments made outside France

Payments of interest and other assimilated revenues made by the Issuer with respect to the Notes will not be subject to the withholding tax set out under Article 125 A III of the French *Code général des impôts* unless such payments are made outside France in a non-cooperative State or territory (*État ou territoire non coopératif*)

within the meaning of Article 238-0 A of the French *Code général des impôts* (a "**Non-Cooperative State**") other than those mentioned in 2° of 2 *bis* of the same Article 238-0 A. If such payments under the Notes are made outside France in a Non-Cooperative State other than those mentioned in 2° of 2 *bis* of Article 238-0 A of the French *Code général des impôts*, a 75 per cent. withholding tax will be applicable (subject to certain exceptions and to the more favourable provisions of an applicable double tax treaty) by virtue of Article 125 A III of the French *Code général des impôts*.

Furthermore, according to Article 238 A of the French *Code général des impôts,* interest and other assimilated revenues on such Notes will not be deductible from the Issuer's taxable income if they are paid or accrued to persons domiciled or established in a Non-Cooperative State or paid on an account held with a financial institution established in such a Non-Cooperative State (the "**Deductibility Exclusion**"). Under certain conditions, any such non-deductible interest and other assimilated revenues may be recharacterised as constructive dividends pursuant to Articles 109 *et seq.* of the French *Code général des impôts*, in which case such non-deductible interest and other assimilated revenues may be subject to the withholding tax set out under Article 119 *bis* 2 of the French *Code général des impôts*, at (i) a rate of 12.8 per cent. for payments benefiting individuals who are not French tax residents, (ii) the standard corporate income tax rate set forth in the first sentence of the second paragraph of Article 219-I of the French *Code général des impôts* (i.e. 26.5 per cent. for fiscal years beginning as from 1 January 2021) for payments benefiting legal persons which are not French tax residents or (iii) a rate of 75 per cent. for payments made outside France in a Non-Cooperative State other than those mentioned in 2° of 2 *bis* of Article 238-0 A of the French *Code général des impôts* (subject to certain exceptions and to the more favourable provisions of an applicable double tax treaty).

Notwithstanding the foregoing, neither the 75 per cent. withholding tax set out under Article 125 A III of the French *Code général des impôts* nor, to the extent the relevant interest and other assimilated revenues relate to genuine transactions and are not in an abnormal or exaggerated amount, the Deductibility Exclusion and therefore the withholding tax set out under Article 119 *bis* 2 of the French *Code général des impôts* that may be levied as a result of such Deductibility Exclusion will apply in respect of an issue of Notes if the Issuer can prove that the main purpose and effect of such issue of Notes was not that of allowing the payments of interest and other assimilated revenues to be made in a Non-Cooperative State (the "**Exception**"). Pursuant to the *Bulletin Officiel des Finances Publiques-Impôts* BOI-INT-DG-20-50 dated 11 February 2014, n°550 and 990, BOI-RPPM-RCM-30-10-20-40 dated 20 December 2019, and BOI-IR-DOMIC-10-20-20-60 dated 20 December 2019, n° 10, an issue of Notes will benefit from the Exception without the Issuer having to provide any proof of the purpose and effect of such issue of Notes, if such Notes are:

(i) offered by means of a public offer within the meaning of Article L.411-1 of the French *Code monétaire et financier* or pursuant to an equivalent offer in a State other than in a Non-Cooperative State. For this purpose, an "equivalent offer" means any offer requiring the registration or submission of an offer document by or with a foreign securities market authority; and/or

(ii) admitted to trading on a French or foreign regulated market or multilateral securities trading system provided that such market or system is not located in a Non-Cooperative State, and the operation of such market is carried out by a market operator or an investment services provider or any other similar foreign entity, provided further that such market operator, investment services provider or entity is not located in a Non-Cooperative State; and/or

(iii) admitted, at the time of their issue, to the operations of a central depositary or of a securities payment and delivery systems operator within the meaning of Article L.561-2 of the French *Code monétaire et financier*, or of one or more similar foreign depositaries or operators provided that such depositary or operator is not located in a Non-Cooperative State.

To the extent the Notes are admitted, at the time of their issue, to delivery in book-entry form through Euroclear and Clearstream, they will fall under the Exception and payments of interest and other assimilated revenues made by the Issuer with respect to the Notes will be exempt from the withholding tax set out under Article 125 A-III of the French *Code général des impôts* and, to the extent such interest and other assimilated revenues relate to genuine transactions and are not in an abnormal or exaggerated amount, from the withholding tax set out under Article 119 *bis* 2 of the same Code that may be levied as a result of the Deductibility Exclusion.

Withholding taxes on payments made to individuals fiscally domiciled in France

Without prejudice to the abovementioned withholding taxes on payments made outside of France, where applicable, pursuant to Article 125 A I of the French *Code général des impôts* (i.e. where the paying agent

(*établissement payeur*) is established in France) and subject to certain exceptions, interest and assimilated revenues received by individuals who are fiscally domiciled (*domiciliés fiscalement*) in France are subject to a 12.8 per cent. withholding tax, which is deductible from their personal income tax liability in respect of the year in which the payment has been made. Social contributions (CSG, CRDS and solidarity levy) are also levied by way of withholding at a global rate of 17.2 per cent. on such interest and assimilated revenues received by individuals fiscally domiciled (*domiciliés fiscalement*) in France, subject to certain exceptions.

The same withholdings are applicable where the paying agent is not located in France but the procedure for their collection may then vary depending on the location of such paying agent. Where the paying agent is not located in France, holders of the Notes who are individuals fiscally domiciled (*domiciliés fiscalement*) in France are urged to consult with their usual tax advisor on the procedure applicable to them, including whether such holders of the Notes will be required to report and remit such withholdings to the French tax authorities.

Stamp Duties

No transfer taxes or similar duties are payable in France in connection with the issuance or redemption of the Notes, as well as in connection with the transfer of the Notes, except in case of filing on a voluntary basis.

CERTAIN ERISA CONSIDERATIONS

The following is a summary of certain considerations associated with the purchase and holding of the Notes by employee benefit plans that are subject to Part 4, Subtitle B, Title 1 of the United States Employee Retirement Income Security Act of 1974, as amended ("ERISA") and other plans or accounts (including individual retirement accounts) that are subject to Section 4975 of the Code or provisions under any other federal, state, local, non-U.S. or other laws or regulations that are substantially similar to such provisions of ERISA or the Code ("Similar Laws") and entities, collective investment funds and other arrangements whose underlying assets are considered to include "plan assets" of any such plan or account (collectively, "Plans").

General Fiduciary Matters

ERISA and the Code impose certain duties on those persons who are fiduciaries with respect to a Plan subject to Title I of ERISA or Section 4975 of the Code (an "ERISA Plan").

In considering an investment in the Notes of a portion of the assets of any Plan, the fiduciary of a Plan should determine whether the investment is in accordance with the applicable provisions of ERISA, the Code or any Similar Laws. The prudence of a particular investment must be determined by the responsible fiduciary of an ERISA Plan by taking into account the ERISA Plan's particular circumstances and all of the facts and circumstances of the investment including, but not limited to, the matters discussed above under "Risk factors" and the fact that in the future there may be no market in which such fiduciary will be able to sell or otherwise dispose of the Notes.

Governmental plans, certain church plans, non-U.S. plans and other plans, while not subject to the fiduciary responsibility provisions of Title I of ERISA or the provisions of Section 4975 of the Code, may nevertheless be subject to Similar Laws. Fiduciaries of any such plans should consult with their counsel before acquiring the Notes.

Prohibited Transaction Issues

Section 406 of ERISA and Section 4975 of the Code prohibit certain transactions involving the assets of an ERISA Plan and certain persons (referred to as "parties in interest" or "disqualified persons") having certain relationships to such ERISA Plans, unless a statutory or administrative exemption is applicable to the transaction. A party in interest or disqualified person who engages in a non-exempt prohibited transaction may be subject to excise taxes and other penalties and liabilities under ERISA and Section 4975 of the Code. In addition, a fiduciary of the ERISA Plan who engaged in such non-exempt prohibited transaction may be subject to penalties and liabilities under ERISA and the Code, and the transaction may need to be rescinded or otherwise corrected.

Prohibited transactions within the meaning of Section 406 of ERISA or Section 4975 of the Code may arise if the Notes are acquired with the assets of an ERISA Plan with respect to which the Issuer, the Initial Purchasers, the agents, the Trustee, the lenders under the Issuer's existing credit facility or any of their respective affiliates, is a party in interest or a disqualified person. Certain exemptions from the prohibited transaction provisions of Section 406 of ERISA and Section 4975 of the Code may be applicable, however, depending in part on the type of ERISA Plan fiduciary making the decision to acquire a Note and the circumstances under which such decision is made. Included among these exemptions are Prohibited Transaction Class Exemption (PTCE) 91-38 (relating to investments by bank collective investment funds), PTCE 84-14 (relating to transactions effected by "independent qualified professional asset managers"), PTCE 90-1 (relating to investments by insurance company pooled separate accounts), PTCE 95-60 (relating to investments by insurance company general accounts), and PTCE 96-23 (relating to transactions effected by in-house asset managers) (Investor-Based Exemptions). There is also a statutory exemption that may be available under Section 408(b)(17) of ERISA and Section 4975(d)(20) of the Code to a person investing in the Notes for adequate consideration (within the meaning of Section 408(b)(17) of ERISA and Section 4975(f)(10) of the Code) that is a party in interest or disqualified person solely because it is a service provider to a Plan or because of a relationship to such a service provider or both, provided that neither such person nor any of its affiliates (directly or indirectly) has or exercises any discretionary authority or control or renders any investment advice with respect to the assets of the ERISA Plan involved in the transaction (the Service Provider Exemption). However, there can be no assurance that any of these Investor-Based Exemptions or the Service Provider Exemption or any other administrative or statutory exemption will be available with respect to any particular transaction involving the Notes.

The U.S. Department of Labor has promulgated a regulation, 29 C.F.R. section 2510.3-101, as modified by section 3(42) of ERISA (the "Plan Asset Regulation") describing what constitutes the assets of an ERISA Plan

for purposes of ERISA and section 4975 of the Code. Under the Plan Asset Regulation, if an ERISA Plan invests in an equity interest of an entity, the ERISA Plan's assets include both the equity interest and an undivided interest in each of the entity's underlying assets, unless the Issuer qualifies as an "operating company" or another exception described in the Plan Asset Regulation applies. An "operating company" is a company that is primarily engaged in the production or sale of a product or service (other than the investment of capital) directly or through one or more majority-owned subsidiaries. Further, a security which is in the form of debt may be considered an equity interest under the Plan Asset Regulation if it has substantial equity features. If any of the Notes have substantial equity features and the Issuer was deemed under the Plan Asset Regulation to hold plan assets by reason of an ERISA Plan's investment in such Notes, the Issuer and the holder of an undivided interest in its underlying assets would be subject to the fiduciary standards of ERISA and the prohibited transaction rules of ERISA and section 4975 of the Code. While there is little pertinent authority in this area and no assurance can be given, the Issuer believes that the Notes should not be treated as equity interests for the purposes of the Plan Asset Regulation and the Issuer currently qualifies as an operating company.

Representations and Further Considerations

By its acquisition of the Notes, each purchaser and subsequent transferee thereof will be deemed to have represented and warranted, on each day from the date on which such purchaser or transferee, as applicable, acquires its interest in such Notes through and including the date on which such purchaser or transferee, as applicable, disposes of its interest in such Notes, either that (a) no portion of the assets used to purchase or hold the Notes (or any interest therein) constitutes assets of any Plan, or (b)(i) its purchase and holding of a Note (or any interest therein) will not constitute or result in a non-exempt prohibited transaction under Section 406 of ERISA or Section 4975 of the Code or a non-exempt violation under any Similar Law and (ii) the fiduciary making the decision to invest in the Notes (A) is an independent fiduciary with financial expertise and authority to make such determination; and (B) none of the Issuer, the Guarantors, the Initial Purchasers, the Trustee or other persons that provide marketing services, nor any of their affiliates, has provided, and none of them will provide, impartial investment advice and they are not giving any advice in a fiduciary capacity, in connection with the acquisition or holding of the Notes.

The foregoing discussion is general in nature and is not intended to be all-inclusive. Due to the complexity of these rules and the penalties that may be imposed upon persons involved in non-exempt prohibited transactions, it is particularly important that any Plan fiduciary or other person who proposes to use assets of any Plan to acquire the Notes should consult with its counsel regarding the applicability of the fiduciary responsibility and prohibited transaction provisions of ERISA and Section 4975 of the Code, or any other applicable Similar Laws, to such an investment, and to confirm that such investment will not constitute or result in a non-exempt prohibited transaction or any other violation of an applicable requirement of ERISA, the Code or any other applicable Similar Laws.

PLAN OF DISTRIBUTION

We have agreed to sell to the Initial Purchasers, and the Initial Purchasers have agreed to purchase from us, the entire principal amount of the Euro Notes and the Dollar Notes. The sale will be made pursuant to a purchase agreement between, *inter alios*, the Issuer and the Initial Purchasers.

The obligations of the Initial Purchasers under the purchase agreement, including their agreement to purchase the Notes from the Issuer, are several and not joint. The purchase agreement provides that the Initial Purchasers are obligated to purchase all of the Notes if any of them are purchased. The purchase agreement also provides that, if an Initial Purchaser defaults, the purchase commitments of non-defaulting Initial Purchasers may be increased or, in some cases, the Offering may be terminated.

The Initial Purchasers propose to offer the Notes initially at the offering price set forth on the cover page of this offering memorandum and may also offer the Notes. After the initial offering, the offering price and other selling terms of the Notes may from time to time be changed by the Initial Purchasers without notice. The Initial Purchasers may make offers and sales through certain of their affiliates and agents. The Initial Purchasers have advised the Issuer that any offer of the Notes by any of them in the United States will be made through their respective U.S. broker-dealer affiliates, if any.

Neither the Notes nor the guarantees of the Notes have been or will be registered under the Securities Act and the Notes may not be offered or sold within the United States or to, or for the account or benefit of, U.S. persons except to qualified institutional buyers in reliance on Rule 144A under the Securities Act and to non-U.S. persons in offshore transactions in reliance on Regulation S under the Securities Act. Each of the Initial Purchasers has agreed that, except as permitted by the purchase agreement, it will not offer, sell or deliver the Notes (i) as part of its distribution at any time or (ii) otherwise until 40 days after the later of the commencement of the Offering and the closing date, within the United States or to, or for the account or benefit of, U.S. persons, and it will have sent to each broker-dealer to which it sells Notes in reliance on Regulation S during such 40-day period, a confirmation or other notice detailing the restrictions on offers and sales of the notes within the United States or to, or for the account or benefit of, U.S. persons. Terms used in this paragraph have the meanings given to them by Regulation S under the Securities Act. Resales of the Notes are restricted as described under "*Transfer and Selling Restrictions*".

In addition, until 40 days after the commencement of the Offering, an offer or sale of Notes within the United States by a broker-dealer (whether or not it is participating in the Offering) may violate the registration requirements of the Securities Act if such offer or sale is made otherwise than pursuant to Rule 144A under the Securities Act.

Persons who purchase Notes from the Initial Purchasers may be required to pay stamp duty, taxes and other charges in accordance with the laws and practice of the country of purchase in addition to the offering price set forth on the cover page of this offering memorandum.

We have agreed that after the date of the initial offering of the Notes by the Initial Purchasers and until the day which is 90 days after the closing date, the Issuer will not offer, sell, contract to sell, pledge or otherwise dispose of, directly or indirectly, or file with the Commission a registration statement under the Securities Act relating to, any debt securities issued or guaranteed by the Issuer and having a maturity of more than one year from the date of issue, or any options or derivatives in respect of such debt securities, or publicly disclose the intention to make any such offer, sale, pledge, disposition or filing, without the prior written consent of the representatives, provided that this prohibition will not prohibit secured financings of accounts receivables and inventory.

We have agreed to indemnify the Initial Purchasers against certain liabilities, including liabilities under the Securities Act, or to contribute to payments the Initial Purchasers may be required to make in respect of those liabilities.

The Notes are new issues of securities for which there currently is no market. We have applied to admit the Notes to listing on the Official List of the Luxembourg Stock Exchange and to trading on the Euro MTF, but we cannot assure you that any such application will be successful or that any such listing or admission to trading will be granted or maintained. The Initial Purchasers have advised us that they intend to make a market in the Notes as permitted by applicable laws. The Initial Purchasers are not obliged, however, to make a market in the Notes, and any market-making activity may be discontinued at any time at their sole discretion without notice. In addition, any such market-making activity will be subject to the limits imposed by the Securities Act and the Securities

Exchange Act of 1934, as amended (the "Exchange Act"). Accordingly we cannot assure you that any market for the Notes will be developed or that it will be liquid if it does develop, or that you will be able to sell any Notes at a particular time or at a price which will be favorable to you.

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

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

The Notes are not intended to be offered, sold, distributed or otherwise made available to and should not be offered, sold, distributed or otherwise made available to any retail investor in the United Kingdom ("UK"). For these purposes, a retail investor means a person who is one (or more) of: (i) a retail client, as defined in point (8) of Article 2 of Regulation (EU) No 2017/565 as it forms part of domestic law by virtue of the European Union (Withdrawal) Act 2018 ("EUWA"); (ii) a customer within the meaning of the provisions of the FSMA and any rules or regulations made under the FSMA to implement Directive (EU) 2016/97, where that customer would not qualify as a professional client, as defined in point (8) of Article 2(1) of Regulation (EU) No 600/2014 as it forms part of domestic law by virtue of the EUWA; or (iii) not a qualified investor as defined in Article 2 of Regulation (EU) 2017/1129 as it forms part of domestic law by virtue of the EUWA. Consequently no key information document required by Regulation (EU) No 1286/2014 as it forms part of domestic law by virtue of the EUWA (the "UK PRIIPs Regulation") for offering or selling the Notes or otherwise making them available to retail investors in the UK has been prepared and therefore offering or selling the Notes or otherwise making them available to any retail investor in the UK may be unlawful under the UK PRIIPs Regulation.

Morgan Stanley & Co. LLC (in respect of the Dollar Notes) and Goldman Sachs Bank Europe SE (in respect of the Euro Notes), or persons acting on their behalf, may engage in over-allotment, stabilizing transactions, covering transactions and penalty bids in accordance with Regulation M under the Exchange Act.

- Over-allotment involves sales in excess of the offering size, which creates a short position for the Initial Purchasers.
- Stabilizing transactions permit bids to purchase the underlying security so long as the stabilizing bids do not exceed a specified maximum.
- Covering transactions involve purchases of the Notes in the open market after the distribution has been completed in order to cover short positions.
- Penalty bids permit the Initial Purchasers to reclaim a selling concession from a broker/dealer when the notes originally sold by such broker/dealer are purchased in a stabilizing or covering transaction to cover short positions.

These stabilizing transactions, covering transactions and penalty bids may cause the price of the Notes to be higher than it would otherwise be in the absence of these transactions. These transactions, if commenced, may be discontinued at any time.

Each of the Initial Purchasers has represented and agreed that it has only offered or sold and will only offer or sell, directly or indirectly, any Notes in France to, and it has only distributed or caused to be distributed and will only distribute or cause to be distributed in France the offering memorandum or any other offering material relating to the Notes to, qualified investors (*investisseurs qualifiés*) as defined in Article 2(e) of the Prospectus Regulation.

Each Initial Purchaser has represented and agreed that:

- it has only communicated or caused to be communicated and will only communicate or cause to be communicated an invitation or inducement to engage in investment activity (within the meaning of Section 21 of the Financial Services and Markets Act 2000, as amended ("FSMA")) received by it in connection with the issue or sale of the Notes in circumstances in which Section 21(1) of the FSMA does not apply to the Issuer; and
- it has complied and will comply with all applicable provisions of the FSMA with respect to anything done by it in relation to the Notes in, from or otherwise involving the United Kingdom.

From time to time, the Initial Purchasers and their affiliates have provided, and may in the future provide, investment banking, commercial banking, financial advisory and other services to us and our affiliates for which they have received or may receive customary fees and commissions. In addition, we have agreed to pay the Initial Purchasers certain customary fees for their services in connection with this offering and to reimburse them for certain costs and expenses incurred.

In the ordinary course of their business activities, the Initial Purchasers and their affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers. Such investments and securities activities may involve securities and/or instruments of the Issuer or its affiliates. Some of the Initial Purchasers or their affiliates have a lending relationship with the Issuer or its affiliates and routinely hedge or may hedge their credit exposure to the Issuer and/or its affiliates consistent with their customary risk management policies. Typically, the Initial Purchasers and their affiliates would hedge such exposure by entering into transactions which consist of either the purchase of credit default swaps or the creation of short positions in securities (including potentially the Notes). Any such short positions could adversely affect future trading prices of the Notes offered hereby. The Initial Purchasers and their affiliates may also make investment recommendations and publish or express independent research views in respect of such securities or financial instruments and may hold, or recommend to clients that they acquire, long and short positions in such securities and instruments. The Initial Purchasers and certain of their affiliates are expected to be lenders or arrangers under the Revolving Credit Facility Agreement.

The Issuer expects that the delivery of the Notes will be made against payment therefor on or about the date specified on the cover page of this offering circular, which will be the tenth business day following the date of pricing of the Notes (such settlement cycle being herein referred to as "T+10"). Under Rule 15c6-1 under the U.S. Exchange Act, trades in the secondary market generally are required to settle in two business days, unless the parties to any such trade expressly agree otherwise. Accordingly, purchasers who wish to trade Notes on the date of pricing or the next seven succeeding business days will be required, by virtue of the fact that the notes initially will settle T+10, to specify an alternative settlement cycle at the time of any such trade to prevent a failed settlement. Purchasers of Notes who wish to trade Notes on the date of pricing should consult their advisors.

TRANSFER AND SELLING RESTRICTIONS

You are advised to consult legal counsel prior to making any offer, resale, pledge or other transfer of any of the Notes offered hereby.

Notice to U.S. Investors

The Notes and the Guarantees have not been and will not be registered under the Securities Act or the securities laws of any other jurisdiction, and, unless so registered, may not be offered or sold except pursuant to an exemption from, or in a transaction not subject to, the registration requirements of the Securities Act or the securities laws of any other jurisdiction. Accordingly, the Notes offered hereby are being offered and sold only to (a) qualified institutional buyers (as defined in Rule 144A) in reliance on Rule 144A and (b) to non-U.S. persons in offshore transactions in reliance on Regulation S.

Each purchaser of Notes, by its acceptance hereof, will be deemed to have represented and agreed as follows (terms used in this paragraph that are defined in Rule 144A or Regulation S under the Securities Act are used herein as defined therein):

(1) The purchaser (A) (i) is a qualified institutional buyer, (ii) is aware that the sale to it is being made in reliance on Rule 144A and (iii) is acquiring such Notes for its own account or for the account of a qualified institutional buyer or (B) is a non-U.S. person and is purchasing such Notes in an offshore transaction pursuant to Regulation S.

(2) The purchaser understands that the Notes are being offered in a transaction not involving any public offering in the United States within the meaning of the Securities Act, that such Notes have not been and will not be registered under the Securities Act and that (A) if in the future it decides to offer, resell, pledge or otherwise transfer any of the Notes, such Notes may be offered, resold, pledged or otherwise transferred only (i) to the Issuer, (ii) in the United States to a person whom the seller reasonably believes is a qualified institutional buyer that purchases for its own account or for the account of a qualified institutional buyer to whom notice is given that the transfer is being made in reliance on Rule 144A, in a transaction meeting the requirements of Rule 144A, (iii) to non-U.S. persons pursuant to offers and sales that occur outside the United States in a transaction complying with the provisions of Rule 904 under the Securities Act, (iv) pursuant to an exemption from registration under the Securities Act provided by Rule 144 (if available), (v) pursuant to another available exemption from registration under the Securities Act, or (vi) pursuant to an effective registration statement under the Securities Act, in each of cases (i) through (vi) in accordance with any applicable securities laws of any State of the United States, and that (B) the purchaser will, and each subsequent holder is required to, notify any subsequent purchaser of the Notes from it of the resale restrictions referred to in (A) above. Investors should be aware that they may be required to bear the financial risks of this investment for an indefinite period of time.

(3) The foregoing transfer restrictions will remain applicable to the earlier of payment in full of the Notes outstanding, registration of the Notes under the Securities Act and the date or dates on which the Notes are fully transferable without registration of the Notes under the Securities Act.

(4) The purchaser has been afforded an opportunity to ask questions to the Issuer, and to request from us and to review, and has received and reviewed, all additional information considered by it to be necessary to verify the accuracy of the information in this offering memorandum and has not relied on the Initial Purchasers or any person affiliated with the Initial Purchasers in connection with its investigation of the accuracy of the information contained in this offering memorandum or any additional information or in connection with its investment decision. The purchaser acknowledges that neither the Initial Purchasers nor any person representing the Initial Purchasers has made any representation to it with respect to either us or the offering of the Notes. The Initial Purchasers reserve the right to reject any offer to purchase, in whole or in part, for any reason.

(5) Each purchaser acknowledges that each Note will contain a legend substantially to the following effect:

    THIS NOTE HAS NOT BEEN AND WILL NOT BE REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT") OR THE SECURITIES LAWS OF ANY STATE OR OTHER JURISDICTION. NEITHER THIS NOTE NOR ANY INTEREST OR PARTICIPATION HEREIN MAY BE OFFERED, SOLD, ASSIGNED, TRANSFERRED, PLEDGED, ENCUMBERED OR OTHERWISE DISPOSED OF IN THE ABSENCE OF SUCH REGISTRATION OR UNLESS SUCH TRANSACTION IS EXEMPT FROM, OR NOT SUBJECT TO, THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT.

THE HOLDER OF THIS NOTE BY ITS ACCEPTANCE HEREOF (1) REPRESENTS THAT (A) IT IS A "*QUALIFIED INSTITUTIONAL BUYER*" (AS DEFINED IN RULE 144A UNDER THE SECURITIES ACT ("*RULE 144A*")) OR (B) IT IS NOT A U.S. PERSON AND IT IS ACQUIRING THIS NOTE IN AN "*OFFSHORE TRANSACTION*" (AS DEFINED IN REGULATION S UNDER THE SECURITIES ACT), (2) AGREES ON ITS OWN BEHALF AND ON BEHALF OF ANY INVESTOR FOR WHICH IT HAS PURCHASED SECURITIES TO OFFER, SELL, PLEDGE OR OTHERWISE TRANSFER SUCH NOTE OR A BENEFICIAL INTEREST IN SUCH NOTE, PRIOR TO THE DATE (THE "*RESALE RESTRICTION TERMINATION DATE*") WHICH IS [IN THE CASE OF RULE 144A NOTES: ONE YEAR] [IN THE CASE OF REGULATION S NOTES: 40 DAYS] (OR SUCH SHORTER PERIOD OF TIME AS PERMITTED BY RULE UNDER THE SECURITIES ACT OR ANY SUCCESSOR PROVISION THEREUNDER) AFTER THE LATER OF THE ORIGINAL ISSUE DATE OF THIS NOTE (OR ANY PREDECESSOR OF THIS NOTE) AND THE LAST DATE ON WHICH THE ISSUER OR ANY AFFILIATE OF THE ISSUER WAS THE OWNER OF THIS NOTE (OR ANY PREDECESSOR OF THIS NOTE) ONLY (A) TO THE ISSUER OR ANY SUBSIDIARY THEREOF, (B) PURSUANT TO A REGISTRATION STATEMENT WHICH HAS BEEN DECLARED EFFECTIVE UNDER THE SECURITIES ACT, (C) FOR SO LONG AS THE SECURITIES ARE ELIGIBLE FOR RESALE PURSUANT TO RULE 144A, TO A PERSON IT, OR ANY PERSON ACTING ON ITS BEHALF, REASONABLY BELIEVES IS A QUALIFIED INSTITUTIONAL BUYER THAT PURCHASES FOR ITS OWN ACCOUNT OR FOR THE ACCOUNT OF A QUALIFIED INSTITUTIONAL BUYER TO WHOM NOTICE IS GIVEN THAT THE TRANSFER IS BEING MADE IN RELIANCE ON RULE 144A, (D) TO NON-U.S. PERSONS IN AN OFFSHORE TRANSACTION IN COMPLIANCE WITH REGULATION S UNDER THE SECURITIES ACT, OR (E) PURSUANT TO ANY OTHER AVAILABLE EXEMPTION FROM THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT, SUBJECT IN EACH OF THE FOREGOING CASES TO ANY REQUIREMENT OF LAW THAT THE DISPOSITION OF ITS PROPERTY OR THE PROPERTY OF SUCH INVESTOR ACCOUNT OR ACCOUNTS BE AT ALL TIMES WITHIN ITS OR THEIR CONTROL AND TO COMPLIANCE WITH ANY APPLICABLE SECURITIES LAWS OF ANY STATE OR TERRITORY OF THE UNITED STATES OR ANY OTHER JURISDICTION, AND ANY APPLICABLE LOCAL LAWS AND REGULATIONS AND FURTHER SUBJECT TO THE ISSUER'S AND THE TRUSTEE'S RIGHTS PRIOR TO ANY SUCH OFFER, SALE OR TRANSFER (I) PURSUANT TO CLAUSES (C), (D) AND (E) TO REQUIRE THE DELIVERY OF AN OPINION OF COUNSEL, CERTIFICATION AND/OR OTHER INFORMATION SATISFACTORY TO EACH OF THEM AND (II) IN EACH OF THE FOREGOING CASES, TO REQUIRE THAT A CERTIFICATE OF TRANSFER IN THE FORM APPEARING ON THE OTHER SIDE OF THIS NOTE IS COMPLETED AND DELIVERED BY THE TRANSFEROR TO THE TRUSTEE AND (3) AGREES THAT IT WILL DELIVER TO EACH PERSON TO WHOM THIS NOTE IS TRANSFERRED A NOTICE SUBSTANTIALLY TO THE EFFECT OF THIS LEGEND.

(6) The purchaser agrees that it will give to each person to whom it transfers the Notes notice of any restrictions on the transfer of such Notes.

(7) The purchaser acknowledges that the Registrar will not be required to accept for registration or transfer any Notes acquired by the purchaser except upon presentation of evidence satisfactory to us and the Registrar that the restrictions set forth therein have been complied with.

(8) The purchaser acknowledges that we, the Initial Purchasers and others will rely upon the truth and accuracy of the purchaser's acknowledgements, representations, warranties and agreements and agree that if any of the acknowledgements, representations, warranties and agreements deemed to have been made in connection with its purchase of the Notes are no longer accurate, the purchaser shall promptly notify the Initial Purchasers. If the purchaser is acquiring Notes as a fiduciary or agent for one or more investor accounts, the purchaser represents that it has sole investment discretion with respect to each such investor account and that it has full power to make the foregoing acknowledgements, representations and agreements on behalf of each such investor account.

(9) The purchaser understands that no action has been taken in any jurisdiction (including the United States) by us or the Initial Purchasers that would result in a public offering of the Notes or the possession, circulation or distribution of this offering memorandum or any other material relating to us or the Notes in any jurisdiction where action for such purpose is required. Consequently, any transfer of the Notes will be subject to the selling restrictions set forth under "*Plan of Distribution*".

(10) The purchaser acknowledges that until 40 days after the commencement of the Offering, any offer or sale of the Notes within the United States by a dealer (whether or not participating in the Offering) may violate the

registration requirements of the Securities Act if such offer or sale is made otherwise than in accordance with Rule 144A under the Securities Act.

Notice to Non-U.S. Investors

Notice to EEA and UK Retail Investors

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

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

The Notes are not intended to be offered, sold, distributed or otherwise made available to and should not be offered, sold, distributed or otherwise made available to any retail investor in the United Kingdom ("UK"). For these purposes, a retail investor means a person who is one (or more) of: (i) a retail client, as defined in point (8) of Article 2 of Regulation (EU) No 2017/565 as it forms part of domestic law by virtue of the European Union (Withdrawal) Act 2018 ("EUWA"); (ii) a customer within the meaning of the provisions of the FSMA and any rules or regulations made under the FSMA to implement Directive (EU) 2016/97, where that customer would not qualify as a professional client, as defined in point (8) of Article 2(1) of Regulation (EU) No 600/2014 as it forms part of domestic law by virtue of the EUWA; or (iii) not a qualified investor as defined in Article 2 of Regulation (EU) 2017/1129 as it forms part of domestic law by virtue of the EUWA. Consequently no key information document required by Regulation (EU) No 1286/2014 as it forms part of domestic law by virtue of the EUWA (the "UK PRIIPs Regulation") for offering or selling the Notes or otherwise making them available to retail investors in the UK has been prepared and therefore offering or selling the Notes or otherwise making them available to any retail investor in the UK may be unlawful under the UK PRIIPs Regulation.

Each subscriber for or purchaser of the Notes in the offering located within a Member State of the EEA or in the UK will be deemed to have represented, acknowledged and agreed that it is a "qualified investor" within the meaning of Article 2(e) of the Prospectus Regulation or Article 2 of Regulation (EU) 2017/1129 as it forms part of UK domestic law by virtue of the EUWA, as applicable. The Issuer, each Initial Purchaser and others will rely on the truth and accuracy of the foregoing representation, acknowledgement and agreement. Notwithstanding the above, a person who is not a qualified investor and who has notified the Initial Purchasers of such fact in writing may, with the consent of the Initial Purchasers, be permitted to subscribe for or purchase the Notes in the offering.

Notice to Certain Specific European Investors

France

This offering memorandum has not been submitted for clearance to the French *Autorité des Marchés Financiers*.

Each of the Initial Purchasers has represented and agreed that it has only offered or sold and will only offer or sell, directly or indirectly, any Notes in France to, and it has only distributed or caused to be distributed and will only distribute or cause to be distributed in France the offering memorandum or any other offering material relating to the Notes to, qualified investors (*investisseurs qualifiés*) as defined in Article 2(e) of the Prospectus Regulation.

Italy

The offering of the Notes has not been registered with the *Commissione Nazionale per le Società e la Borsa* ("CONSOB") pursuant to Italian securities legislation and, accordingly, no note may be offered, sold or delivered, nor may copies of this offering memorandum or of any other document relating to any Notes be distributed in Italy, except, in accordance with any Italian securities, tax and other applicable laws and regulations.

Each Initial Purchaser has represented and agreed that it has not offered, sold or delivered, and will not offer, sell or deliver any Notes or distribute any copy of this offering memorandum or any other document relating to the Notes in the Republic of Italy ("Italy") except:

(a) to qualified investors (*investitori qualificati*), pursuant to Article 100 of Legislative Decree no. 58 of February 24, 1998 (the "Consolidated Financial Services Act" and Article 34-*ter*, paragraph 1, letter (b) of CONSOB Regulation No. 11971 of May 14, 1999 (the "Issuers Regulation"), all as amended from time to time; or

(b) in other circumstances which are exempted from the rules on public offerings pursuant to Article 100 of the Consolidated Financial Services Act and the Issuers Regulation.

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

(i) made by an investment firm, bank or financial intermediary permitted to conduct such activities in Italy in accordance with the Consolidated Financial Services Act, Legislative Decree No. 385 of September 1, 1993 (the "Banking Act"), CONSOB Regulation No. 20307 of February 15, 2018, all as amended from time to time;

(ii) in compliance with Article 129 of the Banking Act, as amended from time to time, and the implementing guidelines of the Bank of Italy, as amended from time to time; and

(iii) in compliance with any other applicable laws and regulations, including any limitation or requirement which may be imposed from time to time by CONSOB or the Bank of Italy or other competent authority.

Norway

This offering memorandum has not been approved or registered with any authority in Norway. Accordingly, the Notes have not been offered or sold, and will not be offered or sold, to any persons in Norway in any way that would constitute an offer to the public other than to persons who invest in securities as part of their professional activity and who are registered with the Oslo Stock Exchange in this capacity, or otherwise only in circumstances where an exemption from the duty to publish a prospectus under the Norwegian Securities Trading Act of 2007 shall be applicable.

The Kingdom of Spain

Neither the Notes nor this offering memorandum and its contents have been approved or registered in the administrative registries of the Spanish Securities Markets Commission (*Comisión Nacional del Mercado de Valores*). Accordingly, the Notes may not be offered, sold, distributed or re-sold in the Kingdom of Spain except in circumstances which do not constitute a public offering of securities in the Kingdom of Spain within the meaning of Article 35 of the Restated Text of the Spanish Securities Market Law (*texto refundido de la Ley del Mercado de Valores aprobado por el Real Decreto Legislativo 4/2015, de 23 de octubre*), Article 38 of Royal Decree 1310/2005 of 4 November (*Real Decreto 1310/2005, de 4 de noviembre*) and supplemental rules enacted thereunder or in substitution thereof from time to time.

Switzerland

The Notes may be offered in Switzerland on the basis of a private placement. The Notes may not be publicly offered, sold, or advertised, directly or indirectly, in, into or from Switzerland and the Notes will neither be listed on SIX Swiss Exchange ("SIX") or on any other exchange or regulated trading facility in Switzerland nor are they subject to Swiss law. This offering memorandum has been prepared without regard to the disclosure standards for issuance prospectuses under Art. 652a or Art. 1156 of the Swiss Code of Obligations or the disclosure standards for listing prospectuses under Art. 27 et seqq. of the SIX Listing Rules or the listing rules of any other stock exchange or regulated trading facility in Switzerland or the rules related to prospectuses under

Swiss Federal Act on Collective Investment Schemes. Neither this offering memorandum nor any other offering or marketing material relating to the Notes may be publicly distributed or otherwise made publicly available in Switzerland.

Neither this offering memorandum nor any other offering or marketing material relating to the Notes has been or will be filed with or approved by any Swiss regulatory authority. In particular, this offering memorandum will not be filed with, and the offer of Notes will not be supervised by, the Swiss Financial Market Supervisory Authority FINMA ("FINMA") or any other Swiss authority. The acquirers of the Notes will not benefit from protection or supervision by FINMA or any other Swiss authority.

Notice to the UK Investors

Each Initial Purchaser has represented and agreed that:

(a) it has only communicated or caused to be communicated and will only communicate or cause to be communicated an invitation or inducement to engage in investment activity (within the meaning of Section 21 of the Financial Services and Markets Act 2000, as amended ("FSMA")) received by it in connection with the issue or sale of the Notes in circumstances in which Section 21(1) of the FSMA does not apply to the Company; and

(b) it has complied and will comply with all applicable provisions of the FSMA with respect to anything done by it in relation to the Notes in, from or otherwise involving the United Kingdom.

Notice to Canadian Investors

Resale Restrictions

The distribution of Notes in Canada is being made only in the provinces of Canada on a private placement basis exempt from the requirement that we prepare and file a prospectus with the securities regulatory authorities in each province where trades of these securities are made. Any resale of the Notes in Canada must be made under applicable securities laws which may vary depending on the relevant jurisdiction, and which may require resales to be made under available statutory exemptions or under a discretionary exemption granted by the applicable Canadian securities regulatory authority. Purchasers are advised to seek legal advice prior to any resale of the securities.

Representations of Canadian Purchasers

By purchasing Notes in Canada and accepting delivery of a purchase confirmation, a purchaser is representing to us and the dealer from whom the purchase confirmation is received that:

(a) the purchaser is entitled under applicable provincial securities laws to purchase the Notes without the benefit of a prospectus qualified under those securities laws as it is an "accredited investor" as defined under National Instrument 45-106—Prospectus Exemptions or Section 73.3(1) of the Securities Act (Ontario), as applicable,

(b) the purchaser is a "permitted client" as defined in National Instrument 31-103—Registration Requirements, Exemptions and Ongoing Registrant Obligations,

(c) where required by law, the purchaser is purchasing as principal and not as agent, and

(d) the purchaser has reviewed the text above under "—*Resale Restrictions*" above.

Conflicts of Interest

Canadian purchasers are hereby notified that the Initial Purchasers are relying on the exemption set out in section 3A.3 or 3A.4, if applicable, of National Instrument 33-105 – Underwriting Conflicts from having to provide certain conflict of interest disclosure in this document.

Statutory Rights of Action

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if the offering memorandum (including any amendment thereto) such as this document contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser

within the time limit prescribed by the securities legislation of the purchaser's province or territory. The purchaser of these securities in Canada should refer to any applicable provisions of the securities legislation of the purchaser's province or territory for particulars of these rights or consult with a legal advisor.

Enforcement of Legal Rights

All of our directors and officers as well as the experts named herein may be located outside of Canada and, as a result, it may not be possible for Canadian purchasers to effect service of process within Canada upon us or those persons. All or a substantial portion of our assets and the assets of those persons may be located outside of Canada and, as a result, it may not be possible to satisfy a judgment against us or those persons in Canada or to enforce a judgment obtained in Canadian courts against us or those persons outside of Canada.

Taxation and Eligibility for Investment

Canadian purchasers of Notes should consult their own legal and tax advisors with respect to the tax consequences of an investment in the Notes in their particular circumstances and about the eligibility of the Notes for investment by the purchaser under relevant Canadian legislation.

Notice to Hong Kong Investors

Each Initial Purchaser has represented and agreed that:

(i) it has not offered or sold and will not offer or sell in Hong Kong, by means of any document, any Notes other than (a) to "professional investors" as defined in the Securities and Futures Ordinance (Cap. 571) of Hong Kong and any rules made under that Ordinance; or (b) in other circumstances which do not result in the document being a "prospectus" as defined in the Companies (Winding Up and Miscellaneous Provisions) Ordinance (Cap. 32) of Hong Kong or which do not constitute an offer to the public within the meaning of that Ordinance; and

(ii) it has not issued or had in its possession for the purposes of issue, and will not issue or have in its possession for the purposes of issue, whether in Hong Kong or elsewhere, any advertisement, invitation or document relating to the Notes, which is directed at, or the contents of which are likely to be accessed or read by, the public of Hong Kong (except if permitted to do so under the securities laws of Hong Kong) other than with respect to Notes which are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" as defined in the Securities and Futures Ordinance and any rules made under that Ordinance.

Notice to Singapore Investors

Each Initial Purchaser has acknowledged that this offering memorandum has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, each Initial Purchaser has represented and agreed that it has not offered or sold any Notes or caused the Notes to be made the subject of an invitation for subscription or purchase and will not offer or sell any Notes or cause the Notes to be made the subject of an invitation for subscription or purchase, and has not circulated or distributed, nor will it circulate or distribute, this offering memorandum or any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the Notes, whether directly or indirectly, to any person in Singapore other than (i) to an institutional investor (as defined in Section 4A of the Securities and Futures Act (Chapter 289) of Singapore, as modified or amended from time to time (the "SFA")) pursuant to Section 274 of the SFA, (ii) to a relevant person (as defined in Section 275(2) of the SFA) pursuant to Section 275(1) of the SFA, or any person pursuant to Section 275(1A) of the SFA, and in accordance with the conditions specified in Section 275 of the SFA, or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Where Notes are subscribed or purchased under Section 275 of the SFA by a relevant person which is:

(a) a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or

(b) a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary of the trust is an individual who is an accredited investor,

securities or securities-based derivatives contracts (each term as defined in Section 2(1) of the SFA) of that corporation or the beneficiaries' rights and interest (howsoever described) in that trust shall not be transferred

within six months after that corporation or that trust has acquired the Notes pursuant to an offer made under Section 275 of the SFA, except:

(i) to an institutional investor or to a relevant person, or to any person arising from an offer referred to in Section 275(1A) or Section 276(4)(i)(B) of the SFA;

(ii) where no consideration is or will be given for the transfer;

(iii) where the transfer is by operation of law;

(iv) as specified in Section 276(7) of the SFA; or

(v) as specified in Regulation 37A of the Securities and Futures (Offers of Investments) (Securities and Securities-based Derivatives Contracts) Regulations 2018.

Singapore SFA Product Classification: In connection with Section 309B of the Securities and Futures Act (Chapter 289) of Singapore (the "SFA") and the Securities and Futures (Capital Markets Products) Regulations 2018 of Singapore (the "CMP Regulations 2018"), we have determined, and hereby notify all relevant persons (as defined in Section 309A(1) of the SFA), that the Notes are capital markets products other than 'prescribed capital markets products' (as defined in the CMP Regulations 2018) and Specified Investment Products (as defined in MAS Notice SFA 04-N12: Notice on the Sale of Investment Products and MAS Notice FAA-N16: Notice on Recommendations on Investment Products).

Notice to Investors in Other Jurisdictions

The distribution of this offering memorandum and the offer and sale or resale of the Notes may be restricted by law in certain jurisdictions. Persons into whose possession this offering memorandum (or any part hereof) comes are required by us and the Initial Purchasers to inform themselves about, and to observe, any such restrictions.

LIMITATIONS ON VALIDITY AND ENFORCEABILITY OF THE SECURITY INTERESTS AND GUARANTEES AND CERTAIN INSOLVENCY LAW CONSIDERATIONS

European Union

The Issuer and several of the guarantors are incorporated under the laws of Member States of the European Union.

The EC Regulation 2015/848 of the European Parliament and of the Council of May 20, 2015 on Insolvency Proceedings (the "EC Regulation") entered into force on June 26, 2017 and is applicable to insolvency proceedings opened on or after that date replacing EC Regulation No. 1346/2000 of May 29, 2000 on insolvency proceedings (which continue to apply to insolvency proceedings opened prior to June 26, 2017). The EC Regulation is effective in all member states of the European Union ("Member States") other than Denmark. Pursuant to the EC Regulation, the courts of a Member State (other than Denmark) will have jurisdiction to open main insolvency proceedings if the company concerned has its centre of main interests ("COMI") in that Member State. The determination of where a company has its COMI is a question of fact and is made at the time of the filing of the insolvency application. The courts of the Member States may therefore have differing and even conflicting views on the determination of the COMI. Article 3(1) of the EC Regulation provides that a company has its COMI in the Member State in which it "conducts the administration of its interests on a regular basis and which is ascertainable by third parties". There is a presumption under Article 3(1) of the EC Regulation that a company has its COMI in the Member State in which it has its registered office in the absence of proof to the contrary (that presumption shall only apply if the registered office has not been moved to another Member State within the three-month period prior to the request for the opening of insolvency proceedings). However, the EC Regulation also states in its preamble at Recital 30 that it should be possible to rebut this presumption if a debtor's central administration is located in a Member State other than that of its registered office and a comprehensive assessment of all the relevant factors establishes, in a manner that is ascertainable by third parties, that the debtor's actual centre of management and supervision and the management of its interests is located in that other Member State. Under the previous EC regulation (Council Regulation (EC) 1346/2000 of May 29, 2000), which defined the COMI in similar terms, courts have taken into consideration a number of factors in determining the COMI of a company, including in particular, where board meetings are held, the location where the company conducts the majority of its business or has its head office and the location where the majority of the company's creditors are established.

If the COMI of a company is and will remain located in the Member State (other than Denmark) in which it has its registered office, the main insolvency proceedings in respect of the company under the EC Regulation may only be commenced in such jurisdiction, and accordingly a court in such jurisdiction would be entitled to commence the types of insolvency proceedings referred to in Annex A to the EC Regulation. If main insolvency proceedings are validly opened in one Member State, they will be recognized and have effect in all other Member States (other than Denmark) pursuant to the EC Regulation. If the company is found to have its COMI in a place other than the relevant Member State (other than Denmark), the courts of that Member State will only have jurisdiction to open secondary insolvency proceedings in that Member State and only, then provided that the company concerned has an "establishment" (within the meaning and as defined in Article 2(10) of the EC Regulation) in that Member State. An "establishment" is defined as "any place of operations where a debtor carries out or has carried out in the three-month period prior to the request to open main insolvency proceedings a non-transitory economic activity with human means and assets". Accordingly, the opening of secondary insolvency proceedings in another Member State will also be possible if the debtor had an establishment in such Member State in the three-month period prior to the request for commencement of main insolvency proceedings.

The effects of such secondary insolvency proceedings will be restricted to the assets of the company located in that Member State and the main insolvency proceedings will be opened in the Member State (other than Denmark) in which the company is found to have its COMI. Where main proceedings in the Member State in which the debtor has its COMI have not yet been commenced, territorial insolvency proceedings may only be commenced in another Member State where the debtor has an establishment where either (i) insolvency proceedings cannot be commenced in the Member State in which the debtor's COMI is situated under of the conditions laid down by that Member State's law; or (ii) the opening of territorial insolvency proceedings is requested by (x) a creditor whose claim arises from or is in connection with the operation of an establishment situated within the territory of the Member State where the opening of territorial proceedings is requested or (y) a public authority which, under the law of the Member State within the territory of which the establishment is situated, has the right to request the opening of insolvency proceedings. Irrespective of whether the insolvency proceedings are main or secondary insolvency proceedings, such proceedings will, subject to certain exceptions,

be governed by the *lex fori concursus*, i.e., the local insolvency law of the court that has assumed jurisdiction over the insolvency proceedings of the debtor.

The courts of all Member States (other than Denmark) must recognize the judgment of the court commencing main proceedings, which will be given the same effect in the other Member States so long as no secondary proceedings have been commenced there. The insolvency administrator appointed by a court in a Member State which has jurisdiction to commence main proceedings (because the debtor's COMI is there) may exercise the powers conferred on it by the laws of that Member State in another Member State (such as to remove assets of the debtor from that other Member State) subject to certain limitations (such as the preservation of third parties' rights in rem pursuant to Article 8 of the EC Regulation), as long as no insolvency proceedings have been commenced in that other Member State or no preservation measures have been taken to the contrary further to a request to commence insolvency proceedings in that other Member State where the debtor has assets. Article 36 of the EC Regulation provides for the right of the insolvency practitioner to give an undertaking in order to avoid secondary insolvency proceedings. The insolvency practitioner in the main insolvency proceedings may give a unilateral undertaking to local creditors in respect of the assets located in the Member State in which secondary insolvency proceedings could be opened, that when distributing those assets or the proceeds received as a result of their realization, it will comply with the distribution and priority rights under national law that creditors would have if secondary insolvency proceedings were opened in that Member State. This undertaking shall be approved by a qualified majority of known local creditors, determined in accordance with the local law of such other Member State. If approved, the undertaking is binding on the estate and a court shall, at the request of the insolvency practitioner, refuse to open secondary insolvency proceedings if it considers that the undertaking sufficiently protects the general interests of the local creditors.

The EC Regulation also provides for rules to coordinate main, secondary and territorial insolvency proceedings (Articles 41 et seq.), as well as to coordinate cross-border group insolvencies (Article 56 et seq.). In the event that insolvency proceedings concerning two or more members of a group are opened, insolvency practitioners and courts shall cooperate with any other insolvency practitioner and any other court involved in insolvency proceedings of another member of the group (Articles 56 and 57). Moreover, an insolvency practitioner appointed in insolvency proceedings opened in relation to a member of the group may request group coordination proceedings before any court having jurisdiction over the insolvency proceedings of a member of the group. Such request shall be accompanied notably by a proposal as to the person to be nominated as the group coordinator (Article 61).

France

Insolvency

We conduct a part of our business activity in France and, to the extent that the COMI or, if not applicable, the main centre of our interests within the meaning of article R.600-1 of the French Commercial Code is deemed to be in France, we could be subject to French insolvency proceedings affecting creditors, including court assisted pre-insolvency proceedings (*mandat ad hoc* proceedings or conciliation proceedings (*procédure de conciliation*)) and court-administered insolvency proceedings being either safeguard (*sauvegarde*), accelerated safeguard proceedings (*procédure de sauvegarde accélérée*), accelerated financial safeguard (*sauvegarde financière accélérée*), judicial reorganization or judicial liquidation proceedings (*redressement judiciaire* or *liquidation judiciaire*).

Pursuant to Article L. 721-8 of the French Commercial Code, specialized courts exist for (i) conciliation or insolvency proceedings with respect to debtors that meet or exceed (on a stand-alone basis or together with the companies under their control) (x) 20 million euros in turnover and 250 employees or (y) 40 million euros in turnover; (ii) commencement of proceedings with respect to which the court's international jurisdiction results from the application of the EC Regulation or (iii) in cases where the EC Regulation does not apply, from the debtor having its main centre of interests within the jurisdiction of such specialized courts.

In addition, the French court that commences insolvency proceedings with respect to the member of a corporate group has jurisdiction over all the other members of the group (subject to French courts having international jurisdiction with respect to such entities, in accordance with the rules outlined above and to specific control thresholds); accordingly, a court can supervise the insolvency proceedings of the whole group and may, for this purpose, appoint the same administrator (*administrateur judiciaire*) and creditors' representative (*mandataire judiciaire*) for all proceedings in respect of members of the group.

In general, French insolvency legislation favours the continuation of a business and protection of employment over the payment of creditors and could limit your ability to enforce your rights under the notes and/or any

guarantees granted by the Issuer. This is even more relevant within the temporary framework to amend Book VI of the French Commercial Code enacted by the French government in the context of the Covid-19 crisis.

The following is a general discussion of insolvency proceedings governed by French law for informational purposes only and does not address all the French legal considerations that may be relevant to holders of the notes.

Such proceedings will likely be amended in the context of the transposition of the EU directive 2019/1023 of the European Parliament and the Council of June 20, 2019 on preventive restructuring frameworks, on discharge of debt and disqualifications, and on measures to increase the efficiency of procedures concerning restructuring, insolvency and discharge of debt, and amending Directive (EU) 2017/1132 (Directive on restructuring and insolvency) (the "Restructuring Directive") into French law with respect to which French statute n°2019-486 dated May 22, 2019 ("Loi Pacte") grants the French government twenty-four months to enact appropriate measures through ordinances for the transposition of the EU Restructuring Directive.

Once transposed into French law, the Restructuring Directive should have a material impact on French insolvency law, particularly with regards to the process of adoption of restructuring plans under insolvency proceedings. According to this directive, "affected parties" (i.e., including notably creditors and therefore the Noteholders) shall be treated in separate classes which reflect certain class formation criteria for the purpose of adopting a restructuring plan. Classes shall be formed in such a way that each class comprises holders of claims or interests with rights that reflect a sufficient commonality of interest based on verifiable criteria. As a minimum, secured and unsecured claims shall be treated in separate classes for the purpose of adopting a restructuring plan. A restructuring plan shall be deemed to be adopted by affected parties, provided that a majority in amount of their claims or interests is obtained in each and every class (the required majorities shall be laid down by Member States at no higher than 75% in the amount of claims or interests in each class, it being noted that Member States may require that in addition, a majority in number of affected parties be obtained in each class).

If the restructuring plan is not approved by each and every class of affected parties, the plan may however be confirmed by a judicial or administrative authority by applying a cross-class cram-down, providing notably that:

- creditors that share enough commonality of interest within a class benefit from equality of treatment and are treated in proportion to their claim;
- the plan has been notified to all affected parties;
- the plan complies with the best interest of creditors test (i.e., no dissenting creditor would be worse off under the restructuring plan than they would be in the event of liquidation, whether piecemeal or sale as a going concern or in the event of the next-best-alternative scenario if the restructuring plan were not to be confirmed);
- as the case may be, any new financing necessary to implement the restructuring plan does not unfairly prejudice the interest of creditors;
- the plan has a reasonable prospect of preventing the insolvency of the debtor or ensuring the viability of the business;
- the plan has been approved:
    - by a majority of the voting classes of affected parties, provided that at least one of those classes is a secured creditors class or is senior to the ordinary unsecured creditors class; or, failing that,
    - by at least one of the voting classes of affected parties or, where so provided under national law, impaired parties, other than an equity-holders class or any other class which, upon a valuation of the debtor as a going-concern, would not receive any payment or keep any interest, or, where so provided under national law, which could be reasonably presumed not to receive any payment or keep any interest, if the normal ranking of liquidation priorities were applied under national law; it is specified that member states may increase the minimum number of voting classes of affected parties or, where so provided under national law, of impaired parties;
- the plan complies with the relative priority rule (i.e., dissenting voting classes of affected creditors are treated at least as favourably as any other class of the same rank and more favourably than any junior class). By way of derogation, Member States may instead provide that the plan shall comply with the absolute

priority rule (i.e., a dissenting voting class of creditors must be satisfied in full before a more junior class may receive any distribution or keep any interest under the restructuring plan); and

- no class of affected parties can, under the restructuring plan, receive or keep more than the full amount of its claims or interests.

Member States may maintain or introduce provisions derogating from the conditions above where they are necessary in order to achieve the aims of the restructuring plan and where the restructuring plan does not unfairly prejudice the rights or interests of any affected parties.

Temporary measures in the context of the Covid-19 pandemic

Please note that due to the Covid-19 pandemic, certain temporary measures have recently been enacted by the French Government to adapt French insolvency law to the health crisis (Ordinance No. 2020-596 dated May 20, 2020, Law No. 2020-1525 dated December 7, 2020 and Ordinance No. 2020-1443 dated November 25, 2020) which are detailed below.

Note that, due to the Covid-19 pandemic, these rules may be further adapted and additional measures may be put in place within the following weeks or months, which may have an impact on French insolvency law.

Grace periods

In addition to pre-insolvency and insolvency laws discussed below, you could, like any other creditors, be subject to Article 1343-5 of the French Civil Code (*Code civil*).

Pursuant to the provisions of this article, French courts may, in any civil proceeding involving a debtor, whether initiated by the debtor or a creditor, taking into account the debtor's financial position and the creditor's financial needs, defer or otherwise reschedule over a maximum period of two years the payment dates of payment obligations and decide that any amounts, the payment date of which is thus deferred or rescheduled, will bear interest at a rate that is lower than the contractual rate (but not lower than the prevailing legal rate as published twice a year by administrative decree of the Ministry of Economy) or that payments made shall first be allocated to repayment of principal. A court order made under article 1343-5 of the French Civil Code (*Code civil*) will suspend any pending enforcement measures, and any contractual interest or penalty for late payment will not accrue or be due during the same grace period ordered by the relevant judge. A creditor cannot contract out of such grace periods.

When the debtor benefits from the opening of conciliation proceedings, these provisions shall be read in combination with Article L. 611-7 and Article L. 611-10-1 of the French Commercial Code.

Insolvency (cessation des paiements) test under French law

Under French law, a debtor is deemed to be insolvent (*en état de cessation des paiements*) when it is not able to pay its debts which are due (*passif exigible*) with its available assets (*actif disponible*) taking into account credit lines available to it, and moratoria which its creditors have granted to it.

The date of insolvency (*cessation des paiements*) is generally deemed to be the date of the court order commencing judicial reorganization or judicial liquidation proceedings, unless the court sets an earlier date, which may be up to 18 months before the date of the court order. Except for fraud, the date of insolvency may not be fixed at an earlier date than the date of the final court decision that approved an agreement (*homologation*) in the context of conciliation proceedings. The date of insolvency marks the beginning of the so called "suspect period" (see below).

Warning procedure (procédure d'alerte)

In order to anticipate a debtor's difficulties to the extent possible, French law provides for warning procedures. Indeed, regarding companies incorporated as *société anonyme*, when there are elements which they believe put the company's existence as a going concern in jeopardy, the statutory auditors of a company must request the management to provide an explanation. Failing satisfactory explanations or appropriate corrective measures, the auditors must request that a board of directors (or the equivalent body) be convened and may request to be heard by the President of the relevant Commercial Court. Employees representatives may be informed of such warning proceeding depending on the answers provided to the auditors.

At a later stage, and failing satisfactory explanations or appropriate corrective measures, a shareholders' meeting shall be convened and the auditors present a special report on this occasion.

Further to the shareholders' meeting, if the auditor considers that the decisions made do not ensure the company's existence as a going concern, he/she must inform the President of the relevant Commercial Court of the warning procedure and may request to be heard by the President of the relevant Commercial Court. As regards companies not incorporated as *société anonyme*, similar warning procedures exist even if the practical details slightly differ.

Shareholders representing at least 5% of the share capital and the workers' committee (or, in their absence, the employees' representatives) have similar rights.

The President of the Commercial Court can also summon the management to provide explanations on elements which the he/she believes put the company's existence as a going concern in jeopardy (or when the company has not filed its financial statements within the statutory timeframe, despite his/her injunction).

Due to the Covid-19 pandemic and state of health emergency that was imposed by the French government, Ordinance n° 2020-341 of 27 March 2020 and Ordinance n° 2020-596 dated 20 May 2020 have amended the warning procedure to provide that, until 31 December 2021 (included), if the statutory auditor considers that the urgency requires immediate action and that the director refuses to take such action or takes insufficient measures, the statutory auditor may inform the President of the Commercial Court further to the first information made in that respect to the director, the chairman of the board of directors (*conseil d'administration*) or of the supervisory board (*conseil de surveillance*), as the case may be.

In such case, the statutory auditor may communicate by any means and without delay to the President of the Commercial Court their findings and proceedings, with copy of any relevant documents. The statutory auditor is released from their obligation of professional secrecy towards the President of the Court.

This exceptional procedure does not preclude the application of the ordinary warning procedure detailed above.

Court-assisted pre-insolvency proceedings

A company facing or anticipating legal, economic or financial difficulties may request in its sole discretion the opening of court assisted pre-insolvency proceedings (*mandat ad hoc* or conciliation), provided that the company:

(i) is not in a state *of cessation des paiements* in case of *mandat ad hoc* or conciliation proceedings; or

(ii) is in a state of *cessation des paiements* for less than 45 days in case of conciliation proceedings only.

The aim of such proceedings is to reach an agreement with the debtor's main creditors and stakeholders, in particular by reducing or rescheduling the company's indebtedness. *Mandat ad hoc* and conciliation are proceedings carried out under a court-appointed officer (*mandataire ad hoc* or *conciliateur*) itself under the supervision of the president of the relevant court (usually, the Commercial Court). The debtor can propose (which he generally does), in the filing for the commencement of the proceedings, the appointment of a particular person as court-appointed officer. Such proceedings are non-binding since the court-appointed officer has no power to force the parties to accept an agreement and the dissenting creditors will not be bound by the arrangement, if any. These proceedings are amicable and confidential (subject to the details below as regards approved conciliation proceedings) and do not involve any automatic stay even if, in practice, creditors generally abstain from taking legal action against the company to recover their claim for the time of the discussions.

Mandat ad hoc and conciliation proceedings may also be used at the request of the debtor and after the opinion of the participating creditors has been sought to prepare the sale of all or part of the business of the debtor with a view to implement such sale (*plan de cession*) in a subsequent insolvency proceeding. To ensure transparency, the Public Prosecutor must be consulted in the context of subsequent insolvency proceedings on any offer received by the *mandataire ad hoc* or the conciliator.

Contractual provisions modifying the terms of an outstanding contract, by diminishing the rights or increasing the obligations of the debtor solely by reason of the appointment of a *mandataire ad hoc* or the opening of conciliation proceedings, or of any request made to this end are deemed null and void.

Equally, contractual provisions that would, as the sole result of the opening of a *mandat ad hoc* proceedings or the opening of conciliation proceedings, make the debtor bear the fees of the creditor's counsel relating to such proceedings are null and void for the portion that would exceed three quarters of the total fee of the relevant counsel.

Mandat ad hoc proceedings

French law does not provide for any specific rule in respect of *mandat ad hoc* proceedings, except that these proceedings (i) are confidential by law (save for their disclosure to statutory auditors if any) and (ii) may only be initiated by a debtor company itself, in its sole direction. In practice, *mandat ad hoc* proceedings are used by debtors that are facing difficulties of an economic, legal or financial nature but are not insolvent (*en état de cessation des paiements*) within the meaning of French law. The duties of the *mandataire ad hoc* (court appointed officer) whose name can be suggested by the debtor (which is generally the case), are determined by the court. This *mandataire ad hoc* is usually appointed in order to facilitate the negotiations with the debtor's main creditors or stakeholders but he cannot coerce the creditors to accept any proposal and the dissenting creditors will not be bound by the arrangement, if any. Creditors are not barred from taking legal action against the company to recover their claims, but, in practice, they generally abstain from doing so. *Mandat ad hoc* proceedings are confidential and are not limited in time. The agreement reached by the parties (if any) with the help of the court appointed officer (*mandataire ad hoc*) is reported by the latter to the President of the Court but is not approved by the court. The restructuring agreement between the company and its main creditors will be negotiated on a purely consensual and voluntary basis—those creditors not willing to take part cannot be bound by the arrangement. In any event, the debtor retains the right to petition the relevant judge for a grace period as set forth in article 1343-5 of the French Civil Code (*Code civil*).

Conciliation proceedings

Conciliation proceedings are available to a debtor that faces current or foreseeable difficulties of a legal, economic or financial nature but which is not insolvent or has not been insolvent for more than 45 days. The debtor petitions the President of the relevant court for the appointment of a conciliator (whose name the debtor can suggest, which is generally the case) in charge of assisting the debtor in negotiating an agreement with all or part of its creditors and/or trade partners. Conciliation proceedings are confidential (subject to the below) and may last up to five months (after an initial period of a maximum of four months, upon request of the conciliator, the court may extend the conciliation period up to a maximum aggregate period of five months). During the proceedings, creditors may continue to individually claim payment of their claims but in practice creditors generally accept not to do so for a certain time, to try and negotiate a consensual agreement. In addition, the debtor retains the right to petition the judge having opened the conciliation proceedings to grant a grace period to the debtor, in accordance with article 1343-5 of the French Civil Code (*Code civil*) for a maximum of two years, provided that the debtor has received a formal notice requesting payment or faces enforcement measures, in which case the decision would be taken after having heard the conciliator. The judge having opened conciliation proceedings may grant a grace period even when the formal notice asking the debtor to pay was sent before conciliation proceedings commenced (and not only during conciliation proceedings). This judge also has jurisdiction to grant such a grace period during the implementation of the conciliation agreement (i.e. after the end of the conciliation proceedings), in relation to claims of non-consenting creditors (other than public creditors) (provided that this agreement has been either acknowledged (*constaté*) or approved (*homologue*) by a court decision, as described below) in accordance with article L. 611-10-1 of the French Commercial Code (*Code de commerce*).

Upon its execution, the agreement reached by the parties becomes binding upon them, creditors party thereto may not take action against the company in respect of claims governed by the agreement and accrued interest of the claims governed by the restructuring agreement cannot bear themselves interest (notwithstanding Article 1343-2 of the French Civil Code). The agreement may be either:

- upon all parties' request, acknowledged (*constaté*) by the President of the court, which makes it immediately enforceable without further recourse (*titre exécutoire*). The acknowledgement of the conciliation agreement keeps the conciliation proceedings confidential; or
- upon the debtor's request, approved (*homologué*) by the Commercial Court, subject to the satisfaction of certain conditions (i.e.: (i) the debtor is not insolvent or the conciliation agreement puts an end to the debtor's insolvency; (ii) the terms of the conciliation agreement are such as to ensure that the company will

survive as a going concern; and (iii) the agreement does not infringe upon the rights of the non-signatory creditors), which shall have the following specific consequences:

- creditors who, as part of the approved agreement or during the course of the conciliation proceedings, provide new money, goods or services designed to ensure the continuation of the business of the distressed company (other than shareholders providing new equity) will enjoy a priority of payment over all pre-proceeding and post-proceeding petitioned claims (other than certain post-proceeding employment claims and procedural costs), in the event of subsequent insolvency proceedings ("New Money Lien"). In the event of subsequent safeguard, accelerated safeguard, accelerated financial safeguard, or judicial reorganization proceedings, the payment date of claims benefiting from the New Money Lien may not be rescheduled or these claims may not be written off by the court without their holders' consent;
- in the event of subsequent judicial reorganization proceedings or judicial liquidation proceedings, the date of *the cessation des paiements* and therefore the starting date of the suspect period (as defined below) cannot be fixed by the court at a date earlier than the date on which the approval of the conciliation agreement by the court has become final, except in case of fraud (see the definition of the date of the *cessation des paiements* above); and
- the conciliation proceedings will be made public only in respect of the existence of the conciliation proceedings but not in respect of the full content of the agreement in theory (except for the guarantees and security interests and liens as well as the amount of New Money Lien detailed above, as provided for in the agreement). The works council or employee representatives, as the case may be, are informed of the contents of the conciliation agreement and may have access to the full conciliation agreement at the clerk's office (*greffe*) of the court. Also, when the debtor is submitted to statutory auditing, the conciliation agreement is communicated to its statutory auditors.

Joint debtors, personal guarantors, or any third party that granted a security interest can benefit from the grace periods granted in accordance with article L. 611-7 of the French Commercial Code to the debtor during conciliation proceedings, as well as from the provisions of the approved or acknowledged agreement. Provided the agreement (whether acknowledged or approved) is duly executed, any individual proceedings by creditors with respect to the claims included in the agreement are suspended.

In case of breach of the agreement, any party to the agreement can petition the court for its termination. The commencement of subsequent insolvency proceedings will automatically put an end to the conciliation agreement, in which case the creditors will recover their claims and security interests, with the exception of those amounts already paid to them. In any event, the debtor retains the right to petition for debt rescheduling pursuant to article 1343-5 of the French Civil Code (*Code civil*).

Conciliation proceedings, in the context of which a draft plan has been negotiated and is supported by a large majority of creditors without reaching unanimity, will be a mandatory preliminary step of the accelerated safeguard or accelerated financial safeguard proceedings as described below.

Due to the Covid-19 epidemic and state of health emergency that was imposed by the French government, Ordinance n°2020-596 dated 20 May 2020 and Ordinance n°2020-1443 dated 25 November 2020, have amended conciliation proceedings to provide that:

- With respect to proceedings commenced within the period of time between 24 August 2020 and 31 December 2021 (included), upon request of the *conciliateur*, the President of the Commercial Court may extend, one or several times, the conciliation period up to a maximum of ten months (as opposed to a maximum of 5 months under standard rules);
- Until 31 December 2021, if a creditor does not accept, by the deadline set by the conciliator, a request made by the conciliator to suspend payment of his claim for the duration of the conciliation proceedings, the debtor may request from the President of the Commercial Court in *ex-parte* proceedings, for the duration of the conciliation proceedings:
  - the stay or prohibition of any legal action for payment or for termination of a contract for a payment default;
  - the stay or prohibition of any judicial enforcement measure against the debtor's movable or immovable property as well as any judicial procedure relating to the distribution of the debtor's assets that would not have become final; or
  - the deferral or rescheduling of the creditor's claim.

In addition, the debtor may petition the judge that commenced conciliation proceedings for a grace period in accordance with Article 1343-5 of the French Civil Code even before the creditor sends any notice to pay or initiates any suit for payment if a creditor does not accept, by the deadline set by the *conciliateur*, a request made by the *conciliateur* to suspend payment of his claim for the duration of the conciliation.

Where the maximum time period allotted to court-assisted proceedings expires without an agreement being reached, the proceedings will end. The termination of such proceedings does not, in and of itself entail any specific legal consequences for the debtor. In particular, it does not result in the automatic commencement of insolvency proceedings. New conciliation proceedings cannot be commenced before 3 months have elapsed as from the end of the previous ones.

Court-administered proceedings—safeguard, accelerated safeguard, accelerated financial safeguard, reorganization and liquidation proceedings

Court administered proceedings may be initiated:

- in the event of safeguard (*procédure de sauvegarde*), accelerated safeguard (*procédure de sauvegarde accélérée*) or accelerated financial safeguard (*procédure de sauvegarde financière accélérée*) proceedings, upon petition by the debtor only if, while not being in a state of *cessation des paiements* (or for accelerated safeguard and accelerated financial safeguard proceedings, if in *cessation des paiements*, not being in such a state for more than 45 days when it initially requested the opening of conciliation proceedings), it is facing difficulties which it cannot overcome. The conditions of opening of accelerated safeguard (*procédure de sauvegarde accélérée*) or accelerated financial safeguard (*procédure de sauvegarde financière accélérée*) proceedings are described below. When the situation of the debtor does not show difficulties that it cannot overcome, the court will first invite the debtor to petition the president of the court for the opening of conciliation proceedings (see above). The court will then rule on the sole request for the opening of safeguard proceedings. Creditors of the debtor are not notified of, nor invited to attend, the hearing before the court at which the commencement of safeguard proceedings is requested; and
- in the event of judicial reorganization or liquidation proceedings, upon petition by the debtor, by any creditor or by the public prosecutor if such company is insolvent (*en état de cessation des paiements*). Judicial reorganization proceedings are available to companies whose recovery prospects are possible while judicial liquidation proceedings are available to companies whose recovery is manifestly impossible. Where the debtor requested the commencement of judicial reorganization proceedings and the court, after having heard the debtor, considers that judicial liquidation proceedings would be more appropriate, it may order the commencement of the proceedings which it determines to be most appropriate. The same would apply if the debtor requested the commencement of judicial liquidation proceedings and the court considered that judicial reorganization proceedings would be more appropriate.

While the debtor may, in its sole discretion, file for safeguard proceedings at any time it is facing difficulties that it cannot overcome when satisfying the conditions, it is required to petition for the opening of judicial reorganization proceedings (if recovery is possible) or judicial liquidation proceedings (if recovery is manifestly not possible) within 45 days of its becoming insolvent (unless it filed for conciliation proceedings in the meantime). If it fails to do so, its directors and officers, whether *de jure* or *de facto*, are exposed to incurring civil liability.

Creditors of the company do not attend the hearing before the court at which the opening of safeguard, accelerated safeguard or accelerated financial safeguard proceedings is requested. The same applies for the hearing before the court at which the opening of reorganization or liquidation proceedings is requested, save for the creditor having requested such opening, as the case may be.

The observation period and its outcome

The period from the date of the court decision commencing the proceedings (whether safeguard or judicial reorganization proceedings) to the date on which the court takes a decision on the outcome of the proceedings is called the observation period and may last up to 18 months. During the observation period, a court appointed administrator, whose name can be suggested by the debtor in safeguard proceedings, investigates the business of the company. Creditors, who are subject to an automatic stay and must file their claims arisen prior to the commencement of the insolvency proceedings as a general rule (see "—Status of creditors during safeguard, accelerated financial safeguard, judicial reorganization or judicial liquidation proceedings" for further details), do not have effective control of the procedure, which remains in the hands of the company and the administrator and is overseen by the court. In safeguard proceedings, the administrator's mission is limited to either supervising or assisting the debtor's management and, in any case, helping it preparing a safeguard plan for the company. In

judicial reorganization proceedings, the administrator's mission is usually to assist the management (although he can be appointed to replace management, in full or in part) and to make proposals for the reorganization of the company, which proposals may include a business continuation plan (equivalent to a safeguard plan) and/or the sale of all or part of the company's business to a third party.

There is no observation period in the case of judicial liquidation proceedings being opened against the debtor, nor does the law limit their duration.

If the court decides to order the judicial liquidation of the debtor, the court will appoint a liquidator, which is generally the former creditors' representative (*mandataire judiciaire*). The liquidator is vested with the power to represent the debtor and perform the liquidation operations (mainly liquidate the assets and settle the liabilities to the extent the proceeds from the liquidated assets are sufficient, in accordance with the creditors' priority order of payment). The liquidator will take over the management and control of the debtor and the managers of the debtor are no longer in charge of its management (although they remain in place).

At the end of the observation period, if it considers that the company can survive as a going concern, the court will adopt a safeguard or reorganization plan which will entail a restructuring and/or rescheduling of debts and may entail the divestiture of some or all of the debtor's assets and businesses (a sale of the entire business is not possible in a safeguard plan). In judicial reorganization proceedings, if no restructuring plan is drafted or if the draft restructuring plan appears obviously incapable of restoring the debtor's viability, the court may determine that all (unlike in safeguard proceedings) or part of the business should be sold to purchasers who have submitted bids. In such a case, the court orders such a (partial or entire) sale in the framework of a so-called "sale of the business plan" (*plan de cession*), which consists of transferring assets, contracts and jobs cherry-picked by the purchaser thereto (see "*—Sale of business and isolated sale of assets of the debtor*" for further details), for a lump sum, in accordance with the bid submitted by the purchaser during the observation period, without (subject to certain exceptions) the need to obtain the consent of either the debtor, the creditors or the other party to certain contracts (such as lease-back agreements or supply agreements of goods and services). Any third party may make a bid to that effect as from the opening of judicial reorganization or judicial liquidation proceedings. By exception, such sale may be organized in *mandat ad hoc* and/or conciliation proceedings and implemented in insolvency (including safeguard) proceedings, through an expeditious and derogatory process (without competitive bids).

Judicial liquidation proceedings entail the relief of the debtor from the management and there is no observation period in such proceedings. The outcome of judicial liquidation proceedings, which is decided by the court without a vote of the creditors, may be a sale of the business in the framework of a so-called "sale of the business plan" (*plan de cession*) and/or isolated sales of the debtor's assets in order to discharge the debtor's liabilities (see "*—Sale of business and isolated sale of assets of the debtor*" for further details). Where a sale of the business (partial or not) is contemplated, the court may authorize a temporary continuation of the business for a maximum period of three months (renewable once for another three-month period at the Public Prosecutor's request) whose effects are similar to an observation period.

With regards to judicial liquidation proceedings, the court will end the proceedings when either no due liabilities remain, the liquidator has sufficient funds to pay off the creditors (*extinction du passif*), or continuation of the liquidation process becomes impossible due to shortfall of assets (*insuffisance d'actif*).

The court may also terminate the judicial liquidation proceedings:

- when the interest of the continuation of the liquidation process is disproportionate compared to the difficulty of selling the assets; or
- in the event where there are insufficient funds to pay off the creditors, by appointing a trustee in charge of continuing ongoing lawsuits and allocating the amounts received from these lawsuits between the remaining creditors.

If, after commencement of the proceedings, it appears that the debtor was insolvent (*en état de cessation des paiements*) before their commencement, at the request of the debtor, the administrator, the creditors' representative or the Public Prosecutor, the court may convert the safeguard proceedings into judicial reorganization proceedings.

In addition, the court may convert safeguard proceedings into (i) judicial reorganization proceedings (a) at any time during the observation period if the debtor becomes insolvent or (b) if the approval of a safeguard plan is

manifestly impossible and if the company would shortly become insolvent should safeguard proceedings end or (ii) judicial liquidation proceedings at any time during the observation period if the debtor is insolvent and its recovery is manifestly impossible. In such cases:

- the court may decide the conversion at the request of the debtor, the court-appointed administrator, the creditors' representative or the Public Prosecutor with the exception of (i) (b);
- the court may also act upon its own initiative, except in the case of (i) (b); and
- the court's decision is only taken after having heard the debtor, the court-appointed administrator, the creditors' representative, the Public Prosecutor and the employees' representatives (if any).

In case of (i)(b) only, the court would decide the conversion (i) at the request of the court-appointed administrator, the creditors' representative or the Public Prosecutor if the draft plan was not approved by the relevant creditors' committees and, if any, the bondholders' general meeting or (ii) at the sole request of the debtor in all other circumstances.

At any time during reorganization proceedings, the court may also order the partial end of business operations or convert such proceedings into liquidation proceedings if the debtor's recovery is manifestly impossible, upon the request of the court-appointed administrator, the creditors' representative, a creditor appointed as a controller, the Public Prosecutor or upon its own initiative.

The court's decision is only made after having heard the debtor, the court-appointed administrator, the creditors' representative, creditors appointed as controller, the Public Prosecutor and the employees' representative.

Due to the Covid-19 epidemic and state of health emergency that was imposed by the French government, Ordinance n° 2020-596 dated May 20, 2020, amended safeguard and judicial reorganization proceedings to provide that:

- as an incentive for new financings granted to debtors in the context of safeguard or reorganization proceedings, Ordinance n° 2020-596 dated May 20, 2020 provides for a new safeguard or reorganization privilege (the "S/R Lien"), applicable exclusively to proceedings commenced between May 21, 2020 and 31 December 2021. The S/R Privilege is distinct from the existing statutory preference benefitting to financing granted, with the approval of the bankruptcy judge, after commencement of the proceedings, for the needs of the proceedings or of the observation period.
- The S/R Lien applies to all new cash contributions made, with the exception of those made through a share capital increase, by any person:
  - during the observation period, in order to ensure the continuity of debtor's business and its sustainability, in which case such cash contributions must be authorized by the supervising judge, or
  - for the implementation of the safeguard or reorganization plan, *i.e.*, within the plan as approved or modified by the court, and for the purposes of its implementation, it being specified that the decision endorsing or modifying the plan must mention all claims benefiting from the lien, as well as the relevant amounts.
- Claims benefiting from the S/R Lien enjoy a priority of payment over pre-commencement and post-commencement claims except with respect to (i) wages claims benefitting from the employees' super-priority lien, (ii) post-petition procedural costs, (iii) claims benefitting from a New Money Lien, (iv) pre-petition claims secured by a real estate security interest (in judicial liquidation proceedings only) and (v) post-petition wages claims not advanced by the French wages guarantee fund in the event of subsequent insolvency proceedings.
- Such claims may not be termed-out or written-off without the consent of the relevant creditors.

If the court adopts a safeguard plan, a reorganization plan or a sale of the business plan, it can set a time period during which the assets that it deems to be essential to the continued business of the debtor may not be sold without its consent.

The sales bids that have been pre-packaged in *mandat ad hoc* or conciliation proceedings and that are deemed satisfactory can be implemented in insolvency proceedings through an expeditious and derogatory process. Such sale could only relate to part (but not all) of the business of the debtor in safeguard proceedings.

Creditors' committees and adoption of the safeguard or reorganization plan

Creditors must be consulted on the manner in which the debtor's liabilities will be settled under the safeguard or judicial reorganization plan (including debt write-offs, debt rescheduling or debt-for-equity swaps) prior to the plan being approved by the court. The rules governing consultation will vary depending on the size of the business.

During the observation period, in the case of large companies (i.e. (a) with more than 150 employees or turnover greater than €20 million and (b) whose accounts are certified by a statutory auditor or established by a certified public accountant) or upon the debtor's or the court-appointed administrator's request and with the consent of the supervising judge in the case of debtors that do not meet the aforementioned thresholds, two creditors' committees must be established by the administrator on the basis of the claims that arose prior to the judgment commencing the proceedings:

- one for credit institutions or assimilated institutions and entities (with the exception of major suppliers and bondholders) having granted credit or advances in favor of the debtor (or the assignees of such claim or of a claim acquired from a supplier) (the "credit institutions committee"); and
- the other for suppliers having a claim that represents more than 3% of the total amount of the claims of all the debtor's suppliers; the smaller suppliers, if invited by the administrator, may elect to be members of such committee. To be eligible to vote, suppliers must have their claims set forth in the list provided by the debtor to the court-appointed administrator as certified by the debtor's statutory auditors (or, in their absence, its accountant) (the "major suppliers committee").

If there are any outstanding debt securities in the form of obligations (such as bonds or the notes), a general meeting gathering all holders of such debt securities will be established in addition to the two aforementioned committees—irrespective of whether or not there are different issuances and of the governing law of those obligations (the "bondholders' general meeting"). The notes would constitute *obligations* for the purposes of safeguard or judicial reorganization proceedings and the noteholders would therefore vote within the bondholders' general meeting.

As a general matter, only the legal owner of the debt claim will be invited into a committee or the bondholders' general meeting. Accordingly, a person holding only an economic interest therein will not itself be a member of the committees or bondholders' general meeting.

These creditors' committees and the bondholders' general meeting will be consulted on the draft safeguard or reorganization plan(s) elaborated during the observation period. Such draft plan(s) may be prepared not only by the debtor's management (together with the judicial administrator(s)), but also by any creditor belonging to a creditors' committee (credit institutions' committee or major suppliers' committee). For the avoidance of doubt, the bondholders are not entitled to propose such a draft plan.

The plan submitted to the committees and the bondholders' general meeting:

- must take into account subordination agreements entered into by the creditors before the opening of the proceedings;
- may treat creditors differently if it is justified by their differences in situation; and
- may notably include a rescheduling, cancellation of debts (subject to the specific regime of claims benefiting from the New Money Lien or the S/R Lien) or debt-for-equity swaps (debt-for-equity swaps requiring the relevant shareholder consent).

In the first instance, one of the plans must be approved by each of the two creditors' committees (as the case may be). Each committee must announce whether its members approve or reject such plan within 20 to 30 days from the communication by the debtor of its proposal(s) (such time can be reduced or extended by the supervising judge, at the request of the debtor or the judicial administrator, but it cannot be less than 15 days). In the event where there is no proposal by the debtor, the judicial administrator determines the date on which the committees will vote on the plan submitted by the creditors. Such approval requires the affirmative vote of creditors holding at least two-thirds of the amounts of the claims held by the members of such committee casting a vote. Each member of a committee must inform the court-appointed administrator of any subordination agreement or any agreement subjecting its vote to certain conditions or providing for the total or partial payment of its claim by a third party. The French law provides that the court-appointed administrator then modulates the voting rights of such a creditor, and submits to such creditor the conditions of calculation of its voting rights. In case of disagreement on this calculation, the creditor or the court-appointed administrator may seize the president of the court in summary proceedings.

Following the approval of the plan by the two creditors' committees, the plan will be submitted for approval to the bondholders' general meeting. The approval of the plan at such meeting requires the affirmative vote of bondholders representing at least two-thirds of the amount of the claims held by bondholders casting a vote in the bondholders' general meeting. The same rules as set forth in the paragraph above in respect of voting rights' determination apply to the bondholders' general meeting.

Holders of the notes could, as members of the general meeting of holders of the notes, veto such plan if they reach a blocking minority (i.e. their claims represent more than one-third of the claims of those creditors casting a vote in the meeting).

The amounts of claims secured by a trust (*fiducie*) granted by the debtor do not give rise to voting rights. In addition, creditors for whom the plan does not provide any modification of their repayment schedule or provides for a full payment of their claims in cash as soon as the plan is approved or as soon as their claims are admitted do not take part in the vote. For those creditors outside the creditors' committees or where no such committees have been convened, the *mandataire judiciaire* may elect not to consult them.

Following approval by the creditors' committees and the bondholders' general meeting, the plan has to be approved (*arrêté*) by the court. In considering such approval, the court has to verify that the interests of all creditors are sufficiently protected. Once approved by the relevant court, the safeguard or reorganization plan accepted by the committees and the bondholders' general meeting will be binding on all the members of the committees and all bondholders (including those who did not vote or voted against the adoption of the plan). The plan also specifies how creditors that do not belong to the committees/bondholders' general meeting are going to be treated (it being noted that if they do not consent to the proposals that they receive, they can only be imposed uniform debt rescheduling as detailed below).

Creditors who are not members of the committees/bondholders' general meeting are consulted individually on the draft plan. The same rule applies to all creditors if no such committees or general meeting of bondholders are convened, when the company does not meet the abovementioned required thresholds for the establishment of creditors' committees and their establishment is not requested. Likewise, in the event the creditors' committees are dissolved because any of the committees or the bondholders' general meeting has refused to give its consent to the draft plan (or has not rendered its decision within six months of the opening judgment, it being noted that this period may be extended by the court at the request of the judicial administrator to the extent it does not exceed the duration of the observation period), the court can still adopt a safeguard/reorganization plan in the time remaining until the end of the observation period, in which case creditors are consulted individually.

In the framework of an individual consultation, creditors will be asked whether they accept rescheduling, debt write-offs and/or debt-for-equity swaps provided for in the draft plan. Where the consultation is in writing, the creditor is deemed to have accepted the debt settlement proposal if he fails to respond within 30 days upon receipt of the creditors' representative letter. However, in respect of debt-to-equity swap proposals, the creditors' representative must obtain the agreement of each individual creditor in writing within this 30-day timeframe. The court is entitled to approve the plan regardless of whether or not a majority of creditors accepted the individual proposals that they received. In those circumstances, the court has the right to accept or reduce debt deferrals or write-offs with respect to the claims of creditors who have consented to such measures but it may only impose uniform debt deferrals (with interest continuing to accrue for debts with an initial maturity of more than one year) for up to 10 years on the claims of the non-consenting creditors, except for claims with maturity dates falling after the end of the plan, in which case such maturity date shall remain the same. The court cannot impose debt write-offs or debt-to-equity swaps.

The first payment under the plan must be made within a year of the judgment approving the plan (as from the third year included, the minimum annual instalment is 5% of each of the admitted liabilities), it being noted, however, that if the contractual provisions relating to a debt claim provide that the principal amount of such debt claim is repayable *in fine* and its maturity date falls within the implementation period of the plan, the repayment of such principal amount only starts on the first annual instalment date (as set out in the plan) following the original contractual maturity date of that debt claim and such debt rescheduling follows specific rules.

If the plan provides for a share capital modification or an amendment to the articles of association, the shareholders' general meeting must approve this modification. The court may decide that the shareholders' general meeting shall vote on first convening at a simple majority (of the votes of the shareholders attending, or represented at, the meeting or represented at the meeting, provided that said shareholders hold at least half of the shares with voting rights). On second convening, the general statutory provisions relating to the quorum and majority requirements shall apply.

If the plan provides for a share capital increase, shareholders can participate in the rights issue by way of set-off up to the amount of their admitted claims, and within the limit of their reduction as provided for in the plan.

In case of judicial reorganization only, if the share capital of the debtor is lower than half of the share capital and has not been restored, the court-appointed administrator can request the court to appoint a judicial officer (*mandataire de justice*) to (i) convene the shareholders meeting and (ii) vote the share capital restoration in place of the opposing shareholders should the plan provide for a share capital modification to the benefit of one or several persons who made commitments to implement the plan.

In addition, Law n°2015-990 dated August 6, 2015, entitled "Macron Law", introduced a new provision (Article L.631-19-2 of the French Commercial Code) applicable to judicial reorganization proceedings opened as from August 7, 2015, in the cases where (i) a debtor (a) employs at least 150 employees or (b) is a dominant company (within the meaning of article L.2331-1 of the French Labor Code) of one or more companies with at least 150 employees in aggregate, (ii) the disappearance of such debtor is likely to cause serious disturbance to the national or local economy and to local employment, and (iii) a share capital modification appears—after review of total or partial sale of business plan solutions—the only credible solution to avoid such a disturbance and to allow the debtor's business operations to continue. In summary, if, in such event, a reorganization plan provides for a modification of the share capital in favor of one or more person(s) who undertake to implement the plan and the existing shareholders refuse to vote such share capital modification, the court may, under certain procedural and substantial conditions (e.g. the payment to the evicted shareholders of an amount corresponding to the value of their shares, as determined by a court appointed expert if no agreement as to such value is reached among the parties) and upon request of the court-appointed administrator or the Public Prosecutor, either (a) appoint a trustee (*mandataire*) to vote in favor of a share capital increase in lieu of the dissenting shareholders up to the amount provided for in the plan or (b) order, in favor of the person(s) who have undertaken to implement the plan, the transfer of all or part of the shares owned by the dissenting shareholders who own (directly or indirectly) a majority of voting rights (including pursuant to any arrangement to that effect with any other shareholder that is not contradictory to the debtor's interest) or hold a blocking minority in the company. Contrary to safeguard proceedings, in judicial reorganization proceedings, in case of share capital modification or of a transfer of the shares in the debtor as provided for in draft plan or the plan, any approval clause is deemed null and void. In either of the above cases, the reorganization plan shall be subject to the undertaking of the new shareholders to hold their shares for a certain time period set by the court which may not exceed the duration of the reorganization plan.

Due to the Covid-19 pandemic and state of health emergency that was imposed by the French government, Ordinance n° 2020-341 of 27 March 2020, Ordinance n° 2020-596 dated 20 May 2020 and Ordinance n°2020-1443 dated 25 November 2020 have amended safeguard and judicial reorganization proceedings as follows:

- Until 31 December 2021 (included), on the basis of the certificate drawn up by a certified accountant or the statutory auditor, liabilities to be taken into account in the draft plan include those claims admitted and not challenged as well as those "identifiable" claims (in particular when the deadline for filing proofs of claim has not expired yet):
  - This includes liabilities foreseeable and reasonably likely to enable the court to assess the seriousness of the plan (which requires that the debtor's accounts be accurate, and that identifiable claims be taken into account, such as those of the French wages guarantee fund); and
  - This implies a temporary exception to the principle (established in case law) according to which the plan must be drawn up in consideration of the filed claims (even if they are challenged).
- Until 31 December 2021 (included), upon request of the judicial administrator (if appointed) or the creditors' representative (*mandataire judiciaire*), the supervising judge may shorten the deadline for individual consultation of the creditors from 30 to 15 days.
- Until 31 December 2021 (included), proposals for the settlement of liabilities included in the plan and any responses to these proposals may be notified by any means allowing the creditor's representative to establish with certainty the date of their receipt, both in the context of the individual consultation of creditors and the consultation of bondholders within the framework of the bondholder's general meeting (it is unclear whether this way of notification also applies to credit and credit institutions or assimilated institutions' committee and the main suppliers' committee).
- The duration of safeguard and reorganization plans has been amended as follows:

  (i) between 24 August 2020 (included) and 23 February 2021 (included): extension by the court of ongoing plans for a maximum period of one year, upon request of the court-appointed trustee in charge

of supervising the execution of the plan or the public prosecutor. This extension is only available to plans adopted outside the framework of creditors' committees;

(ii) until 31 December 2021 (included), in addition to (i): extension for a further two-year period upon request of the public prosecutor or the court-appointed trustee in charge of supervising the execution of the plan; and

(iii) until 31 December 2021 (included): in case of substantial modification of the plan, its duration is extended to a maximum period of 12 years.

With respect to i. to ii., it should be specified that:

- these extensions do not require to go through the process of the substantial modification of the plan (*modification substantielle du plan*);
- the payment instalment deadlines initially set by the president of the court or the court would be adapted to the duration of the plan so extended, with possible deviation from the obligation to pay an annual instalment of 5% minimum as from year 3 and application of grace periods provisions within the limit of the new term of the plan so extended.

- Until 31 December 2021 (included), as part of a substantial modification of the plan process, where the modification is relating to the plan's repayment terms and conditions, those creditors failing to reply to the registered letter provided for in Article R. 626-45 of the French commercial code will be deemed to have accepted the proposed modifications, except in case of debt write-offs or conversions into shares that give or may give access to share capital.

  Where creditors are consulted within the framework of creditors' committees, the procedures for consultation of the committees continue to apply.

Specific case—Creditors that are public institutions: public creditors (financial administrations, social security and unemployment insurance organizations) may agree to grant debt remissions under conditions that are similar to those that would be granted under normal market conditions by a private economic operator placed in a similar position. Public creditors may also decide to enter into subordination agreements for liens or mortgages, or relinquish these security interests. Public creditors examine possible remissions within the framework of a local administrative committee (Commission des Chefs de Services Financiers). The tax administrations may grant relief from all direct taxes. As regards indirect taxes, relief may only be granted from default interest, adjustments, penalties or fines.

Like most court decisions issued in insolvency proceedings, the court decision approving the safeguard or reorganisation plan or acknowledging its complete execution may be appealed under specific circumstances.

Court administered proceedings—accelerated safeguard proceedings and accelerated financial safeguard

A debtor in conciliation proceedings may request commencement of accelerated safeguard or accelerated financial safeguard proceedings (subject to the conditions listed below). The accelerated safeguard or accelerated financial safeguard proceedings have been designed to "fast-track" the regular safeguard proceedings. The accelerated safeguard is designed as the common accelerated procedure, the accelerated financial safeguard proceedings being a variety thereof, tailored to "fast-track" the treatment of purely financial difficulties. The regime applicable to accelerated safeguard or accelerated financial safeguard proceedings is essentially similar to the regular safeguard proceeding to the extent compatible with the accelerated timing in accelerated safeguard and accelerated financial safeguard proceedings. Therefore, some provisions relating in particular to ongoing contracts and restitution claims formed by owners are excluded by law.

The accelerated safeguard proceeding has effect against all the pre-petition creditors that have filed a proof of claim and the counterparties to an ongoing contract (see below). In particular, trade creditors notably will be involved in the accelerated safeguard proceedings, whereas accelerated financial safeguard proceedings only involve financial creditors (i.e. members of the credit institutions' committee and of the bondholders' general meeting), with no impact on suppliers or public creditors notably (they will thus continue to be paid according to their applicable contractual terms and are not subject to the automatic stay applicable during the observation period).

To be eligible to accelerated safeguard or accelerated financial safeguard, the debtor must fulfil the following conditions:

- the debtor must (i) not be insolvent for more than 45 days when it initially requested the opening of *conciliation* proceedings and (ii) face difficulties which it is not able to overcome;

- the debtor must be subject to ongoing conciliation proceedings when it applies for the opening of the accelerated safeguard or accelerated financial safeguard proceedings;
- in the context of the *conciliation* proceedings, the debtor must have prepared a draft restructuring plan that aims to ensure the continuation of its business as a going concern and which is likely to be supported, within the group of those creditors who will be affected by the accelerated (or accelerated financial) safeguard proceedings, by a sufficiently large majority of them to allow a likely approval of the plan by the relevant creditors' committees (credit institutions' committee only for the accelerated financial safeguard) and bondholders general meeting, if any, within the timeframe of the procedure; and
- the debtor must: (i) have its accounts certified by a statutory auditor or established by an accounting expert and: (x) have more than 20 employees, (y) have a turnover greater than €3 million excluding any applicable taxes or (z) have total assets in its balance sheet greater than €1.5 million; or (ii) establish consolidated financial statements in accordance with article L. 233-16 of the French Commercial Code. Where the debtor does not meet the statutory thresholds provided to set-up creditors' committees (see above), the court shall order such setting-up in its ruling opening the accelerated safeguard or accelerated financial safeguard proceedings.

  However, Ordinance n° 2020-596 dated 20 May 2020 provides that these thresholds will no longer be required for proceedings commenced between 21 May 2020 and 31 December 2021.

Where accelerated safeguard proceedings are commenced, the creditors' committees (only the credit institutions' committee in accelerated financial safeguard proceedings) and the bondholders' general meeting are convened and are required to vote on the proposed safeguard plan within a minimum period of 15 days of delivery of the proposed plan (eight days for accelerated financial safeguard proceedings).

The approval of a plan in the context of accelerated safeguard or accelerated financial safeguard proceedings follows the same majority rules as in regular safeguard proceedings and it may notably provide for rescheduling, debt write-off and debt-for-equity swaps (which would require the relevant shareholder consent).

The total duration of the accelerated safeguard proceedings is three months, while the duration of the accelerated financial safeguard proceedings is one month, unless the court decides to extend it by one additional month. If a plan is not adopted by the creditors' committee(s) and the bondholders' general meeting, where relevant, and approved by the court within such deadlines, the court shall terminate the accelerated safeguard or accelerated financial safeguard proceedings and cannot impose any uniform debt rescheduling.

Ordinance n° 2020-596 dated 20 May 2020 provides that for proceedings commenced between 21 May 2020 and 31 December 2021, if a plan is not approved by the creditors and by the court within the applicable deadline, the debtor, the judicial administrator, the creditors representative or the public prosecutor may request, without any delay, that opening of reorganization or liquidation proceedings (as the case may be).

Sale of business and isolated sale of assets of the debtor

Concerning the liquidation of the assets of the debtor, there are two possible outcomes:

- a sale of the business (*cession d'entreprise*) (in which case a court appointed administrator (*administrateur judiciaire*) will usually be appointed, or remain in office if already appointed, to manage the debtor during a temporary period of continuation of the business operations ordered by the court (three months, renewable once) (during which the rules of the observation period will generally apply) and organize such sale of the business as a going-concern via an asset sale, a.k.a. a "sale of the business plan" (*plan de cession*)), any third party (as construed under French insolvency law) being entitled to present a bid on all or part of the debtor's business. As part of the bids submitted to the court, the third-party purchasers can, under certain conditions, cherrypick assets (including the real estate assets)/jobs/contracts without the liabilities pertaining to them (save exceptions). The price offered for the transferred assets (including the real estate assets) is often at a significant discount compared to their *in bonis* market value. The court will indeed tend to favor a credible sale plan that ensures the sustainability of the business as a going concern, and the preservation of jobs, over the payment of creditors.

Subject to certain exceptions, the court can judicially impose such a sale plan on creditors, including secured creditors and mortgagees as a general principle, the payment of the purchase price operating to release their security interests. By way of exception:

- a purchaser is obliged to continue to pay remaining instalments due to creditors having granted financing for the acquisition of assets acting as collateral for such creditors and included in the sale of the business plan; and

- only those secured creditors benefitting from a retention right (which is the case for pledges over inventory or certain types of pledges over shares, but not mortgagees of real estate assets) would be entitled to retain their security interest over the asset on which they have such right (and therefore in practice prevent it from being transferred) until repaid in full of their claim so secured or unless reaching an agreement with the relevant parties.

Third-party purchasers may also submit combined bids in respect of all or part of the business of several debtors subject to insolvency proceedings, in particular when the key assets are located in different legal entities subject to insolvency proceedings. Again, the price offered for the transferred assets could be significantly less than their *in bonis* market value;

- a sale of the individual assets of the debtor, in which case the liquidator may decide to:
  - launch auction sales (*vente aux enchères* or (*adjudication amiable* for real estate assets only));
  - sell on an amicable basis (*vente de gré à gré*) each asset for which spontaneous purchase offers have been received, (the formal authorization of the supervising judge being necessary to conclude the sale agreement with the bidder); or
  - request, under the supervision of the supervising judge, all potential interested purchasers to bid on each asset, as the case may be, by way of a private competitive process whereby the bidders submit their offers only at the hearing without the proposed prices being disclosed before such hearing (*procédure des plis cachetés*). However the possibility to implement such process is questioned by certain legal authors and case-law in this respect has varied.

If the court adopts a sale of the business plan, it can set a time-period during which the assets that it deems to be essential to the continuation of the business of the debtor may not be sold without its consent.

Extension of insolvency proceedings

French law provides that, upon the petition of the debtor, the Public Prosecutor, the judicial administrator, the liquidator or the creditors' representative, the insolvency proceedings of a company may be extended to another entity, so that their respective assets and liabilities will be treated as belonging to one single insolvency estate, if (i) the debtor company is deemed "fictitious", i.e. a sham, or (ii) the debtor company "commingled its assets and liabilities" with another entity, i.e. either it proves impossible to determine which assets and liabilities belong to each of them or "abnormal financial relationships" existed between the two entities (such as transfers of assets or funds without consideration).

Protective measures under safeguard, judicial reorganization and judicial liquidation proceedings

Protective measures may be taken by the President of the court on the assets of *de facto* or *de jure* managers against whom a liability action for shortfall of assets has been launched in judicial liquidation proceedings.

In addition, protective measures may be requested:

- in the context of a legal action to extend the insolvency to a third party (on the grounds mentioned above), against the defendant; and
- over the assets of the *de facto* or *de jure* manager of a company subject to judicial reorganization proceedings and against whom an action for liability is brought on the grounds of a wrongdoing having contributed to the debtor's cash-flow insolvency (*cessation des paiements*). Such protective measure can be maintained in judicial liquidation proceedings.

These protective measures aim at precluding third parties from seizing the assets of the company against which an action for extension of the insolvency proceedings is brought or the assets of the manager against which an action for liability is brought.

Status of creditors during safeguard, accelerated financial safeguard, judicial reorganization or judicial liquidation proceedings

As a general rule, creditors domiciled in France whose claims arose prior to the commencement of proceedings must file a claim (*déclaration de créances*) with the *mandataire judiciaire* (*creditors' representative*) within two months of the publication of the court decision in the *Bulletin Officiel des annonces civiles et commerciales* (by

exception, the deadline starts upon receipt of an individual notification for those creditors whose claim arose from a published security interest or who benefit from a published security interest); this period is extended to four months for creditors domiciled outside France. Creditors must also file a claim for the post-commencement non-privileged debts, with respect to which the two-or four- month period referred to above starts to run as from their maturity date. Where the debtor has informed the creditors' representative of the existence of a claim and no proof of a claim has been filed yet, such claim is deemed filed with the creditors' representative. Creditors are allowed to ratify a proof of claim made on their behalf until the judge rules on the admission of their claims. Creditors who have not submitted their claims during the relevant period are, except with respect to very limited exceptions, barred from receiving distributions made in connection with the insolvency proceedings. Employees are not subject to limitations and are preferential creditors under French law.

In accelerated safeguard and accelerated financial safeguard proceedings, the debts held by creditors that took part in the conciliation proceedings are listed by the debtor and certified by its statutory auditor (or, in its absence, its accountant) and are thus deemed to have been filed. Although such creditors can file proofs of claim pursuant to the regular process, which they usually do, they may also avail themselves of this simplified alternative and merely adjust the amounts of their claims set forth on the list prepared by the debtor (within the aforementioned two- to four-month time limit). Those creditors who did not take part of the conciliation proceedings (but who would be party to the creditors' committees or the bondholders' general meeting) would have to file their proofs of claim within the aforementioned statutory time limit.

As from the commencement of insolvency proceedings:

- accrual of interest is suspended (except in respect of loans providing for a term of at least one year, or contracts providing for a payment which is differed by at least one year; even in such a case, accrued interest cannot bear themselves interest, notwithstanding Article 1343-2 of the French Civil Code);
- the debtor is prohibited from paying (i) debts incurred prior to the date of the court decision commencing the insolvency proceedings, subject to specified exceptions which essentially cover the set-off of related debts (*compensation pour dettes connexes*) and payments authorized by the supervising judge *(juge-commissaire)* to recover assets for which recovery is justified by the continued operation of the business and (ii) post-opening debts not useful to the proceedings; and
- creditors may not initiate or pursue any individual legal action against the debtor (or, in safeguard or judicial reorganization proceedings against, a guarantor of the debtor, provided such guarantor is an individual) with respect to any claim arising prior to the court decision commencing the proceedings if the objective of such legal action is:
  - to obtain an order for payment of a sum of money by the debtor to the creditor (however, the creditor may require that a court determine the amount due);
  - to terminate a contract for non-payment of amounts owed by the creditor; or
  - to enforce the creditor's rights against any assets of the debtor, except (i) in judicial liquidation proceedings, by way of judicial foreclosure (*attribution judiciaire*) of the pledged assets or (ii) where such asset—whether tangible or intangible, moveable or immoveable—is located in another Member State within the European Union, in which case the rights *in rem* of creditors thereon would not be affected by the insolvency procedure, in accordance with the terms of article 8 of the EC Regulation (provided no secondary proceedings are open in such member state). Similarly, the rights of a creditor on the debtor's assets located outside France (and the EU) would only be affected by the French insolvency proceedings if they were to be recognized by the local courts where the assets at stake are located (unless provided otherwise in a treaty to which France is a party).

In accelerated safeguard or accelerated financial safeguard proceedings, the above rules only apply to the creditors which are subject to those proceedings.

Contractual provisions that would accelerate the payment of the debtor's obligations or the termination or cancellation of an ongoing contract upon the occurrence of certain insolvency events are not enforceable under French law. The court-appointed administrator can unilaterally decide not to continue ongoing contracts (*contrats en cours*) which it believes the debtor will not be able to continue to perform. The court-appointed administrator can, on the contrary, require that other parties to a contract continue to perform their obligations even though the debtor may have been in default prior to the opening of the insolvency proceedings, but on the condition that such debtor fully performs its post-opening contractual obligations. The opening of liquidation proceedings does, however, automatically accelerate the maturity of all of the debtor's liabilities, unless the court allows the

business to continue for a period of no more than three months (renewable once) if it considers that a sale of part or all of the business is possible. In this case, the debtor's liabilities are deemed mature on the day the court approves the sale of the business or the end of the period of continuation of the business.

According to a decision of the French Supreme Court dated January 14, 2014, n°12-22.909, "contractual provisions modifying the conditions of continuation of an ongoing contract, diminishing the rights or increasing the obligations of the debtor solely upon the opening of reorganization proceedings" (which should also apply in case of safeguard, accelerated safeguard or accelerated financial safeguard proceedings) shall also be unenforceable (which seems to have been confirmed by *Cass. com.* February 22, 2017, n°15-15.942).

During reorganization and liquidation proceedings, when an ongoing contract involves the payment of a sum of money, this payment must be made in cash (i.e. without payment terms), unless the administrator obtains extended payment terms from the contractual partner of the debtor; the administrator is under the obligation to verify that by continuing the contract he or she does not risk creating a foreseeable damage for the contractual partner.

If the court approves a safeguard plan or reorganization plan, claims of creditors included in the plan will be paid according to the terms of the plan. The court can also set a time period during which the assets that it deems to be essential to the continued business of the debtor may not be sold without its consent.

If the court approves a plan for the sale of the business (*plan de cession*) in judicial reorganization or liquidation proceedings (see above), the proceeds of the sale will be allocated for the repayment of the creditors according to the ranking of their claims under French law. If the court decides to order the judicial liquidation of the debtor, the court will appoint a liquidator in charge of selling the assets of the company and settling the relevant debts in accordance with their ranking. However, in practice, where the sale of the business is considered, it will usually appoint a judicial administrator to assist the company and organize the sale of the business.

French insolvency law assigns a certain order of priority to the payment of certain preferred creditors, i.e.: certain pre-opening employee claims, post-opening legal costs (essentially, fees of the officials appointed by the insolvency court), creditors who, in the framework of a conciliation procedure which resulted in the approval of a conciliation agreement by the court, have provided new money or goods or services (the "New Money Lien"), creditors having security over real estate assets (in case of judicial liquidation proceedings only; in case of safeguard or judicial reorganization proceedings, they rank behind post-opening privileged creditors), post-opening privileged creditors (i.e. whose claims meet certain criteria, such claims being subject to a specific order of priority among themselves), and the other pre-opening and post-opening creditors, whose order of priority among themselves depends on various factors (in particular, the French State and other public institutions benefit from the highest ranking, with respect to taxes and social charges). Some creditors may, nevertheless, bypass this order of priority, *e.g.* if they benefit from a retention right over certain assets.

The "suspect period" in judicial reorganization and liquidation proceedings

The date of insolvency (*cessation des paiements*) is generally deemed to be the date of the court decision commencing the judicial reorganization or judicial liquidation proceedings. However, in the decision commencing judicial reorganization or judicial liquidation proceedings or in a subsequent decision, the court may carry back such insolvency date, up to 18 months prior to the court decision commencing the proceedings. Such insolvency date marks the beginning of the "suspect period" (*période suspecte*). However, the starting date of the "suspect period" cannot be fixed by the court as of a date earlier than the date of the approval of the conciliation agreement, save in case of fraud. Certain transactions entered into by the debtor during the suspect period are automatically void or voidable by the court.

Automatically void transactions include in particular transactions or payments entered into during the suspect period that may constitute voluntary preferences for the benefit of some creditors to the detriment of other ones. Such transactions or payments must be set aside by the court if a claimant (the judicial administrator, the liquidator, the creditors' representative or the court-appointed trustee in charge of overseeing the implementation of the restructuring plan, or the Public Prosecutor) so requests. These include transfers of assets for no consideration, contracts under which the reciprocal obligations of the debtor significantly exceed those of the other party, payments of debts not due at the time of payment, payments made in a manner which is not commonly used in the ordinary course of business, deposits of cash or monetary instruments ordered by a court decision that has not yet become final to serve as guarantee or as a provisional measure in accordance with Article 2075-1 of the French Civil Code, security granted for debts (including a security granted to secure a

guarantee obligation) previously incurred and provisional measures (*mesures conservatoires*), unless the right of attachment or seizure predates the insolvency date, operations relating to stock options, the transfer of any assets or rights into a trust (*fiducie*) (unless such transfer is made as a security for debt incurred at the same time), and any amendment to a trust arrangement that dedicates assets or rights as a guaranty of pre-existing debts, and notarized declarations of exemption of assets from seizure (*déclaration d'insaisissabilité*) pursuant to article L. 526-1 of the French Commercial Code.

Transactions voidable by the court include payments made on due debts, transactions for consideration and notices of attachments made to third parties (*avis à tiers détenteur*), seizures (*saisie attribution*) and oppositions made during the suspect period, if the court determines that such actions are taken after the debtor was insolvent and the party dealing with the debtor knew, or should have known, that the debtor was in such a state at that time. Transactions relating to the transfer of assets for no consideration and notarized declarations of exemption of assets from seizure (*déclaration d'insaisissabilité*) are also voidable when entered into during the six-month period prior to the beginning of the suspect period. Unlike automatically void transactions, which must be set aside by the court if so requested, the court has discretion to decide whether or not it is appropriate to set aside transactions that are only "voidable". There is no suspect period prior to the opening of safeguard, accelerated safeguard, or accelerated financial safeguard proceedings (assuming the proceedings are successful).

Creditors' liability

Pursuant to article L. 650-1 of the French Commercial Code, where insolvency proceedings have been commenced, creditors may only be held liable for the losses suffered as a result of facilities granted to the debtor on the following grounds: (i) fraud; (ii) wrongful interference with the management (*immixtion caractérisée dans la gestion*) of the debtor; or (iii) if the security or guarantees taken to support the facilities are disproportionate to such facilities. In addition, any security or guarantees taken to support facilities in respect of which a creditor is found liable on any of these grounds can be cancelled or reduced by the court. In addition to the above criteria, case law confirmed that this liability also requires that the granting of the facility be deemed to be wrongful.

If a creditor has repeatedly interfered in the company's management, it can be deemed a *de facto* "manager" of such company (*dirigeant de fait*). In this case, article L 651-2 of the French Commercial Code provides that, if judicial liquidation proceedings (*liquidation judiciaire*) have been commenced against the debtor, the creditor may be liable to pay all or part of the debtor's shortfall of assets, along with the other managers (whether *de jure* or *de facto*), as the case may be, if it is established that their mismanagement has contributed to such shortfall. If such conditions are met, French courts will decide whether the managers should bear all or part of the shortfall amount. However, a manager (*whether de jure or de facto*) cannot be held liable on the basis of article L. 651-2 of the French Commercial Code in cases of "simple negligence" (*simple négligence*) in the management of the company.

Rights in the Collateral may be adversely affected by the failure to perfect security interests in the Collateral.

Under French law, a security interest in certain assets can only be properly perfected, and its priority retained, through certain actions undertaken by the secured party and/or the grantor of the security. The liens on the Collateral securing the Notes may not be perfected with respect to the claims of the Notes if we, or any Applicable Security Agent, fail or are unable to take the actions required to perfect any of these liens. Furthermore, it should be noted that neither the Trustee nor any Applicable Security Agent shall have any obligation to take any steps or action to perfect any of these liens. In particular, pledges over the securities of French subsidiaries in the form of a stock company (*société par actions*) that are governed by French law consist of pledges over a securities account (*nantissement de compte de titres financiers*) in which the relevant securities are registered. The securities account pledges will be validly established after execution of a statement of pledge (*déclaration de nantissement de compte titres financiers*) by each security provider in favor of the relevant Applicable Security Agents. Each statement of pledge will have to be registered in the relevant shareholder's account (*compte d'actionnaire*) and shares registry (*registre de mouvement de titres*) of each of CGG Services SAS, Sercel Holding and Sercel. In France, no lien searches are available for security interests which are not publicly registered (such as pledges over securities account), with the result that no assurance can be given on the priority of a security interest if it is not publicly registered.

Limitations on enforcement of security interests and cash amount ("*soulte*")

Security interests governed by French law may only secure payment obligations and may only be enforced following a payment default (including following acceleration) and may only secure a creditor up to the secured

amount that is due and remaining unpaid to it. Pledges over securities (whether in the form of a pledge over a securities account or in the form of a pledge over shareholding interests (*parts sociales*)) may generally be enforced at the option of the secured creditors either (i) before a court (a) by way of a sale of the pledged securities in a public auction (the proceeds of the sale being paid to the secured creditors) or (b) by way of judicial foreclosure (*attribution judiciaire*) or (ii) by way of contractual foreclosure (*attribution conventionnelle* or *pacte commissoire*) of the pledged securities to the secured creditors, following which the secured creditors become the legal owner of the pledged securities. If the secured creditors choose to enforce by way of foreclosure (whether a judicial foreclosure or a contractual foreclosure), the secured liabilities would be deemed extinguished up to the value of the foreclosed securities. Such value is determined either by the court in the context of a judicial attribution or by an expert (pre-contractually agreed or appointed by a judge) in the context of a contractual foreclosure. If the value of the Collateral exceeds the amount of secured debt, the secured creditor may be required to pay the pledgor a cash amount (*soulte*) equal to the difference between the value of the securities as so determined and the amount of the secured debt. This is true regardless of the actual amount of proceeds ultimately received by the secured creditor from a subsequent on-sale of the Collateral. Under the Intercreditor Agreement, we purport to defer the payment of the *soulte* to the earlier of (i) the date which is 12 months after the date on which such foreclosure occurs and (ii) the date on which the relevant debt is considered discharged in accordance with the Intercreditor Agreement. Such deferral of the *soulte* has not been tested under French law.

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

An enforcement of the pledged securities could be undertaken through a public auction in accordance with applicable law. If enforcement is implemented through a public auction procedure, it is possible that the sale price received in any such auction might not reflect the value of the securities, since the latter will not be sold pursuant to a competitive bid process and/or a private sale organized by an investment bank and controlled by the vendor on the basis of a value determined pursuant to the methods usually used for the purpose of the acquisition of companies or groups of companies.

Under French law, a secured creditor under a pledge over receivables may enforce its security interest by (i) requesting the attribution by a court of the pledged receivables (*attribution judiciaire*) or (ii) requesting the transfer to it of the pledged receivables in accordance with the terms of the relevant pledge agreement (*attribution conventionnelle or pacte commissoire*). The secured creditor will then be able to receive payment by the pledged debtors of the relevant pledged receivables and apply the amounts so paid to it in satisfaction of the secured debt.

Parallel debt—trust

Under French law, prior to the recent reform of the security agent regime pursuant to Ordonnance n°2017-748 of May 4, 2017, which came into force on October 1, 2017, as described below, the pledgee of a French law security interest and the creditor of the claim secured by such security interest are required to be the same person. Such security interest cannot be held on behalf of third parties who do not hold the secured claim, unless they act as fiduciary (*fiduciaire*) under Article 2011 of the French Civil Code or as security agent (*agent des sûretés*) under Articles 2488-6 *et seq.* of the French Civil code.

The beneficial holders of interests in the Notes from time to time will not be parties to the Security Documents. In order to permit the beneficial holders of the Notes to benefit from a secured claim, the Intercreditor Agreement will provide for the creation of "parallel debt" obligations in favor of the Security Agent (the "Parallel Debt") mirroring, amongst other things, the obligations of the Company and the Guarantors (as principal obligors) towards the holders of the Notes under or in connection with the Indenture (the "Principal Obligations").

The Parallel Debt will at all times be in the same amount and payable at the same time as their respective Principal Obligations. Any payment in respect of the relevant Principal Obligations shall discharge the corresponding Parallel Debt and any payment in respect of any Parallel Debt shall discharge the corresponding Principal Obligations. Pursuant to the Parallel Debt, the Security Agent becomes the holder of a claim equal to each amount payable by an obligor under the Notes. The pledges governed by French law will directly secure the Parallel Debt and may not directly secure the obligations under the Notes and the other indebtedness secured by the Collateral. The holders of the Notes will not be entitled to take enforcement actions in respect of such security interests except through the Security Agent.

There is one published decision of the French Supreme Court (*Cour de cassation*) on Parallel Debt mechanisms (*Cass. com.* September 13, 2011 n°10-25533 *Belvédère*) relating to a bond documentation governed by New York law. Such a decision recognized the enforceability in France of certain rights (especially the filing of claims in safeguard proceedings) of a security agent benefiting from a parallel debt. In particular, the French Supreme Court upheld the proof of claim of the legal holders of a parallel debt claim, considering that it did not contravene French international public policy (*ordre public international*) rules. The ruling was made on the basis that the French debtor was not exposed to double payment or artificial liability as a result of the parallel debt mechanism. Although this court decision is generally viewed by legal practitioners and academics as a recognition by French courts of parallel debt structures in such circumstances, there can be no assurance that such a structure will be effective in all cases before French courts. Indeed, it should be noted that the legal issue addressed by it is limited to the proof of claims. The French court was not asked to generally uphold French security interests securing a parallel debt. It is also fair to say that case law on this matter is scarce and based on a case-by-case analysis. Such a decision should not be considered as a general recognition of the enforceability in France of the rights of a security agent benefiting from a parallel debt claim. There is no certainty that the parallel debt construction will eliminate the risk of unenforceability under French law.

To the extent that the security interests in the Collateral created for the benefit of the Security Agent as creditor of the Parallel Debt under the Parallel Debt construction are successfully challenged by other parties, the holders of the Notes will not be entitled to receive on this basis any proceeds from an enforcement of the security interests in the Collateral. The holders of the Notes will bear the risks associated with the possible insolvency or bankruptcy of the Applicable Security Agents as beneficiaries of the Parallel Debt.

The concept of "trust" has been recognized by the French Tax Code and the French Supreme Court (*Cour de cassation*), which has held, in the same published decision referred to above (*Cass. com.* September 13, 2011 n°10-25533 *Belvédère*) that a trustee validly appointed under a trust governed by the laws of the State of New York could validly be regarded as a creditor in safeguard proceedings commenced in France. However, while substantial comfort may be derived from the above, France has not ratified the Hague Convention of July 1, 1985 on the law applicable to trusts and on their recognition, so that the concept of "trust" has not been generally recognized under French law.

The Security Documents may be granted to the benefit of *inter alios* the Trustee. To the extent that the security interests in the Collateral created to the benefit of the Trustee are successfully challenged by other parties, holders of the Notes will not be entitled to receive on this basis any proceeds from an enforcement of the security interests in the Collateral. In addition, the holders of the Notes will bear the risks associated with the possible insolvency or bankruptcy of the Trustee.

Security Agent

References to the Security Agent with respect to security interests granted under French law are references to The Bank of New York Mellon SA/NV, Paris Branch, as security agent in France. In relation to the security interests granted under French law, each holder of the Notes has appointed the Security Agent to act as security agent (*agent des sûretés*) pursuant to Articles 2488-6 *et seq.* of the French Civil Code for the purpose of taking, registering, managing and enforcing any Collateral granted under French law in the name of the Security Agent for the benefit of such holder of the Notes. All rights and assets received by the Security Agent as security agent (*agent des sûretés*) when acting in such a capacity will, subject to certain exceptions set forth in the French Civil Code, be part of a separate estate (*patrimoine d'affectation*) designed to protect the rights of the secured creditors in case of bankruptcy or insolvency of the security agent (*agent des sûretés*). The security agent regime provided under Articles 2488-6 *et seq.* of the French Civil Code came into force only on October 1, 2017 and accordingly has not been tested to date. Whilst this new regime provides for a protection of the rights and assets received by the Security Agent as security agent (*agent des sûretés*) in case of various bankruptcy or insolvency proceedings affecting the security agent (*agent des sûretés*), it is uncertain how the non-French courts of the jurisdiction where bankruptcy or insolvency proceedings of the security agent (*agent des sûretés*) are conducted will recognize and apply this regime.

Fraudulent conveyance

French law contains specific "*action paulienne*" provisions dealing with fraudulent conveyance both in and outside insolvency proceedings. The *action paulienne* offers creditors protection against a decrease in their means of recovery. A legal act performed by a debtor (including, without limitation, an agreement pursuant to which such debtor guarantees the performance of the obligations of a third party or agrees to provide or provides

security for any of such debtor's or a third party's obligations, enters into additional agreements benefiting from existing security or any other legal act having similar effect) can be challenged in or outside insolvency proceedings of the relevant debtor by the creditors' representative (*mandataire judiciaire*), trustee in charge of overseeing the implementation of the safeguard or reorganization plan (*commissaire à l'exécution du plan*) insolvency proceedings of the relevant debtor, or any creditor who was prejudiced in its means of recovery as a consequence of the act in or outside insolvency proceedings. Any such legal act may be declared unenforceable against all the creditors of the relevant person (if the claim was lodged by the creditors' representative (*mandataire judiciaire*) or the trustee in charge of overseeing the implementation of the safeguard or reorganization plan (*commissaire à l'exécution du plan*)) or the concerned creditor (if the claim was lodged by such creditor) if: (i) the debtor performed such act without an obligation to do so; (ii) the relevant creditor or (in the case of a claim lodged by the creditors' representative (*mandataire judiciaire*) or the trustee in charge of overseeing the implementation of the safeguard or reorganization plan (*commissaire à l'exécution du plan*))) any creditor was prejudiced in its means of recovery as a consequence of the act; and (iii) at the time the legal act was performed, both the debtor and the counterparty to the transaction knew or should have known that one or more of such debtor's creditors (existing or future) would be prejudiced in their means of recovery (where the legal act was entered into for no consideration (*à titre gratuit*), no such knowledge of the counterparty is necessary). If a court found that the issuance of the Notes, the grant of the security interests in the Collateral, or the granting of a Guarantee involved a fraudulent conveyance that did not qualify for any defense under applicable law, then the issuance of the Notes, the granting of the security interests in the Collateral or the granting of such Guarantee could be (i) declared unenforceable against all creditors if the claim was lodged by the creditors' representative (*mandataire judiciaire*) or the trustee in charge of overseeing the implementation of the safeguard or reorganization plan (*commissaire à l'exécution du plan*) or (ii) declared unenforceable against the creditor who lodged the claim in relation to the relevant act. As a result of such successful challenges, holders of the Notes may not enjoy the benefit of the Notes, the Guarantees or the security interests in the Collateral and the value of any consideration that holders of the Notes received with respect to the Notes, the security interests in the Collateral or the Guarantees could also be subject to recovery from the holders of the Notes and, possibly, from subsequent transferees. In addition, under such circumstances, holders of the Notes might be held liable for any damages incurred by prejudiced creditors of the Company or the guarantors as a result of the fraudulent conveyance.

Recognition of intercreditor arrangements by French courts

There is no law or published decision of the French courts of appeal or of the French Supreme Court (*Cour de cassation*) on the validity or enforceability of the obligations of an agreement such as the Intercreditor Agreement, except for Articles L.626-30-2, L.626-32 and L.631-19 of the French Commercial Code which state that, in the context of safeguard proceedings (namely safeguard, accelerated safeguard or accelerated financial safeguard proceedings), the safeguard restructuring plan which is put to the vote of the creditors' committees and for bondholders' general meeting takes into consideration (*prend en compte*) the provisions of subordination agreements between creditors which were entered into prior to the commencement of such safeguard proceedings. This also applies to judicial reorganization proceedings pursuant to article L.631-19 of the French Commercial Code. As a consequence, except to the extent referred to above (which, as of the date hereof has received no judicial interpretation), we cannot rule out the possibility that a French court would not give effect to certain provisions of the Intercreditor Agreement.

Recognition of validity of second or lower ranking pledges by French courts

The Intercreditor Agreement provides for a mechanism allowing the implementation of second or lower ranking pledges over the Collateral located in France.

A pledge over the shares of a stock company (*société par actions*) governed by French law is a pledge over the relevant securities account (*nantissement de compte de titres financiers*) in which the shares of such company are registered. In France, no lien searches are available for security interests which are not registered, such as pledges over securities accounts (*nantissements de comptes de titres financiers*). As a result, no assurance can be given on the priority of a pledge over a securities account in which the shares of such a company are registered.

The creation and enforcement of second ranking pledges over certain assets (such as shares or receivables) has not been tested before French courts, and there can be no assurance that second ranking pledges over such assets would be upheld if tested. Accordingly, there is a risk that a second ranking pledge over such assets may be held void or unenforceable by a French court.

The Netherlands

Insolvency Proceedings

CGG Holding B.V. (the "Dutch Company") is incorporated under Dutch law. Where debtors have their "centre of main interests" or an "establishment" in the Netherlands they may be subject to Dutch insolvency proceedings governed by Dutch insolvency laws, subject to certain exceptions provided for in the EC Regulation. See "*—European Union*".

Dutch insolvency law differs significantly from insolvency proceedings in the United States or other jurisdictions, and may make it more difficult for holders of Notes to recover the amount they would normally expect to recover in a liquidation or bankruptcy proceeding in the United States or another jurisdiction. The following is a brief description of certain aspects of the Dutch insolvency laws.

Any insolvency proceedings applicable to the Dutch Company may be commenced in the Netherlands and be governed by Dutch insolvency laws. There are two insolvency regimes under Dutch law applicable to a legal entity such as the Dutch Company. The first, a suspension of payments (*surseance van betaling*), is intended to facilitate the reorganization of a debtor's indebtedness and enable the debtor to continue as a going concern. The second, bankruptcy (*faillissement*), is primarily designed to liquidate the assets of a debtor and distribute the proceeds thereof to its creditors. In practice a suspension of payments often results in the bankruptcy of the debtor. Both insolvency regimes are set forth in the Dutch Bankruptcy Act (*Faillissementswet*). A general description of the principles of both insolvency regimes is set our below. This general description is subject to the emergency legislation discussed under the heading "*—Emergency Legislation to Protect Enterprises in Financial Distress due to the Covid-19 Pandemic*" below.

Only the debtor can make an application for a suspension of payments, and only if it foresees that it will be unable to continue to pay its debts as they fall due. Once the application has been filed, a court will immediately (*dadelijk*) grant a provisional suspension of payments and appoint one or more administrators (*bewindvoerders*). It will also set a date for a meeting of creditors, which is required to decide on the definitive suspension of payments. If a draft composition (*ontwerpakkoord*) is filed simultaneously with the application for a moratorium of payments, the court can order that the composition will be processed before a decision about a definitive moratorium. If the composition is accepted and subsequently ratified by the court (*gehomologeerd*), the provisional moratorium ends. The definitive moratorium will generally be granted, unless (i) a qualified minority (i.e., more than one-quarter of the amount of claims held by creditors represented at the creditors' meeting or more than one-third of the number of creditors of the amount of claims held by creditors) of the unsecured, non-preferential, creditors declare against it or (ii) if there is a valid fear that the debtor will try to prejudice the creditors during a suspension of payments or if there is no prospect that the debtor will be able to satisfy its creditors in the (near) future. That the debtor must be able to satisfy its creditors does not mean that they must be paid in full. It suffices that creditors can be satisfied to some extent (for example, by receiving a percentage of their claims within the framework of a composition). Other than in the case of the ordering by a competent court of a statutory stay of execution of up to two months (extendable by another period of up to two months) imposed by court order pursuant to Article 241a of the Dutch Bankruptcy Act (*afkoelingsperiode*), a suspension of payments will only affect unsecured, non-preferential creditors. During such stay of execution, a secured creditor may not, without the court's consent (i) claim the asset subject to the security right if it is under the control of (*in de macht van*) the debtor subject to a suspension of payments or (ii) seek recourse against the asset.

Under Dutch law, a debtor can be declared bankrupt when it has ceased to pay its debts. Bankruptcy can be requested by a creditor of the debtor or the holder of a security interest over a claim from such creditor, when there is at least one other creditor. At least one of the claims (of the creditor requesting bankruptcy or the other creditor) needs to be due and payable. Bankruptcy can also be declared in certain circumstances when a debtor is subject to suspension of payments. The debtor can also request the application of bankruptcy proceedings itself. Furthermore, the Public Prosecution Service (*het Openbaar Ministerie*) can request the application of bankruptcy proceedings for reasons of public interest (*openbaar belang*). The general principle of Dutch bankruptcy law is the so-called *paritas creditorium* (principal of equal treatment). Therefore, in Dutch bankruptcy proceedings, a debtor's assets are generally liquidated and the proceeds distributed to the debtor's creditors according to the relative priority of those creditors' claims and, to the extent certain creditors' claims have equal priority, in proportion to the amount of such claims. Certain parties, such as secured creditors, will benefit from special rights. Secured creditors, such as pledgees and mortgagees, may enforce their rights separately from bankruptcy and do not have to contribute to the liquidation costs; however, enforcement of the security interest might be subject to the following: (i) a statutory stay of execution of up to two months (extendable by another period of up to two months) imposed by court order pursuant to Article 63a of the Dutch Bankruptcy Act (which may be a

total period of eight months if the similar statutory stay of the execution under Article 241a of the Dutch Bankruptcy Act (referred to above) is first applied during suspension of payments), which has the same effects as set forth above for stays of execution in suspensions of payment; (ii) a receiver (*curator*) can force a secured party to foreclose its security interest within a reasonable time (as determined by the receiver pursuant to Article 58(1) of the Dutch Bankruptcy Act), failing which the receiver will be entitled to sell the relevant rights or assets and distribute the proceeds to the secured party after a deduction of liquidation costs; and (iii) excess proceeds of enforcement must be returned to the company's receiver and may not be offset against an unsecured claim of the company's secured creditor. Consequently, Dutch bankruptcy laws could reduce your potential recovery in Dutch bankruptcy proceedings.

Both a suspension of payments and bankruptcy have retroactive effect from 00.00 hours of the day on which the suspension of payments or the bankruptcy of the relevant Dutch Company is declared.

Unlike chapter 11 proceedings under United States bankruptcy law, where both secured and unsecured creditors are generally barred from seeking to recover on their claims, a suspension of payment and bankruptcy proceedings against Dutch debtors would allow secured creditors and preferential creditors (including tax and social security authorities) to satisfy their claims by proceeding against the assets (that secure their claims) as if there were no bankruptcy or suspension of payments. However, a statutory stay of execution as described above may be ordered by the competent court both in a suspension of payments and bankruptcy. Furthermore, certain preferred creditors have a preference by virtue of law. Unlike secured creditors, preferred creditors are not entitled to foreclose on assets of the bankrupt. They do have priority in the distribution of the proceeds of the bankrupt's assets. Restrictions on the enforcement of security interests may apply. For instance, higher ranking rights must be respected. These may include secured creditors and tax and social security authorities. A statutory stay of execution of security rights and other rights, as described above, may be imposed. Furthermore, a receiver in bankruptcy can force a secured creditor to enforce its security right within a reasonable period of time, failing which the receiver will be entitled to sell the secured assets, if any, and the secured creditor will have a preferred claim in respect of the proceeds, meaning that the secured creditor will have to share in the bankruptcy costs, which may be significant. Excess proceeds of any enforcement must be returned to the bankrupt estate; they may not be set off against an unsecured claim of the secured creditor. Such set-off may be allowed prior to the bankruptcy, although at that time it may be subject to clawback in the case of fraudulent conveyance or bad faith in obtaining the claim used for the set-off.

Any pending executions of judgments against the debtor will be suspended by the operation of law when a suspension of payments is granted and terminate by the operation of law when bankruptcy is declared. In addition, all attachments on the debtor's assets will cease to have effect upon the suspension of payments having become definitive, a composition having been ratified (*gehomologeerd*) by the court or the declaration of bankruptcy (as the case may be) subject to the ability of the court to set an earlier date for such termination. Litigation pending on the date of the bankruptcy order is automatically stayed.

Both in a definitive suspension of payments and bankruptcy, a composition (*akkoord*) may be offered to creditors. A composition will be binding for all unsecured and non-preferential creditors if it is: (i) approved by a simple majority (*gewone meerderheid*) of the number of creditors represented at the creditors' meeting, representing at least 50% of the amount of the claims that are acknowledged and conditionally admitted; and (ii) subsequently ratified (*gehomologeerd*) by the court. Consequently, Dutch insolvency law could preclude or inhibit the ability of the holders of the Notes to effect a restructuring and could reduce the recovery of a holder of Notes in a Dutch suspension of payments proceeding or bankruptcy. Interest payments that fall due after the date on which a moratorium of payments is granted cannot be claimed in a composition.

The claim of a creditor, other than a claim to the extent that it is secured by Dutch law security, may be limited depending on the date the claim becomes due and payable in accordance with its terms. Claims that fall due more than one year after the date of the bankruptcy, will be valued for distribution purposes as of the date the bankruptcy was declared. Claims that become payable within one year after the bankruptcy was declared will be considered payable from the day the bankruptcy was declared.

All unsecured, pre-bankruptcy claims will have to be verified in the insolvency proceedings in order to be entitled to vote and, in a bankruptcy liquidation, entitled to distributions. "Verification" under Dutch law means, in the case of a suspension of payments, that the treatment of a disputed claim for voting purposes is determined and, in the case of a bankruptcy, the unsecured, pre-bankruptcy claims are submitted to a receiver for verification, and the receiver then makes a determination as to the claim's existence, ranking and value and whether and to what extent it should be admitted in the bankruptcy proceedings (for voting). In the situation of

bankruptcy, creditors who wish to dispute the receiver's verification of their claims will be referred to a claim validation proceeding (*renvooiprocedure*) in order to establish the amount and rank of the disputed claim, while in a suspension of payments the court will decide how a disputed claim will be treated for voting purposes. These procedures could cause holders of Notes to recover less than the principal amount of their Notes or less than they could recover in a United States liquidation proceeding. The *renvooi* proceedings could also cause payments to the holders of Notes to be delayed. Interest on claims accruing after the bankruptcy order date cannot be admitted unless secured by a pledge or mortgage, in which case interest will be admitted *pro memoria*, such as in case of the Notes. To the extent that interest is not covered by the proceeds of the security, the creditor may not derive any rights from the admission. No interest is payable in respect of unsecured claims as of the date of a bankruptcy.

Enforceability of Guarantees and Security General Defenses and Corporate Benefit

In general, receipt of any payment under a Dutch law-governed guarantee or security interest may be affected by (i) the standards of reasonableness and fairness (*maatstaven van redelijkheid en billijkheid*), (ii) force majeure (*niet toerekenbare tekortkoming*) and unforeseen circumstances (*onvoorziene omstandigheden*), and (iii) the other general defenses available to debtors under Dutch law in respect of the validity, binding effect and enforceability of such guarantee or security interest. Other general defenses include claims that a guarantee or security interest should be voided because it was entered into through undue influence (*misbruik van omstandigheden*), fraud (*bedrog*), duress (*bedreiging*) or error (*dwaling*). Other impeding factors include rights of suspension (*opschorting*), a dissolution of a contract (*ontbinding*) and set-off (*verrekening*). The enforceability of the obligations of the Company may also be limited under the 1977 Sanction Act (*Sanctiewet* 1977) or otherwise by international sanctions and in proceedings in a Dutch court for the enforcement of a Dutch law security interest, the court may mitigate amounts due in respect of litigation, enforcement and collection costs.

Furthermore, if a Dutch company enters into a transaction (such as the granting of a guarantee or security interest), the validity and enforceability of the relevant transaction may be contested by the Dutch company or its administrator (*bewindvoerder*) in a suspension of payments or its receiver (curator) in bankruptcy, if (i) that transaction is not in the company's corporate interest (*vennootschappelijk belang*) and (ii) the other party to the transaction knew or should have known this without independent investigation. In determining whether the granting of a guarantee or the giving of security is in the interest of the relevant Dutch company, a Dutch court would not only consider the text of the objects clause in the articles of association of the company but also all relevant circumstances, including whether the company derives certain commercial benefits from the transaction in respect of which the guarantee or security interest was granted and any indirect benefit derived by the relevant Dutch company as a consequence of the interdependence of it with the group of companies to which it belongs and whether or not the subsistence of the relevant Dutch company is jeopardized by conducting such transaction. The mere fact that a certain legal act (*rechtshandeling*) is explicitly mentioned in the objects clause in the articles of association of the company may not be conclusive evidence to state that such legal act is in the corporate interests.

Dutch Scheme

With the entry into force of the Act on Court Confirmation of Extrajudicial Restructuring Plans (*Wet homologatie onderhands akkoord*) ("WHOA") on January 1, 2021, debtors now have the possibility to offer a composition outside of formal insolvency proceedings. The WHOA is inspired on the UK Scheme of Arrangements and the US Chapter 11 procedure and it offers debtors additional possibilities to restructure their debt. Unlike a composition in suspension of payments and in bankruptcy proceedings, a composition under the WHOA can be offered to secured creditors as well as shareholders. The WHOA provides, inter alia, for cross class cramdown, the restructuring of group company obligations through aligned proceedings, the termination of onerous contracts, the suspension of certain ipso facto clauses in contracts and supporting court measures. A WHOA composition may result in claims against the Dutch Guarantors being compromised if the relevant majority votes in favor of such a composition and it is subsequently confirmed by the Dutch courts. A composition plan under the WHOA can extend to claims against entities that are not incorporated under Dutch law and/or are residing outside the Netherlands. Accordingly, the WHOA can affect the rights of the Trustee and/or the holders of the Notes under the Indenture and therefore the Notes.

Voting on a WHOA composition plan is done in classes. A class is deemed to accept the plan if two third of the total amount of the debt of that class or, in the case of a class of shareholders, two thirds of the share capital of that class, participating in the vote, votes in favor. The WHOA provides for the possibility for a composition plan to be binding on a dissenting class (i.e., cross class cramdown). Under the WHOA, the court will confirm a

composition plan if at least one class of creditors (other than a class of shareholders) that can be expected to receive a distribution in case of a bankruptcy of the debtor approves the plan, unless there is a statutory ground for refusal. The court can, inter alia, refuse confirmation of a composition plan on the basis of (i) a request by a dissenting creditor, if the value of the distribution that such creditor receives under the plan is lower than the distribution it can be expected to receive in case of a bankruptcy of the debtor or (ii) a request of a dissenting creditor in a dissenting class, if the plan provides for a distribution of value that deviates from the statutory or contractual ranking and priority to the detriment of that class, unless there is a reasonable ground to do so. There is one mandatory refusal ground specifically applicable to secured financial creditors. If the composition plan entails a debt-for-equity swap to which such creditors do not want to ascribe, and these creditors do not have the right to opt for a different kind of distribution, the court will refuse confirmation of such plan on the request of such creditor.

Under the WHOA, the court may grant a stay on enforcement of a maximum of 4 months, with a possible extension of 4 months. For the duration of such moratorium, all enforcement action against the assets of (or in the possession of) the debtor is suspended unless with the court's approval, including action to enforce security over the assets of the debtor or, in case of an undisclosed right of pledge over receivables, the collection, or notification to the debtors. Furthermore, any petitions for bankruptcy in respect of the debtor are suspended and the court may lift attachments on the debtor's assets at the request of the debtor or restructuring expert.

Fraudulent Conveyance

Dutch law contains specific provisions dealing with fraudulent conveyance both in and outside bankruptcy: the *actio pauliana* provisions. Under Dutch law, any creditor of a Dutch company or its receiver (curator) may nullify any transaction or legal act entered into by the Dutch company in connection with the Notes, under certain circumstances, if (i) the transaction or legal act entered into by the Dutch company in connection with the Notes was conducted without a prior existing legal obligation to do so (*onverplicht*); (ii) the creditor(s) concerned or, in the case of its or their bankruptcy, any creditor was prejudiced as a consequence of such transactions or legal act (irrespective of whether a creditor's claim arose prior to or after such transactions); and (iii) at the time of the transaction or legal act entered into by the Dutch company in connection with the Notes was conducted (including the granting of the Guarantee or any security), the Dutch company and, unless the transactions were conducted for no consideration (*om niet*), the counterparty knew or should have known that one or more of the entities' creditors (existing or future) would be prejudiced (*actio pauliana*).

A receiver (*curator*) may nullify a transaction on behalf of and for the benefit of the joint insolvent debtor's creditors, and the burden of proof of the above-mentioned elements of fraudulent conveyance in principle rests on the receiver. Knowledge of prejudice is, however, presumed by law for certain transactions performed within a "suspect period" of one year prior to an adjudication of bankruptcy. This is applicable for certain transactions only, the most important application being in cases where the obligations of the bankrupt materially exceed those of the other party, the satisfaction of existing obligations of the bankrupt that are not yet due, and acts between the bankrupt and its counterparty when the shares in both are held (indirectly) by the same shareholder or if the bankrupt and its counterparty are part of the same group of companies. The foregoing requirements for invoking fraudulent transfer provisions outside a bankruptcy apply mutatis mutandis when invoking fraudulent transfer provisions during a bankruptcy. In addition, the receiver may challenge a transaction if it was conducted on the basis of a prior existing legal obligation to do so (*verplichte rechtshandeling*), if (i) the transaction was conducted at a time when the counterparty knew that a request for bankruptcy had been filed or (ii) if such transaction was conducted as a result of deliberation between the debtor and the counterparty in order to give preference to the counterparty over the debtor's other creditors. Consequently, the validity of any such transactions conducted by a Dutch legal entity may be challenged and it is possible that such a challenge would be successful.

The application of Dutch law in respect of a Dutch law security interest in the Collateral will not prevent effect being given to the overriding provisions of the law of a jurisdiction with which the situation has a close connection (and for this purpose "overriding provisions" are provisions the respect for which are regarded as crucial by a jurisdiction for safeguarding its public interests to such an extent that they are applicable to any situation falling within their scope, irrespective of the law otherwise applicable to an agreement and include any rules (whether mandatory or not) that must be applied pursuant to the EC Regulation) and will not prevent regard having to be had to the law of the jurisdiction in which performance takes place in relation to the manner of performance and the steps to be taken in the event of defective performance. In addition, enforcement of each Dutch law security interest in the Collateral (including allocation of the proceeds) is subject to Dutch law. Among other things, under Dutch law shares may only be transferred upon enforcement in accordance with Dutch law and the articles of association of the company in which shares are pledged at the time of enforcement.

Rights of third parties acquiring a share or a limited right on a share and acting in good faith (*te goeder trouw*) may also affect the binding effect and enforceability of a Dutch law security interest in the Collateral.

In proceedings before a Dutch court, security interests are in principle enforced through a public auction of the relevant assets in accordance with Dutch law. The Security Agent or the relevant security interest provider may request the competent court to approve a private sale of the secured assets, except when otherwise agreed. In the case of secured assets, the Security Agent and the security interest provider may agree to an alternative foreclosure procedure once the security right has become enforceable. The security interest providers have agreed to waive the right to request such alternative foreclosure procedure. The Security Agent may also request the competent court to determine that the secured assets shall accrue to it for a price determined by the court. In the case of a pledge, the right of the relevant security interest provider to request approval of a private sale may be excluded. It is not certain and has not been determined in published case law whether a right of pledge on shares can be created in advance of the acquisition of the shares by the pledgor.

Emergency Legislation to Protect Enterprises in Financial Distress due to the Covid-19 Pandemic

The emergency legislation (the Temporary Covid-19 Social Affairs and Employment and Justice and Security Act (*Tijdelijke Wet Covid-19 SZW en JenV*)) regarding a temporary suspension of enforcement and other measures in support of enterprises during the Covid-19 pandemic entered into force on 17 December 2020. The emergency legislation provides for a court ordered moratorium and several related protections which apply until at least April 1, 2021 and can, if and when necessary, be extended beyond that date for two month periods at a time.

The measures of the legislation apply to enterprises (other than regulated entities) whose continuity is threatened due to the Covid-19 pandemic. In response to a request from creditors (other than the tax authorities) to declare the enterprise bankrupt or initiate the execution or seizure of assets, the enterprise/debtor can request the court to grant a moratorium vis-à-vis those creditors of two months (which may be extended twice at the request of the enterprise/debtor by two month periods at a time).

If such moratorium is granted by the court then during such moratorium period:

(i) the bankruptcy petition is stayed;

(ii) payment obligations to those creditors are suspended, and any prior default does not, in and of itself, provide a legal basis to change the terms or suspend performance of, or terminate, an agreement with those creditors; and

(iii) if the court so decides, conservatory and executory attachments by those creditors are suspended, and no other enforcement measures can (continue to) be taken by those creditors against the assets of their debtor without the prior approval of the court.

The measures referred to in (iii) can also be requested in summary proceedings and attachments can be terminated as part of such proceedings. It is important to note that any measure of the court only affects those creditors who requested the bankruptcy or initiated the execution or seizure of assets of the debtor. However, any request by other creditors will most likely result in the court taking the same decisions.

When considering the request to apply the measures discussed above, the court will need to establish that the enterprise/debtor has made it plausible that, solely or mainly due to the outbreak of the Covid-19 pandemic, the enterprise has not been able to continue its business as usual and as a result has temporarily become unable to pay its debts when they fall due. Creditors not covered by the moratorium retain these rights vis-à-vis their debtor. The enterprise/debtor is in any event presumed to be in this position if it can provide financial information that shows that prior to the outbreak of the Covid-19 pandemic or the restrictive measures announced since March 15, 2020 (i) it had sufficient liquidity to satisfy its due and payable debts, and (ii) its revenue decreased by at least 20% compared to the average revenue in the preceding three months. The court will further need to conclude that following the moratorium the enterprise/debtor will be able to satisfy its debts and that the creditor(s) that are affected are not significantly and unreasonably prejudiced as a result of the moratorium. When granting a moratorium, the court can take any measures it considers necessary to ensure the interests of the creditor(s) are not prejudiced.

Parallel Debt

It is generally assumed that under Dutch law security interests such as rights of pledge cannot be validly created in favor of a person who is not the creditor of the claim that the security interest intends to secure. The beneficial

holders of the Notes from time to time will not be party to the Security Documents. In order to permit the holders of the Notes from time to time to have a secured claim, the documentation relating to the Notes will provide for the creation of a "parallel debt". Pursuant to the parallel debt, the Security Agent becomes the holder of a claim equal to each amount payable by an obligor under the Notes. The pledges governed by Dutch law will directly secure the parallel debt. The parallel debt concept has not been tested under Dutch law, and there is no certainty that it will eliminate or mitigate the risk of unenforceability posed by Dutch law.

United States

Insolvency

Fraudulent transfer

Under the Bankruptcy Code or comparable provisions of state fraudulent transfer or fraudulent conveyance laws, the transfer of an interest in property or the incurrence of an obligation, including the incurrence of the obligations under the notes, the issuance of the note guarantees and the grant of security, whether now or in the future, by any Obligor could be avoided, if, among other things, at the time the Obligor made such transfer or incurred such obligation, the Obligor:

(i) intended to hinder, delay or defraud any present or future creditor; or

(ii) received less than reasonably equivalent value in exchange for the transfer or obligation and one of the following is met:

- the Obligor was insolvent on the date the transfer was made or obligation incurred or became insolvent as a result of the transfer or obligation;
- the Obligor was engaged in a business or transaction, or was about to engage in a business or transaction, for which the Obligor's remaining assets constituted unreasonably small capital; or
- the Obligor intended to incur, or believed that it would incur, debts that would be beyond its ability to pay such debts as they mature.

Preference

In a U.S. bankruptcy case, any transfer of an interest of the debtor in property, including any grant of security interest with regard to the Collateral or other transfer in respect of the notes, such as security documents delivered after the date of the Indenture, may be avoided by the grantor (as debtor-in-possession) or by its bankruptcy trustee as a preference if the transfer is: (i) to or for the benefit of a creditor, (ii) for or on account of an antecedent debt owed by the grantor before such transfer was made, (iii) made while the grantor is insolvent, (iv) made on or within 90 days before the date on which a bankruptcy petition is filed (or made within one year if the creditor is an insider) and (v) that enables the creditor to receive more than the creditor would receive if the bankruptcy case were a case under Chapter 7 of the Bankruptcy Code and the transfer had not been made.

Other actions

The Bankruptcy Code permits the subordination of claims under the principles of equitable subordination. A U.S. bankruptcy court may find equitable subordination warranted where, with respect to a noteholder's claim: (i) the holder of notes engaged in some type of inequitable conduct; (ii) such inequitable conduct resulted in injury to our other creditors or conferred an unfair advantage upon the holder of notes; and (iii) equitable subordination would not be inconsistent with the provisions of the Bankruptcy Code.

The automatic stay

A creditor's right to enforce its security interests against the Obligors upon the occurrence of an Event of Default under the Indenture governing the notes is likely to be significantly impaired by applicable U.S. bankruptcy law if one or more of the Obligors becomes a debtor in a case under the Bankruptcy Code. Upon the commencement of a bankruptcy case, the debtor obtains the benefit of the automatic stay. The automatic stay is a pervasive worldwide injunction that prohibits actions by third parties against the debtor and its assets wherever located, subject to certain exceptions. The automatic stay becomes effective immediately upon the filing of a bankruptcy petition and remains in effect until the debtor emerges from bankruptcy. In the event an obligor commences a bankruptcy case, the automatic stay would prevent the holders of the notes from obtaining possession or exercising control over the Collateral or commencing any action in an attempt to obtain possession or exercise

control over the Collateral. The automatic stay could be lifted or modified with bankruptcy court approval in certain circumstances, but parties may object to any creditor's request to lift or modify the automatic stay, and the bankruptcy court may deny such a request.

Right of debtor-in-possession to remain in control of collateral and the bankruptcy process

An entity that becomes a debtor under chapter 11 of the Bankruptcy Code remains in possession of its property and is authorized to operate and manage its business as a "debtor-in-possession", subject to certain limitations. This remains the case unless a chapter 11 trustee is appointed or the chapter 11 case is converted to a chapter 7 liquidation under the Bankruptcy Code, in which case a chapter 11 trustee or chapter 7 trustee takes control of the debtor's property.

Subject to U.S. bankruptcy court approval, the Bankruptcy Code also permits the continued use of collateral so long as the secured creditor is provided "adequate protection" of its interest in the collateral. The term "adequate protection" is not expressly defined in the Bankruptcy Code, but may include making periodic cash payments, providing an additional or replacement lien or granting other relief, in each case, to the extent that the value of the secured creditor's interest in such collateral depreciates during the pendency of the bankruptcy case as a result of, among other things, the use, sale or lease of such collateral or the imposition of the automatic stay. The type of adequate protection provided to a secured creditor may vary according to the circumstances. A U.S. bankruptcy court may determine that a secured creditor is not entitled to additional adequate protection for a decrease in the value of its collateral if the value of the collateral exceeds the amount of the debt that it secures.

The Bankruptcy Code provides a debtor with an exclusive period during which it may propose and solicit acceptances of a chapter 11 plan. Unless the debtor's exclusive period is terminated upon request, a debtor has 120 days from the commencement of the bankruptcy case to propose a Chapter 11 plan. Further, a debtor has 180 exclusive days from the commencement of the case to obtain confirmation of the proposed plan by the bankruptcy court. During these "exclusive periods", other parties, such as secured creditors, are precluded from proposing or soliciting acceptances of their own chapter 11 plans. The bankruptcy court may reduce or extend these periods for cause upon request of a party in interest. The 120-day period could be extended for up to 18 months after a chapter 11 filing, while the 180-day period could be extended for up to 20 months after a chapter 11 filing.

In view of the automatic stay, the lack of a precise definition of the term "adequate protection", the exclusive periods, and the broad discretionary power of a U.S. bankruptcy court, it is impossible to predict:

- whether or when a holder of the notes could enforce its security interests;
- the value of the Collateral at the time of the bankruptcy petition or at the time a chapter 11 plan is proposed or confirmed; or
- whether or to what extent holders of the notes would be compensated for any delay in payment or loss of value of the Collateral through the provision of "adequate protection".

A debtor-in-possession may obtain new credit secured by a lien that is senior or equal to existing liens

The Bankruptcy Code permits a debtor-in-possession or trustee in a chapter 11 case to obtain an extension of new credit from an existing lender or from a new lender. The bankruptcy court may, depending on the facts and circumstances, authorize the debtor-in-possession or trustee to obtain new credit or incur new debt that is secured by a lien that is senior or equal to existing liens, provided that, among other things, there is adequate protection of the interest of the holder of the existing lien on the property of the debtor's estate or which such senior or equal lien is proposed to be granted. In other words, it is possible that, in connection with a chapter 11 case of one or more of the Obligors, such Obligor or Obligors would be permitted to incur new debt that is secured by a lien that is senior or equal to the liens that exist at the time of the chapter 11 filing.

Post-petition interest

The Bankruptcy Code generally prohibits the allowance of post-petition interest as part of a creditor's claim. There is an exception, however, where the value of the collateral that secures the claim exceeds the value of the creditor's claim for principal and accrued pre-petition interest. To the extent a secured creditor is over-collateralized, an amount of post-petition interest may be added to the claim to the extent of that over-security. In such an event, courts differ as to the appropriate rate of interest to be applied.

In the event an Obligor commences a bankruptcy case, therefore, the holders of the notes would be entitled to post-petition interest only if the notes are over-collateralized and only to the extent of that over-security. If the value of the Collateral were equal to or less than the value of the noteholders' pre-petition claims for principal and accrued interest under the Notes, subject to certain other equitable exceptions, any claim for post-petition interest would be disallowed under the Bankruptcy Code.

Ability to confirm a chapter 11 plan notwithstanding the dissenting votes of creditors

A chapter 11 plan provides for the comprehensive treatment of all claims asserted against the debtor and the property of the bankruptcy estate and may provide for the readjustment or extinguishment of equity interests. Claims and interests are classified by type. Only those classes of claims and interests impaired by the plan may vote to accept or reject such plan. Classes of claims and interests that are unimpaired are deemed to accept it. Classes of claims and interests that receive no distributions under the plan are deemed to reject it. A class of claims is deemed to accept the plan if creditors holding at least two-thirds in amount and more than one-half in number of the allowed claims of such class held by creditors that have accepted or rejected the plan. A plan can be confirmed by the bankruptcy court over the dissenting votes of members of a class that accepts the plan overall.

Furthermore, even if one or more impaired classes rejects the plan, the plan may still be confirmed, subject to specific statutory requirements, in accordance with the "cram-down" provisions of the Bankruptcy Code, which require, among other things, that one impaired class has accepted the plan and that the plan does not discriminate unfairly, and is fair and equitable, with respect to each class of claims or interests that is impaired under, and has not accepted, the plan. A plan is fair and equitable with respect to a class of secured claims if the plan provides: (i) (a) that the holders of such claims retain the liens securing such claims, whether the property subject to such liens is retained by the debtor or transferred to another entity, to the extent of the allowed amount of such claims; and (b) that each holder of a claim of such class receives on account of such claim deferred cash payments totaling at least the allowed amount of such claim, of a value, as of the effective date of the plan, of at least the value of such holder's interest in the estate's interest in such property; (ii) for the sale, subject to Section 363(k) of the Bankruptcy Code, of any property that is subject to the liens securing such claims, free and clear of such liens, with such liens to attach to the proceeds of such sale, and the treatment of such liens on proceeds under clause (i) or (iii) of this sentence; or (iii) for the realization by such holders of the indubitable equivalent of such claims. A plan is fair and equitable with respect to a class of unsecured claims if: (i) the plan provides that each holder of a claim of such class receives or retains on account of such claim property of a value, as of the effective date of the plan, equal to the allowed amount of such claim; or (ii) the holder of any claim or interest that is junior to the claims of such class will not receive or retain under the plan on account of such junior claim or interest any property. These provisions could allow the debtor or other plan proponent to confirm its plan over the objection of one or more dissenting creditor classes, including holders of the notes.

England and Wales

Fixed versus floating charges

There are a number of ways in which fixed charge security has an advantage over floating charge security, for example: (i) an English administrator appointed to a chargor can convert floating charge assets to cash and use such cash, or use cash subject to a floating charge, to meet certain statutory administration expenses (which can include the costs of continuing to operate the business of the chargor) while in administration in priority to the claims of the floating charge holder; (ii) a fixed charge, even if created after the date of a floating charge, may have priority against the floating charge on the charged assets (provided that the floating charge has not crystalized at the time the fixed charge was granted); (iii) until the floating charge security crystallizes, a company is entitled to deal with assets that are subject to floating charge security in the ordinary course of business, meaning that such assets can be effectively disposed of by the chargor so as to give a third party good title to the assets free of the floating charge, and give rise to the risk of security being granted over such assets in priority to the floating charge security; and (iv) in certain circumstances, a percentage of the proceeds of the enforcement of floating rate charge security is ring fenced for the benefit of unsecured creditors (for charges created on or after 6 April 2020, up to a statutory limit of GBP 800,000 for a first-ranking floating charge (under current law)).

Under English insolvency law, there is a possibility that a court could find that the fixed security interests expressed to be created by a security document could take effect as floating charges because the description given to them as fixed charges is not determinative. Whether fixed security interests will be upheld as fixed

rather than floating security interests will depend, among other things, on whether the chargee has the requisite degree of control over the ability of the relevant chargor to deal in the relevant assets and the proceeds thereof and, if so, whether such control is exercised by the chargee in practice. Where the chargor is free to deal with the secured assets without the consent of the chargee, the court is likely to hold that the security interest in question constitutes a floating charge, notwithstanding that it may be described as a fixed charge.

Equitable share charge

The security interests over the issued share capital in a company incorporated in England and Wales granted by a company are ordinarily equitable charges. The charge over the shares typically takes effect as an equitable mortgage as the chargor transfers the beneficial interest in the shares to the chargee but retains legal title to the shares. Remedies in relation to equitable charges or pledges may be subject to equitable considerations or are otherwise at the discretion of the court.

Cross Border Insolvency

One of the Guarantors is incorporated under the laws of England and Wales and certain English law collateral has been granted. Any insolvency proceedings by or against that Guarantor would likely (subject to the location of the Company’s centre of main interests at the time of any filing) be based on English insolvency laws.

Such insolvency proceedings do not benefit from automatic recognition in EU Member States. The UK insolvency officeholder will therefore need to apply to the courts of each Member State where recognition is required to apply for such under domestic insolvency and/or private international laws of such Member State.

There is no certainty that such insolvency proceedings will be recognised. Where the appointment of a UK office holder has been made in reliance on a UK domestic approach (rather than COMI), it is much less certain that such appointment will be recognised in Member States. If insolvency proceedings were to be opened in a place other than England and Wales, such proceedings could be in parallel to proceedings opened in England. Such proceedings would not benefit from automatic recognition in England, although the officeholder could apply under the UNCITRAL Implementing Regulations which provide that foreign (i.e. non-English) insolvency proceedings may be recognised where any English company has its COMI or an “establishment” (being a place of operations where it carries out a non-transitory economic activity with human means and assets) in such foreign jurisdiction.

English insolvency law is different to the laws of France and other jurisdictions with which investors may be familiar. The obligations under the Notes will be secured by security interests over the Collateral, including the pledge over certain shares. English insolvency laws, and other limitations could limit the enforceability of those security interests over the Collateral and the enforceability of any guarantees granted which are governed by English law.

Formal Insolvency Processes

Formal insolvency proceedings under the laws of England and Wales may be initiated in a number of ways, including by the company or a creditor making an application for administration in court, the company or the holder of a “qualifying floating charge” (discussed below) appointing administrators out of court, or by a creditor filing a petition to wind up the company or the company resolving to do so (in the case of a liquidation). The following is a brief description of certain aspects of English insolvency law relating to certain limitations on the guarantees given by the Guarantors and the security interests granted over the collateral. The application of these laws could adversely affect investors, including their ability to enforce their rights under the collateral securing the Notes and may limit the amounts that investors may receive in an English law insolvency of the Issuers and Guarantors. A summary of these processes is set out below.

Under the Insolvency Act 1986, as amended from time to time (the “Insolvency Act”), and subject to certain additional considerations and exceptions enacted in the CIGA, certain types of company may file for or become subject to certain formal insolvency processes. Formal insolvency proceedings under the laws of England and Wales include administration and liquidation.

The distinction between administration and liquidation is discussed further below but, in essence, administration is designed to provide a tool to rescue the company or its business as a going concern where the company is or is likely to become insolvent, whereas liquidation is a termination procedure designed to distribute the company’s assets to its creditors.

In addition to administration and liquidation, there are two other insolvency regimes under the Insolvency Act for certain types of company in England and Wales, namely company voluntary arrangements and administrative receivership. Certain secured creditors may also have the ability to appoint a receiver (in contrast to an administrative receiver) which is a self-help remedy often granted within the documents granting the security interests over the collateral. Save for receivership and administrative receivership, all of these insolvency procedures under the Insolvency Act are collective remedies for the benefit of creditors as a whole.

In addition to the formal insolvency regimes available under the Insolvency Act, Part 26A of the Companies Act 2006 (as implemented by CIGA), introduces a new procedure, the restructuring plan, which is a corporate restructuring process designed to prevent a company from going into a formal insolvency process (the "Restructuring Plan"). As it enables a financially distressed company to impose a composition or arrangement on a class of dissenting creditors or shareholders, the Restructuring Plan is considered in further detail below.

CIGA also provides for a moratorium procedure, standalone from any of the formal insolvency procedures and the Restructuring Plan, to "*give those financially distressed companies which are ultimately viable, a period of time when creditors (including secured creditors) cannot take action against the company, allowing it to make preparations to restructure or seek new investment*" This is also considered in further detail below.

Administration

The Insolvency Act empowers English courts to make an administration order, in respect of, principally the following: (i) a company registered under the Companies Act 2006 in England and Wales or Scotland, (ii) a company incorporated in a member state of the EEA; (iii) a company not incorporated in the EEA but with its COMI in a Member State (other than Denmark) or in the United Kingdom; or (iv) a company with its COMI in a Member State (other than Denmark) where there is an establishment in the UK. Without limitation and subject to specific conditions, an administration order can be made if the court is satisfied that the relevant company is or is likely to become "unable to pay its debts" and that the administration order is reasonably likely to achieve the stated purpose of the administration. A company is unable to pay its debts if it is insolvent on a "cash flow" basis (unable to pay its debts as they fall due) or if it is insolvent on a "balance sheet" basis (the value of the company's assets is less than the amount of its liabilities, taking into account its contingent and prospective liabilities). Such insolvency is presumed if, among other matters, the company fails either to satisfy a creditor's statutory demand for a debt exceeding £750 within 21 days of service or to satisfy in full or in part a judgment debt (or similar court order). Without limitation and subject to specific conditions, a company (falling within the definition set out in the Companies Act 2006), the directors of such company or the holder of a qualifying floating charge where the floating charge has become enforceable, may also appoint an administrator via an out of court process, and different procedures apply according to the identity of the appointor.

The administration of a company must achieve one of the following statutory objectives: (1) the rescue of the company (as distinct from the business carried on by the company) as a going concern (the first objective); (2) the achievement of a better result for the company's creditors as a whole than would be likely if the company were wound up (without first being in administration) (the second objective); or (3) the realization of some or all of the company's property to make a distribution to one or more secured or preferential creditors (the third objective). An administrator must attempt to achieve the first objective of administration, unless he or she thinks either that it is not reasonably practicable to achieve the first objective, or that the second objective would achieve a better result for the company's creditors as a whole. The administrator cannot pursue the third objective unless he thinks that it is not reasonably practicable to achieve either the first objective or the second objective and that it will not unnecessarily harm the interests of the creditors of the company as a whole to pursue the third objective. Subject to this, the administrator must perform his functions in the interests of the company's creditors as a whole. The order of priority which applies to any distribution to creditors is set out below.

Certain rights of creditors, including secured creditors, are curtailed in an administration pursuant to the statutory moratorium imposed under the Insolvency Act. For example, upon the appointment of an administrator, no step may be taken to enforce security over the company's property except with the consent of the administrator or permission of the court (although a demand for payment could be made under a guarantee granted by the company). The same requirements for consent or permission apply to the institution or continuation of legal process (including legal proceedings, execution, distress and diligence) against the company or property of the company. In either case, a court will consider a range of discretionary factors in determining any application for leave in light of the hierarchy of statutory objectives of administration described above.

Accordingly, if a Guarantor were to enter into administration, the collateral granted by the Guarantor could not be enforced while the Guarantor was in administration without the permission of the court or consent of the

administrator. There can be no assurance that the Security Agent would obtain such permission of the court or consent of the administrator.

However, while the restrictions of the moratorium are extensive they are not total. For example, contractual set-off rights may continue to be exercised, at least until the administrator makes an authorized distribution (at which point mandatory insolvency set-off rules will override contractual set-off arrangements) and certain creditors of a company in administration may, in certain defined circumstances, be able to enforce their security over certain of that company's property notwithstanding the statutory moratorium. This is by virtue of the disapplication of the moratorium in relation to a "security financial collateral arrangement" (generally, this can include a charge over cash or financial instruments, such as shares, bonds or tradeable capital market debt instruments and credit claims) under the Financial Collateral Arrangements (No. 2) Regulations 2003 (as amended) (the "Financial Collateral Regulations"). If a Guarantor were to enter administration, it is possible that, to the extent such security is not a financial collateral arrangement, the security granted by it would not be able to be enforced while it is in administration without leave of the court or consent of the administrators. While an administrator is in office, the powers of the board of directors of the relevant company cease (save for those powers that do not interfere with the exercise of the administrators' powers, or where permitted by the administrator) and the administrator has primary responsibility for managing the company's affairs. An administrator is given wide powers to conduct the business of the company to which they are appointed and, subject to certain requirements under the Insolvency Act, dispose of the property of a company in administration that is either not subject to security, or is subject to a floating charge—however an administrator may only dispose of property of a company subject to a fixed charge with the leave of the court or with the consent of the secured creditor. The administrator also has the ability to challenge certain antecedent transactions.

Ordinary corporate administration terminates automatically after a year (albeit the administration may be extended by court order or, subject to a limit of one year, by consent of the creditors).

A company may exit administration if the administrator is satisfied that one or more of the statutory objectives have been achieved (upon application to and order of the court if the administration is pursuant to an administration order). On exiting administration the company may resume normal business. However, the administrator also has the power, should he conclude that there is no reasonable prospect of rescuing the company, to either place the company into liquidation or use his powers under, and in accordance with, the Insolvency Act to distribute the company's assets and thereby achieve substantially the same result as a liquidation (though this may require the permission of the court).

Liquidation

Liquidation is a company dissolution procedure pursuant to which the assets of the company are realized and distributed by the liquidator to creditors in the statutory order of priority prescribed by the Insolvency Act. Any surplus shall then be distributed to its members. Once the liquidator has completed this task, the company will be dissolved and removed from the register of companies.

There are two forms of winding-up: (a) compulsory liquidation, by order of the court; and (b) voluntary liquidation, by resolution of the company's members, and which is in turn divided into members' voluntary liquidation ("MVL") and creditors' voluntary liquidation ("CVL"). The difference between the latter two proceedings is the solvency of the company in question; in an MVl, the directors of the company swear a statutory declaration as to the company's solvency over the following twelve months, a CVL (other than as an exit from administration) is initiated by a resolution of the members, not the creditors, but once in place is subject to some degree of control by the creditors.

Companies registered in England and Wales or foreign companies: (i) with their COMI in England and Wales, (ii) with their COMI in a Member State (except Denmark) and an establishment in England and Wales; (iii) or whose COMI is not located in a Member State (except Denmark) but having "sufficient connection" with England and Wales may be wound up via compulsory liquidation. Only companies registered in England and Wales may be subject to voluntary liquidation (save that a foreign company where its COMI is in England and Wales or in another Member State (except Denmark) but which has an establishment in England and Wales) may enter a creditors' voluntary liquidation).

A creditor, the company, the directors of the company or in certain circumstances a shareholder, among others, can ordinarily present a winding-up petition to the Court for the compulsory winding-up of a company. The most common grounds for the compulsory winding-up of a company is that either it is unable to pay its debts (as

defined in Section 123 of the Insolvency Act) or the court is of the opinion that it is just and equitable for the company to be wound up. However, with effect from 1 March 2020 until 31 March 2021 (the "Period"), CIGA temporarily prohibits creditors from presenting a winding-up petition to the Court on the basis that a debtor has failed to respond to a statutory demand for payment within 21 days of its service. During the Period, CIGA also prohibits a creditor from presenting a winding-up petition on the basis that the debtor is unable to pay its debts (as defined in Section 123 of the Insolvency Act) unless the creditor certifies that it has reasonable grounds to believe that the debtor company would still have been insolvent, even if the impact of Covid-19 on its business were to be disregarded. Where a winding-up petition is presented during the Period on this basis, the Court will not make a winding-up order based on that petition, unless it concurs with the creditor's statement regarding the impact of Covid-19 on the debtor's insolvency.

The effect of a compulsory liquidation differs in a number of respects from that of a voluntary liquidation. Generally, in a compulsory liquidation, under Section 127 of the Insolvency Act, any disposition of the relevant company's property made after the commencement of the winding up is, unless sanctioned by the court, void. Subject to certain exceptions, when an order is made for the winding-up of a company by the court, it is deemed to have commenced from the time of the presentation of the winding-up petition. However, CIGA temporarily suspends the effect of Section 127 of the Insolvency Act in relation to winding-up petitions that are issued during the Period. Once a winding-up order is made by the court, a stay of all proceedings against the company will be imposed. No action or proceeding may be continued or commenced against the company without permission of the court and subject to the terms as the court may impose although there is no stay on the enforcement of security.

In the context of a voluntary liquidation however, there is no equivalent to the retrospective effect of a winding-up order; the winding-up commences on the passing of the members' resolution to wind up. As a result, there is no equivalent of Section 127 of the Insolvency Act. There is also no automatic stay in the case of a voluntary liquidation—it is for the liquidator, or any creditor or contributory of the company, to apply for a stay to prevent the continuation of legal proceedings and enforcement of security.

An MVL is a solvent liquidation that is controlled by the shareholders. It commences when the shareholders pass a special resolution to place the company into liquidation and there is generally no involvement by the court. Not more than five weeks prior to the making of the winding-up resolution, the directors must swear a statutory declaration of solvency stating that, after having made full enquiry into the company's affairs, they have formed the opinion that it will be able to pay its debts, including interest and the costs of the MVL process, in full within a stated period not exceeding twelve months from the start of the liquidation.

A CVL (other than as an exit from administration) is also commenced by the shareholders resolving to place the company into liquidation and has no court involvement. In contrast to an MVL, however, the directors do not swear a statutory declaration of solvency for a CVL (meaning the company can be solvent or insolvent). If the creditors choose a different person to act as liquidator from that appointed by the shareholders, the creditors' choice will prevail.

On the appointment of a liquidator, the directors' powers to bind the company automatically cease save for those powers that are sanctioned by the liquidator or creditors (as appropriate), and the office of director terminates automatically, although the former directors retain a residual power allowing them to appeal (in the name of the company) against the winding-up order. A liquidator has, among other things, the power to bring or defend legal proceedings on behalf of the company, to carry on the business of the company as far as it is necessary for its beneficial winding up, to sell the company's property (provided that in respect of the sale of any property that is secured by a fixed charge in favor of a creditor, if that sale is made without the secured creditor's consent, it will be made subject to that security, as the creditor's consent will be needed to the release of the security), execute documents in the name of the company and to challenge antecedent transactions.

Under English insolvency law, with some exceptions a liquidator has the power to disclaim any onerous property, which includes unprofitable contracts and any other property of the company that cannot be sold, readily sold or may give rise to a liability to pay money or perform any other onerous act. A contract may be unprofitable if it gives rise to prospective liabilities and imposes continuing financial obligations on the company that may be detrimental to creditors. However, this power does not apply to a contract where all of the obligations have been performed nor can it be used to disturb accrued rights and liabilities, and if a contract is disclaimed the contractual counterparty has a right to sue for damages in respect of the terminated contract.

Company Voluntary Arrangements

A company voluntary arrangement ("CVA") is a procedure intended to allow companies to avoid potentially terminal insolvency proceedings and to address their financial difficulties by obtaining a binding agreement or compromise with their unsecured creditors. Though it does not result in the insolvency of a company, a CVA is implemented under the supervision of an insolvency practitioner who will act as the nominee before the CVA proposals are approved, and as the supervisor afterwards. CVAs may also be used as a tool alongside a formal insolvency procedure such as administration in order to implement a compromise between the debtor company and its unsecured creditors.

A company is eligible to propose a CVA if it is (i) registered under the Companies Act 2006 (or the preceding legislation) in England and Wales or Scotland, (ii) if it is incorporated in a member state of the EEA or (iii) if the company is not incorporated in a member state of the EEA but has its COMI in a Member State (other than Denmark) or in the United Kingdom. The CVA can be proposed by the relevant company's directors (if the relevant company is not in administration or liquidation) or, if the relevant company is in administration or liquidation, by the administrator or the liquidator (as applicable).

The proposal for a CVA would generally include a rescheduling or reduction of the company's unsecured debts, but may also form part of more complex arrangements that seek to balance the interests of many different creditor groups.

If the proposals under the CVA are approved by the requisite majority of creditors, a CVA will bind all unsecured creditors of a company who were entitled to vote on the proposal or who would have been entitled to vote if they had had notice of the decision procedure. However, a CVA will not affect the rights of secured creditors or preferential creditors unless they agree to the proposals. Shareholders of the company will also be asked to vote on the CVA, though, if the results of the shareholder vote differ from the creditor vote, the creditor vote will prevail.

Restructuring plans

Enacted into the Companies Act 2006 by CIGA, the Restructuring Plan is a flexible court-supervised restructuring procedure, rather than a formal insolvency process. It does not directly involve an insolvency practitioner and is specifically designed to foster a solvent rescue of a company and avoid its terminal insolvency. A Restructuring Plan can be proposed by a company, its creditors or an office holder (e.g. administrator or liquidator) if it has sufficient connection to England & Wales and has "*encountered, or is likely to encounter, financial difficulties that are affecting, or will or may affect, its ability to carry on business as a going concern*."

Creditors affected by a Restructuring Plan are entitled to vote on its terms and are placed into classes for this purpose, based on the commonality of their rights both prior to the Restructuring Plan being effected and any alteration of, or supplement to, those rights that would accrue from the terms of the Restructuring Plan. The constitution of creditor classes must be approved by the Court at a hearing where creditors are given the opportunity to challenge the classes proposed by the proponent of the Restructuring Plan. A class of creditors approves a Restructuring Plan if more than 75% of the members of the class by value of claim vote in favor of it.

A Restructuring Plan can be imposed on a class of creditors that did not vote to accept it, whether those creditors are secured or unsecured. This will occur if the following conditions are satisfied: (i) at least one class of creditors "*who would receive a payment, or have a genuine economic interest in the company, in the event of the relevant alternative*" voted in favor of the Restructuring Plan; and (ii) the dissenting creditors would not be any worse off under the Restructuring Plan than they would have been in the event of whatever the court considers most likely to occur in relation to the company (e.g. insolvent liquidation) in the absence of the Restructuring Plan. This is in addition to the general requirement for the court to be satisfied with the overall fairness of the Restructuring Plan before deciding whether to sanction it. The Restructuring Plan is a new process and so the body of case law as to how the rules will be applied by the Court is still developing.

Moratorium

The moratorium introduced by CIGA in a new Part A1 of the Insolvency Act is a new standalone tool for companies in financial distress. The directors of a company with a sufficient connection to England & Wales to be eligible for compulsory liquidation (as described above) may apply for the moratorium without first invoking

a formal insolvency proceeding if they are of the view that the company is or is likely to become unable to pay its debts, subject to certain exceptions and other eligibility criteria. An insolvency practitioner acting as the proposed monitor must then be willing to certify that a moratorium would likely result in the company being rescued as a going concern. A moratorium will initially last for 20 business days (extendable without court or creditor consent by a further 20 business days and by up to a year in total with creditor consent), giving a debtor breathing space from creditor action to enable it to pursue restructuring options.

During the moratorium the company is protected from the following forms of creditor action: (i) the enforcement of security (except where security constitutes a "security financial collateral arrangement" (as considered above); (ii) the crystallisation of any floating charges or imposition of any restrictions on the disposal of an asset subject to a floating charge; and (iii) the commencement of insolvency processes (e.g. administration or liquidation) in respect of the company. As well as the protections from creditor action outlined above, the company is relieved from paying any debts that have fallen due prior to the commencement of the moratorium or that fall due during the moratorium but were incurred prior to the moratorium, subject to a number of exclusions. One such notable exclusion from the payment holiday applies to contractual debts or liabilities relating to financial services contracts, which generally includes loan facilities and capital markets transactions.

While secured creditors are prevented from enforcing their security (unless it qualifies as a "security financial collateral arrangement"), they are entitled to call a default, accelerate their debt or demand repayment of amounts owed and terminate contracts during the moratorium. If payments cannot be made as and when they fall due, in respect of such debts to which the payment holiday does not apply, an independent monitor (appointed by the Court to oversee the moratorium) will be required to bring the moratorium to an end, likely triggering the entry into a formal insolvency process (e.g. insolvency or administration).

Limitation on Enforcement

The grant of a Guarantee or security by an English company in respect of the obligations of another company must satisfy certain legal requirements. More specifically, such a transaction must be allowed by the respective company's memorandum and articles of association. To the extent that these documents do not allow such an action, there is the risk that the grant of the Guarantee and/or security can be found to be void and the respective creditor's rights unenforceable. Some comfort may be obtained for third parties if they are dealing with an English company in good faith; however, the relevant legislation is not without difficulties in its interpretation. Further, corporate benefit must be established for the company in question by virtue of entering into the proposed transaction. Section 172 of the Companies Act 2006 provides that a director of a company must act in the way that he considers, in good faith, would be most likely to promote the success of that company for the benefit of its members as a whole. If the directors enter into a transaction where there is no or insufficient commercial benefit, they may be found as abusing their powers as directors and such a transaction may be vulnerable to being set aside by a court.

Norway

Guarantees and security interest

The obligations of the Norwegian Guarantor under a Guarantee or in connection with any security interest provided under any security documents, will be limited by such mandatory provisions of law applicable to the Norwegian Guarantor limiting the legal capacity or ability of the Norwegian Guarantor to grant or honor a guarantee as provided for in this offering memorandum, including, but not limited to, the provisions of Sections 8-7 and 8-10 of the Norwegian Private Limited Liability Companies Acts of 13 June 1997 no. 44 (the "Norwegian Companies Act").

Section 8-7 of the Norwegian Companies Acts restricts a Norwegian limited liability company from granting credit to, guaranteeing or providing security for the obligations of, its (direct and indirect) shareholders (or any affiliates of its shareholders) beyond its distributable reserves (free equity) and then, only if adequate security in favor of the company is provided for the company's repayment/recourse claim against that shareholder or affiliate. Whether the provision of credit, guarantee or security is in compliance with the Norwegian Companies Act has to be determined at the time such credit, guarantee or security is provided.

The above restrictions in Section 8-7 of the Norwegian Companies Acts are, however, subject to exceptions and pursuant to such exception the restrictions do not apply to any credit, guarantee or security for the obligations of (i) its direct or indirect Norwegian parent company and its Norwegian and foreign subsidiaries, provided that the

parent company is a Norwegian limited liability company or (ii) its direct or indirect foreign parent company and its Norwegian and foreign subsidiaries, provided that the parent company has decisive influence over the company (meaning, it typically owns more than 50% of the shares in the company) and that the credit, guarantee or security has been made in the "financial interest of the group." This exception is fairly new, and how it shall be interpreted and practiced is therefore still somewhat uncertain. However, the general perception in Norway seems to be that the term "the group's financial interests" covers quite a wide range of transactions, but that for instance transactions whose main purpose is to benefit the shareholders of the parent company and not the group (such as dividend recap-transactions and the like), will not be covered by this exception. Pursuant to the preparatory works of the Norwegian Companies Act, this condition will not be satisfied if funds from the Norwegian Guarantor are being utilized to the benefit of the group's ultimate shareholders (for example, financing distributions to the owners).

In addition to the restrictions with respect to upstream and cross-stream loans, guarantees and security outlined above, Section 8-10 of the Norwegian Companies Acts restricts a Norwegian limited liability company from granting any financial assistance (in other words, making assets available, granting credit or providing guarantees or security) in connection with the acquisition of shares in itself or its direct or indirect parent company, and these restrictions apply irrespective of whether the company whose shares are being acquired is a Norwegian or a foreign company. In order for such financial assistance to be valid and binding, the financial exposure of the Norwegian company cannot exceed the amount which the company has available for distribution of dividends to its shareholders (free equity), and the financial assistance must also be granted according to "ordinary commercial terms and principles."

Following certain amendments to the Norwegian Companies Acts that were introduced on January 1, 2020, the limitation of financial assistance to the amount of the Norwegian company's free equity does not apply for Norwegian private limited liability companies if (i) the acquirer of the shares is domiciled in the European Economic Area and (ii) the Norwegian company is, or will following the acquisition, form part of the same group as the acquirer (in other words, be controlled by the acquirer following the acquisition).

In addition, Section 8-10 provides that for a Norwegian company to grant financial assistance its board of directors must issue a report (Nw. redegjørelse) where it makes an assessment of the creditworthiness of the beneficiary of the financial assistance (meaning, the acquirer), and also gives an account of the background and the terms of the financial assistance in question. The board report must also include a declaration to the effect that (1) it will be in the interest of the company to grant the financial assistance, and (2) that the company will have sufficient equity and liquidity as required by the Norwegian Companies Acts when taking the financial assistance into account. Further, the report must address the requirement of the financial assistance being granted on ordinary commercial terms, typically by way of the target company receiving some kind of consideration for providing the financial support (for example, guarantee commission or similar from the acquirer). The financial assistance must thereafter be approved by a majority representing at least two-thirds of both the votes and share capital represented at the general meeting of shareholders of the Norwegian company. Finally, the minutes of the general meeting and the board report need to be filed with the Norwegian Register of Business Enterprises (Nw. Foretaksregisteret) before the financial assistance can be provided.

The Norwegian Companies Act restricts financial assistance made "in connection with" the acquisition of shares, which may also cover financial assistance after completion of the acquisition (such as the refinancing of an acquisition loan facility or the subsequent merger of the target company and the acquiring entity). There must, however, be sufficient connection both in time and as regards other circumstances surrounding such assistance for it to be in contravention of Section 8-10.

Section 8-10 explicitly states that the restrictions on financial assistance does not apply to other distributions made in accordance with the Norwegian Companies Acts, such as distributions by way of dividends, group contributions or share capital reductions.

The issue of corporate benefit may in some situations impose a restriction on a Norwegian limited liability company's possibility to offer a guarantee and/or provide security to shareholders in addition to the restrictions described above. Norwegian law does not have a "clear and well-defined" corporate benefit principle (stating that transactions that do not sufficiently coincide with the interest or are to the benefit of the company may be challenged), as you find in many other jurisdictions. Having said that, there are several provisions in the Norwegian Companies Act, whose main purpose are to ensure that shareholders and other related parties, board members, creditors etc., do not get what may be considered an unreasonable benefit at the expense of the Norwegian company (normally referred to as "abuse of lawful authority") and/or secure maximum profits/return for the company and its shareholders.

Financial assistance, guarantees or security infringing the limitations set out in Sections 8-7 and Section 8-10 of the Norwegian Companies Act may be declared void if challenged and may give rise to directors' liability issues. If a credit, guarantee or security is provided in contravention of these rules, any funds paid out will have to be repaid to the company. Typically, the financial assistance restrictions set out in Sections 8-7 and 8-10 are dealt with by including so-called "limitation language" in the relevant finance documents (to the effect that the Norwegian limited liability company only guarantees and secures the relevant obligations to the extent the same would not be in breach of those restrictions).

Creation and enforcement of security interest

Norwegian law strictly requires written statutory basis for establishing a security interest. Although it is not possible for a Norwegian company to provide a fixed or floating charge over all its present and future assets, Norwegian law provides for effectively creating security over a range of closely defined asset types. For example, floating charges may be established over certain asset types of a Norwegian company.

As a main rule, a secured creditor does not have a general step-in right to security assets in an enforcement situation and agreements on enforcement cannot validly be entered into prior to the occurrence of an event of default. Instead, enforcement must be sought through the Norwegian courts and/or the Norwegian enforcement authorities. However, this is different for financial instruments, such as shares in a Norwegian limited liability company. If the secured party is a financial institution or bond trustee, the shares are considered financial collateral, and the parties are free (within reasonable limits) to agree on the enforcement process in the share pledge agreement.

Also, for specific security assets, and under certain circumstances, a creditor may take possession or directly enforce its rights upon enforcement. This is the case for security established over receivables (such as trade receivables or bank account claims) whereby the secured party may instruct the relevant debtor to pay the outstanding amounts directly to the secured party instead of to the chargor.

The concept of a security trustee, as it is understood under common law, does not exist under Norwegian law. In practice, in an arrangement with a security agent acting on behalf of the secured parties, as these exist from time to time, it is generally recognized under Norwegian law that the security agent will be able to enforce the security on behalf of the secured parties and apply any proceeds to the secured parties. In order to commence any legal action regarding a claim (for enforcement purposes or otherwise) against the debtor the security agent may, however, be required to disclose to the court the identity of the creditors and have the creditors join in or participate as claimants in the proceedings. It has been established by the Norwegian Supreme Court that a bond trustee for an undisclosed number of bondholders can, based on the provisions in the bond agreement, take legal action against the issuer on behalf of and in lieu of the bondholders and without having to disclose the identity of the bondholders.

Insolvency—bankruptcy

Norwegian insolvency legislation is regulated by the Norwegian Bankruptcy Act of June 8, 1984 No. 58 (the "Norwegian Bankruptcy Act"), which sets forth the various procedures to be followed, and the Creditors Recovery Act of June 8, 1984 No. 59 (the "Norwegian Recovery Act") containing provisions on, among other things, the priority of claims.

The key features of the Norwegian bankruptcy proceedings are (i) the seizure and subsequent disposal of debtor's assets, (ii) assessment and ranking of claims, (iii) testing and revocation of transactions (including securing of existing claims) made prior to bankruptcy, (iv) handling of the debtor's contractual relationships and (v) distribution of funds (if any) in accordance with the priority rules. If the business operations of the bankrupt company are continued, they are in practice continued at the risk of, and only to the extent guaranteed by, the creditors.

Bankruptcy proceedings may be opened, provided that the debtor is insolvent. Both the debtor and the creditors (holding or pretending to hold a claim) can petition for bankruptcy. The court will request a cash deposit of NOK 59,950 (as of 2021) from the petitioning creditor (does not apply to the debtor or employee-initiated bankruptcy) to secure court fees and basic costs related to the proceedings.

The court reviews whether the procedural and material requirements for opening the procedures are fulfilled. A petition from a creditor will be served on the debtor, and a court hearing will take place within two or three

weeks after the petition has been filed with the court. The court will, pre-judicially, review any objections the debtor might have to the petition (for example, whether the creditor holds a valid claim or the debtor has a possible counterclaim, among others). The creditor has to prove by a high degree of probability both (i) that the creditor holds valid claim that is due for payment and (ii) that the debtor is insolvent.

There are two requirements for a debtor to be deemed to be insolvent. The debtor must (i) be unable to service its debt as it becomes due (the "cash flow test"), and (ii) the debtor must be in "deficit" (the company's debts must exceed the sum of its assets and revenues) (the "balance sheet test").

During bankruptcy proceedings the debtor's assets are controlled by the court appointed liquidator (generally a lawyer), on behalf of the bankruptcy estate. The bankrupt company will be controlled by the court appointed liquidator (generally a lawyer). The liquidator is often assisted and supervised by a creditors' committee, also appointed by the court. A liquidator would be in control of the company's property following insolvency and the liquidator will generally adhere to the wishes of the secured creditor as the liquidator's main purpose is to dispose of the property.

The main task of the liquidator is to turn all the debtor's assets into cash in the manner assumed to be most profitable for the estate (the creditors), and then distribute the available cash to the rightful creditors.

All of the debtor's assets will in practice be seized by the bankruptcy estate, and the debtor may not dispose of the seized assets in any way while the bankruptcy proceedings are ongoing. The bankruptcy estate may also seize assets held by third parties, if these assets are acquired from the debtor in an unlawful manner, or if the acquisition lacks legal protection, or if the transaction can be reversed according to the Norwegian Recovery Act. The bankruptcy estate is a separate legal entity, which is authorised to exercise all ownership interests/rights with respect to the seized assets, including but not limited to the realisation of assets.

The liquidator can decide that the business will continue to trade only if this is regarded as being in the best interest of the estate as such. New debt incurred by the estate will be regarded as preferential debts. The liquidator will therefore normally seek to obtain guarantees from creditors in favor of the estate (to cover debts to suppliers, etc.).

Secured creditors are, in principle, not deemed to be part of the bankruptcy proceedings to the extent the value of the security is sufficient to cover the underlying obligations of the debtor. The secured creditors may, in principle, realise the security, and cover their claims, however, keeping in mind that the realisation of a number of categories of security the first six months after the opening of a bankruptcy will be subject to the approval of the bankruptcy estate (the same principles apply to official debt negotiations). The bankruptcy estate may, subject to certain conditions being fulfilled, also decide to realise the security and divide the proceeds between the secured creditors and other holding legal rights in the assets. In particular it should be noted that a three month hardening period applies to security if such security is provided for debt already existing when the security was agreed, or if legal perfection for the security is not achieved without undue delay after the secured debt was incurred. Since the Guarantor incorporated in Norway ("Norwegian Guarantor") will provide security within 90 days of the Issue Date, there is a risk that the security will be set aside, in part or in full, if the relevant Norwegian Guarantor enters into bankruptcy or composition proceedings within three months from the date security was provided.

Furthermore, the bankruptcy estate has a statutory first lien of up to 5% of the estimated value or sales value of all assets (except financial collateral) secured by the debtor for its own debt or by a third-party for the debtor's indebtedness.

Any under-secured amount (any amount exceeding the value of the secured assets) will be deemed as an ordinary (unsecured) trade claim.

In a Norwegian bankruptcy, the creditors will be paid according to the following priority:

- Secured claims (valid and perfected security covered up to the value of the secured asset—either after the realisation by the secured creditor itself or after realisation undertaken by the bankruptcy estate);
- Super priority claims (claims which arise during the bankruptcy proceedings, liquidator's costs, obligations of the estate);
- Salary claims (within certain limitations);

- Tax claims (such as withholding tax and value-added tax within certain limitations);
- Ordinary unsecured claims (all other claims unless subordinated, including unsecured debt, trade creditors and indemnity claims);
- Subordinated claims (including interest incurred after the opening of bankruptcy proceedings, claims subordinated by agreement, liquidated damages and penalty claims).

Pursuant to the Norwegian Recovery Act, the bankruptcy estate may be entitled to set aside or reverse transactions carried out in the three up to twelve month period (and in respect of transactions in favor of related parties up to two years) before the opening of the bankruptcy, such as extraordinary payments of certain creditors, security established for old debt and transaction at under-value. The bankruptcy estate may also, under certain circumstances, be entitled to set aside or reverse transactions made in bad faith or negligently which in an improper manner increase the debtor's debt, favor one creditor at the expense of others or deprive the debtor of assets which may otherwise have served to cover the creditors' claims, in which case the time limit for challenges by the estate is increased to ten years.

It should also be noted that the bankruptcy estate has a statutory first lien of up to 5% of the respective asset's estimated value or sales value over assets mortgaged/pledged by the debtor or mortgaged/pledged by a third party for the debtor's indebtedness. Such statutory lien is not applicable to financial security pursuant to the Norwegian Financial Security Act no. 17/2004 (cash deposits and financial instruments), cf. the Norwegian Liens Act no. 2/1980 section 6-4 (9).

Insolvency—reconstruction

The provisional Norwegian Provisional Reconstruction Act of May 7, 2020 No. 38 (the "Norwegian Reconstruction Act") (in force until 1 January 2022) relates to restructuring to alleviate financial difficulties resulting from the Covid-19 outbreak. Reconstruction is a law regulated "instrument" by which the debtor may seek bankruptcy protection and protection from debt recovery proceedings, with the aim to reorganize the business and reach a composition agreement with the creditors. The reconstruction proceedings are regulated by the Norwegian Reconstruction Act, replacing, subject to certain exceptions, Part I of the Norwegian Bankruptcy Act for as long as the Reconstruction Act remains in effect.

Reconstruction proceedings may be initiated by the courts after petition from the debtor or, on certain conditions, from creditors (but may not be instituted against the will of the debtor). In order for the courts to open reconstruction proceedings, the debtor must be encountering, or will in the foreseeable future encounter severe financial difficulties. If the petition is granted, the Court shall appoint a reconstructor (who shall be an insolvency lawyer) and a creditors committee (the "Reconstruction Committee").

The key feature of the reconstruction proceedings is that all creditor collection steps are suspended, in particular:

- Payment of all pre-petition debt is suspended.
- The debtor is protected from creditor initiated bankruptcy and debt recovery and enforcement proceedings while the debtor's business is being reconstructed.
- The debtor's business is under the supervision of the Reconstruction Committee The aim of the proceedings is in essence a reconstruction of the debtor's business and to reduce the risk of unnecessary bankruptcy of viable businesses.

The Reconstruction Act distinguishes between voluntary composition and compulsory composition. A voluntary composition may in principle include any possible arrangement or composition. However, it requires an approval from each and every one of the creditors, and is only binding on those creditors who have participated in the composition (for example, not on "unknown" creditors). In a compulsory reconstruction, there are limitations with respect to the contents of the proposal. It is however binding on the minority of creditors, and also on unknown creditors.

Pursuant to the Reconstruction Act a voluntarily reconstruction may include (and a compulsory composition can only include) a:

(i) moratorium;

(ii) percentage reduction of the debt;

(iii) full or partial conversion of debt to equity (only applicable to consenting creditors);

(iv) transfer of all or parts of the debtor's business and assets, without liquidation;

(v) transfer and liquidation of all or parts of the debtor's business and assets, discharging the debtor of the obligations not covered by the liquidation; or

(vi) a combination of the above mentioned measures.

The proposed composition, together with the recommendation from the Reconstruction Committee, is distributed to all creditors included in the composition, and the creditors are requested to confirm to the Reconstruction Committee whether or not the proposed composition is accepted.

The creditors must accept or reject the composition within a time limit of minimum two, and maximum three weeks.

The voluntary composition is considered approved when it has been accepted by all the creditors included in the composition. A compulsory composition is considered approved when it has been accepted by 1/2 of the voting creditors.

If the proposed composition is rejected by any of the creditors, the proposal may be subject to negotiations and amended. The new proposal may be distributed to the creditors, always provided that the Reconstruction Committee considers that the amended debt composition is likely to be obtained. If the amended proposal is rejected, no further proposals may be distributed.

The only claims which may be excluded from the debt composition are preferential claims, secured claims, valid counterclaims, and claims below a defined threshold set out in the proposed composition.

Solvent Enforcement

Enforcement of a guarantee claim against a solvent guarantor will in principle require a final judgment by a court (unless the guarantee is written on a promissory note). Thereafter the creditor may apply to the enforcement authorities for enforcement of his claim. Enforcement of security normally requires that the pledgee/chargee files an application to enforcement authorities for the enforcement of the security. Certain types of security may, however, be enforced without the involvement of the enforcement authority or a court. A provision granting the secured party such right of enforcement is typically included in any pledge agreement between the pledgor and the secured party.

Limitation on enforcement of Security Interests

Any enforcement of a security interest created over an asset located in Norway must be conducted within the rules and regulations set out by the Norwegian Enforcement Act (1992) which sets out various enforcement procedures based on the relevant asset classes and will vary from asset class to asset class. Enforcement of security interests usually takes place through the Norwegian courts by way of an auction sale conducted by a court-appointed official. The Norwegian Enforcement Act (1992) is mandatory in the sense that the security provider and the security taker cannot, prior to an event of default, enter into an agreement that sets out different enforcement procedures than those in the Norwegian Enforcement Act. However, where the parties to a Norwegian share pledge agreement have entered into a written agreement with respect to the enforcement process in accordance with the Norwegian Financial Collateral Act (2003), the security interests over shares may be enforced without the involvement of the enforcement authorities and the security may be enforceable in accordance with the pre-agreed terms.

There is doubt as to the enforceability in Norway, in original actions or actions for the enforcement of judgments of U.S. courts, of civil liabilities predicated solely upon the federal securities laws of the United States. The United States and Norway currently do not have a treaty providing for the reciprocal recognition and enforcement of judgments. A final and conclusive judgment obtained in the United States may not be enforceable by the courts of Norway without re-examination of the merits of the case, unless (i) such judgment obtained is final and enforceable in and pursuant to the laws of the United States, (ii) a court in the United States is the agreed legal venue and the judgment is in compliance with Section 19-16 (2) of the Norwegian Civil Procedure Act (2005), (iii) enforcement of the judgment is in accordance with the mandatory provisions of the Norwegian Enforcement Act (1992) and (iv) such judgment is not in conflict with mandatory laws or is deemed offensive to the Norwegian legal order.

Brazil

Insolvency proceedings

Insolvency proceedings affecting creditors are (i) judicial reorganization (*recuperação judicial*), (ii) out-of-court reorganization (*recuperação extrajudicial*) and (iii) bankruptcy (*falência*) governed by Law No. 11,101/2005 ("Brazilian Bankruptcy Law").

Judicial reorganization

Upon filing of a request for judicial reorganization and admission of it by the court, certain creditors are refrained from enforcing their rights. Brazilian Bankruptcy Law provides for a stay period of 180 days, which can only be extended for only another 180-day period (another extension will be applicable if creditors submit an alternative judicial reorganization plan), during which the creditors cannot bring or continue any legal or foreclosure proceedings against the debtor. The judicial reorganization is not applicable to tax claims, claims that have a fiduciary lien on a specific asset, claims of lessors, owners or committed sellers of real estate where the relevant agreement includes an irrevocability or irreversibility clause; and claims that have retention of title clauses or are beneficiaries of forward exchange agreements. These creditors, however, cannot sell or remove assets which are deemed essential for the debtor's activities during the stay period, being the court overseeing the judicial reorganization the competent one to decide if an asset is essential or not.

Shareholders and directors also keep the control and management of the company, but may be removed if certain requirements are met. A court appointed trustee (*administrador judicial*) will supervise management's acts, in order to guarantee that they will comply with the legal requirements.

The debtor must present a list of creditors, classified according to the legal standards, including (i) labor credits; (ii) secured credits; (iii) unsecured credits; and (iv) small enterprise creditors (which are categorizes as such by Brazilian law based on yearly revenues). Each of those classes of creditors votes separately in the approval of the reorganization plan (cram-down procedures is admissible under Brazilian Bankruptcy Law if the reorganization plan is approved by creditors representing more than half of the amount of all claims represented at the meeting, regardless of class; by two classes of creditor—or one class if there are only two classes of creditor—; and by more than one-third of creditors belonging to the class which rejected the plan). Creditors that were not listed by the debtor are entitled to claim for inclusion (credit qualification). Creditors that disagree with the amount or classification in the list are entitled to claim for correction (correction request). Creditors will be paid accordingly to the terms and conditions of the approved reorganization plan.

The commencement of judicial and out-of-court reorganization does not have the effect of automatically terminate the company's contracts. Brazilian Bankruptcy Law has provisions seeking the super priority of DIP financing and the regulation of procedural and substantive consolidation.

Out-of-court reorganization

The out-of-court reorganization is a private settlement between the debtor and its creditors and which, despite the name, must be submitted to court to become enforceable for all the creditors belonging to the class(es)/subclass(es) of creditors subject to the proceedings. The proceeding can involve any class and type of creditors (except for tax claims and creditors holders of fiduciary lien). For the labour class, a collective negotiation with the labour union of the respective professional category shall occur.

Debtors can request the confirmation of the reorganization plan if: (i) creditors that represent more than 50% of the creditors of each class are covered by the out-of-court reorganization plan that have signed the reorganization plan; and (ii) more than 1/3 of creditors of each class have joined the reorganization plan and, within 90 days after the request for confirmation of the reorganization plan, creditors that represent more than 50% of the creditors of each class decide to join the reorganization plan. The reorganization plan will then become mandatory for all creditors of those classes after approval. In this case, debtor can request the conversion of the out-of-court reorganization to judicial reorganization. If the debtor does not have sufficient support of creditors to achieve the minimum quorum (50%) for the confirmation of the reorganization plan the judge may grant a 90-day stay period. The stay period will apply only to credits that may be subject to the reorganization plan.

Under out-of-court proceeding, shareholders and directors keep the control and management of the company. Creditors may challenge the reorganization plan or the quorum, but there are no specific legal provisions related to credit claims (*habilitação de crédito*) for out-of-court reorganization.

Bankruptcy (liquidation)

Bankruptcy can be decreed by the bankruptcy court (i) upon request of the debtor, its surviving spouse, its shareholder or any creditor; and (ii) if the company under judicial reorganization (ii.a) fails to present the reorganization plan; (ii.b.) fails to have its reorganization plan approved; (ii.c) does not comply with the provisions of the reorganization plan, (ii.c) sells relevant part of its assets in detriment to creditors not submitted to the judicial reorganization (e.g., creditors with fiduciary guarantee and/or State tax credits); or (ii.d) does not comply with the tax agreements entered into with tax authorities. Bankruptcy can also be decree whenever (i) the debtor company fails, without legal reason, to pay a debt which is represented by a protested enforceable instrument and exceeds the equivalent of 40 minimum wages; (ii) enforcement proceedings are pending and the debtor company does not pay, deposit or appoint sufficient assets within the legal term; (iii) sells its assets in advance or resorts to ruinous or fraudulent means to make payments; (iv) performs (or tries to perform by unequivocal actions) a simulate transaction or the disposal of part or all of its assets to a third party, with the objective of delaying payments or defrauding creditors; (v) transfers its place of business without the consent of all creditors and does not maintain sufficient assets to settle its liabilities; (vi) performs a fraudulent transaction to transfer its main place of business to evade the law or to prejudice a creditor; (vii) gives or increases security for an existing debt and does not maintain sufficient free and clear assets to settle its liabilities; (viii) becomes absent without leaving any competent representative with enough resources to pay the creditors; (ix) abandons its place of business or tries to hide from its domicile, head office or main place of business; and/ or (x) fails to perform an obligation due under a judicial reorganization plan.

Bankruptcy is a procedure carried out in the collective interest of the creditors of a certain debtor and culminates with a court liquidation, in which the main purpose is to sell the assets of the debtor in order to satisfy the credits held by each creditor in a legal payment order provided in the Brazilian Bankruptcy Law. In the bankruptcy, all debt and obligations denominated in foreign currency will be converted into Brazilian reais at the prevailing exchange rate on the date of declaration of the bankruptcy by the court.

When bankruptcy is declared, all debts become due and payable (including those of shareholders with unlimited and joint liability), with a pro rata deduction of interest. The debtor is automatically prevented from exercising any business activity and from managing or disposing of its assets and agreements which the debtor entered into with third parties do not terminate automatically. The trustee may perform these agreements if certain requirements are met.

For bankruptcy proceedings, there is a statutory order of preferences/privileges to be followed for payment of the credits. Brazilian Bankruptcy Law establishes the following order: (i) expenses whose advanced payment is necessary for management of the bankruptcy and labour claims related to three months prior to the bankruptcy decree, limited to 5 monthly minimum wages per employee; (ii) DIP financing; (iii) restitution claim, (iv) bankruptcy proceeding fees and labour claims related to activities rendered after the bankruptcy decree, (v) credits constituted during the judicial reorganization or after the bankruptcy decree, (vi) claims related to employee contracts and accidents, limited to 150 monthly minimum wage per employee; (vii) secured creditors (up to the value of the assets given as security); (viii) federal, state and municipal tax claims, excluding fines; (ix) unsecured creditors; (x) contractual and public fines and penalties, including tax penalties; (xi) subordinated credits and (xii) interest incurred after the bankruptcy decree.

In addition, companies in Brazil may only remit funds out of Brazil and/or convert such funds into hard currency in strict compliance with foreign exchange rules, and there can be no assurance that such companies would have the ability to convert reais into U.S. dollars or euro, nor that such companies would be able to remit such funds out of Brazil. If the debtor's assets are insufficient to pay its creditors, no interest accrues on claims (except interest on debentures and secured claims, which can be paid from the proceeds of sale of the underlying security).

Participation of holders of the Notes in insolvency legal procedures

Brazilian courts have taken different approaches regarding the representations of bondholders or noteholders in insolvency proceedings. Some courts have admitted the representation of bondholders or noteholders by the trustee or agent while others have required the direct participation of the beneficial owner of the bonds or notes, sometimes even considering the relevant note/bond as independent credit. Nonetheless, the most recent and prevailing understanding is: (i) the recognition of the trustee's capacity to represent the bondholders; and (ii) the bondholders' capability to seek segregation of their respective claims from the mass of claims represented by the trustee.

Cross-border reorganization

The recently Brazilian Bankruptcy Law reform substantially adopted the UNCITRAL (United Nations Commission on International Trade Law) Model Law on Cross-Border Insolvency. The Brazilian Bankruptcy Law now establishes the principle of cooperation among Brazilian and foreign courts regarding bankruptcy proceedings, which include direct and effective forms of enforcement of decisions and communication between courts and judicial administrators (or bankruptcy estate's foreign representative), instead of the letter rogatory.

The reform of the Brazilian Bankruptcy Law provides for the recognition of foreign proceedings, which could be considered as foreign main or non-main proceeding based on the center of main interest of the debtor. The judge of the main establishment of the debtor in Brazil will have the jurisdiction to rule on the recognition of a foreign proceeding and to cooperate with the foreign authorities. The recognition of a foreign main proceeding will automatically apply a stay of enforcement proceedings against the debtor, a stay of statute of limitations against the debtor and the ineffectiveness of any transfer on debtor's asset without a court authorization. The stay is not applicable to creditors that are not subject to the reorganization proceeding and to lawsuits that discuss illiquid claims. Preliminary injunctions may be applicable to protect the bankruptcy estate or its administration until the recognition of a foreign proceeding. After that recognition, the foreign representative of the main or non-main proceeding may request other measures to the Brazilian judge, such as hearing, collecting of evidence, information about assets and file lawsuit to protect/recover the bankruptcy estate's assets (*ação revocatória*).

The bankruptcy estate's foreign representative may request directly to the Brazilian judge. Foreign creditors will have in principle the same rights of the Brazilian creditors. If there is no similar classification in Brazil to a foreign credit, that credit will be listed as an unsecured credit.

Any insolvency proceeding in Brazil can only be requested if the debtor has assets or activities in Brazil. The Brazilian judge shall seek to cooperate and coordinate its decisions with the foreign proceeding, including in the termination of the proceeding.

Defraud of creditors

Under the allegation of defraud of creditors (*fraude contra credores*), a creditor, the judicial administrator and/or the public prosecutor may challenge transactions entered into by the Brazilian Guarantor if there is evidence that (i) the insolvency of the Brazilian Guarantor was known at the time the transaction was carried out, or should have been known; and/or (ii) the transaction was carried out with the intention of defrauding creditors, when there was a fraudulent collusion between the Brazilian Guarantor and the third party involved in the transaction; and the transaction caused effective damages and/or result in the bankruptcy of the Brazilian Guarantor. In such situation, the transaction may be declared null and void.

In a bankruptcy (forced liquidation) scenario, the court can set aside transactions which take place up to 90 days before (as the court decides) the bankruptcy decreed, the judicial reorganization request or the first protest not cancelled against the debtor due to failure of payment (*protesto de título*). These transactions include (i) payments of debts that were not due and payable; (ii) payments made in a way which differed from those set out in the relevant contractual agreement; and (iii) the granting of security to existing debts. The court can also set aside, regardless of whether the debtor intended to defraud creditors or the third party to the transaction knew of the debtor's financial difficulties, (i) transactions for no consideration carried out within two years of the declaration of the bankruptcy; and (ii) the sale of the debtor's business if the value of the debtor's assets is insufficient to pay its debts and the consent of unpaid creditors' has not been obtained, unless they have been notified of the sale and have not opposed it within 30 days. Also, the transactions entered into by the debtor may be made null and void if practiced in order to defraud creditors.

Fraud upon the execution of judgment

Under the allegation of fraud upon the execution of judgment (*fraude à execução*), a creditor may challenge transactions entered into by the Brazilian Guarantor if there is evidence that, by the time that the transaction took place (i) there was a pending claim filed against the Brazilian Guarantor; and (ii) the transaction led the Brazilian Guarantor to insolvency, i.e., the payment of the claim held by the creditor is put at risk due to the Brazilian Guarantor's lack of assets to cover the payment of the claim. In such case, it is not necessary for the creditor to produce evidentiary support of the fraud (neither guilt, nor evidence of intention), which may be presumed under special circumstances.

Enforceability of U.S. judgments

Under Brazilian law, judgments of U.S. courts (whether or not such judgments relate to U.S. federal or state securities laws) may only be enforceable in Brazil if they have been previously ratified by the Superior Court of Justice of Brazil (*Superior Tribunal de Justiça*). Such ratification may only be granted if the judgment (i) fulfils all formalities required for its enforceability under the laws of the jurisdiction where the judgment was rendered; (ii) is issued by a competent court after proper service of process on the parties, which service of process if made in Brazil must comply with Brazilian law; (iii) the foreign judgment has become final and is not subject to appeal; (iv) is authenticated by the Brazilian consulate with jurisdiction over the country where the judgment was issued and is accompanied by a certified translation into Portuguese; (v) is for the payment of a fixed sum; (vi) is not against Brazilian public policy, good morals or national sovereignty and does not contain any provision which for any reason would not be upheld by courts of Brazil; and (vii) the foreign judgment is not rendered in an action upon which Brazilian courts have exclusive jurisdiction. Notwithstanding, the confirmation process may be time-consuming and may also give rise to difficulties in enforcing the foreign judgment in Brazil. Accordingly, we cannot assure that such confirmation would be obtained, that the process described above could be conducted in a timely manner or that a Brazilian court would enforce a monetary judgment for violation of the U.S. securities laws with respect to the Notes and the Note Guarantees.

The ability of a judgment creditor to satisfy a judgment by attaching certain assets of the defendant is limited by provisions of Brazilian law. In addition, a plaintiff, whether Brazilian or non-Brazilian, who resides outside Brazil or is outside Brazil during the course of the litigation in Brazil and who does not own real property in Brazil must provide a bond to guarantee the payment, except for (i) lawsuits seeking to enforce titles and judgments; (ii) counterclaims; or (iii) when an international treaty or agreement to which Brazil is a party otherwise provides. The bond must be sufficient to satisfy the payment of the defendant's legal fees and court expenses in connection with court procedures for the collection of payments under the Notes and the Note Guarantees. This requirement does not apply to the enforcement of foreign judgments which have been confirmed by the Brazilian Superior Court of Justice.

LEGAL MATTERS

Certain legal matters in connection with the validity of the Notes will be passed on for us by Linklaters LLP, Paris, France, who are acting as our special United States federal and New York state law counsel and our French legal advisors. The Initial Purchasers have been represented by Cravath, Swaine & Moore LLP, London, United Kingdom, who are acting as United States federal and New York state law counsel to the Initial Purchasers, and by Bredin Prat, Paris, France, who are acting as French counsel to the Initial Purchasers.

INDEPENDENT AUDITORS

Our Consolidated Financial Statements that are included elsewhere in this offering memorandum have been audited by Ernst & Young et Autres and Mazars, each independent auditors, as stated in their reports appearing herein.

SERVICE OF PROCESS AND ENFORCEMENT OF LIABILITIES

France

The Issuer is an entity organized under the laws of France with its registered offices or principal places of business in France. Certain of our directors, officers and other executives are neither residents nor citizens of the United States (the "French Individuals"). Furthermore, most of the assets of the Issuer or the French Individuals are located outside the United States. As a result, it may not be possible for investors to effect service of process upon such persons and entities, or to enforce against them judgments of U.S. courts predicated upon the civil liability provisions of U.S. federal or state securities laws within the United States. However, it may be possible for investors to effect service of process within France upon those persons or entities, provided that The Hague Convention on the Service Abroad of Judicial and Extrajudicial Documents in Civil or Commercial Matters of November 15, 1965 is complied with.

The following is a summary of certain legal aspects of French law regarding the enforcement of civil law claims connected with the Notes against the Issuer and/or French Individuals.

The United States and France are not parties to a treaty providing for the reciprocal recognition and enforcement of judgments, other than arbitral awards rendered in civil and commercial matters. Accordingly, a judgment rendered by any U.S. federal or state court based on civil liability, whether or not predicated solely upon U.S. federal or state securities laws, would not directly be recognized or enforceable in France.

A party in whose favor such judgment was rendered could initiate enforcement proceedings (*exequatur*) in France before the relevant civil court (*Tribunal judiciaire*) that has exclusive jurisdiction over such matter.

Enforcement in France of such U.S. judgment could be obtained following proper (i.e., *non ex parte*) proceedings if such U.S. judgment is enforceable in the United States and if the French civil court is satisfied that the following conditions have been met (which conditions, under prevailing French case law, do not include a review by the French civil court of the merits of the foreign judgment):

- such U.S. judgment was rendered by a court having jurisdiction over the matter because the dispute is sufficiently or substantially connected to the jurisdiction of such court, the choice of the U.S. court was not fraudulent and the French courts did not have exclusive jurisdiction over the matter;
- such U.S. judgment does not contravene French international public policy rules, both pertaining to the merits and to the procedure of the case, including fair trial rights;
- such U.S. judgment is not tainted with fraud under French law; and
- such U.S. judgment does not conflict with a French judgment or a foreign judgment that has become effective in France, and there are no proceedings pending before French courts at the time enforcement of the U.S. judgment is sought and having the same or similar subject matter as such U.S. judgment (in this latter case, exequatur proceedings may be stayed).

In addition to these conditions, it is well established that only final and binding foreign judicial decisions (i.e. those having a *res judicata effect*) can benefit from an exequatur under French law. If the French civil court is

satisfied that such conditions are met, the U.S. judgment will benefit from the *res judicata* effect as of the date of the decision of the French civil court and will thus be declared enforceable in France. However, the decision granting the exequatur is subject to appeal.

In addition, the discovery process under actions filed in the United States could be adversely affected under certain circumstances by French law No. 68 678 of July 26, 1968, as modified by French law No. 80 538 of July 16, 1980 and French Ordinance No. 2000 916 of September 19, 2000 (relating to the communication of documents and information of an economic, commercial, industrial, financial or technical nature to foreign authorities or persons), which could prohibit or restrict obtaining evidence in France or from French persons in connection with a judicial or administrative U.S. action. Pursuant to the regulations above, the U.S. authorities would have to comply with international (the 1970 Hague Convention on the Taking of Evidence Abroad) or French procedural rules to obtain evidence in France or from French persons.

Similarly, European and French data protection rules (including Regulation (EU) 2016/679 of the European Parliament and of the Council of April 27, 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data and French law No. 78 17 of January 6, 1978 on data processing, data files and individual liberties, as modified) can limit under certain circumstances the possibility of obtaining information in France or from French persons in connection with a judicial or administrative U.S. action in a discovery context.

Furthermore, if an original action is brought in France, French courts may refuse to apply foreign law designated by the applicable French rules of conflict (including the law chosen by the parties to govern their contract) if the application of such law (in the case at hand) is deemed to contravene French international public policy (as determined on a case by case basis by French courts) or in case of applicable overriding mandatory rules. Furthermore, in an action brought in France on the basis of U.S. federal or state securities laws, French courts may not have the requisite power to grant all the remedies sought.

Pursuant to Article 14 of the French Civil Code, a French national (either a company or an individual) can sue a foreign defendant before French courts. Pursuant to Article 15 of the French Civil Code, a French national can be sued by a foreign claimant before French courts (Article 15). For a long time, case law has interpreted these provisions as meaning that a French national, either claimant or defendant, could not be forced against its will to appear before a jurisdiction other than French courts. However, according to recent case law, the French courts' jurisdiction over French nationals is not mandatory to the extent an action has been commenced before a court in a jurisdiction that has sufficient contacts with the dispute and the choice of jurisdiction is not fraudulent, and does not prevent the recognition and enforcement of the decision of such foreign court. In addition, a French national may waive its rights to benefit from the provisions of Articles 14 and 15 of the French Civil Code, including by way of conduct by voluntarily appearing before the foreign court.

It must be noted that under Regulation (EU) No. 1215/2012 of the European Parliament and of the Council of December 12, 2012, as regards legal actions falling within the scope of said Regulation, the privileges granted to French nationals pursuant to Articles 14 and 15 of the French Civil Code may not be invoked against a person domiciled in an EU Member State. Conversely, pursuant to Article 6.2 of Regulation (EU) No. 1215/2012, the privilege granted by Article 14 of the French Civil Code may be invoked by a claimant domiciled in France, regardless of the claimant's nationality, to sue before French courts a defendant domiciled outside the EU.

There are diverging positions amongst the chambers of the French Supreme Court (*Cour de Cassation*) regarding the validity of a contractual provision submitting one party to the exclusive jurisdiction of a court and giving another party the discretionary option to choose any competent jurisdiction. On the one hand, further to several decisions – the most recent dated 3 October 2018 – the first civil chamber of the *Cour de Cassation* seems to consider that, unless the competent courts can be identified by reference to objective elements or jurisdiction rules in force in a Member State, unilateral jurisdiction clauses do not comply with the objective of foreseeability set out in the international instruments applicable in these cases and are therefore invalid. On the other hand, the Commercial Chamber of the French Supreme Court (*Cour de Cassation*) has held that a unilateral jurisdiction clause is valid, by a decision rendered on 11 May 2017. Accordingly, any provisions to the same effect in any relevant documents may not be binding on the party having agreed to the exclusive jurisdiction of a court.

The Netherlands

CGG Holding B.V. is a private limited liability company incorporated under Dutch law and has its registered seat in the Netherlands. A substantial portion of its assets is located in the Netherlands or elsewhere outside the United States. In addition, some of the members of its managing board are residents of the Netherlands and a

substantial portion of its assets are also located in the Netherlands. Civil liabilities based on the securities laws of the United States may not be enforceable in the Netherlands, either in an original action or in an action to enforce a judgment obtained in US courts. As a result, it may be difficult for investors to effect service of process upon CGG Holding B.V. or the members of its managing board.

Furthermore, the Netherlands does not currently have a treaty with the United States providing for the reciprocal recognition and enforcement of judgments (other than arbitration awards) in civil and commercial matters. Therefore, a final judgment for the payment of money rendered by any court in any federal or state court in the United States based on civil liability, whether or not predicated solely upon US federal securities laws, would not automatically be recognized or enforceable in the Netherlands.

In order to obtain a judgment that is enforceable in the Netherlands, the claim must be re-litigated before a competent Dutch court and the judgment rendered by the foreign court must be submitted in the course of such proceedings, in which case the Dutch court will have to decide whether and to what extent it, given the circumstances of the case, will recognize the foreign judgment. A Dutch court will, under current practice, generally grant the same judgment without substantive re-examination or re-litigation analysis on the merits if (i) the foreign court rendering that judgment has jurisdiction over the matter on internationally acceptable grounds and (ii) has conducted the proceedings in accordance with generally accepted principles of fair trial (*behoorlijke rechtspleging*), (iii) that judgment does not contravene public policy (*openbare orde*) of the Netherlands, (iv) the foreign judgment is not in conflict with a decision rendered by a Dutch court between the same parties, or with an earlier judgment rendered by a foreign court in proceedings involving the same cause of action and between the same parties, provided that the earlier decision can be recognized in the Netherlands, and (v) the foreign judgment is—according to the law of its country of origin—formally capable of being enforced (e.g. is readily enforceable, has not been annulled in appeal or its enforceability has not been subject to a certain time frame).

Subject to the foregoing and provided that service of process occurs in accordance with applicable treaties, investors may be able to enforce in the Netherlands, judgments in civil and commercial matters obtained from US federal or state courts. No assurance can be given, however, that these judgments will be enforceable. In addition, it is doubtful whether a Dutch court would accept jurisdiction and impose civil liability in an original action commenced in the Netherlands and predicated solely upon US federal securities laws.

Any enforcement of agreements governed by foreign law and any foreign judgments in the Netherlands will be subject to the rules of Dutch civil procedure. Judgments may be rendered in a foreign currency but enforcement is executed in EUR at the applicable rate of exchange. Enforcement of obligations in the Netherlands will be subject to the nature of the remedies available in the Dutch courts. Under certain circumstances, a Dutch court has the power to stay proceedings (*aanhouden*) or to declare that it has no jurisdiction, if concurrent proceedings are being brought elsewhere.

A Dutch court may reduce the amount of damages granted by a US court and recognize damages only to the extent that they are necessary to compensate actual losses or damages.

England and Wales

CGG Services (UK) Limited is incorporated in and has its principal office in England and Wales. All of its directors and executive officers live outside the United States. All the assets of the directors and executive officers of CGG Services (UK) Limited are located outside the United States. As a result, it may not be possible for you to serve process on such persons or CGG Services (UK) Limited in the United States or to enforce judgments obtained in U.S. courts against such persons or CGG Services (UK) Limited including judgments based on the civil liability provisions of the federal or state securities laws of the United States.

The United States and England currently do not have a treaty providing for the reciprocal recognition and enforcement of judgments (as opposed to arbitration awards) in civil and commercial matters. To the extent that recognition and enforcement is necessary elsewhere, you should consult with your own advisers in any relevant jurisdictions. Consequently, a final judgment for payment rendered by any federal or state court in the United States based on civil liability, whether or not predicated solely upon U.S. federal securities laws, would not automatically be recognized or enforceable in England and Wales. In order to enforce any such U.S. judgment in England, proceedings must first be initiated before a court of competent jurisdiction in England and Wales. In such an action, the English court would not generally reinvestigate the merits of the original matter decided by the U.S. court (subject to what is described below) and it would usually be possible to obtain summary judgment on such a claim (assuming that the defence to it has no real prospect of success and there is no other compelling

reason for trial). Recognition and enforcement of a U.S. judgment by an English court in such an action is conditional upon (among other things) the following:

- the U.S. court having had, at the time when proceedings were served, jurisdiction over the original proceedings according to English conflicts of laws principles;
- the U.S. judgment being final and conclusive on the merits in the sense of being final and unalterable in the court which pronounced it and being for a definite sum of money; and
- the U.S. judgment not being for a sum payable in respect of taxes, or other charges of a like nature or in respect of a penalty or fine or otherwise based on a U.S. law that an English court considers to relate to penal, revenue or other public law.

An English court may refuse to enforce such a judgment if the judgment debtor satisfies the court that:

- the U.S. judgment contravenes English public policy;
- the U.S. judgment has been arrived at by doubling, trebling or otherwise multiplying a sum assessed as compensation for the loss or damages sustained, is otherwise specified in Section 5 of the Protection of Trading Interests Act 1980 or is based on measures designated by the Secretary of State under Section 1 of the Act;
- the U.S. judgment has been obtained by fraud or in breach of English principles of natural or substantial justice;
- the U.S. judgment is a judgment on a matter previously determined by an English court or another court whose judgment is entitled to recognition in England or conflicts with an earlier judgment of such court;
- the English enforcement proceedings were not commenced within the relevant limitation period; or
- the U.S. judgment was obtained contrary to an agreement for the settlement of disputes under which the dispute in question was to be settled otherwise than by proceedings in a United States court (to whose jurisdiction the judgment debtor did not submit).

Only subject to the foregoing may investors be able to enforce in England judgments that have been obtained from U.S. federal or state courts in civil and commercial matters. Notwithstanding the preceding, we cannot assure you that those judgments will be recognized or enforceable in England. In addition, we cannot assure you whether an English court would accept jurisdiction and impose civil liability if the original action was commenced in England, instead of the United States, and predicated solely upon U.S. federal securities laws.

Norway

A civil judgment/ruling or in-court settlement (a "judgment") against a Norwegian party passed by the courts of a foreign state may be recognized and enforceable in Norway if (i) such judgement concerns civil or commercial matter to which the Lugano Convention on the Recognition of Judgments in Civil and Commercial Matters applies, and such state is a Contracting State (as defined in the Lugano Convention) or (ii) such state is a state with which Norway has entered into a convention on the mutual recognition and enforcement of judgments, or (iii) the jurisdiction of the foreign court has been specifically agreed between the parties in a defined legal relationship in accordance with the Norwegian Civil Procedure Act of June 17, 2005 No. 90 section 4-6. The Lugano Convention does not apply to (i) the status or legal capacity of natural persons, rights in property arising out of a matrimonial relationship, wills and succession; (ii) bankruptcy, proceedings relating to the winding up of insolvent companies or other legal persons, judicial arrangements, compositions and analogous proceedings; (iii) social security; or (iv) arbitration.

Foreign arbitral awards are enforceable in Norway pursuant to the Norwegian Arbitration Act of 14 May, 2004 No 25 section 45 and 46 which reflects the rules of the New York Convention (to which Norway has acceded).

Furthermore, a judgment will only be recognized or enforceable as a matter of right if it is (i) final, non-appealable, conclusive and enforceable in and pursuant to the laws of the country in which it has been passed, and (ii) not given in default of appearance (and the legal action opening the case was not served to the defendant), or is not irreconcilable with a judgment given in a dispute between the same parties Norway or with an earlier judgment given in another state bound by the Lugano Convention or in a third state involving the same cause of action and between the same parties, pursuant to the Lugano Convention article 34, and (iii) the recognition and enforcement of the judgment is not considered to be in conflict with decency or Norwegian mandatory law or public policy ("ordre public"), cf. the Norwegian Civil Procedure Act of June 17, 2005 No. 90 section 19-16.

The foregoing could imply, inter alia, that judgments by U.S. courts may not be recognized or enforceable in Norway as a matter of right. However, such judgments may be admissible as evidence in the courts of law, executive or other public authorities of Norway and may, assuming the same applicable law applies (lex causae), in such capacity carry persuasive authority depending on the merits of the judgment and therefore could limit the need for a full retrial on its merits.

Brazil

The Brazilian Guarantor is a limited liability corporation organized under the laws of Brazil. Substantially all of its officers reside in Brazil or elsewhere outside the United States. In addition, all or a substantial portion of its assets and substantially all of the assets of its officers are likely located outside the United States. As a result, it may not be possible for investors to effect service of process upon these persons within the United States or other jurisdictions outside Brazil, which may be time-consuming, or to enforce against them judgments predicated upon the civil liability provisions of the U.S. federal securities laws or the laws of such other jurisdictions.

Judgments of non-Brazilian courts for civil liabilities predicated upon the securities laws of countries other than Brazil, including U.S. securities laws, may be enforced in Brazil subject to certain requirements, as described below. A judgment against the Brazilian Guarantor or any of its officers obtained outside Brazil would be enforceable in Brazil against the Brazilian Guarantor or any such person without retrial or reexamination of the merits, upon confirmation of that judgment by the Brazilian Superior Court of Justice (*Superior Tribunal de Justiça*). That confirmation, generally, will occur if:

- is effective and complies with all formalities required for enforcement under the laws of the jurisdiction where it was rendered;
- is issued by a court of competent jurisdiction after proper service of process on the parties and such service of process either complies with Brazilian law, if made in Brazil, or, after sufficient evidence of the parties' absence has been given, as required by applicable law;
- is final and thus, not subject to appeal;
- is apostilled by the appropriate authority of the state rendering such foreign judgment in accordance with the Hague Convention of October 5, 1961 Abolishing the Requirement of Legalization for Foreign Public Documents, or the Apostille Convention, or, if the rendering state is not a signatory to the Apostille Convention, is duly authenticated by the appropriate Brazilian consulate;
- does not violate a final and unappealable decision issued by a Brazilian court;
- is translated into Portuguese by a certified translator in Brazil, unless an exemption is provided by an international treaty to which Brazil is a signatory;
- is not contrary to Brazilian national sovereignty, public policy, public morality or human dignity; and
- does not violate the exclusive jurisdiction of the Brazilian judiciary authority.

The confirmation process may be time-consuming and may also give rise to difficulties in enforcing the foreign judgment in Brazil. Accordingly, if any suit, action or proceeding in connection with the Notes are brought against the Brazilian Guarantor in a non-Brazilian court, we cannot assure you that confirmation would be obtained, that the confirmation process would be conducted in a timely manner or that a Brazilian court would enforce a monetary judgment for violation of the securities laws of countries other than Brazil, including U.S. securities laws. A plaintiff, whether Brazilian or non-Brazilian, who resides outside Brazil or is outside Brazil during the course of litigation in Brazil regarding the Notes must provide a bond to guarantee the payment of court expenses and defendant's legal fees, if the plaintiff owns no real property in Brazil that may secure such payment, except for (i) lawsuits seeking to enforce titles and judgments; (ii) counterclaims; or (iii) when an international treaty or agreement to which Brazil is a party otherwise provides, as established under Article 83 *caput* and §§1, I, II and III of the Brazilian Code of Civil Procedure. The bond must be sufficient to satisfy the payment of court fees and the defendant's attorney fees, as determined by a Brazilian judge. This requirement does not apply to the enforcement of foreign judgments which have been confirmed by the Brazilian Superior Court of Justice.

Additionally, if the Notes or the relevant documentation were to be declared void by a court applying their governing laws, a judgment obtained outside Brazil seeking to enforce the guarantee provided by the Brazilian Guarantor to the Notes may not be confirmed by the Brazilian Superior Court of Justice.

GENERAL INFORMATION

Share Capital of the Issuer

As of March 1, 2021, we had issued share capital of €7,113,935, divided into 711,393,503 ordinary shares of €0.01 nominal value each, all of which were fully paid.

Corporate Authorizations

The issue of the Notes was authorized pursuant to a resolution of the Board of Directors of the Issuer adopted on March 4, 2021. The Guarantees were authorized by the Board of Directors of each Guarantor.

Listing of the Notes

Application has been made to admit the Notes to listing on the Luxembourg Stock Exchange and to trading on the Euro MTF. The Issuer will send all notices to Noteholders in accordance with the provisions set out in "*Description of the Notes—Notices*".

Clearing of the Notes

The Dollar Notes have been accepted for clearance through the facilities of DTC under the following securities codes: a Dollar Rule 144A Global Note will have a CUSIP of 12531T AF6, an ISIN of US12531TAF66 and a common code of 232452986 and a Dollar Regulation S Global Note will have a CUSIP of F1704U AJ3, an ISIN of USF1704UAJ37 and a common code of 232453001.

The Euro Notes have been accepted for clearance and settlement with Euroclear and Clearstream under the following securities codes: a Euro Rule 144A Global Note will have an ISIN of XS2324372510 and a common code of 232437251 and a Euro Regulation S Global Note will have an ISIN of XS2324372270 and a common code of 232437227.

The Issuer's LEI is 969500FCVQ5SLAAUJV59.

No Material Adverse Change

Except as disclosed in this offering memorandum, there has been no significant change in the financial or trading position of the Issuer or the Group since December 31, 2020 and no material adverse change in the financial position or prospects of the Issuer or the Group since December 31, 2020.

Litigation

Except as disclosed in this offering memorandum, neither we nor any of our subsidiaries are involved in any litigation, arbitration or administrative proceedings relating to amounts which, individually or in the aggregate, are material in the context of the issue of the Notes and, to the best of our knowledge, there are no such litigation, arbitration or administrative proceedings pending or threatened.

Significant Subsidiaries

For the year ended December 31, 2020, four subsidiaries (CGG do Brasil Participações, Sercel SAS, CGG Services (U.S.) Inc. and CGG Services (Norway) AS), each represented more than 10% of our consolidated revenues.

Sercel SAS is held 99.99996% by the Issuer and 0.00004% by Sercel Holding SAS, and is primarily engaged in the design, manufacturing and sale of seismic acquisition equipment and associated services. Sercel SAS represented 21% of our consolidated operating revenues for the year ended December 31, 2020 and 12% of our consolidated total assets (excluding assets held for sale) as of December 31, 2020. Sercel SAS's registered office is at 16 rue de Bel Air, 44470 Carquefou, France. Sercel SAS had issued share capital of €2,000,000 as of December 31, 2020, divided into 5,000,000 shares, all of which were fully paid.

Information about CGG do Brasil Participações, CGG Services (U.S.) Inc. and CGG Services (Norway) AS is provided below.

The Guarantors

Each of the Guarantors is, directly or indirectly, a wholly-owned subsidiary of the Issuer.

CGG Holding (U.S.) Inc., a corporation incorporated under the laws of the State of Delaware, is a wholly-owned subsidiary of CGG Holding B.V. and an indirect wholly-owned subsidiary of the Issuer operating as a holding company. CGG Holding (U.S.) Inc. represented 0% of our consolidated operating revenues for the year ended December 31, 2020 and 12% of our consolidated total assets (excluding assets held for sale) as of December 31, 2020. CGG Holding (U.S.) Inc. is located at 10300 Town Park Drive, Houston, Texas, 10300, United States of America. CGG Holding (U.S.) Inc. had issued share capital of US$1 as of December 31, 2020, divided into 100 shares, all of which were fully paid.

CGG Holding B.V., a wholly-owned subsidiary of the Issuer, primarily operates as a holding company of certain subsidiaries. CGG Holding B.V. represented 0% of our consolidated operating revenues for the year ended December 31, 2020 and 21% of our consolidated total assets (excluding assets held for sale) as of December 31, 2020. CGG Holding B.V.'s registered office is located at Bordewijklaan 58, 2591 XR, the Hague, the Netherlands, and its corporate seat (*statutaire zetel*) at Amsterdam, the Netherlands. CGG Holding B.V. had issued share capital of €93,810,240 as of March 4, 2021, divided into 4,690,512 shares, all of which were fully paid.

CGG do Brasil Participações, a 99.99% owned subsidiary of the Issuer, primarily operates as a provider of services from seismic data acquisition, multi-client surveys and their licensing, seismic imaging, reservoir services. CGG do Brasil Participações represented 11% of our consolidated operating revenues for the year ended December 31, 2020 and 3% of our consolidated total assets (excluding assets held for sale) as of December 31, 2020. CGG do Brasil Participações's registered office is located at Avenida Presidente Wilson, n°231 – 15º andar, Centro—Rio de Janeiro—RJ—Brazil, CEP 20.030-021. CGG do Brasil Participações had issued share capital of BRL30,500,715.39 as of December 31, 2020, divided into 3,050,071,539 shares, all of which were fully paid.

CGG Services (Norway) AS, a wholly-owned subsidiary of the CGG Holding B.V., primarily operates as a provider of services from sale and planning of multi-client activity, advanced data acquisition, seismic imaging, reservoir services and data management. CGG Services (Norway) AS represented 12% of our consolidated operating revenues for the year ended December 31, 2020 and 3% of our consolidated total assets (excluding assets held for sale) as of December 31, 2020. CGG Services (Norway) AS's registered office is located at Lilleakerveien 6A, 0283 Oslo, Norway. CGG Services (Norway) AS had issued share capital of NOK12,000,000 as of December 31, 2020, divided into 10,000 shares, all of which were fully paid.

CGG Services (UK) Limited, a wholly-owned subsidiary of the CGG Holding B.V., primarily operates as a provider of geological, geophysical and reservoir products and services. CGG Services (UK) Limited represented 8% of our consolidated operating revenues for the year ended December 31, 2020 and 6% of our consolidated total assets (excluding assets held for sale) as of December 31, 2020. CGG Services (UK) Limited's registered office is located at Crompton Way, Manor Royal Estate, Crawley, West Sussex, RH10 9QN, United Kingdom. CGG Services (UK) Limited had issued share capital of US$98,651,500 as of December 31, 2020, divided into 98,651,500 shares, all of which were fully paid.

CGG Services (U.S.) Inc., a wholly-owned subsidiary of the CGG Holding (U.S.) Inc., is primarily engaged in acquiring marine seismic data in U.S. waters for third parties on a contract basis, acquiring, processing and licensing marine multi-client library data, and processing seismic data for third parties. CGG Services (U.S.) Inc. represented 15% of our consolidated operating revenues for the year ended December 31, 2020 and 5% of our consolidated total assets (excluding assets held for sale) as of December 31, 2020. CGG Services (U.S.) Inc.'s registered office is located at 1209 Orange Street, Wilmington, Delaware 19801, United States of America. CGG Services (U.S.) Inc. had issued share capital of US$100 as of December 31, 2020, divided into 1,000 shares, all of which were fully paid.

CGG Land (U.S.) Inc., a wholly-owned subsidiary of CGG Services (U.S.) Inc., is primarily engaged in acquiring seismic data on land in the U.S. for third parties on a contract basis and acquiring and licensing U.S. land multi-client library data. CGG Land (U.S.) Inc. represented 1% of our consolidated operating revenues for the year ended December 31, 2020 and 3% of our consolidated total assets (excluding assets held for sale) as of December 31, 2020. CGG Land (U.S.) Inc.'s registered office is located at 1209 Orange Street, Wilmington, Delaware 19801, United States of America. CGG Land (U.S.) Inc. had issued share capital of US$1,000 as of December 31, 2020, divided into 1,000 shares, all of which were fully paid.

Sercel-GRC Corp., a wholly-owned subsidiary of Sercel Inc., is primarily engaged in the design, manufacturing and sale of downhole sensors and gauges for the oil and gas industry. Sercel-GRC Corp. represented 1% of our consolidated operating revenues for the year ended December 31, 2020 and 1% of our consolidated total assets

(excluding assets held for sale) as of December 31, 2020. Sercel-GRC Corp.'s registered office is located at 17200 Park Row, 77084 Texas, Houston, United States of America. Sercel-GRC Corp. had issued share capital of US$500 as of December 31, 2020, divided into 500 shares, all of which were fully paid.

Sercel Inc., is held at 81% by CGG Holding (U.S.) Inc. and at 19% by Sercel Holding SAS, is primarily engaged in the design, manufacturing and sale of downhole sensors and gauges for the oil and gas industry. Sercel Inc. represented 4% of our consolidated operating revenues for the year ended December 31, 2020 and 4% of our consolidated total assets (excluding assets held for sale) as of December 31, 2020. Sercel Inc.' registered office is located at 17200 Park Row, 77084 Texas, Houston, United States of America. Sercel Inc. had issued share capital of US$64,779 as of December 31, 2020, divided into 64,779 shares, all of which were fully paid.

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2019-2020 CGG CONSOLIDATED FINANCIAL STATEMENTS

Consolidated statement of operations

In millions of US$	Notes	Year 2020	Year 2019
Operating revenues	18, 19	886.0	1,355.9
Other income from ordinary activities		0.7	0.7
Total income from ordinary activities		**886.7**	**1,356.6**
Cost of operations		(725.9)	(967.0)
Gross profit		**160.8**	**389.6**
Research and development expenses – net	20	(18.6)	(23.6)
Marketing and selling expenses		(32.5)	(47.0)
General and administrative expenses		(67.9)	(66.2)
Other revenues (expenses) – net	21	(214.5)	(9.3)
Operating income	**19**	**(172.7)**	**243.5**
Cost of financial debt – gross		(136.3)	(135.2)
Income from cash and cash equivalents		2.2	3.5
Cost of financial debt – net	**22**	**(134.1)**	**(131.7)**
Other financial income (loss)	23	(39.4)	5.6
Income (loss) before income taxes and share of income (loss) from companies accounted for under the equity method		**(346.2)**	**117.4**
Income taxes	24	(29.5)	8.9
Net income (loss) before share of net income (loss) from companies accounted for under the equity method		**(375.7)**	**126.3**
Net income (loss) from companies accounted for under the equity method	8	0.1	(0.1)
Net income (loss) from continuing operations		**(375.6)**	**126.2**
Net income (loss) from discontinued operations [a]	5	(62.5)	(187.7)
Consolidated net income (loss)		**(438.1)**	**(61.5)**
Attributable to:			
Owners of CGG	$	(441.8)	(69.1)
Non-controlling interests	$	3.7	7.6
Weighted average number of shares outstanding	29	710,739,746	709,950,455
Weighted average number of shares outstanding adjusted for dilutive potential ordinary shares	29	710,739,746	711,922,761
Net income (loss) per share			
- Base	$	(0.62)	(0.10)
- Diluted	$	(0.62)	(0.10)
Net income (loss) from continuing operations per share			
- Base	$	(0.53)	0.17
- Diluted	$	(0.53)	0.17
Net income (loss) from discontinued operations per share [a]			
- Base	$	(0.09)	(0.26)
- Diluted	$	(0.09)	(0.26)

(a) See note 5 for more information regarding the impact of IFRS 5 "Non-current assets held for sale and discontinued operations".

The accompanying notes are an integral part of the consolidated financial statements.

Consolidated statement of comprehensive income (loss)

In millions of US$	Year 2020 *	2019 *
Net income (loss) from consolidated statement of operations	**(438.1)**	**(61.5)**
Other comprehensive income to be reclassified in profit (loss) in subsequent period:		
Net gain (loss) on cash flow hedges	-	0.2
Variation in translation adjustments	20.3	(1.9)
Net other comprehensive income to be reclassified in profit (loss) in subsequent period (1)	**20.3**	**(1.7)**
Other comprehensive income not to be classified in profit (loss) in subsequent period:		
Net gain (loss) on actuarial changes on pension plan	(6.8)	(7.1)
Net other comprehensive income not to be reclassified in profit (loss) in subsequent period (2)	**(6.8)**	**(7.1)**
Total other comprehensive income (loss) for the period, net of taxes (1)+(2)	**13.5**	**(8.8)**
Total comprehensive income (loss) for the period	**(424.6)**	**(70.3)**
Attributable to:		
Owners of CGG	(431.0)	(77.2)
Non-controlling interests	6.4	6.9

* *Including other comprehensive income related to discontinued operations which is not material.*

The accompanying notes are an integral part of the consolidated financial statements.

Consolidated statement of financial position

In millions of US$	Notes	12.31.2020	12.31.2019
ASSETS			
Cash and cash equivalents	28	385.4	610.5
Trade accounts and notes receivable, net	3, 18	325.0	436.0
Inventories and work-in-progress, net	4	237.8	200.1
Income tax assets		84.6	84.9
Other current financial assets, net	7, 14	13.7	-
Other current assets, net	4	92.0	116.7
Assets held for sale, net [a]	5	117.7	316.6
Total current assets		**1,256.2**	**1,764.8**
Deferred tax assets	24	10.3	19.7
Investments and other financial assets, net	7	13.6	27.4
Investments in companies accounted for under the equity method	8	3.6	3.0
Property plant & equipment, net	9	268.1	300.0
Intangible assets, net	10	639.2	690.8
Goodwill, net	11	1,186.5	1,206.9
Total non-current assets		**2,121.3**	**2,247.8**
TOTAL ASSETS		**3,377.5**	**4,012.6**
LIABILITIES AND EQUITY			
Bank overdrafts	13	0.2	-
Financial debt – current portion	13	58.6	59.4
Trade accounts and notes payable		96.7	117.4
Accrued payroll costs		106.6	156.6
Income taxes payable		56.8	59.3
Advance billings to customers		19.5	36.9
Provisions – current portion	16	52.7	50.0
Other current financial liabilities	14	34.4	-
Other current liabilities	12	278.6	327.3
Liabilities associated with non-current assets held for sale [a]	5	13.0	259.2
Total current liabilities		**717.1**	**1,066.1**
Deferred tax liabilities	24	16.3	10.4
Provisions – non-current portion	16	51.8	58.1
Financial debt – non-current portion	13	1,330.3	1,266.6
Other non-current financial liabilities	14	53.0	-
Other non-current liabilities	12	44.4	4.0
Total non-current liabilities		**1,495.8**	**1,339.1**
Common stock [b]	15	8.7	8.7
Additional paid-in capital		1,687.1	3,184.7
Retained earnings		(480.6)	(1,531.1)
Other Reserves		(37.3)	(23.5)
Treasury shares		(20.1)	(20.1)
Cumulative income and expense recognized directly in equity		(0.7)	(0.7)
Cumulative translation adjustments		(37.4)	(56.3)
Equity attributable to owners of CGG SA		**1,119.7**	**1,561.7**
Non-controlling interests		44.9	45.7
Total Equity		**1,164.6**	**1,607.4**
TOTAL LIABILITIES AND EQUITY		**3,377.5**	**4,012.6**

(a) See note 5 for more information regarding the impact of IFRS 5 "Non-current assets held for sale and discontinued operations".
(b) Common stock: 1,194,071,863 shares authorized and 711,392,383 shares with a nominal value of €0.01 outstanding at December 31, 2020

The accompanying notes are an integral part of the consolidated financial statements.

Consolidated statement of cash flows

In millions of US$	Notes	Year 2020	2019
OPERATING ACTIVITIES			
Consolidated net income (loss)	1, 19	(438.1)	(61.5)
Less: Net income (loss) from discontinued operations	5	62.5	187.7
Net income (loss) from continuing operations		**(375.6)**	**126.2**
Depreciation, amortization and impairment	1, 19, 28	193.5	138.2
Impairment and amortization of Multi-Client surveys	1, 10, 28	284.8	308.0
Amortization and depreciation of Multi-Client surveys, capitalized	10	(18.1)	(18.8)
Variance on provisions		15.9	(10.5)
Share-based compensation expenses		4.0	5.3
Net (gain) loss on disposal of fixed and financial assets		0.5	1.0
Share of (income) loss in companies recognized under equity method		(0.1)	0.1
Dividends received from companies accounted for under the equity method		-	-
Other non-cash items		39.3	(4.3)
Net cash flow including net cost of financial debt and income tax		**144.2**	**545.2**
Less: Cost of financial debt		134.1	131.7
Less: Income tax expense (gain)		29.5	(8.9)
Net cash flow excluding net cost of financial debt and income tax		**307.8**	**668.0**
Income tax paid		(7.7)	(30.2)
Net cash flow before changes in working capital		**300.1**	**637.8**
Changes in working capital		(35.8)	113.6
- Change in trade accounts and notes receivable		38.4	150.0
- Change in inventories and work-in-progress		(25.9)	(3.7)
- Change in other current assets		(2.8)	(33.7)
- Change in trade accounts and notes payable		(1.6)	7.7
- Change in other current liabilities		(43.9)	(6.7)
Net cash flow from operating activities		**264.3**	**751.4**
INVESTING ACTIVITIES			
Total capital expenditures (tangible and intangible assets) net of variation of fixed assets suppliers and excluding Multi-Client surveys)	9	(64.1)	(75.3)
Investments in Multi-Client surveys, net cash	10	(239.0)	(185.7)
Proceeds from disposals of tangible and intangible assets		0.5	0.1
Total net proceeds from financial assets		-	0.1
Acquisition of investments, net of cash & cash equivalents acquired	8	(0.4)	-
Variation in loans granted		-	-
Variation in subsidies for capital expenditures		-	-
Variation in other non-current financial assets	28	13.4	(0.7)
Net cash-flow used in investing activities		**(289.6)**	**(261.5)**
FINANCING ACTIVITIES			
Repayment of long-term debt	13, 28	(5.2)	(0.4)
Total issuance of long-term debt		-	-
Lease repayments	28	(55.5)	(56.9)
Change in short-term loans		0.1	-
Financial expenses paid		(80.2)	(80.5)

In millions of US$	Notes	Year 2020	2019
Capital increase:			
- by owners of CGG		-	-
- by non-controlling interests in integrated companies		-	-
Dividends paid and share capital reimbursements			
- to owners of CGG		-	-
- to non-controlling interests of integrated companies		(7.2)	(3.8)
Acquisition/disposal of treasury shares		-	-
Net cash-flow from (used in) financing activities		**(148.0)**	**(141.6)**
Effect of exchange rate changes on cash		20.7	(4.3)
Impact of changes in consolidation scope			
Net cash flows incurred by discontinued operations [a]	**5**	**(72.5)**	**(167.6)**
Net increase (decrease) in cash and cash equivalents		**(225.1)**	**176.4**
Cash and cash equivalents at beginning of year		610.5	434.1
Cash and cash equivalents at end of period		**385.4**	**610.5**

(a) See note 5 for more information regarding the impact of IFRS 5 "Non-current assets held for sale and discontinued operations".

The accompanying notes are an integral part of the consolidated financial statements.

Consolidated statement of changes in equity

In millions of US$, except for share data	Number of shares issued	Share capital	Additional paid-in capital	Retained earnings	Other Reserves	Treasury shares	Income and expense recognized directly in equity	Cumu -lative translation adjust -ment	CGG SA - Equity attributable to owners of CGG SA	Non-control-ling interests	Total Equity
Balance at January 1, 2019	**709,944,816**	**8.7**	**3,184.6**	**(1,457.8)**	**(27.9)**	**(20.1)**	**(0.9)**	**(55.1)**	**1,631.5**	**42.6**	**1,674.1**
Net gain (loss) on actuarial changes on pension plans (1)				(7.1)					(7.1)		(7.1)
Net gain (loss) on cash flow hedges (2)							0.2		0.2		0.2
Net gain (loss) on translation adjustments (3)								(1.2)	(1.2)	(0.7)	(1.9)
Other comprehensive income (1)+(2)+(3)		**-**	**-**	**(7.1)**	**-**	**-**	**0.2**	**(1.2)**	**(8.1)**	**(0.7)**	**(8.8)**
Net income (4)				(69.1)					(69.1)	7.6	(61.5)
Comprehensive income (1)+(2)+(3)+(4)		**-**	**-**	**(76.2)**	**-**	**-**	**0.2**	**(1.2)**	**(77.2)**	**6.9**	**(70.3)**
Exercise of warrants	9,504										-
Dividends										(3.8)	(3.8)
Cost of share-based payment	2,038		0.1	5.2					5.3		5.3
Transfer to retained earnings of the parent company											-
Variation in translation adjustments generated by the parent company					4.4				4.4		4.4
Changes in consolidation scope and other				(2.3)					(2.3)		(2.3)
Year ended December 31, 2019	**709,956,358**	**8.7**	**3,184.7**	**(1,531.1)**	**(23.5)**	**(20.1)**	**(0.7)**	**(56.3)**	**1,561.7**	**45.7**	**1,607.4**

In millions of US$, except for share data	Number of shares issued	Share capital	Additional paid-in capital	Retained earnings	Other Reserves	Treasury shares	Income and expense recognized directly in equity	Cumu -lative translation adjust -ment	CGG SA - Equity attributable to owners of the parent	Non-control-ling interests	Total equity
Balance at January 1, 2020	**709,956,358**	**8.7**	**3,184.7**	**(1,531.1)**	**(23.5)**	**(20.1)**	**(0.7)**	**(56.3)**	**1,561.7**	**45.7**	**1,607.4**
Net gain/(loss) on actuarial changes on pension plan (1)				(6.8)					(6.8)		(6.8)
Net gain (loss) on cash flow hedges (2)											-
Variation in translation adjustments (3)								17.6	17.6	2.7	20.3
Other comprehensive income (1)+(2)+(3)		**-**	**-**	**(6.8)**	**-**	**-**	**-**	**17.6**	**10.8**	**2.7**	**13.5**
Net income (4)				(441.8)					(441.8)	3.7	(438.1)
Comprehensive income (1)+(2)+(3)+(4)		**-**	**-**	**(448.6)**	**-**	**-**	**-**	**17.6**	**(431.0)**	**6.4**	**(424.6)**
Exercise of of warrants	12,272		-	-							-
Dividends										(7.2)	(7.2)
Cost of share-based payment	1,423,753			3.7					3.7		3.7
Transfer to retained earnings of the parent company			(1,497.6)	1,497.6							-
Variation in translation adjustments generated by the parent company					(15.8)				(15.8)		(15.8)
Changes in consolidation scope and other				(2.2)	2.0			1.3	1.1		1.1
At December 31, 2020	**711,392,383**	**8.7**	**1,687.1**	**(480.6)**	**(37.3)**	**(20.1)**	**(0.7)**	**(37.4)**	**1,119.7**	**44.9**	**1,164.6**

The accompanying notes are an integral part of the consolidated financial statements.

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NOTE 1 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

CGG SA ("the Company") and its subsidiaries (together forming "the Group") is the world leader in geoscience technology. CGG provides a comprehensive range of data, products, services and equipment that support the discovery and responsible management of the Earth's natural resources.

As the Company is listed in a European country, and pursuant to European Regulation (EU) no. 1606/2002 dated July 19, 2002, the consolidated financial statements for the year ending December 31, 2020 have been prepared in accordance with International Financial Reporting Standards ("IFRS") and their interpretations, as issued by the International Accounting Standards Board (IASB) and as adopted by the European Union and in force at December 31, 2020.

The consolidated financial statements for the year ending December 31, 2020 were authorized for issue by the Board of Directors on March 4, 2021 and will be submitted to the General Meeting convened on May 12, 2021 for approval.

1.1 Summary of significant accounting policies

The significant accounting policies applied by the Group are described below. The accounting policies related to the accounts impacted by the judgments and estimates are particularly important to reflect our financial position and results of operations. As we must exercise significant judgment when we apply these policies, their application is subject to an inherent degree of uncertainty.

These accounting policies are consistent with those used to prepare our consolidated financial statements as at December 31, 2019, except for the first-time adoption of the following standards, amendments, and interpretations:

- amendments to IFRS 3 "Business Combinations";
- amendments to IFRS 9, IAS 39 and IFRS 7 "Interest Rate Benchmark Reform - Phase 1";
- amendments to References to the Conceptual Framework in IFRS Standards;
- amendments to IAS 1 and IAS 8 "Definition of Material";
- amendment to IFRS 16 "Leases - Covid-19-Related Rent Concessions".

These newly-adopted standards and interpretations have no impact on the consolidated financial statements.

At the date of issuance of these consolidated financial statements, the following Standards, Amendments, and Interpretations were issued but not yet adopted by the European Union and were thus not effective:

- amendments to IAS 1 "Classification of Liabilities as Current or Non-current";
- amendments to IFRS 3 "Business combinations; IAS 16 "Property, Plant and Equipment"; IAS 37 "Provisions, Contingent Liabilities and Contingent Assets"; "Annual Improvements to IFRS 2018-2020 Cycle";
- amendments to IFRS 9, IAS 39, IFRS 7, IFRS 4 and IFRS 16 "Interest Rate Benchmark Reform - Phase 2".

The Group does not expect the following standards to have a material impact on the consolidated financial statements:

- amendments to IFRS 3 "Business Combinations" and Annual Improvements to IFRS 2018-2020 Cycle;
- amendments to IFRS 9, IAS 39, IFRS 7, IFRS 4 and IFRS 16 "Interest Rate Benchmark Reform - Phase 2".

A review of the amendments to IAS 1, IAS 16 "Property, Plant and Equipment" and IAS 37 "Provisions" is currently underway with a view to measuring their potential impact on the consolidated financial statements.

1.2 Key items and where to find them

	Consolidated statement of operations	Consolidated statement of financial position	Consolidated statement of cash flows
Discontinued operations CGG 2021 Plan Exit from Data Acquisition business.	In 2020, loss in respect of discontinued operations of US$(62.5) million in 2020 of which US$(36.9) million of restructuring costs for the CGG 2021 Plan. *See note 5*	At December 31, 2020, US$36.1 million recognized in assets held for sale and US$(11.4) million in liabilities directly associated with the assets held for sale. *See note 5*	Net cash flows incurred of US$(72.5) million, presented under discontinued operations in 2020. *See note 5*
Strategic partnership with Shearwater in Marine Acquisition and Capacity Agreement Exit from Marine Data Acquisition business.	In 2020, the net result from discontinued operations presented above included a US$(10) million loss for the Idle Vessel Compensation following revised assumptions. In 2020, the net result from continuing operations was impacted by the remeasurement to fair value on Shearwater Shares and Eidesvik Put Option for US$(47.2) million. *See notes 2, 14, 17, 23*	At December 31, 2020, US$13.7 million of Shearwater shares, US$(127.2) million in liabilities in respect of the Capacity Agreement and US$(16.1) million for the fair value of the Eidesvik Put Option. *See notes 2, 7, 12, 14*	Cash outflows of US$(13.4) million in respect of the Off-Market Component recognized in continuing operations, and US$(21.5) million in respect of Idle Vessel Compensation, recognized in cash flow from discontinued operations in 2020. *See note 5*
Continuing operations Segment figures	In 2020, Segment Revenue of US$955.2 million. Segment Operating Income of US$(164.3) million. Segment EBITDAs of US$360.7 million. *See note 19*	At December 31, 2020, the capital employed were US$1.6 billion and US$0.6 billion respectively for our GGR and Equipment segments. *See note 19*	Segment EBITDAs of US$360.7 million. Capital expenditures from continuing operations of US$(303.1) million. *See note 19*
Continuing operations Redundancy costs and Impairment	In 2020, the net result from continuing operations included a loss of US$(268.8) million in 2020, broken down into US$(41.6) million of severance costs and US$(227.2) million of impairment. *See notes 2, 21, 23, 24*	US$(32.5) million in respect of the redundancy provision. *See notes 2, 16*	Net cash flows of US$(14.0) million in respect of redundancy plan. *See note 2*

1.3 Use of judgments and estimates

The preparation of consolidated statement of financial position in accordance with IFRS requires management to make estimates, assumptions and judgments that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ materially from those estimates due to the change in economic conditions, changes in laws and regulations, changes in strategy and the inherent imprecision associated with the use of estimates.

The key judgments and estimates used in the financial statements are summarized in the following table:

Note	Judgments and estimates	Key assumptions
Note 11	Recoverable amount of goodwill and intangible assets	Expected geophysical market trends and scenario of recovery ; strength, trajectory, recovery outlook of E&P spending Discount rate (WACC)
Notes 10 and 21	Amortization and impairment of Multi-Client surveys	Expected sales for each survey
Notes 2 and 5	Classification of disposal groups as held for sale	Likelihood of disposal within twelve months
Notes 2 and 5	Valuation of disposal groups classified as held for sale	Assessment of disposal groups at fair value less cost to sell Final terms of disposal are in line with currently contemplated terms
Note 14	Idle Vessel Compensation (Capacity Agreement)	Shearwater fleet utilization assumptions over the commitment period
Note 12	Off-Market Component (Capacity Agreement)	Market rate over the commitment period as estimated at the “Marine Closing” date
Notes 18 and 19	Revenue recognition	Estimated Geoscience contract completion rates
Note 24	Income tax liabilities – Uncertain tax positions	Estimate of most likely tax amount
Note 24	Deferred tax assets	Assumptions supporting the achievement of future taxable profits
Notes 16 and 21	Provisions for restructuring	Assessment of future costs related to restructuring plans
Notes 9 and 13	Discount rate IFRS 16	Assessment of incremental borrowing rate
Note 3	Recoverability of client receivables	Assessment of clients’ credit default risk
Notes 9 and 10	Depreciation and amortization of tangible and intangible assets	Useful life of assets
Note 10	Development costs	Assessment of future benefits of each project
Note 16	Post-employment benefits	Discount rate Enrollment rate in post-employment benefit plans Inflation rate
Note 16	Provisions for risks, claims and litigations	Assessment of risks considering court rulings and attorney’s positions

1.4 Significant accounting principles

1. Basis of consolidation

Our consolidated financial statements include CGG SA and all its subsidiaries.

Subsidiaries are fully consolidated from the date of acquisition, being the date on which we obtain control. They continue to be consolidated until the date when such control ceases. Control is achieved when we are exposed or have rights to variable returns from our involvement with the investee and have the ability to affect those returns through our power over the investee. When we have less than a majority of the voting or similar rights of an investee, we consider all relevant facts and circumstances in assessing whether we have power over the investee, including contractual arrangements with the other holders or potential voting rights.

The financial statements of the subsidiaries are prepared for the same reporting period as the parent company, using consistent accounting policies. All intra-group balances, transactions, unrealized gains and losses resulting from intra-group transactions and dividends are eliminated in full.

Losses within a subsidiary are attributed to the non-controlling interest even if that results in a deficit balance. A change in the ownership interest of a subsidiary, without a loss of control, is accounted for as an equity transaction.

We use the equity method for investments classified as joint venture. A joint venture is a joint arrangement whereby the parties that have joint control of the arrangement have rights to the net assets of the arrangement. The Group effectively owns companies under joint arrangements under which control of the business is shared by virtue of a contractual agreement. Key financial and operational activities require the unanimous consent of the parties sharing control.

2. Foreign currencies

The Group's consolidated financial statements are presented in US dollars. This currency reflects the profile of our revenues, costs and cash flows, which are primarily generated in US dollars, thus providing the best representation of the Group's financial performance.

The functional currency is the currency in which the subsidiaries primarily conduct their business. The functional currency of most of our subsidiaries is the US dollar. Goodwill attributable to subsidiaries is accounted for in the functional currency of the applicable entities.

For the subsidiaries with a functional currency different to US dollar, the financial statements are translated to US dollars using the following method:

- year-end exchange rates are applied to the statement of financial position;
- average annual exchange rates are applied to consolidated statement of operations;
- adjustments resulting from this process are recorded in translation adjustments.

With respect to affiliates accounted for using the equity method, the effects of exchange rate changes on the net assets of the affiliates are recorded under translation adjustments in equity.

Transactions denominated in currencies other than the functional currency are recorded at the exchange rate prevailing on the date of the transaction. Monetary assets and liabilities denominated in foreign currencies are revalued at year-end exchange rates. Any resulting gains and losses are included directly in income. Unrealized exchange gains and losses arising from monetary assets and liabilities for which settlement in neither planned nor likely to occur in the foreseeable future are recorded in a separate component of shareholder's equity.

3. Business combinations

Business combinations are accounted for using the acquisition method. The cost of an acquisition is measured at the fair value of the consideration transferred at the acquisition date. Goodwill is measured as the difference between (i) the value of the consideration transferred, the amount of any non-controlling interest and, if applicable, the fair value of the previously-held equity interest, and (ii) the fair value of the identifiable assets acquired and liabilities assumed. For each business combination, we measure the non-controlling interest in the acquiree either at fair value or at the proportionate share in the recognized amounts of the acquiree's identifiable net assets. Acquisition costs incurred are expensed and included in administrative expenses.

After initial recognition, goodwill is measured at cost less any accumulated impairment losses. For the purposes of impairment testing, goodwill acquired in a business combination is allocated to each of the Group's cash-generating units (or group of cash generating units) that are expected to benefit from the combination, irrespective of whether other assets or liabilities of the acquiree are assigned to those units.

Where goodwill forms part of a cash-generating unit and part of the operation within that unit is disposed of, the goodwill associated with the operation disposed of is included in the carrying amount of the operation when determining the gain or loss on disposal of the operation. Goodwill disposed of in this circumstance is measured based on the relative values of the operation disposed of and the portion of the cash-generating unit retained.

4. Operating revenues

Revenues from contracts with customers are recognized using the five-step model of the IFRS 15 standard. The following provides a description of the main nature of our performance obligations broken down by business line, the timing of their satisfaction, and detail on the transaction prices and their allocations, if applicable.

GGR

Geoscience contracts

Under our Geoscience contracts, we process seismic data for a specific customer. These contracts may encompass one or several performance obligations. For each performance obligation, we recognize the revenues over time as the services are rendered. The measure of revenue recognized is based on the time spent over the total time expected to satisfy the performance obligation. The balance of revenue recognized that has not yet been invoiced to the clients is recorded as an unbilled revenue, i.e. as a contract asset. When the services have been invoiced but have not yet been rendered under the percentage of completion method, the Group recognizes deferred revenues, i.e. a contract liability.

We also recognize revenue related to the sale of software upon delivery of the software and of the access code/key as the case may be, to the client. Software maintenance revenues are recognized over the term of the contract. Where a contract provides for both the sale and maintenance of software, the price allocation is based on the stand-alone selling price of each service and the software revenue is recognized upon delivery, while the maintenance revenue is recognized over the term of the contract. In most cases, we issue only one invoice, issued upon license delivery, and the amount corresponding to maintenance is recorded as deferred revenues, i.e. as a contract liability, at invoicing.

We also provide geological consulting services or training for specific customers. We recognize the revenues over time as the services are rendered.

We provide licenses to use geological data to several clients. We recognize the revenue upon delivery of the data to the client.

In addition, we provide licenses to access dynamic geological databases for a specific duration. We recognize the revenue related to such licenses over the duration of the contract. In most cases, only one invoice is issued for such contracts at the beginning of the year and the total amount is recorded as deferred revenues, as a contract liability, at invoicing.

Multi-Client after sales contracts and prefunding contracts

Pursuant to our Multi-Client contracts, we provide non-exclusive licenses to use seismic processed data to several clients. We recognize the revenue upon delivery of the data to the client.

In certain cases, significant after sales agreements contain multiple deliverable elements, and the associated revenues are allocated to the various elements based on specific objective evidence of the stand-alone sale price for such elements, regardless of any separate allocations stated within the contract for each element.

In certain circumstances, revenues can also be recognized in respect of a performance obligation that has already been fulfilled in the past. This happens when a customer is already in possession of the license for certain data and either (i) the customer is taken-over by a competitor who does not yet have the license for such data (and is thus required to pay a transfer fee), or (ii) the customer involves another partner, not already having access to the licensed data, for the exploration of a block (farm-in, uplift). Revenues are then recognized when there is an agreement on the fee and, in the case of transfer fees, when the buyer notifies us that they will not return the data to the Group.

Equipment

We recognize revenues on equipment sales upon delivery to the customer, when control is transferred. When such contracts require a partial or total advance payment, such payments are recorded as advance billings to customers, as a contract liability.

Contractual Data Acquisition (classified as discontinued operations)

Pursuant the announcement of the new strategy for the Group in November 2018 and the ensuing actions undertaken, we have presented our contractual data acquisition operations in assets held for sale and discontinued operations, in accordance with IFRS 5.

Please refer to note 5 "Assets held for sale and discontinued operations".

5. Cost of net financial debt

Cost of net financial debt includes:

- the expenses related to long-term financial debt composed of bonds and other loans;
- interest expense on leases;
- other charges paid to financial institutions for financing operations;
- net income from cash and cash equivalents.

6. Income taxes and deferred taxes

Income taxes includes all tax based on taxable profit.

Deferred taxes are recognized on all temporary differences between the carrying value and the tax value of assets and liabilities, as well as on carry-forward losses. Deferred tax assets are recognized only when their recovery is considered as probable or when there are existing taxable temporary differences, of an appropriate type, that reverse in an appropriate period. When tax laws limit the extent to which unused tax losses can be recovered against future taxable profits in each year, the amount of deferred tax assets recognized from unused tax losses as a result of suitable existing taxable temporary differences is restricted as specified by the tax law.

Deferred tax assets and deferred tax liabilities are not discounted.

7. Intangible and tangible assets

In accordance with IAS 16 "Property, Plant and equipment" and IAS 38 "Intangible assets" only items for which cost can be reliably measured and for which the future economic benefits are likely to flow to us are recorded in our consolidated financial statements.

Property, plant and equipment

Property, plant and equipment are valued at historical cost less accumulated depreciation and impairment losses. Depreciation is generally calculated over the following useful lives:

- equipment and tools: 3 to 10 years;
- vehicles: 3 to 5 years;
- buildings for industrial use: 20 years;
- buildings for administrative and commercial use: 20 to 40 years.

Depreciation expense is determined using the straight-line method.

Residual value is excluded from our calculation of the depreciable amount. We segregate tangible assets into their separate components if there is a significant difference in their expected useful lives, and depreciate them accordingly.

Lease agreements

IFRS 16 standard requires that almost all leases be recognized on the consolidated statement of financial position, as the distinction between operating and finance leases is removed for lessees. Under the new standard, both a right-of-use asset (the right to use the leased asset) and an associated liability (corresponding to the minimum lease payments) must be recognized. The right-of-use asset is depreciated on a straight-line basis over the term of the lease. The lease liability, which is initially measured at the present value of lease payments over the term of the lease, is accreted using the interest rate implicit in the lease when that rate is easily determined, or at the incremental borrowing rate. The only exemptions are for short-term leases and leases of low-value assets, and the Group has decided to use them both. Moreover, initial direct costs were not taken into account for the measurement of the right-of-use asset at the date of first-time application from January 1, 2019, the date of first-time application of IFRS 16.

The lease term to be applied for the measurement of lease assets and liabilities is the length of time the lessee is reasonably certain to pursue the lease. For legal purposes, the tacit extension period constitutes an extension of the initial lease, and is used to determine the initial lease term to be recognized when the lessee can reasonably anticipate that it will be in their interest to use said extension and/or the lessor cannot then give notice of termination without incurring a substantial penalty. In this case, the date applied is that on which the lessee is reasonably certain to end the lease after an extension past the initial contractual term date. When an event or significant change in circumstances on the lessee side gives rise to a tacit extension that was not initially anticipated, the lease term is remeasured to reflect the additional time during which the lessee is reasonably certain to pursue the lease.

The assumptions applied to determine the term of the lease are aligned with those applied in respect of the amortization period for non-reusable fixtures.

Goodwill

Goodwill is determined according to IFRS 3 "Revised – Business Combinations". Goodwill is not amortized but subject to an impairment test at least once a year at the statement of financial position dates or when a triggering event occurs.

Multi-Client surveys

Multi-Client surveys consist of seismic surveys to be licensed to customers on a non-exclusive basis. All costs of data acquisition, processing and finalization of surveys are recognized as intangible assets. Multi-Client surveys are valued on the basis of capitalized costs less accumulated amortization, or at fair value, if the latter is the lower. An impairment test of all delivered surveys is performed at least upon delivery and at year-end. Whenever there is an indication that a survey may be impaired, an impairment test is performed.

The Group applies the straight-line amortization method over four years from delivery, in accordance with the industry standard. Prefunding revenue is recognized upon delivery of the final product to the client and the prefunding cost of sales is calculated as the difference between the total capitalized cost of a survey upon delivery and the fair value based upon discounted future expected sales. The net book value of the survey upon delivery thus equals the net present value of future expected sales. After sale revenues are recognized upon delivery of the final product to the client.

Development cost

Expenditures on research activities undertaken with the prospect of gaining new scientific or technological knowledge and understanding are recognized in the income statement as expenses as incurred and are presented as "Research and development expenses – net". Expenditures on development activities, whereby research findings are applied to a plan or design for the production of new or substantially improved products and processes, are capitalized if:

- the project is clearly defined, and costs are separately identified and reliably measured;
- the product or process is technically and commercially feasible;
- we have sufficient resources to complete development; and
- the intangible asset is likely to generate future economic benefits, either because it is useful to us or through an existing market for the intangible asset itself or for its products.

The expenditures capitalized include the cost of materials, direct labor and an appropriate proportion of overhead. Other development expenditures are recognized in the income statement as expenses as incurred and are presented as "Research and development expenses – net".

Capitalized development expenditures are stated at cost less accumulated amortization and impairment losses.

Capitalized development costs are amortized over five years in "Cost of sales".

"Research and development expenses" in our income statement represent the net cost of development costs that are not capitalized, research costs and government grants acquired for research and development (for the portion not related to capitalized development costs).

Other intangible assets

Other intangible assets consist primarily of customer relationships, technology and trade name acquired in business combinations. Customer relationships are generally amortized over periods ranging from 10 to 20 years and acquired technology are generally amortized over periods ranging from 5 to 10 years.

Impairment of assets

The carrying amounts of the Group's assets (excluding inventories, non-current assets recognized as held for sale as per IFRS 5, deferred tax assets, assets arising from pension plans and financial assets) are reviewed for the purpose of identifying impairment risk, in compliance with IAS 36 "Impairment of assets". Whenever any such indication exists, the recoverable value must be measured. Factors we consider important that could trigger an impairment test include the following:

- significant underperformance relative to expected operating results based upon historical and/or projected data;
- significant changes in the manner of our use of the tested assets or the strategy for our overall business; and
- significant negative industry or economic trends.

The recoverable amount of tangible and intangible assets is the greater of their fair value less costs of disposal and value in use.

Goodwill, assets that have an indefinite useful life and intangible assets are allocated to cash-generating units or groups of cash-generating units whose recoverable value is assessed at least once a year and as soon as an indication of loss of value of a cash-generating unit arises.

We determine the value in use by estimating future cash flows expected from the assets or from the cash-generating units, discounted to their present value using the sector weighted average cost of capital (WACC) estimated on a yearly basis by the Group. When the recoverable amount applied is the fair value less costs to sell, the fair value is determined by reference to the price at which the asset would sell in an orderly transaction between market participants at the measurement date.

We recognize an impairment loss whenever the carrying amount of an asset exceeds its recoverable amount. For an asset that does not generate largely independent cash inflows, the recoverable amount is determined for the cash-generating unit to which the asset belongs.

Impairment losses are recognized in the statement of operations. Impairment losses recognized in respect of a group of non-independent assets allocated to a cash-generating unit are allocated first to reduce the carrying amount of any goodwill allocated to cash-generating units (group of units) and subsequently, to reduce the carrying amount of the other assets in the unit (group of units) on a pro rata basis, provided that the carrying amount of an individual asset is not reduced below its value in use or fair value less costs of disposal.

A previously recognized impairment loss is reversed only if there has been a change in the assumptions used to determine the asset's recoverable amount since the last impairment loss was recognized. The reversal is limited so that the carrying amount of the asset does not exceed its recoverable amount, nor exceed the carrying amount that would have been determined, net of depreciation or amortization, had no impairment loss been recognized for the asset in prior years.

Impairment losses recognized on goodwill cannot be reversed.

Non-current assets held for sale and discontinued operations

Non-current assets and disposal groups comprising assets and liabilities that are expected to be recovered primarily through sale rather than through continuing use are classified as held for sale. They are valued at the lower of carrying amount and fair value less costs to sell.

Non-current assets classified as held for sale and the assets of a disposal group classified as held for sale are presented separately from the other assets in the consolidated statement of financial position. The liabilities of a disposal group are presented separately from other liabilities in the consolidated statement of financial position.

A discontinued operation is a component of an entity that has either been disposed of or is classified as held for sale, and represents a separate major line of business or geographical area of operations or is a part of a single coordinated plan to dispose of a separate major line of business or geographical area of operations; or is a subsidiary acquired exclusively with a view to resale.

Any gains or losses from disposals, together with the results of these operations until the date of disposal, are reported separately as discontinued operations in the consolidated statement of operations, in the consolidated statement of cash flows and in the appended notes. The prior periods are restated accordingly.

Further information on discontinued operations and non-current assets held for sale can be found in note 5.

8. Investments in companies accounted for under the equity method

Under the equity method, the investments in our associates or joint ventures are carried in the statement of financial position at cost plus post acquisition changes in our share of net assets of the associates or joint ventures. Goodwill relating to the associates is included in the carrying amount of the investment and is neither amortized nor individually tested for impairment.

After application of the equity method, we determine whether it is necessary to recognize an additional impairment loss on our investment in the associates. We determine at each reporting date whether there is any objective evidence that the investments in our associates are impaired. If this is the case we calculate the amount of impairment as the difference between the recoverable amount of the associates and their carrying value and usually recognize the amount in the 'share of profit of an associate' in the statement of operations.

From the date when an investment ceases to be an associate or a joint venture and becomes a financial asset we discontinue the use of the equity method. The retained interests are measured at fair value. We recognize in profit or loss any difference between (i) the fair value of any retained interest and any proceeds from disposing of a part interest in the associate or joint venture; and (ii) the carrying amount of the investment at the date the equity method was discontinued.

9. Investments, other non-current and current financial assets

Investments and other financial assets include investments in non-consolidated entities, loans and non-current receivables.

Investments and other financial assets currently in our statement of financial position are measured at fair value through profit and loss. The fair value for listed securities is their market price at the statement of financial position date. If a reliable fair value cannot be established, securities are valued at historical cost.

10. Treasury shares

We value treasury shares at their cost, as a reduction of shareholders' equity. Proceeds from the sale of treasury shares are included in shareholders' equity and have no impact on the statement of operations.

11. Inventories

We value inventories at the lower of cost (including direct production costs where applicable) and net realizable value.

We calculate the cost of inventories on a weighted average price basis.

The additions and deductions in valuation allowances for inventories and work-in-progress are presented in the consolidated statement of operations as "Cost of sales".

12. Trade accounts and notes receivable

In the Geology and Geophysics & Reservoir (GGR) segments, customers are generally large national or international oil and gas companies, which management believes reduces potential credit risk.

In the Equipment segment, a significant portion of sales is paid by irrevocable letters of credit.

The Group maintains an allowance for doubtful accounts based upon factors surrounding the credit risk of specific customers, historical trends and other information. Credit losses have not been material for the periods presented and have consistently been within management's expectations.

Contract assets represent the Group's right to consideration in exchange for goods or services that the Group has transferred to a customer when that right is conditioned by something other than the passage of time (e.g. revenue recognized from the application of the Percentage of Completion method before the Group has a right to invoice).

13. Provisions

We record a provision when the Group has a present obligation (legal or constructive) as a result of a past event for which it is probable that an outflow of resources embodying economic benefits (that can be reliably determined) will be required to settle the obligation.

Onerous contracts

We record a provision for onerous contracts equal to the excess of the unavoidable costs of meeting the obligations under the contract over the economic benefits expected to be received under it, as estimated by the Group.

Pension and other post-employment benefits

We record obligations for contributions to defined contribution pension plans as an expense in the income statement as incurred. We do not record any provision for such plans as we have no further obligation.

Our net obligation in respect of defined benefit pension plans is calculated separately for each plan by estimating the amount of future benefit that employees have earned in return for their service in the current and prior periods. We perform the calculation by using the projected unit credit method.

The methodology of calculation and booking of the defined benefit pension plan is as follows:

- the benefit is discounted to determine its present value, and the fair value of any plan assets is then deducted;
- net interest is calculated by applying the discount rate to the net defined benefit liability or asset. Interest is recorded in the profit and loss;
- past service costs are recognized as an expense when a plan amendment or curtailment occurs;
- we record actuarial gains and losses on defined benefits plans directly in equity.

Warranty for sales of geophysical equipment

The geophysical equipment we sell come with a customer warranty. The duration and cover provided by these warranties are in line with standard industry practice. A provision is therefore recorded on the basis of the estimated cost of the warranties by product line in respect of products sold. This provision is reversed when the warranty expires or is used.

14. Financial debt

Bond debts and other interest-bearing loans are initially recognized at their fair value less transaction costs directly attributable to the issuance of the debt. These financial liabilities are then valued at their amortized cost using the effective interest method. Where applicable, the financial debt is increased by capitalized interest.

By way of exception, the issuing costs of the first and second lien notes issued in 2018 were recognized, as incurred, as an expense of the period.

15. Other financial liabilities (Idle Vessel Compensation)

The Idle Vessel Compensation was initially recorded at fair value, i.e. the present value of estimated disbursements based on fleet utilization assumptions over the commitment period. This financial liability was subsequently carried at amortized cost. The effects of changes in assumptions on the financial liability amount are recorded in the consolidated statement of operations under "Other financial income (loss)". *See note 14.*

16. Derivative financial instruments

Recognition and presentation of hedging instruments

The Group uses over-the-counter financial instruments to hedge its exposure to foreign exchange risk arising activities denominated in currencies different from its functional currency. We may also use interest rate swaps to limit our exposure to variations in said rates. In accordance with our treasury policy, we do not hold or issue derivative financial instruments for trading purposes. However, derivatives that do not qualify for hedge accounting are accounted for as trading instruments in "Other financial income (loss)".

Over-the-counter derivatives are entered into in the frame master agreements that provide a right of set-off in the event of default, insolvency or bankruptcy of one of the parties to the agreement (those netting agreements do not fulfill IAS 32 criteria to offset the fair value of derivatives on the statement of financial position).

Exchange gains or losses on foreign currency financial instruments that represent the efficient portion of an economic hedge of a net investment in a foreign subsidiary are reported as translation adjustments in equity under "Translation adjustments", the inefficient portion being recognized in the statement of operations. The cumulative value of foreign exchange gains and losses recognized directly in equity will be transferred to statement of operations when all or part of the foreign subsidiary is sold.

Where derivatives qualify for cash flow hedge accounting, we account for changes in the fair value of the effective portion of the hedging instruments in equity. The ineffective portion is recorded in "Other financial income (loss)". Amounts recorded in other comprehensive income are reclassified into the statement of operations when the hedged risks impact the statement of operations.

Recognition and presentation of derivatives not qualifying for hedge accounting

These notably include a put option on securities held by third parties.

Derivative instruments not qualifying for hedge accounting are measured at fair value upon initial recognition. The fair value of derivatives not qualifying for hedge accounting is subsequently remeasured at each reporting date and any successive variations in fair value are immediately recognized in the consolidated statement of operations for that period under "Other financial income (loss)" Derivative financial instruments are presented in the statement of financial position under current items, for derivatives expiring in under 12 months, and non-current items for other derivatives.

17. Other liabilities (Off-Market Component)

This item pertains to an operating liability initially recognized at fair value, i.e. the present value of the difference between the day rate set by the Capacity Agreement and the estimated market rate over the period of the five-year commitment. This liability is reversed at its rate of consumption, i.e. usage per day as set out in the Capacity Agreement, over the term of the contract. *See note 12.*

18. Cash flow statement

The cash flows of the period are presented in the cash flow statement within three activities: operating, investing and financing activities:

Operating activities

Operating activities are the principal revenue-producing activities of the entity and other activities that are not investing or financing activities.

Investing activities

Investing activities are the acquisition and disposal of long-term assets and other investments not included in cash equivalents. When a subsidiary is acquired, a separate item, corresponding to the consideration paid net of cash and cash equivalents held by the subsidiary at the date of acquisition, provides the cash impact of the acquisition.

Investments in Multi-Client surveys are presented net of depreciation and amortization capitalized in Multi-Client surveys. Depreciation and amortization capitalized in Multi-Client surveys are also restated in operating activities.

Financing activities

Financing activities are transactions involving equity financing and borrowings taken out by the entity.

They include the cash impact of financial expenses and lease repayments.

Cash and cash equivalents

Cash and cash equivalents in the consolidated statement of financial position comprise cash at banks and on hand and short-term deposits with a maturity of three months or less that are readily convertible to known amounts of cash.

19. Share-based payments, including stock options

Employees (including senior executives) of the Group receive remuneration in the form of share-based payments. These rights can be settled either in equity (equity-settled transactions) or in cash (cash-settled transactions).

Equity-settled transactions

We include stock options granted to employees in the financial statements using the following principles: the stock option's fair value is determined on the grant date and is recognized in personnel costs, with a corresponding increase in equity, on a straight-line basis over the period between the grant date and the end of the vesting period. We calculate stock option fair value using the Black-Scholes mathematical model.

Cash-settled transactions

The cost of cash-settled transactions is measured initially at the grant date using a binomial model. A provision is recognized over the period until the vesting date. This liability is re-measured at fair value at each reporting date up to and including the settlement date, with changes in fair value recognized in the statement of operations.

20. Grants

Government grants, including non-monetary grants at fair value, are not recognized until there is reasonable assurance that the entity will comply with the conditions of the grant and that the grants will be received.

Government grants are recognized as income over the periods necessary to match them with the related costs which they are intended to compensate. They are presented as a reduction of the corresponding expenses in the item "Research and development expenses, net" in the statement of operations.

Refundable grants are presented in the statement of financial position as "Other non-current liabilities".

21. Earnings per share

Basic earnings per share amounts are calculated by dividing net income for the year attributable to ordinary equity holders of the Company by the weighted average number of ordinary shares outstanding during the year.

Diluted earnings per share amounts are calculated by dividing the net income attributable to ordinary equity holders of the Company, by the weighted average number of ordinary shares outstanding during the year plus the weighted average number of ordinary shares that would be issued on the exercise of stock options and shares from performance share plans.

NOTE 2 SIGNIFICANT EVENTS, ACQUISITIONS AND DIVESTITURES

The global health crisis in 2020

The Covid-19 pandemic, the drop in oil price and consecutive cut in E&P spending

The outbreak of Covid-19 pandemic has plunged the global economy into a deep recession in 2020 leading to a significant decline in the demand for oil and gas due to lockdown measures. The radical increase in supply by certain oil producing countries (particularly Saudi Arabia and Russia) in March has further exacerbated the crisis. As a result, the oil price experienced large variations over the year, with Brent going from approximately US$65/bbl during late 2019 down to approximately US$50/bbl on March 5, 2020, the date on which the CGG Board of Directors approved the 2019 financial statements, before reaching the low point of about US$25/bbl on March 31, 2020. It then rebounded and fluctuated between US$40/bbl and US$45/bbl until mid-November 2020, before gradually recovering, following the announced arrival of Covid-19 vaccines, up to approximately US$50/bbl on December 31, 2020.

This volatility changed dramatically our business environment and the energy sector experienced strong headwinds. Our clients reacted sharply and, on average, reduced their E&P spending by around 30% in 2020, refocusing their investments in oil and gas towards core areas and producing the most accessible oil, while energy transition agenda quickly gained momentum. In this context, our activity reduced in 2020, which had material adverse effect in our result of operations and cash flows.

It is difficult to predict how long the instability and imbalance in oil market will last as well as the timing and breadth of any recovery of our clients' E&P activities, the main driver for the demand of our products and services. We believe though the on-going vaccination campaigns will improve the prospects of economic recovery. In line with some analysts and investment banks and given the recent OPEC+ agreements, we anticipate the rebalancing of demand for oil & gas and the increase in the oil price with Brent expected to stabilize above US$50/bbl in 2021. In this context and provided the pandemic remains under control, after several years of under-investments we anticipate E&P spending to increase gradually and stimulate the demand for our products and services, oil & gas continuing to play a major part in the energy mix and in the financial equation of our clients despite growing importance of renewables energies. We also believe that we should more especially benefit from their focus on reservoir development and production optimization of existing portfolio of assets as, thanks to our technology and people, we developed unique and recognized expertise in these geoscience domains.

Consequences of E&P spending cuts for CGG

With consolidated operating revenues down 35% compared to 2019, we adapted to the new industry baseline and significantly cut our capital expenditures and cost structure, reducing staff in various locations worldwide and closing sites, to preserve cash.

These measures have given rise of US$41.6 million of severance costs (*see note 21*). The Group also reviewed the carrying value of its assets and liabilities, resulting in an impairment loss of US$227.2 million for the period (*see notes 21, 23 and 24*), consisting mainly of:

(i) a US$36.9 million impairment loss on the remeasurement to fair value of the GeoSoftware business held for sale (*see note 5*) ;

(ii) a US$35.7 million impairment loss on the remeasurement to fair value of the Shearwater Shares (*see note 7*) ;

(iii) a US$98.0 million impairment loss on the value of the Multi-Client data library as a consequence of the downward revision of expected sales of Multi-Client surveys in frontier exploration areas, due to political instability (Africa) and government decisions to limit exploration (Ireland) in the context of significant cuts in E&P spending (*see notes 10 and 21*) ;

(iv) a US$24.0 million goodwill impairment of the GeoConsulting CGU (*see note 11*) ;

(v) an US$11.5 million impairment loss on the measurement to fair value of the Eidesvik Put Option (*see note 14*) ;

(vi) an US$8.9 million impairment loss on deferred tax assets (*see note 24*) ;

(vii) a US$6.6 million impairment loss on GeoConsulting's business relationship and brand (*see note 10*) ; and

(viii) a US$4.1 million impairment loss on buildings right-of-use (*see note 9*).

In addition, the Group benefited from governments' support measures in certain countries where it operates, triggering a US$12 million positive impact on cash, including deferrals of tax and social contributions for US$6 million, grants and subsidies for around US$5 million, and furloughs for US$1 million.

The Group will continue monitoring the situation and outlook very closely. However, the consequences of the crisis do not prevent the Group from continuing its operations as CGG has enough cash to fulfill its commitments taking into account a period of twelve months from the closing date.

Launch of employment protection scheme in France

In the context of the crisis caused by the drop in oil prices and significant cuts in E&P spending, CGG launched an employment protection plan in France including a plan for voluntary departures.

The plan was subject to an information and consultation process involving the Social and Economic Committee, and an agreement was signed on December 10, 2020. It was also approved by the DIRECCTE (French regional directorate for enterprises, competition, consumption, labor and employment) on December 21, 2020.

The employment protection plan aims to limit the number of compulsory departures, to provide the best possible support for employees leaving the company and to permit the Group to retain the skills and expertise necessary to carry out its activities. *See notes 16 and 21.*

Exit from Contractual Data Acquisition business - CGG 2021 Plan

Aimed at ensuring profitable growth across business cycles, the strategic roadmap announced in November 2018 (the "CGG 2021 Plan") included a planned transition to an asset-light business model by reducing our exposure to the Contractual Data Acquisition business. The Contractual Data Acquisition business has been adversely affected by structural industry overcapacity, high capital intensity and a heavy fixed cost base. The plan was designed as follows:

- Marine:
  - reduce the number of seismic vessels in operation in 2019 ,and
  - search for a strategic partnership to operate cost efficiently with the aim of exiting seismic vessel operations by 2021 at the latest;
- Land: gradual wind-down to exit the market ;
- Multi-Physics: market for sale and monetize when suitable;
- Divest equity stakes in the Argas and Seabed Geosolutions BV ("SBGS") joint ventures;
- General and administrative expenses and support costs: adjust in line with new size and footprint.

Following these strategic announcements and the actions subsequently undertaken, the Contractual Data Acquisition segment and the costs of the restructuring plan implemented in relation to our exit from the Contractual Data Acquisition business have been presented in discontinued operations and in assets held for sale and related liabilities, in accordance with IFRS 5. The costs of implementing the aforementioned plan are recorded under the related data acquisition business lines.

Exit from Marine Data Acquisition business

At the beginning of 2020, we achieved a key milestone on our strategic roadmap to an asset-light business model with the closing of our strategic partnership with Shearwater GeoServices Holding AS ("Shearwater") in Marine Data Acquisition.

On January 8, 2020 (the "Marine Closing"), Shearwater acquired all of the shares in Global Seismic Shipping AS ("GSS") (the indirect owner of five high end vessels) and five sets of streamers, and the Capacity Agreement (described below) entered into force.

The agreement in principle signed in June 2019 also provided for the establishment of a technology partnership through the creation of a company under the Sercel brand name and with CGG's majority ownership to which the parties would contribute their respective towed marine streamer equipment businesses. The Company would focus on the development, manufacturing, commercialization and support of streamers, navigation software and steering systems (the "Streamer Newco Transaction").

More precisely, the following transactions occurred on the Marine Closing:

- CGG acquired the 50% interest held by Eidesvik in GSS and indemnified Eidesvik for the end of the relationship with payment in Shearwater shares. CGG also granted Eidesvik an associated put option (the "Eidesvik Put Option");
- Shearwater acquired 100% of GSS and the streamers from CGG with payment in Shearwater Vendor Notes exchangeable into Shearwater shares (the "Shearwater Vendor Notes");
- The existing umbrella agreement and the existing bareboat charter agreements between CGG and GSS subsidiaries were terminated together with the guarantee granted by CGG;
- Shearwater CharterCo AS entered into five-year bareboat charter agreements with GSS subsidiaries, guaranteed by Shearwater, for the five high end vessels equipped with streamers (the "Shearwater Charter Agreements") and CGG Services SAS entered into the Capacity Agreement;
- Under a payment instructions agreement (the "Payment Instructions Agreement"), Shearwater and Shearwater CharterCo AS direct CGG Services SAS to pay amounts due under the Capacity Agreement directly to GSS subsidiaries to cover Shearwater CharterCo's obligations under its bareboat charter agreements; and
- CGG also entered into step-in agreements with Shearwater and GSS (the "Step-In Agreements") which could come into force if certain conditions are met and would require CGG to substitute itself for Shearwater CharterCo AS as charterer of GSS subsidiaries' five high end seismic vessels (equipped with streamers).

As a result of these transactions, CGG's statement of financial position included the following items:

- US$52.9 million in Vendor Notes at the Marine Closing converted into Shearwater Shares on December 29, 2020 and valued at US$13.7 million at 31, December 2020;
- US$(148.0) million in liabilities in respect of the Capacity Agreement as at the Marine Closing date, amounting to US$(127.2 million) at December 31, 2020. *See note 12 and 14*; and
- US$(4.6) million for the fair value of the Eidesvik Put Option as at the Marine Closing, amounting to US$(16.1) million at December 31, 2020.

The loss relating to the Marine Closing have been recognized in the consolidated financial statements as at December 31, 2019 through the remeasurement of the fair value less cost to sell of the Contractual Data Marine Acquisition disposal group for a net amount of US$(108.3) million.

CGG and Shearwater agreed to suspend negotiations on Marine Streamer NewCo

Due to the downturn in the oil and gas industry triggered by the Covid-19 pandemic, CGG and Shearwater have jointly agreed in November 2020 to suspend negotiations with a view to creating a joint venture in marine streamer equipment until such time as visibility on the replacement cycle improves. Both parties continue to benefit from the marine acquisition partnership and remain committed to the establishment of its technology component.

Shearwater Shares

Shearwater Vendor Notes, exchangeable into Shearwater shares, could also be used to set off payment obligations or buy assets, would Shearwater agrees. Shearwater was in no case required to settle the notes with cash. On December 31, 2020, Shearwater was entitled to require CGG to use the notes as consideration in kind for the purchase of shares in Shearwater at a fixed price of US$25.2262 per share.

On December 29, 2020, the Vendor Notes were irrevocably transferred to Shearwater in exchange for the subscription by CGG of 1,958,248 shares in Shearwater (the "Shearwater Shares") at the agreed fixed unit price. *See note 7.*

For information on Rasmussengruppen's acquisition of Shearwater's shares in January 2021, please refer to note 30.

Capacity Agreement

The main terms of the Capacity Agreement, the contract signed with Shearwater for the provision of marine seismic data acquisition services, requires CGG to:

- Use Shearwater's vessel capacity over a period of five years, for an average of 730 days per year;
- Pay a pre-agreed day rate for the first 2.5 years and the higher of market rate or the pre-agreed day rate for the remaining 2.5 years;
- Reimburse Shearwater for project-related operational costs and fuel ; and
- Compensate Shearwater for days during which more than one of its high-end seismic vessels are idle for a maximum of three vessels (the "Idle Vessel Compensation").

The pre-agreed day rate as negotiated in summer 2019 was higher than the estimated average market day rate at the Marine closing date. Thus, an off-market operational liability of US$(69.3) million was recognized at the Marine Closing date representing the net present value of the positive difference between the pre-agreed rate and the estimated market rate over the five-year contractual term. *See note 12.*

The Idle Vessel Compensation gave rise to a US$(78.7) million financial liability at the Marine Closing date representing the net present value of expected payments under this clause. The expected payments were estimated based on Shearwater fleet utilization assumptions over the five-year commitment period. *See note 14.*

Eidesvik Put Option

Eidesvik had the right to sell all its Shearwater shares to CGG at a strike price of US$30 million. The exercise period started at the earlier of: i) the date of Shearwater IPO, and ii) 1 year after Marine Closing. It ended at the earlier of: i) 6 months after the date of Shearwater IPO, and ii) 3 years after Marine closing. The fair value of this put option has been assessed at US$(4.6) million as of the Marine Closing Date. *See note 14.*

For the latest information on the Eidesvik Put Option, and on Rasmussengruppen's acquisition of Shearwater's shares in January 2021, please refer to note 30.

Step-In Agreements

Following the Marine Closing, Shearwater CharterCo AS has entered into five-year bareboat charter agreements with the GSS subsidiaries, guaranteed by Shearwater, for the five high-end vessels equipped with streamers. As part of the Step-In Agreement, CGG has agreed to substitute itself for Shearwater CharterCo AS as charterer of GSS subsidiaries' five high-end seismic vessels (equipped with streamers) in the event of a payment default under the charter party between the GSS subsidiaries and Shearwater CharterCo AS. As indicated above, and in accordance with the Payment Instruction Agreement, the payments of the payables in relation with the Capacity Agreement and due by Shearwater CharterCo AS to the subsidiaries of GSS, under the Shearwater bareboat charters, are made directly by CGG.

Were the Step-in Agreements to be triggered:

- CGG would be entitled to terminate the Capacity Agreement;
- CGG would become the charterer of the five high end seismic vessels equipped with streamers under bareboat charter agreements;
- CGG would be entitled, through pledge in its favor, to acquire all the share capital of GSS, knowing that GSS and its subsidiaries' principal assets would be the vessels and streamers and its principal liabilities would be the external debt associated with the vessels.

The Step-In Agreements will not impact the statement of financial position unless a trigger, as described above, occurs. In such circumstances, the obligations under the Capacity Agreement should be terminated and replaced by the obligations under the Step-In Agreements, representing a lower amount of commitment compared to the Capacity Agreement.

Divestment from Seabed Geosolutions BV

In line with our strategy to exit the Contractual Data Acquisition business, on December 30, 2019 CGG SA entered into a Share Purchase and Exit Agreement to transfer on that date 15% (out of its total 40% stake) of its shares in the Seabed Geosolutions BV joint venture ("Seabed") to its partner Fugro NV ("Fugro"), with its remaining 25% shareholding to be transferred before April 1, 2020.

The full divestment from Seabed was effective on April 1, 2020 with the transfer of the remaining shares to Fugro.

In December 2019, CGG also paid US$35 million to Fugro to settle any disputes and claims between them relating to the financing of Seabed and differing interpretations of non-competition provisions in the Seabed joint venture agreement.

Signature of agreement to divest Multi-Physics business

In line with its strategy to exit from the Contractual Data Acquisition business, the Group on August 5, 2020 entered into an agreement for the sale of its Multi-Physics activity. The Closing of the sale is expected to take place in 2021. *See note 5.*

Exit from Land Data Acquisition

We progressively reduced the Land Data Acquisition business over 2019 and fully shut down activity in 2020. Some of the assets used in this business were sold for US$3 million during 2019, and the remainder was sold for US$7.1 million in 2020. The Land Data Acquisition staff were laid off under the CGG 2021 redundancy plan.

CGG 2021 Redundancy Plan

In the affected countries, CGG group has complied with the administrative and legal procedures required by the employment reductions in the data acquisition business and the related support functions. In France, CGG group implemented a social plan after reaching an agreement with union representatives that was approved by the relevant regulatory body, DIRECCTE *(Direction régionale des enterprises, de la concurrence et de la consummation, du travail et de l'emploi).* Because CGG SA remains subject to certain undertakings given as part of the Safeguard Plan, we sought and received approval from the French Commercial Courts in June 2019 to carry out the strategic changes in our data acquisition business.

CGG is pursuing the execution of its strategy to exit the Contractual Data Acquisition business in full compliance with all legal requirements.

Safeguard Plan

On July 17, 2018, certain holders of CGG's convertible bonds (Oceanes) filed an appeal before the French Supreme Court (Cour de cassation) against the ruling rendered on May 17, 2018 by the Appeals Court of Paris rejecting a claim by a group of Convertible Bondholders against the ruling of the Commercial Court of Paris sanctioning the Safeguard Plan on December 1, 2017.

On February 26, 2020, the French Supreme Court (Cour de cassation) confirmed the ruling rendered by the Appeals Court of Paris and rejected the claim from a group of Convertible Bondholders, putting a definitive end to this litigation.

By a ruling issued on November 24, 2020, the Commercial court of Paris acknowledged the completion of CGG's Safeguard Plan, following the early repayment in full of all its remaining debt under the Safeguard Plan (see note 13). In this context, CGG reiterated its undertaking made as part of the negotiation of the safeguard plan to maintain, and procure that the French-law subsidiaries it controls within the meaning of article L.233-3 of the French Commercial Code maintain in France their decision-making centres currently located in France, including the headquarters of CGG, until December 31, 2022.

Notwithstanding this successful outcome, on December 22, 2020, Mr. Jean Gatty in his capacity both as former representative of each of the two bodies of Oceane holders and as director of JG Capital Management (a management company of JG Partners, itself a former holder of the Oceanes) filed three third-party appeals against the decision approving the completion of CGG's Safeguard Plan. On February 1, 2021, Mr. Gatty, as former representative of each body of Oceane holders issued two notices convening general meetings of Oceane holders in order to authorise him to lodge the aforementioned third-party appeals (which had already been lodged before the Commercial Court of Paris).

GeoSoftware

In 2019, after CGG was approached by several potential buyers interested in GeoSoftware, part of GGR segment, the related assets were reclassified to the line "assets held for sale" and liabilities to the line "liabilities directly associated with the asset classified as held for sale". The GeoSoftware activity does not meet the criteria of a major line of business under IFRS 5, therefore the GeoSoftware operations were not presented as discontinued operations in the consolidated statements of operations and in the consolidated statements of cash flows (hence triggering no retrospective presentation).

The sale dynamics was hindered by events beyond the control of the Group, namely the global health crisis and the drop in oil price in 2020. The outlook improved at the end of the year and management and its advisors are actively working on the sale of the business.

NOTE 3 TRADE ACCOUNTS AND NOTES RECEIVABLE

Analysis of trade accounts and notes receivable is as follows:

In millions of US$	December 31, 2020	2019
Trade accounts and notes receivable, gross – current portion	299.1	376.9
Less: allowance for doubtful accounts – current portion	(36.2)	(27.0)
Trade accounts and notes receivable, net – current portion	**262.9**	**349.9**
Trade accounts and notes receivable, gross – non-current portion	0.8	-
Less: allowance for doubtful accounts – non-current portion	–	–
Trade accounts and notes receivable, net – non-current portion	**0.8**	**-**
Contract assets	61.3	86.1
TOTAL TRADE ACCOUNTS AND NOTES RECEIVABLE [a]	**325.0**	**436.0**

(a) As of December 31, 2019, this amount does not include US$17.0 million of trade accounts and notes receivable, net, reclassified as Assets held for sale.

Allowances for doubtful accounts only relate to overdue receivables at the closing date.

As of December 31, 2020, the aging analysis of net trade accounts and notes receivable is as follows:

In millions of US$	Not past due	30 days	30-60 days	60-90 days	90-120 days	> 120 days	Total
2020	200.8	11.7	3.8	4.3	0.9	42.2	263.7
2019	238.6	39.3	12.3	6.5	10.1	43.0	349.9

Litigation

On March 18, 2013, CGG Services SAS and Wavefield Inseis AS (together "CGG"), both fully owned subsidiaries of CGG SA, initiated arbitration proceedings against ONGC, an Indian company, to recover certain unpaid amounts under three commercial contracts entered into by ONGC and CGG Services SAS on one hand and ONGC and Wavefield Inseis AS on the other hand, between 2008 and 2010. The Arbitration Tribunal issued an award in favor of CGG on July 26, 2017 and at the same date dismissed ONGC's counter claims against CGG. ONGC submitted an application against the Tribunal award on October 27, 2017. On January 6, 2020, ONGC's application to set aside the Tribunal awards was dismissed by the Single Judge of the Bombay High Court without costs. ONGC has filed an appeal on March 2, 2020 against this judgment, which is pending before the Division Bench of the Bombay High Court. We believe that the tribunal's award will be confirmed agian by the Bombay High Court, allowing us to recover at least the amount of the receivables recorded on our balance sheet as unpaid receivables as at December 31, 2020.

As of the date of this Document, legal proceedings are still ongoing.

Factoring agreements

There were no factoring agreements at December 31, 2020 and 2019.

NOTE 4 INVENTORIES, WORK IN PROGRESS AND OTHER CURRENT ASSETS

	December 31, 2020			December 31, 2019		
In millions of US$	Gross value	Valuation Allowance	Net value	Gross value	Valuation Allowance	Net value
Consumables and spares parts	0.2	–	0.2	8.2	(2.5)	5.7
Raw materials and sub-assemblies	77.7	(16.9)	60.8	73.5	(16.6)	56.9
Work in progress	157.2	(27.4)	129.8	140.0	(36.9)	103.1
Finished goods	80.6	(33.6)	47.0	74.7	(40.3)	34.4
INVENTORIES AND WORK IN PROGRESS	**315.7**	**(77.9)**	**237.8**	**296.4**	**(96.3)**	**200.1**

Variation of inventories and work in progress

VARIATION OVER THE PERIOD

	December 31,	
In millions of US$	2020	2019
Balance at beginning of period	**200.1**	**204.8**
Variations	(4.6)	(10.0)
Movements in valuation allowance [a]	25.5	3.3
Translation adjustments	16.8	(3.0)
Change in consolidation scope	–	–
Other [b]	–	5.0
BALANCE AT END OF PERIOD	**237.8**	**200.1**

(a) Mainly concerns reversals of provisions for scrapped inventories by the Equipment segment.
(b) In 2019, US$5 million were due to the reclassification of finished goods to asset under construction by the Equipment segment.

Other current assets

	December 31,	
In millions of US$	2020	2019
Personnel and other tax assets	51.0	51.3
Fair value of financial instruments	1.1	–
Restricted cash	9.2	13.4
Other miscellaneous receivables	8.1	22.5
Supplier prepayments	5.8	12.0
Prepaid expenses	16.8	17.5
OTHER CURRENT ASSETS	**92.0**	**116.7**

NOTE 5 ASSETS HELD FOR SALE AND DISCONTINUED OPERATIONS

Assets held for sale

The 2021 strategic roadmap announced in November 2018 aimed at implementing an asset light business model by reducing CGG's exposure to the contractual data acquisition business. As a result of the strategic announcements and actions undertaken subsequently, we presented our contractual data acquisition operations and the costs of implementation of the related measures, referred to as the CGG 2021 Plan, in accordance with IFRS 5, as discontinued operations and assets held for sale.

The fair value measurement of assets held for sale is categorized within Level 3 of the fair value hierarchy.

In 2019 the assets of our GeoSoftware business, part of our GGR segment, were reclassified to the line "assets held for sale" and liabilities to the line "liabilities directly associated with the asset classified as held for sale". The GeoSoftware activity does not meet the criteria of a major line of business under IFRS 5, therefore the GeoSoftware operations were not presented as discontinued operations in the consolidated statements of operations and in the consolidated statements of cash flows, hence triggering no retrospective presentation.

Disaggregation of assets and liabilities

	December 31, 2020			December 31, 2019
	GeoSoftware	Other	Net	
Goodwill	-	-	-	23.0
Intangible assets, net	77.0	-	77.0	77.2
Property. plant & equipment, net	1.0	0.5	1.5	48.4
Right of use-assets	-	-	-	82.0
Companies formerly accounted for under the equity method	-	25.0	25.0	72.0
Trade accounts and notes receivable, net	2.4	10.6	13.0	12.1
Other current assets, net	1.0	-	1.0	1.9
Other non-current assets, net	0.2	-	0.2	-
ASSETS HELD FOR SALE, NET	**81.6**	**36.1**	**117.7**	**316.6**
Trade accounts and notes payable		(2.6)	(2.6)	(2.6)
Accrued payroll costs	(1.6)	(2.1)	(3.7)	(3.2)
Other current liabilities		(6.3)	(6.3)	-
Other non-current liabilities		(0.4)	(0.4)	(1.7)
Lease liabilities				(190.7)
Provisions for onerous contracts				(61.0)
LIABILITIES DIRECTLY ASSOCIATED WITH THE ASSETS CLASSIFIED AS HELD FOR SALE	**(1.6)**	**(11.4)**	**(13.0)**	**(259.2)**
ASSETS (LIABILITIES) HELD FOR SALE, NET	**80.0**	**24.7**	**104.7**	**57.4**

The decrease in Assets held for sale and Liabilities directly associated with the assets classified as held for sale between the 2019 and 2020 financial years is primarily due to:

(i) the exit from the Marine Data Acquisition business, in the amount of US$108.3 million;

(ii) the sale of Land equipment (US$7.1 million) and the impairment (US$1.5 million) of these assets held for sale;

(iii) the decrease of the assets held for sale for US$(27.0) million on the GeoSoftware business including US$(36.9) million of fair value remeasurement less cost to sell due to the global health crisis, drop in oil price and E&P spending cuts;

(iv) US$(20.6) million in respect of the fair value remeasurement less cost to sell of our equity investments due to the aforementionned circumstances;

(v) following the signature of an agreement to sell the Multi-Physics business, the remeasurement of the fair value less cost to sell of this activity, amounting to US$(0.7) million at the end of the 2020 financial year, compared to US$4.3 million at the end of the 2019 financial year, i.e. a decrease of US$5.0 million.

Net income (loss) from discontinued operations

In millions of US$	Year 2020	2019
Operating revenues	39.3	191.4
Operating expenses	(52.1)	(198.1)
Other revenues (expenses) – net	(36.9)	(155.5)
Operating income	**(49.7)**	**(162.2)**
Interest expense on leases	(0.1)	(18.5)
Other financial income (loss)	(14.0)	(1.6)
Income taxes	1.3	(5.4)
Share of (income) loss in companies formerly accounted under equity method	-	-
NET INCOME (LOSS) FROM DISCONTINUED OPERATIONS	**(62.5)**	**(187.7)**

For the financial year ended December 31, 2020, we recognized US$(36.9) million of restructuring costs as part of the CGG 2021 plan including US$(34.4) million of impairment of assets, mainly coming from the re-measurement to fair value less cost to sell of our disposal groups, of which US$(20.6) million in respect of our equity investments, US$(1.5) million for the Land assets and US$0.8 million for the Multi-Physics disposal group;

In addition, US$(14.1) million of financial losses for the Idle Vessel Compensation have been recognized, of which a US$(10.0) million increase of the Idle Vessel Compensation following revised assumptions.

For the period ended December 31, 2019, we recognized US$(155.5) million of restructuring costs as part of the CGG 2021 plan. The breakdown is as follows:

(i) US$(50.0) million of impairment of assets, coming from the loss recognized on the remeasurement to fair value less cost to sell of our disposal groups including, US$(25.7) million for marine disposal group, US$(11.1) million for Multi-physics disposal group, US$(6.1) million for Multi-physics intangible assets, US$(7.9) million of equity investment impairment, and US$0.8 million for Land assets;

(ii) US$(11.8) million of other costs, mostly related to exit and wind down costs for US$(5.2) million and transaction fees for US$(6.6) million;

(iii) US$(93.7) million of losses on divestment in Seabed Geosolutions BV, including US$(35.0) million settlement payment to Fugro.

Net cash flows incurred by discontinued operations

The net cash flow from discontinued operations for each period is presented below:

In millions of US$	December 31, 2020	2019
Net cash flow from operating activities	(51.8)	(92.7)
Net cash flow used in investing activities	6.3	(37.5)
Net cash flow from financing activities	(27.0)	(37.4)
NET CASH FLOWS GENERATED BY DISCONTINUED OPERATIONS	**(72.5)**	**(167.6)**

In 2020, the net cash flow generated by discontinued operations included disbursements in respect of the CGG 2021 Plan for an amount of US$(87.4) million, of which US$(41.6) million of severance cash outflows, US$(21.5) million of cash outflows in respect of Idle Vessel Compensation and US$(24.1) million of ramp down cash outflows and US$7.1 million of proceed of Land assets.

In 2019, the net cash flow included disbursements related to CGG 2021 Plan for an amount of US$(136,0) million, including the settlement payment of US$(35,0) million to Fugro.

NOTE 6 ASSETS VALUATION ALLOWANCE

	December 31, 2020					
In millions of US$	Balance at beginning of year	Additions	Deductions	Unused Deductions	Other [a]	Balance at end of period
Trade accounts and notes receivable	27.0	13.5	(3.2)	-	(1.1)	36.2
Inventories and work-in-progress	96.3	1.1	(26.6)	-	7.1	77.9
Tax assets	4.6	1.6	(0.1)	-	-	6.1
Other current assets	2.9	-	(0.2)	-	1.1	3.8
TOTAL ASSETS VALUATION ALLOWANCE	**130.8**	**16.2**	**(30.1)**	**-**	**7.1**	**124.0**

(a) Includes effects of translation adjustments and changes in the scope of consolidation.

	December 31, 2019					
In millions of US$	Balance at beginning of year	Additions	Deductions	Unused Deductions	Other [a]	Balance at end of period
Trade accounts and notes receivable	33.4	7.8	(14.4)	-	0.2	27.0
Inventories and work-in-progress	101.3	4.2	(7.5)	-	(1.7)	96.3
Tax assets	4.9	-	(0.3)	-	-	4.6
Other curent assets	3.0	-	(0.1)	-	-	2.9
TOTAL ASSETS VALUATION ALLOWANCE	**142.6**	**12.0**	**(22.3)**	**-**	**(1.5)**	**130.8**

(a) Includes effects of translation adjustments and changes in the scope of consolidation.

NOTE 7 INVESTMENTS, OTHER NON-CURRENT AND CURRENT FINANCIAL ASSETS

In millions of US$	2020	2019
Non-consolidated investments [a]	0.9	1.1
Loans and advances [b]	0.7	7.3
Deposits and other [c]	12.0	19.0
Investments and other financial assets	**13.6**	**27.4**
Non-consolidated Shearwater Shares	13.7	-
Other current financial assets	**13.7**	**-**
TOTAL INVESTMENTS, OTHER FINANCIAL ASSETS AND OTHER CURRENT FINANCIAL ASSETS	**27.3**	**27.4**

(a) Mainly shares in Interactive Network. No restriction or commitment exists between CGG and the non-consolidated investments.
(b) The US$(6.6) million variation mostly corresponds to the release of trust guarantees for US$6.7 million.
(c) At December 31, 2020, the amount of pledged financial assets is US$11.9 million.

The value of Shearwater Shares was US$13.7 million as of December 31, 2020, compared to US$52.9 million in Vendor Notes at the Marine Closing date. US$3.5 million were used to settle various operational costs. A fair value adjustment of US$(35.7) million was booked based on the agreement with Rasmussengruppen for the acquisition of Shearwater shares hold by CGG. *See notes 2 and 30.*

NOTE 8 INVESTMENTS IN COMPANIES ACCOUNTED FOR UNDER THE EQUITY METHOD

In millions of US$	Country/Head office	2020 % interest held	December 31, 2020	December 31, 2019
GGR				
Reservoir Evaluation Services LLP	Kazakhstan/Almaty	49.0%	2.8	2.7
Equipment				
Autonomous Mobile Blast Paint Robot SAS	France/Allevard	34.0%	0.5	-
Contractual Marine Data Acquisition				
PT Elnusa-CGGVeritas Seismic	Indonesia/Jakarta	49.0%	0.3	0.3
PTSC CGGV Geophysical Survey Limited	Vietnam/Vung Tau City	49.0%	-	-
INVESTMENTS IN COMPANIES ACCOUNTED FOR UNDER THE EQUITY METHOD			**3.6**	**3.0**

CGG acquired the 51% interest in CGG Eidesvik Shipmanagement AS on the Marine Closing date, raising its total stake to 100%. CGG Eidesvik Shipmanagement AS was merged with another entity fully-owned by the Group in the course of 2020.

The Group's share of the net result of CGG Eidesvik Shipmangement AS was nil at December 31, 2019.

Pursuant the strategic announcements in November 2018, CGG reclassified its investments in the following companies accounted for under the equity method as "Assets held for sale":

In millions of US$	Country/Head office	2020 % interest held	2019 % interest held
Contractual Marine Data Acquisition			
Global Seismic Shipping AS	Norway/Bomlo	-	50.0%
Land and Multi-Physics Data Acquisition			
Argas	Saudi Arabia/Al-Khobar	49.0%	49.0%
Seabed Geosolutions BV	The Netherlands/Amsterdam	-	25.0%

On the Marine Closing date, CGG acquired Eidesvik's stake in Global Seismic Shipping AS to fully own the company and sold the full stake on the very same date to Shearwater. *See note 2.*

On December 30, 2019, CGG agreed to sell its 40% stake in Seabed Geosolutions to Fugro. 15% have been transferred on December 31st, 2019, then the remaining part was transferred on April 1st, 2020. *See note 2.*

The variation of "Investments in companies accounted for under the equity method" is as follows:

In millions of US$	December 31, 2020	2019
Balance at beginning of period	**3.0**	**0.1**
Change in consolidation scope	-	-
Investments made during the year	0.5	3.1
Share of income (loss)	0.1	(0.2)
Impairment	-	-
Dividends received during the period and return of capital	-	-
Investments reclassified as Assets held for sale	-	-
Translation adjustments and other	-	-
BALANCE AT END OF PERIOD	**3.6**	**3.0**

In 2020, the Group invested US$0.5 million, after acquiring shares in Autonomous Mobile Blast Paint Robot.

In 2019, Investments for US$3.1 million corresponded to our participation in Petroleum Edge Limited's capital increase through the conversion of part of the existing debt.

For transactions with investments in companies accounted for under the equity method, please see *note 27* "Related party transactions".

NOTE 9 PROPERTY, PLANT AND EQUIPMENT

	December 31, 2020			2019		
In millions of US$	Gross	Accumulated depreciation	Net	Gross	Accumulated depreciation	Net
Land	6.8	-	6.8	6.8	-	6.8
Buildings [a]	161.4	(117.6)	43.8	156.5	(110.1)	46.4
Machinery & Equipment	290.9	(244.3)	46.6	215.0	(147.4)	67.6
Other tangible assets	132.3	(117.5)	14.8	122.7	(118.6)	4.1
Right-of-use assets [a]	294.2	(138.1)	156.1	264.5	(89.4)	175.1
- Property	214.5	(91.5)	123.0	207.9	(67.1)	140.8
- Machinery & Equipment	79.7	(46.6)	33.1	56.6	(22.3)	34.3
TOTAL PROPERTY, PLANT AND EQUIPMENT	**885.6**	**(617.5)**	**268.1**	**765.5**	**(465.5)**	**300.0**

(a) Prior to IFRS 16 first application, capital leases were recognized in property, plant and equipment. At December 31, 2019, these were presented as rights of use.

Short-term leases and leases of low-value assets

As allowed by IFRS 16, the Group decided to use exemptions for short-term leases (<12 months) and leases of low-value assets (<US$5,000), which were not material at December 31, 2020 and at December 31, 2019.

Revenues from subleases

The Group signed arrangements with third parties to sublease leased real estate assets. The income generated by these sub-lease agreements, which are classified as operating leases, was not material at December 31, 2020 and at December 31, 2019.

Variation over the period

In millions of US$	December 31 2020	2019
Balance at beginning of period	**300.0**	**189.2**
IFRS 16 first time application right-of-use assets (net) [a]	-	128.8
Acquisitions [b]	50.2	73.8
Depreciation [c]	(89.5)	(75.0)
Disposals	(1.5)	(3.4)
Translation adjustments	10.1	(1.2)
Change in consolidation scope	-	-
Impairment of assets [d]	(4.2)	(5.5)
Reclassification of tangible assets as "Assets held for sale"	-	(1.1)
Other	3.0	(5.6)
BALANCE AT END OF PERIOD	**268.1**	**300.0**

(a) At December 31, 2019, the line item "IFRS 16 first time application right-of-use assets" included a US$17.0 million impairment.
(b) Including US$29.0 million additional right-of use assets in 2020, compared to US$33.2 million in 2019.
(c) Including US$48.8 million depreciations of right-of-use assets in 2020, compared to US$45.2 million in 2019.
(d) Including US$4.1 million depreciations related to impairment of right-of-use assets.

In 2019, the Group recognized right-of-use assets of US$128.8 million (after impairment) from identified operating lease commitments in respect of the transition to IFRS 16.

Disposals essentially correspond to damaged and/or scrapped marine equipment.

Reconciliation of acquisitions with the consolidated statements of cash flows and capital expenditures in note 20

In millions of US$	December 31 2020	2019
Acquisitions of tangible assets, excluding leases	21.9	40.6
Capitalized development costs (*see notes 10 and 20*)	41.0	32.4
Acquisitions of other intangible assets, excluding Multi-Client surveys (*see note 10*)	1.1	1.2
Change in fixed asset suppliers	0.1	1.1
Reclassification of tangible assets in "Assets held for sale"	-	-
TOTAL PURCHASES OF TANGIBLE AND INTANGIBLE ASSETS ACCORDING TO CASH FLOW STATEMENT ("CAPITAL EXPENDITURES")	**64.1**	**75.3**

NOTE 10 INTANGIBLE ASSETS

	December 31					
	2020			2019		
In millions of US$	Gross	Accumulated depreciation	Net	Gross	Accumulated depreciation	Net
Multi-Client surveys - Marine	5,186.7	(4,776.3)	410.4	5,013.5	(4,554.0)	459.5
Multi-Client surveys - Land	811.8	(729.8)	82.0	784.5	(713.0)	71.5
Capitalized development costs	459.5	(350.8)	108.7	418.8	(316.0)	102.8
Software	92.0	(88.7)	3.3	102.8	(95.4)	7.4
Customer relationships	227.7	(194.0)	33.7	227.4	(182.2)	45.2
Other intangible assets	220.1	(219.0)	1.1	209.3	(204.9)	4.4
TOTAL INTANGIBLE ASSETS	**6,997.8**	**(6,358.6)**	**639.2**	**6,756.3**	**(6,065.5)**	**690.8**

Variation over the period

	December 31,	
In millions of US$	2020	2019
Balance at beginning of period	**690.8**	**898.9**
Increase in Multi-Client surveys	257.1	204.5
Capitalized development costs	41.0	32.4
Other acquisitions	1.1	1.2
Amortization and impairment on Multi-Client surveys	(284.8)	(308.0)
Other depreciation [a]	(58.3)	(58.7)
Disposals	(0.2)	–
Translation adjustments	(6.2)	(1.3)
Reclassification of intangible assets as "Assets held for sale" [b]	-	(76.0)
Other	(1.3)	(2.2)
BALANCE AT END OF PERIOD	**639.2**	**690.8**

(a) including a US$6.6 million impairment loss on customer relationships and trade name related to the GeoConsulting business.
(b) In 2019, intangible assets relating to the GeoSoftware business were reclassified as 'Assets held for sale". See note 5.

Multi-Client library

Impairment test and key assumptions

The recoverable value of our Multi-Client library depends on the expected sales for each survey. The sales forecasts are subject to numerous change factors such as the survey location, the basin dynamics depending on the lease rounds, the political, economic and tax situation in the country, the operators expectations and are revised regularly. The expected sales are discounted at the WACC rate used for our Multi-Client CGU (*please refer to note 11*).

Impairment loss

In 2020, "Amortization and impairment on Multi-Client surveys" included US$(99.6) million of impairment loss primarily related to the downward revision of expected sales of surveys in frontier exploration areas, due to political instability (Africa) and government decisions to limit exploration (Ireland) in the context of significant cuts in E&P spending.

In 2019, "Amortization and impairment on multi-client surveys" included US$(33.0) million of impairment loss. This impairment loss was mainly coming from the Irish Prime Minister's decision to restrict oil exploration in Ireland as well as the potential lifting of the obligation to use CGG's services for oil companies in Gabon.

Sensitivity to changes in assumptions

An increase by 50 basis points of the discount rate would reduce by approximately US$(5) million the net present value of the expected sales of our multi-client library. It would not trigger any impairment loss.

A reduction by 10% of the expected sales in 2022 and 2023 would reduce by approximately US$(22) million the net present value of expected sales. It would trigger an impairment loss of about US$(6) million.

Reconciliation of acquisitions with the consolidated statement of cash flows and capital expenditures in note 20

In millions of US$	December 31 2020	2019
Investments in Multi-Client surveys	257.1	204.5
Amortization & depreciation capitalized in Multi-Client surveys	(18.1)	(18.8)
INVESTMENT IN MULTI-CLIENT SURVEYS ACCORDING TO CASH-FLOW STATEMENT	**239.0**	**185.7**

NOTE 11 GOODWILL

Goodwill is analyzed as follows:

Variation over the period

(In millions of US$)	December 31, 2020	December 31, 2019
Balance at beginning of period	**1,206.9**	**1,229.0**
Additions	-	-
Impairment [a]	(24.0)	-
Assets held for sale [b]	-	(23.0)
Translation adjustments	3.6	0.9
BALANCE AT END OF PERIOD	**1,186.5**	**1,206.9**

(a) Impairment of goodwill recognized in respect of GeoConsulting (CGU of GGR)
(b) The goodwill relating to the GeoSoftware business was reclassified in "Assets held for sale". See note 5.

Impairment tests

The Group management performs at least one annual impairment test on the goodwill, intangible assets and indefinite-life assets allocated to the cash-generating units (CGU) to assess whether an impairment loss needs to be recognized.

These tests are performed at each balance sheet date and whenever there is any indication of potential loss of value.

Following the outbreak of the Covid-19 pandemic, as a consequence of the significant cuts in E&P spending in the context of high volatility in oil price, we conducted a goodwill impairment test at the June 30, 2020 reporting date which resulted in the impairment of the goodwill allocated to our GeoConsulting CGU for US$24 million.

The information disclosed in this note corresponds to the expected discounted cash flows as determined at the balance sheet date together with capital employed at December 31, 2020.

The recoverable amount retained by the Group corresponds to the value in use of the assets, cash-generating units or group of cash-generating units, defined as the discounted expected cash flows.

The Group's continuing operations are divided into six cash-generating units (CGU), including the GeoSoftware business classified as held for sale. A cash-generating unit refers to a homogeneous group of assets generating cash inflows that are largely independent of the cash inflows from other groups of assets.

The following table provides the breakdown of goodwill per segment:

In millions of US$	December 31, 2020	December 31, 2019
Contractual Data Acquisition	-	-
Non-Operated Resources	-	-
Multi-Client CGU	284	284
Geoscience CGUs	724	748
GGR	**1,008**	**1,032**
Equipment	**178**	**175**
TOTAL	**1,186**	**1,207**

Key assumptions used in the determination of the recoverable amount

In determining the recoverable amount of assets through value in use, the Group management makes estimates, judgments and assumptions on uncertain matters.

The assumptions underlying the financial projections are based on internal estimates in respect of expected operating conditions, market dynamics, commercial penetration of new technologies, services and products and competitive landscape, as well as external sources of information, such as the yearly budgets of oil companies, some notes and reports from analysts of brokerage firms and investment banks, about the forecasted activities of the Group and the sector.

The main factor influencing our activities is the level of E&P spending which itself depends on various other factors, such as oil price and its volatility.

The value in use is determined as follows:

- Budgeted cash-flow for 2021 and forecasted perspectives for 2022-2023;
- Use of normative cash flows beyond Year 3, the discounted normative cash flows weighting more than 80% of the value in use;
- Long-term growth rate of 2.0% for all the CGUs;
- Discount rates that we consider reflect the weighted average cost of capital (WACC) of the segment concerned:
  - 9.625% for the Equipment segment (compared to 9.75% in 2019) corresponding to a pre-tax rate of 11.9%,
  - 9.375% for the cash-generating units in the GGR segment (compared to 9.0% in 2019) corresponding to a pre-tax rate of around 11.5% (between 11.4% and 11.6%).

WACC is calculated using the standard capital asset pricing model (CAPM) methodology. We requested an independent firm to assess our WACC in 2020. The net asset value (NAV) of each CGU is computed using pre-tax WACC, tax expenses being included in our cash flow projections. The pre-tax WACC is then calculated iteratively *i.e.* applying the discount rate leading to the same NAV with tax expenses excluded from cash flows projections.

In 2020

The outbreak of the Covid-19 pandemic triggered a significant decline in the demand for oil and gas due to lockdown measures and high volatility in the oil price. Our clients reacted sharply and consequently reduced their E&P spending by around 30% in 2020, leading to material drop in our activity.

It is difficult to predict the timing and breadth of any recovery of our clients' E&P spending and hence the evolution of the demand for our products and services. We believe though the on-going vaccination campaigns will improve the prospects of economic recovery. In line with some analysts and investment banks, and considering the recent OPEC+ agreements, we anticipate the rebalancing of demand for oil & gas and the increase in the oil price with Brent expected to stabilize above US$50/ bbl in 2021. In this context and provided the pandemic remains under control, after several years of under-investments, we anticipate E&P spending to rebound gradually and stimulate the demand for our products and services, oil & gas continuing to play a major part in the energy mix and in the financial equation of our clients, despite growing importance of renewable energies. The financial projections of our CGU are based on such a gradual recovery path.

GGR

The cuts in E&P spending strongly impacted our GGR segment in 2020. If the first half of the year was supported by the pre-crisis order book, slow sales materialized in the second half. Our GGR operating revenues as reported decreased by 35% compared to 2019. We responded to this environment by:

- Adjusting the cost structure in line with our clients' new level of activity;
- Continuing to invest in research and development, our people and computing power and infrastructure to maintain our leadership in geoscience and strengthen our reservoir characterization capabilities;
- Ensuring sustained investments in new multi-client surveys in mature production areas (including Brazil and the North Sea), well known by operators, allowing them to minimize the marginal cost of investment, while maintaining acceptable levels of pre-funding.

After a year of transition in 2021, the activity of our GGR segment is expected to increase driven by the E&P spending recovery. We estimate it should particularly benefit from its unique expertise in high-end imaging and reservoir

characterization, fully aligned with oil companies' focus on existing assets.

At December 31, 2020, the capital employed of the Multi-Client CGU amounted to US$629 million, including US$284 million in goodwill.

While the future cash flows were revised downwards, with a decrease of 11% and 2% in the normative cash flow compared respectively to our forecasts at December 31, 2019 and June 30, 2020 reporting dates, there was no impairment loss of goodwill to be recorded as at December 31, 2020.

At December 31, 2020, the capital employed of the Geoscience CGU amounted to US$895 million and included US$724 million in goodwill, net of the impairment loss of goodwill recognized in respect of the GeoConsulting CGU for US$24 million. Our GeoConsulting CGU, involved in upstream consulting, has been particularly hard hit by the cuts in clients' spending. As we do not expect a recovery in this business, we recorded the aforementioned impairment loss. While the future cash flows were revised downwards, with a decrease of 15% and 16% in the normative cash flow compared respectively to our forecasts at December 31, 2019 and June 30, 2020 reporting dates, there was no impairment loss of goodwill to be recorded for our other Geoscience CGU at December 31, 2020

US$24 million in respect of the goodwill impairment recorded at December 31, 2020.

Equipment

We estimate that the worldwide demand for geophysical equipment decreased by over 30% in 2020, after two consecutive years of growth, primarily due to the Covid-19 pandemic and volatility in the oil price that caused oil and gas companies and geophysical contractors to drastically cut their capital expenditures. After an expected growth in 2021 with solid deliveries for land mega crews in Saudi Arabia in the first half-year, we believe that the market dynamics should be supported by ever increasing demand from oil and gaz companies for new technologies (WING nodes onshore, GPR nodes offshore) to achieve high-resolution imaging. The revenues of our Equipment segment are expected to increase going forward fueled by large installed base, its portfolio of new products and the diversification stream into non-oil sectors.

As regards land equipment, we see opportunities for the latest generations of products in traditional markets (Russia, China and Middle East) as well as in North Africa and India. On the marine equipment front, we believe the demand should remain weak as contractors still face difficult market conditions. However we expect to see a gradual recovery, supported by the obsolescence of streamers in operations and shrinking inventories from stacked vessels.

The capital employed amounted to US$599 million at December 31, 2020, including US$178 million of goodwill.

While the future cash flows were revised downwards, with a decrease of 40% and 23% in the normative cash flow compared respectively to our forecasts at December 31, 2019 and June 30, 2020 reporting dates, there was no impairment loss of goodwill to be recorded at December 31, 2020.

No impairment of goodwill was recognized at December 31, 2020.

In 2019

At December 31, 2019, the capital employed at the Multi-Client cash-generating unit amounted to US$707 million, including US$284 million in goodwill.

At December 31, 2019, the capital employed at the Geoscience cash-generating units amounted to US$1,005 million, including US$748 million in goodwill.

At December 31, 2019, the capital employed at the Equipment cash-generating unit amounted to US$490 million, including US$175 million in goodwill.

No impairment of goodwill was recognized in 2019.

Sensitivity to changes in assumptions

A change in certain assumptions, in particular the discount rate and the normative cash flows, could significantly impact the measurement of the value in use of our cash-generating units and, hence, the impairment test outcomes. The cyclical business profile of our operations can have an impact on the value in use of our CGU, albeit to a lesser extent than the two previous assumptions. The structuring assumption is the gradual recovery of E&P spending. The cash flows generated in 2022 and 2023 as well as in the normative year could vary based on timing and breadth of recovery. The impacts on value in use coming from changes on 2022 and 2023 as well as normative year linked to alternative recovery scenarii are disclosed in the template below.

Changes in these assumptions have the following impact on value in use:

In millions of US$	Goodwill	Difference between the CGUs' value in use and the carrying value of assets including goodwill	Sensitivity of cash flows in 2022-2023		Sensitivity of normative cash flows		Sensitivity to long-term growth rates		Sensitivity to discount rate (after tax)	
			Decrease of 10%	Increase of 10%	Decrease of 10%	Increase of 10%	Decrease of 0.50 bps	Increase of 0.50 bps	Decrease of 0.50 bps	Increase of 0.50 bps
Multi-Client CGU	284	68	(7)	7	(61)	61	(39)	44	54	(47)
Geoscience CGUs [a]	724	93	(9)	9	(86)	86	(55)	63	77	(67)
Equipment CGU	178	150	(6)	6	(63)	63	(39)	44	54	(48)
TOTAL	**1,186**									

(a) Relates only to the Geoscience CGU for which the goodwill is not nil.

NOTE 12 OTHER CURRENT AND NON-CURRENT LIABILITIES

In millions of US$	December 31 2020	2019
Value added tax and other taxes payable	33.1	40.8
Deferred revenues	226.5	280.7
Fair value of financial instruments (*see note 14*)	-	0.1
Off-Market Component [a]	13.9	-
Other current liabilities	5.1	5.7
OTHER CURRENT LIABILITIES	**278.6**	**327.3**

(a) Operating debt in respect of Capacity Agreement. See note 2.

In millions of US$	December 31, 2020	2019
Research and development subsidies	0.2	0.2
Profit-sharing scheme	2.2	3.2
Off-Market Component [a]	42.0	-
Other non-current liabilities	-	0.6
OTHER NON-CURRENT LIABILITIES	**44.4**	**4.0**

(a) Operating debt in relation to Capacity Agreement. See note 2.

NOTE 13 FINANCIAL DEBT

Gross financial debt as of December 31, 2020 was US$1,389.1 million compared to US$1,326.0 million as of December 31, 2019.

The breakdown of our gross debt is as follows:

	December 31					
	2020			2019		
In millions of US$	Current	Non-current	Total	Current	Non-current	Total
First lien senior secured notes due 2023	-	643.6	643.6	-	614.5	614.5
Second lien senior secured notes due 2024 (including PIK interest) [a]	-	577.2	577.2	-	520.8	520.8
Bank loans and other loans	-	0.6	0.6	-	3.3	3.3
Lease liabilities	46.2	108.9	155.1	47.5	128.0	175.5
Sub-total	**46.2**	**1,330.3**	**1,376.5**	**47.5**	**1,266.6**	**1,314.1**
Accrued interests	12.4	-	12.4	11.9	-	11.9
Financial debt	**58.6**	**1,330.3**	**1,388.9**	**59.4**	**1,266.6**	**1,326.0**
Bank overdrafts	0.2	-	0.2	-	-	-
TOTAL	**58.8**	**1,330.3**	**1,389.1**	**59.4**	**1,266.6**	**1,326.0**

(a) PIK: payment-in-kind, capitalized interest included.

Changes in liabilities arising from financing activities

During the 2020 financial year, CGG organized the early repayment of all of its remaining creditors in respect of the Safeguard Plan as approved by the Paris Commercial Court on December 1, 2017, with the result that it recognized the reimbursement of debt in the amount of US$5.2 million for the period on the effective date of payment.

In the framework of IFRS 16 adoption, the Group recognized from the identified operating lease commitments, for continuing operations, a discounted lease liability of US$146 million on January 1, 2019. It should be noted that the debt related to leases of vessels with our GSS joint-venture and some assets related to the Multi-Physics business are classified as "Liabilities directly associated with the assets classified as held for sale", as per IFRS 5.

	December 31,	
In millions of US$	2020	2019
Balance at beginning of period	**1,326.0**	**1,166.7**
First-time application of IFRS 16 as at January 1, 2019	-	146.0
Decrease in long term debts	(5.2)	(0.4)
Increase in long-term debts	-	-
Lease repayments	(55.5)	(56.9)
Financial interests paid	(80.2)	(80.5)
Total Cash flows	**(140.9)**	**(137.8)**
Cost of financial debt, net	134.1	131.7
Increase in lease liabilities	28.5	33.5
Translation adjustments	46.0	(8.3)
Other	(4.6)	(5.8)
BALANCE AT END OF PERIOD	**1,389.1**	**1,326.0**

Financial debt by financing sources

	Issuing date	Maturity	Nominal amount 12.31.2020 *(in millions of currency)*	Net balance 12.31.2020 *(in US$m)*	Interest rates
First Lien secured notes due 2023	2018	2023	€280.0	343.6	7.875%
First Lien secured notes due 2023	2018	2023	US$300.0	300.0	9.0%
Sub-total First Lien				**643.6**	
Second Lien secured notes due 2024	2018	2024	€80.4	98.7	Euribor 3M + 4% In cash, + 8.5% PIK [a]
Second Lien secured notes due 2024	2018	2024	US$355.1	355.1	Libor 3M + 4% In cash, + 8.5% PIK [a]
PIK Second Lien secured notes due 2024 [a]	-	-	-	123.4	Same as principal amount
Sub-total Second Lien				**577.2**	
Other loans	-	-	-	0.6	-
Sub-total bank loans and other loans				**0.6**	
Sub-total lease liabilities				**155.1**	
TOTAL FINANCIAL DEBT, EXCLUDING ACCRUED INTERESTS AND BANK OVERDRAFTS				**1,376.5**	

(a) PIK: payment-in-kind, capitalized interest included.

Financial debt by currency

In millions of US$	December 31 2020	2019
USD	824.7	802.8
EUR	519.2	475.1
GBP	10.9	11.7
AUD	4.6	5.5
CAD	6.3	5.3
NOK	2.4	4.4
SGD	2.5	3.2
RUB	0.3	1.0
Other	5.6	5.1
TOTAL FINANCIAL DEBT, EXCLUDING ACCRUED INTERESTS AND BANK OVERDRAFTS	**1,376.5**	**1,314.1**

Financial debt by interest rate

In millions of US$	December 31 2020	December 31 2019
Variable rates (average effective rate December 31, 2020: 12.86%, 2019: 13.39%)	577.2	520.8
Fixed rates (average effective rate at December 31, 2020: 7.67%, 2019: 7.97%)	799.3	793.3
TOTAL FINANCIAL DEBT, EXCLUDING ACCRUED INTERESTS AND BANK OVERDRAFTS	**1,376.5**	**1,314.1**

Variable interest rates are generally based on inter-bank offered rates of the related currency.

First Lien secured notes due 2023

The outstanding principal amount of the First Lien secured notes was US$643.6 million at December 31, 2020. At December 31, 2019, these stood at US$614.5 million.

These "First Lien notes" represented at issuance on April 24, 2018 a total principal amount of US$645 million (using an exchange rate of $1.2323 per €1.00) at a weighted average coupon of 8.40%.

The "First Lien notes" due 2023 and the "Second Lien senior secured notes" due 2024 share the same security package encompassing notably the US Multi-Client library, the shares of Sercel's main operating entities (Sercel SAS and Sercel Inc.), the shares of significant GGR operating entities, and certain intercompany loans.

Second Lien notes due 2024

The outstanding principal amount of the Second Lien secured notes was US$577.2 million including US$123.4 million of capitalized interest at December 31, 2020, compared with US$520.8 million on December 31, 2019 including US$75.4 million of capitalized interest.

On February 21, 2018, CGG SA issued US$453.4 million (using an exchange rate of $1.2229 per €1.00) in principal amount of second Lien senior secured notes due in 2024. These notes bear a Libor-based floating rate of interest (with a floor of 1%) for the USD series and a Euribor-based floating rate of interest (with a floor of 1%) for the EUR series + 4% in cash, and 8.5% of capitalized interest (known as "payment in kind" or "PIK" interest).

The "First Lien Secured notes" due 2023 and the "Second Lien senior secured notes" due 2024 share the same security package encompassing, notably, the US Multi-Client Library, the shares of Sercel's main operating entities (Sercel SAS and Sercel Inc.), the shares of significant GGR operating entities, and certain intercompany loans.

Other loans

In September 2020, CGG organized the early repayment of all of its remaining creditors in respect of the Safeguard Plan as approved by the Paris Commercial Court on December 1, 2017 (*see note 2*). As a consequence, the Group recorded a US$5.2 million cash outflow and a debt repayment of the same amount during the period on the effective date of payments.

The outstanding amount of these borrowings on a discounted basis was recognized for the amount of US$3.2 million in CGG's accounts at December 31, 2019.

NOTE 14 CURRENT AND NON-CURRENT FINANCIAL LIABILITIES

Because we operate internationally, we are exposed to general risks linked to operating abroad. Our major market risk exposures are changing interest rates and currency fluctuations. We do not enter into or trade financial instruments including derivative financial instruments for speculative purposes.

Foreign currency risk management

As a company that derives a substantial amount of its revenue from sales internationally, we are subject to risks relating to fluctuations in currency exchange rates. The Group's revenue and expenses are mostly denominated in US dollar and euro, as well as to a lesser extent in currencies such as the Brazilian real, the Chinese yuan, the Norwegian krone, the pound sterling, the Canadian dollar and the Australian dollar.

Foreign currency sensitivity analysis

Fluctuations in the exchange rate of other currencies, particularly the euro, against the US dollar, have had in the past and will have in the future a significant effect upon our results of operations. We manage our balance sheet exposures (including debt exposure) by maintaining, as far as possible, a balance between our monetary assets and liabilities in the same currency, and readjusting for any variance through spot and forward currency sales or equity transactions. Although we attempt to minimize this risk, we cannot guarantee that exchange rate fluctuations will not have a materially adverse impact on our future operating results.

As of December 31, 2020, we estimate our net annual recurring expenses in euros at the Group level to be approximately €200 million and as a result, an unfavorable variation of US$0.10 in the average yearly exchange rate between the US dollar and the euro would reduce our net income (loss) and our shareholders' equity by approximately US$20 million.

The following table shows our exchange rate exposure as at December 31, 2020:

	As at December 31, 2020					
	Assets	Liabilities	Currency commitments	Net position before hedging	Forward contracts applied	Net position after hedging
Converted in millions of US$	(a)	(b)	(c)	(d) = (a) – (b) ± (c)	(e)	(f) = (d) + (e)
US$[a]	475.8	811.6	-	(335.8)	(14.9)	(350.7)
EUR [b]	124.2	459.9	-	(335.7)	-	(335.7)
US$[c]	5.6	17.8	-	(12.2)	-	(12.2)
BRL [d]	8.7	-	-	8.7	-	8.7

(a) US$-denominated assets and liabilities in the entities whose functional currency is the euro.
(b) Euro-denominated assets and liabilities in the entities whose functional currency is the US dollar.
(c) US$-denominated assets and liabilities in the entities whose functional currency is the Brazilian real.
(d) BRL-denominated assets and liabilities in the entities whose functional currency is the US dollar.

"Gross financial debt" includes bank overdrafts, the short-term portion of financial liabilities and long-term financial liabilities. "Net financial debt" is defined as gross financial debt less cash and cash equivalents. Net financial debt is presented as additional information because we understand that certain investors believe that netting cash against debt provides a clearer picture of the financial liability exposure. However, other companies may present their net debt differently to us. Net financial debt is not a measure of financial performance under IFRS and should not be considered as an alternative to any other measures of performance derived in accordance with IFRS.

Our financial debt is partly denominated in euros and converted in US dollars at the closing exchange rate. As at December 31, 2020, the euro-denominated component of our US$1,004 million in net financial debt came to €261 million, based on the closing exchange rate of US$1.2271 per euro.

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$26 million.

Forward exchange contracts

Forward exchange transactions are aimed at hedging future cash flows against fluctuations in exchange rates involving sales contracts awarded. These forward exchange contracts usually have a maturity of less than one year.

We do not enter into foreign currency forward contracts for trading purposes.

As at December 31, 2020, the Group had currency forward contracts for the US dollar equivalent of US$47.5 million (of which US$25.4 million were applied), of which US$28 million were against the euros, €1.6 million were against the Chinese yuan, and US$17.5 million were against the Chinese yuan.

Effects of forward exchange contracts on the financial statements:

In millions of US$	December 31, 2020	2019
Carrying value of forward exchange contracts (*see notes 4 and 12*)	1.1	(0.1)
Gains (losses) recognized in profit and loss (*see note 21*)	0.7	(0.2)
Gains (losses) recognized directly in equity	-	0.2

Interest rate risk management

We are subject to interest rate risks on our floating rate debt and when we refinance any of our debt. As of December 31, 2020, we had US$577,2 million of debt under our second lien notes, bearing a floating rate of interest, such that a 100 base point increase in the applicable three-month interest rate would have had a negative impact on our net results before taxes of US$1.1 million on a twelve months basis.

Our second lien notes are subject to payment-in-kind (PIK) interest at a fixed rate of 8.5% per year. As a result, the principal amount increases each period and as such, the variable component of interest is paid on an increasing principal amount each period. Changes in the monetary policies of the US Federal Reserve and the European Central Bank, developments in financial markets and changes in our perceived credit quality may increase our financing costs and consequently adversely impact our ability to refinance our indebtedness, which could have a negative impact on our business, liquidity, results of operations and financial condition We aim at having medium-term fixed rate debts to the extent possible.

Interest rate sensitivity analysis

The following table shows our variable interest rate exposure by maturity as at December 31, 2020.

	Financial assets *		Financial liabilities *		Net position before hedging		Off-balance sheet position		Net position after hedging	
	(a)		(b)		(c) = (a) - (b)		(d)		(e) = (c) + (d)	
12.31.2020 *In millions of US$*	Fixed rate	Variable rate	Fixed rate	Variable rate	Fixed rate	Variable rate	Fixed rate	Variable rate	Fixed rate	Variable rate
Overnight to 1 year	88.0	26.0	47.0	-	41.0	26.0	-	-	41.0	26.0
1 to 2 years	-	-	81.1	-	(81.1)	-	-	-	(81.1)	-
3 to 5 years	-	-	660.5	577.2	(660.5)	(577.2)	-	-	(660.5)	(577.2)
More than 5 years	-	-	10.7	-	(10.7)	-	-	-	(10.7)	-
TOTAL	**88.0**	**26.0**	**799.3**	**577.2**	**(711.3)**	**(551.2)**	**-**	**-**	**(711.3)**	**(551.2)**

* *Excluding bank overdrafts and accrued interest.*

The Group's sources of liquidity include debt securities, which are or may be subject to variable interest rates. As a result, our interest expenses could increase if short-term interest rates increase. The sensitivity analysis is based on a net liability exposure after taking account of hedging of US$551 million. The variable interest rate portion of our debt carried an average interest rate of 12.9% at December 31, 2020. Each 100 basis point increase would increase our interest expense by US$5.5 million per year and each 100 basis point decrease in this rate would decrease our interest expense by US$5.5 million per year.

Commercial and counterparty risk

Our trade receivables and investments do not represent a significant concentration of credit risk due to the wide variety of markets in which we sell our services and products. Nevertheless, some of our clients are national oil companies, which can lengthen payment deadlines and expose us to political risks. Finally, in relation with our international operations, we work with a wide network of banks and are therefore subject to counterparty risks.

Specific procedures have been implemented to manage client payments and reduce risk. The Group's two largest clients respectively contributed 8.7% and 6.8% of consolidated revenues in 2020. In 2019, they respectively contributed 6.7% and 6.5%. The loss of any of our significant customers or deterioration in our relations with any of them could affect our business, results of operations and financial condition.

Liquidity risk management

We rely primarily on our ability to generate cash from operations and our access to external financing to fund our working capital needs.

Our cash generation depends on, among other factors, market conditions, the credit quality of customers and other contractual counterparties, the countries of cash collection and any transfer restrictions that may be in place, as well as the strength of our bank partnerships.

Our ability to repay or refinance our indebtedness and fund our working capital needs and planned capital expenditures depends, among other things, on our future operating results, which will be partly the result of economic, financial, competitive and other factors beyond our control.

In this context, the following measures have been put in place to manage our liquidity risk:

- we have implemented extended cash pooling arrangements in order to circulate cash inside the group and supply funds where needed;
- we seek to anticipate liquidity position (with daily reporting on cash in, weekly reporting on free cash flow, regular reporting to Finance Committee, and to the Audit and Risk Management Committee and, on a long-term basis, assessments of our budget and business plan;
- we manage short term cash needs by targeting reserves of available liquidity, and, as appropriate, reducing capital expenditures and costs, selling assets, and, if required, adjusting the group profile and footprint;
- we manage long term cash needs by planning refinancing long before maturity, maintaining regular discussions with banks and regularly communicating with investors regarding our strategy;
- our Trade Compliance Officer and treasury functions are regularly informed about countries where cash could be trapped or difficult to move within the group. We also check our counterparty risk for sales and our bank partners' quality (rating);
- we aim to maintain access to guarantee lines by seeking good relations with bank partners.

Financial instruments by categories in the statement of financial position

The impact and breakdown of the Group's financial instruments in the statement of financial position as at December 31, 2020 are as follows:

	As at December 31, 2020						
In millions of US$	**Fair value hierarchy [a]**	**Carrying amount**	**Fair value**	**Fair value in income statement**	**Loans, receivables**	**Debt at amortized cost**	**Derivatives**
Non-consolidated Shearwater Shares	Level 2	13.7	13.7	13.7			
Non-consolidated investments	Level 3	0.9	0.9	0.9	-	-	-
Non-current financial assets	Level 3	12.7	12.7	-	12.7	-	-
Trade receivables	Level 3	325.0	325.0	-	325.0		-
Current financial assets	Level 2	–	-	-	-	-	–
TOTAL ASSETS		**352.3**	**352.3**	**14.6**	**337.7**	**-**	**-**
Financial liabilities (*see note 13*)	Level 1	1,376.5	1,367.5	-	-	1,367.5	-
Trade and other payables	Level 3	96.7	96.7	-	96.7	-	-
Current and non-current financial liabilities	Level 2	87.4	16.1	16.1	-	71.3	-
TOTAL LIABILITIES		**1,560.6**	**1,480.3**	**16.1**	**96.7**	**1,438.8**	**-**

(a) Level 1 – Listed (unadjusted) market prices in active markets for identical assets or liabilities. Level 2 – Valuation techniques for which the lowest level input that is significant to the fair value measurement is directly or indirectly observable. Level 3 – Valuation techniques for which the lowest level input that is significant to the fair value measurement is unobservable.

As in 2019, there was no change in the fair value hierarchy in 2020.

Due to their short maturities, the fair value of cash, cash equivalents, bank overdrafts, trade receivables and trade payables is deemed equivalent to carrying value.

As at December 31, 2020:

- the **first lien senior secured notes due 2023** denominated in US dollars were traded at a discounted price of 101.5% of their nominal value;
- the **first lien senior secured notes due 2023** denominated in euros were traded at a discounted price of 101.5% of their nominal value;
- the **second lien senior secured notes due 2024** denominated in US dollars were traded at a discounted price of 96.5% of their nominal value;
- the **second lien senior secured notes due 2024** denominated in euros were traded at a discounted price of 97.9% of their nominal value.

Other current and non-current financial liabilities

	At December 31	
	2020	**2019**
Other current financial liabilities: *Idle Vessel Compensation*	18.3	-
Other current financial liabilities: *Eidesvik Put Option*	16.1	-
Other non-current financial liabilities: *Idle Vessel Compensation*	53.0	-
TOTAL	**87.4**	**-**

Idle Vessel Compensation

The Idle Vessel Compensation gave rise to a US$(78.7) million financial liability at the Marine Closing date representing the net present value of expected related payments. The expected payments are estimated based on Shearwater fleet utilization assumptions over the five-year commitment period. The Idle Vessel Compensation is recognized in liabilities at amortized cost. *See note 2.*

The assumptions for the utilization of the Shearwater fleet over the remaining term were revised following the drop in the oil price and the reductions in E&P spending and resulted in an increase of the Idle Vessel Compensation of US$(10.0)million. *See note 5.*

At December 31, 2020, the total financial liabilities in respect of Idle Vessel Compensation came to US$(71.3) million, consisting of a current portion of US$(18.3) million and a non-current portion of US$(53.0) million.

Eidesvik Put Option

Eidesvik had a put option granting it the right to sell all of its Shearwater shares to CGG at a strike price of US$30 million. *See notes 2 and 30.*

Pursuant the exercise of its put option by Eidesvik on January 11, 2021 and the sale agreement entered into with Rasmussengruppen on January 12, 2021, we recorded an adjustment of US$(11.5) million in respect of the remeasurement to fair value of the Eidesvik Put Option. It was valued at US$(16.1) million at December 31, 2020, compared to US$(4.6) million at the Marine Closing date.

The fair value measurement of the put option is categorized under Level 2 of the fair value hierarchy.

NOTE 15 SHARE CAPITAL AND STOCK OPTION PLANS

At December 31, 2020, CGG SA's share capital consisted of 711,392,383 ordinary shares with a nominal value of €0.01 each. At December 31, 2019, CGG SA's share capital consisted of 709,956,358 ordinary shares with a nominal value of €0.01 each.

Rights and privileges attaching to ordinary shares

Ordinary shares give right to dividend. Ordinary registered shares held for more than two years qualify for double voting rights.

Dividends may be distributed from the CGG SA's statutory retained earnings, subject to the requirements of French law and the Company's articles of incorporation.

Retained earnings available for distribution amounted to €797.0 million (US$978.0 million) at December 31, 2020. We did not pay any dividend during the years ended December 31, 2020 and 2019.

Share capital and warrants in 2020

Common stock operations during the 2020 fiscal year involved the exercise of warrants for 12,272 shares and stock options for 1,423,753 shares.

Share capital and warrants in 2019

Common stock operations during the 2019 fiscal year involved the exercise of warrants for 9,504 shares and stock options for 2,038 shares.

Stock options

Pursuant to various resolutions adopted by the Board of Directors, the Group has granted options to purchase ordinary shares to certain employees, executive officers and directors.

The details of the beneficiaries and performance conditions for the plans prior to 2018 are not disclosed below, as the related expense recorded in the consolidation statement is not material. Details regarding adjustments to the number of options are not presented for these aforementioned plans.

On June 27, 2018, the Board of Directors allocated:

- 732,558 options to the Chief Executive Officer. These have an exercise price of €2.15 and vest in four batches, in June 2019 (for 25% of the options allocated), June 2020 (for 25% of the options allocated), June 2021 (for 25% of the options allocated) and June 2022 (for 25% of the options allocated). Vesting of these options is subject to performance conditions related to CGG share price. The options have a term of eight years;
- 1,141,088 options to the Executive Leadership members. These have an exercise price of €2.15 and vest in four batches, in June 2019 (for 25% of the options allocated), June 2020 (for 25% of the options allocated), June 2021 (for 25% of the options allocated) and June 2022 (for 25% of the options allocated). Vesting of these options is subject to performance conditions related to CGG share price. The options have a term of eight years;
- 4,670,743 options to certain employees. These have an exercise price of €2.15 and vest in four batches, in June 2019 (for 25% of the options allocated), June 2020 (for 25% of the options allocated), June 2021 (for 25% of the options allocated) and June 2022 (for 25% of the options allocated). The options have a term of eight years.

The exercise price of each option is the average market value of the share during the twenty-day period ending the day before the date the option is allocated.

On December 11, 2018, the Board of Directors allocated:

- 671,171 options to the members of the Executive Committee. These have an exercise price of €1.39 and vest in four batches, in June 2019 (for 25% of the options allocated), June 2020 (for 25% of the options allocated), June 2021 (for 25% of the options allocated) and June 2022 (for 25% of the options allocated). Vesting of these options is subject to performance conditions related to CGG's share price. The options have a term of seven years and seven months.

On June 27, 2019 and November 5, 2019, the Board of Directors allocated:

- 360,000 options to the Chief Executive Officer. These have an exercise price of €1.52 and vest in one batch in June 2022. Vesting of these options is subject to performance conditions related to CGG's share price. The options have a term of eight years;
- 851,330 options to the members of the Executive Committee. These have an exercise price of €1.52 and vest in two batches, in June 2021 (for 50% of the options allocated) and June 2022 (for 50% of the options allocated). Vesting of these options is subject to performance conditions related to CGG's share price. The options have a term of eight years;
- 1,062,190 options to certain Group employees. Their exercise price is €1.52 and vest in two batches, in June 2021 (for 50% of the options allocated) and June 2022 (for 50% of the options allocated). The options have a term of eight years.

The exercise price of each option is the average market value of the share during the twenty-day period ending the day before the date the option is allocated.

On June 25, 2020, the Board of Directors allocated:

- 360,000 options to the Chief Executive Officer. These have an exercise price of €1.10 and vest in one batch, in June 2023, subject to a performance condition relating to CGG's share price. The options have a term of eight years;
- 940,000 options to members of the Executive Leadership members. These have an exercise price of €1.10 and vest in one batch, in June 2023, subject to a performance condition relating to CGG's share price. The options have a term of eight years;
- 968,512 options to certain Group employees. These have an exercise price of €1.10 and vest in two batches, in June 2022 (for 50% of the options allocated) and June 2023 (for 50% of the options allocated). The options have a term of eight years.

Information related to options outstanding at December 31, 2020 is summarized below:

Date of Board of Directors' Resolution	Options granted	Options granted after capital operations [a]	Options outstanding at Dec. 31, 2020 [b] [c]	Exercise price per share *(in €)*[b] [c]	Expiration date	Remaining duration
June 24, 2013 to June 25, 2015	5,068,307	484,041	221,834	62.92-193.27	June 24, 2021 to June 25, 2023	5.8 to 29.8 months
June 23, 2016	6,658,848	531,281	236,828	8.52	June 23, 2024	41.8 months
June 28, 2018	6,544,389	6,544,389	5,297,130	2.15	June 28, 2026	65.9 months
December 11, 2018	671,171	671,171	604,053	1.39	June 28, 2026	65.9 months
June 27, 2019 & November 5, 2019	2,273,520	2,273,520	2,210,100	1.52	June 27, 2027	77.9 months
January 6, 2020	80,000	80,000	80,000	2.72	June 27, 2027	77.9 months
June 25, 2020	2,268,512	2,268,512	2,268,512	1.10	June 25, 2028	89.9 months
TOTAL	**23,564,747**	**12,852,914**	**10,919,030**			

(a) Options granted adjusted following 2012, 2016 and 2018 capital increases and 2016 reverse split.
(b) Following the reverse split in July 2016, the stock options were adjusted as follows:
(c) Following the capital increase in February 2018, the stock option plans were adjusted as follows:

Date of stock option plans	Adjustment of number of options at 20 July, 2016	Exercise price before adjustment per share *(in €)*	Adjusted exercise price per share *(in €)*
June 23, 2016	208,089	0.68	21.76

Date of stock option plans	Adjustment of number of options at February 21, 2018	Exercise price before adjustment per share *(in €)*	Adjusted exercise price per share *(in €)*
June 23, 2016	471,856	21.76	8.52

A summary of the Company's stock option activity, and related information for the years ended December 31, 2020 follows:

	2020		2019	
Weighted average exercise price in €	Number of options	Weighted average exercise price	Number of options	Weighted average exercise price
Options outstanding at beginning of year	**9,171,472**	**5.99**	**7,460,676**	**10.52**
Granted	2,348,512	1.16	2,273,520	1.52
Adjustments following the reverse split	-	-	-	-
Adjustments following the capital increase	-	-	-	-
Exercised	-	-	(2,038)	2.15
Forfeited	(600,954)	18.37	(560,686)	48.16
Option outstanding at year-end	**10,919,030**	**4.27**	**9,171,472**	**5.99**
Exercisable at year-end	3,409,535	10.10	2,077,304	19.76

The average price of the CGG share was €1.02 in 2020 and €1.72 in 2019.

Performance units

Allocation plan dated June 27, 2018

On June 27, 2018, the Board of Directors allocated 157,500 performance shares to the Chief Executive Officer, 242,841 performance shares to the members of the Executive Committee, and 2,708,180 performance shares to certain Group employees.

The performance shares vest in two batches, in June 2020 (for 50% of the shares allocated) and June 2021 (for 50% of the shares allocated). The vesting period for the first batch of these performance shares is due to end on the latest of the following two dates: June 27, 2020 or the date of the Annual Shareholders' Meeting convened to approve the financial statements for fiscal year 2019, and provided that the Board of Directors deems the performance conditions to have been fulfilled. The vesting period for the second batch of these performance shares is due to end on the latest of the following two dates: June 27, 2021 or the date of the Annual Shareholders' Meeting convened to approve the financial statements for fiscal year 2020, provided that the Board of Directors deems the performance conditions to have been fulfilled.

Allocation plan dated December 11, 2018

On December 11, 2018, the Board of Directors allocated 132,821 performance shares to the members of the Executive Committee.

The performance shares vest in two batches, in June 2020 (for 50% of the shares allocated) and June 2021 (for 50% of the shares allocated). The vesting period for the first batch of these performance shares is due to end on the latest of the following two dates: June 27, 2020 or the date of the Annual Shareholders' Meeting convened to approve the financial statements for fiscal year 2019, provided that the Board of Directors deems the performance conditions set forth in the plan regulation to have been fulfilled. The vesting period for the second batch of these performance shares is due to end on the latest of the following two dates: June 27, 2021 or the date of the Annual Shareholders' Meeting convened to approve the financial statements for fiscal year 2020, provided that the Board of Directors deems the performance conditions to have been fulfilled.

Allocation plan dated June 27, 2019

On June 27, 2019, the Board of Directors allocated :

- 220,000 performance shares to the Chief Executive Officer. The performance shares vest in one batch, in June 2022. The vesting period for the batch of these performance shares is due to end on the latest of the following two dates: June 27, 2022 or the date of the Annual Shareholders' Meeting convened to approve the financial statements for fiscal year 2021, and provided that the Board of Directors deems the performance conditions to have been fulfilled.
- 518,660 performance shares to the members of the Executive Committee. The performance shares vest in two batches, in June 2021 (for 50% of the shares allocated) and June 2022 (for 50% of the shares allocated). The vesting period for the first batch of these performance shares is due to end on the latest of the following two dates: June 27, 2021 or the date of the Annual Shareholders' Meeting convened to approve the financial statements for fiscal year 2020, provided that the Board of Directors deems the performance conditions set forth in the plan regulation to have been fulfilled. The vesting period for the second batch of these performance shares is due to end on the latest of the following two dates: June 27, 2022 or the date of the Annual Shareholders' Meeting convened to approve the financial statements for fiscal year 2021, provided that the Board of Directors deems the performance conditions to have been fulfilled.
- 1,269,060 performance shares to certain Group employees. The performance shares vest in two batches, in June 2021 (for 50% of the shares allocated) and June 2022 (for 50% of the shares allocated). The vesting period for the first batch of these performance shares is due to end on the latest of the following two dates: June 27, 2021 or the date of the Annual Shareholders' Meeting convened to approve the financial statements for fiscal year 2020, provided that the Board of Directors deems the performance conditions set forth in the plan regulation to have been fulfilled. The vesting period for the second batch of these performance shares is due to end on the latest of the following two dates: June 27, 2022 or the date of the Annual Shareholders' Meeting convened to approve the financial statements for fiscal year 2021, provided that the Board of Directors deems the performance conditions to have been fulfilled.

Allocation plan dated June 25, 2020

On June 25, 2020, the Board of Directors allocated:

- 220,000 performance shares to the Chief Executive Officer. The performance shares vest in one batch, in June 2023. The vesting period for the batch of these performance shares is due to end on the latest of the following two dates: June 25, 2023 or the date of the Annual Shareholders' Meeting convened to approve the financial statements for fiscal year 2022, and provided that the Board of Directors deems the performance conditions to have been fulfilled.
- 530,000 performance shares to the Chief Executive Officer. The performance shares vest in one batch, in June 2023. The vesting period for the batch of these performance shares is due to end on the latest of the following two dates: June 25, 2023 or the date of the Annual Shareholders' Meeting convened to approve the financial statements for fiscal year 2022, and provided that the Board of Directors deems the performance conditions to have been fulfilled.
- 1,203,148 performance shares to certain Group employees. The performance shares vest in two batches, in June 2022 (for 50% of the shares allocated) and June 2023 (for 50% of the shares allocated). The vesting period for the first batch of these performance shares is due to end on the latest of the following two dates: June 25, 2022 or the date of the Annual Shareholders' Meeting convened to approve the financial statements for fiscal year 2021, provided that the Board of Directors deems the performance conditions set forth in the plan regulation to have been fulfilled. The vesting period for the second batch of these performance shares is due to end on the latest of the following two dates: June 25, 2023 or the date of the Annual Shareholders' Meeting convened to approve the financial statements for fiscal year 2022, provided that the Board of Directors deems the performance conditions to have been fulfilled.

The following table lists the assumptions used to value the 2018, 2019 and 2020 options plans and the 2018, 2019 and 2020 performance unit allocation plans in accordance with IFRS 2, and the resulting fair values. The other previous plans have a non-significant impact on IFRS 2 expense. The Group uses the Black & Scholes model to value the options granted. Dividend yield used is nil for all plans.

	Options granted	Volatility [a]	Risk-free rate	Exercise price per share *(in €)*	Estimated maturity *(in years)*	Fair value per share at the grant date *(in €)*	Total cost *(in millions of €)*
June 2018 stock options plan	6,544,389	56%	0%	2.15	2.5	0.63	4.1
December 2018 stock options plan	671,171	56%	0%	1.39	2.5	0.57	0.4
June 2019 stock options plan	2,273,520	57%	0%	1.52	2.5	0.50	1.1
June 2020 stock options plan	2,268,512	65%	(0.6)%	1.10	2.5	0.34	0.8

(a) Corresponds to restated historical average volatility and implied volatility.

	Free shares granted subject to performance conditions	Performance Conditions fulfilled [a]	Fair value per share at the grant date *(in €)* [b]	Dividend yield
June 2018 performance units plan	3,108,521	50%	2.15	0
December 2018 performance units plan	132,821	50%	1.39	0
June 2019 performance units plan	2,007,720	100%	1.52	0
June 2020 performance units plan	1,953,148	100%	1.10	0

(a) Estimated.

(a) Corresponds to CGG share price on grant date.

Under IFRS 2, the fair value of the stock options granted since November 7, 2002 must be recognized as an expense over the life of the plan. The expenses break down as follows:

	Expense under IFRS 2		In respect of executive managers of the Group	
In millions of US$	**2020**	2019	**2020**	2019
2018 stock options plan	0.7	1.7	0.3	0.7
2019 stock options plan	0.5	0.3	0.2	0.1
2020 stock options plan	0.2	-	0.1	-
2018 performance units plans – paid in shares	0.9	3.2	0.1	0.5
2019 performance units plans – paid in shares	1.7	0.8	0.6	0.3
2020 performance units plans – paid in shares	0.5	-	0.2	-
TOTAL EXPENSE FOR EQUITY-SETTLED TRANSACTIONS	**4.5**	**6.0**	**1.5**	**1.6**

NOTE 16 PROVISIONS

	December 31, 2020							
In millions of US$	Balance at beginning of year	Additions	Deductions (used)	Deductions (unused)	Other [(a)]	Balance at end of period	Short term	Long term
Provisions for redundancy plan	28.5	1.6	(22.2)	(2.5)	(1.2)	4.2	4.2	-
Provision for other restructuring costs	2.6	0.6	(3.9)	(0.1)	2.7	1.9	1.9	-
Provisions for onerous contracts	2.0	-	(0.8)	(0.4)	0.1	0.9	0.2	0.7
Total CGG 2021 plan	**33.1**	**2.2**	**(26.9)**	**(3.0)**	**1.6**	**7.0**	**6.3**	**0.7**
Provisions for redundancy plan	-	40.4	(8.9)	(0.1)	1.1	32.5	32.5	-
Provisions for pensions [(b)]	40.0	1.8	(12.7)	(3.9)	10.8	36.0	-	36.0
Provisions for customer guarantees	2.7	2.7	(2.9)	-	0.2	2.7	-	2.7
Other provisions for restructuring costs	1.5	0.1	(0.1)	(0.1)	0.2	1.6	1.6	-
Provisions for cash-settled share-based payment arrangements [(c)]	1.1	0.4	(0.1)	-	0.2	1.6	-	1.6
Other provisions for onerous contracts	0.8	0.3	(0.2)	-	(0.1)	0.8	0.1	0.7
Other provisions (other taxes and miscellaneous risks)	28.9	4,8	(7.5)	(1.7)	(2.2)	22.3	12.2	10.1
Total other provisions	**75.0**	**50.5**	**(32.4)**	**(5.8)**	**10.2**	**97.5**	**46.4**	**51.1**
TOTAL PROVISIONS	**108.1**	**52.7**	**(59.3)**	**(8.8)**	**11.8**	**104.5**	**52.7**	**51.8**

(a) Includes translation adjustments, change in consolidation scope (see note 2), reclassification and actuarial gains (losses).
(b) The unused reversal of US$3.9 million in retirement benefits stems from a collateral effect of the redundancy plan.
(c) Relating to social security costs.

Provision for restructuring costs

In 2020, the Group used US$(31.1) million of provision for redundancy costs and US$(4.0) million for other restructuring costs.

In 2019, the Group used US$(95.6) million of the provision for restructuring costs and facilities exit costs.

Provision for onerous contracts (current and non-current)

In 2020, the relative variation in provisions for onerous contracts is chiefly due to the end of our obligations in respect of Bourbon and the refurbishment of unused facilities.

In 2019, the variance on provisions for onerous contracts is due to three idle seismic data acquisition vessels returned to their owners (mainly the Champion vessel).

Provisions for retirement benefit obligations

The Group's main obligations in respect of pensions and related employee benefits are in France and the UK. The UK scheme was closed to new entrants on December 1, 1999 and closed to future accruals in 2016.

A supplemental pension plan was implemented in December 2004 for the members of the Group's Management Committee and members of the Management Board of Sercel Holding. This plan was definitively terminated on December 31, 2020 and all of benefits were paid in respect of this pension scheme

Contributions amounting to US$(8.9) million and US$(2.4) million were paid in France in 2020 and 2019, respectively.

The Group records provisions for retirement benefits based on the following actuarial assumptions:

- staff turnover and mortality factors;
- a retirement age of between 62 and 66 years old in France;
- actuarial rate and average rate of increase in future compensation;
- taxes on pension plans and supplemental pension plans.

As of December 31, 2020, the net liability for these plans amounted to US$36.0 million.

On the basis of the actuarial assumptions referred to above, details of the retirement benefit obligations, provisions recognized in the balance sheet, and the retirement benefit expenses recognized in 2020 are provided below :

	December 31,	
In millions of US$	**2020**	**2019**
AMOUNTS RECOGNIZED IN THE STATEMENT OF FINANCIAL POSITION		
Present value of the obligation [a]	140.9	135.5
Fair value of plan assets	(104.9)	(95.5)
Deficit (surplus) of funded plans	**36.0**	**40.0**
Net liability (asset) recognized in the statement of financial position	**36.0**	**40.0**
AMOUNTS RECOGNIZED IN THE INCOME STATEMENT		
Service cost	1.5	1.2
Interest expense (income) for the financial year	0.5	0.8
Effects of curtailments/settlements	(4.1)	(1.9)
Payroll tax	-	-
Net expense (income) for the period	**(2.1)**	**0.1**
MOVEMENTS IN THE NET LIABILITY RECOGNIZED IN THE STATEMENT OF FINANCIAL POSITION		
Net Liability at January 1st	**40.0**	**36.2**
Expense as above	(2.1)	0.1
Actuarial gains (losses) recognized in other comprehensive income[b]	7.8	9.7
Contributions paid	(3.4)	(2.7)
Benefits paid by the Company	(8.9)	(2.3)
Consolidation scope entries, reclassifications and translation adjustments	2.6	(1.0)
Other	-	-
Net Liability at December 31	**36.0**	**40.0**
CHANGE IN DEFINED BENEFIT OBLIGATION		
Defined benefit obligation at January 1st	**135.5**	**109.2**
Payroll tax adjustment	-	-
Current service cost	1.5	1.2
Contributions paid	-	-
Interest Cost	2.3	3.1
Past service cost	-	-
Benefits paid from plan	(12.9)	(6.3)
Actuarial gains (losses) recognized in the other comprehensive income	12.7	19.7
Effects of curtailments/settlements	(4.1)	(1.9)
Consolidation scope entries, reclassifications and translation adjustments	6.0	10.5
Other	-	-
Obligation in respect of benefits accrued at December 31	**141.0**	**135.5**

In millions of US$	December 31, 2020	2019
CHANGE IN PLAN ASSETS [c]		
Fair value of plan assets at January 1st	**95.5**	**73.0**
Interest income for the financial year	1.8	2.3
Contributions paid	10.5	2.7
Benefits paid from plan	(11.1)	(4.0)
Actuarial gains (losses) recognized in the other comprehensive income	4.9	10.0
Effects of curtailments/settlements	-	-
Consolidation scope entries, reclassifications and translation adjustments	3.3	11.5
Other	-	-
Obligation in respect of benefits accrued at December 31	**104.9**	**95.5**
KEY ASSUMPTIONS USED IN ESTIMATING THE GROUP'S RETIREMENT OBLIGATIONS ARE:		
Discount rate [d]	0.50%	0.75%
Average rate of increase in future compensation [e]	2.00%	2.20%

(a) In 2020, these commitments amount to US$140.9 million of which US$22.3 million for defined-benefit plans not covered by plan assets (US$23.4 million in 2019). The average duration of the defined-benefit pension plans was 18.9 years at December 31, 2020 (17.6 years at December 31, 2019).

(b) Other comprehensive income.

Cumulative actuarial losses recognized in other comprehensive income amounted to US$27.9 million at December 31, 2020.

Changes in the defined benefit obligation and fair value of plan assets are, as follows:

In millions of US$	December 31, 2020	2019
Actuarial gains (losses) recognized in the other comprehensive income		
Experience adjustment	0.7	1.1
Actuarial changes arising from changes in demographic assumptions	0.7	(0.7)
Actuarial changes arising from changes in financial assumptions	11.3	19.3
Return on plan assets (excluding amounts included in net interest expense)	(4.9)	(10.0)
Sub-total included in the other comprehensive income	**7.8**	**9.7**

(c) Plan assets

The major categories of plan assets as a percentage of the fair value of total plan assets are as follows:

	December 31 2020	2019
Equity securities	42%	49%
Debt securities	21%	18%
Real estate	7%	7%
Other	30%	26%

(d) Discount rate

The discount rate applied by the Group for entities operating in the euro zone is 0.50% in 2020 (0.75% in 2019). The discount rate is determined by reference to the yield on private investment grade bonds (AA), using the Iboxx index.

The discount rate used for the United Kingdom is 1.40% in 2020 (2.00% in 2019).

An increase of 25 basis point in the discount rate would decrease the defined-benefit plan obligation by US$(6.4) million, and a decrease of the discount rate of 25 basis point would increase that obligation by US$6.8 million.

A variation of 25 basis point in the discount rate would have no material impact, less than US$0.1 million, on service cost or on interest expense (income).

(e) Increase in future compensation

An increase of 25 basis point in the average rate of growth in future compensation would increase the defined-benefit obligation by US$0.8 million, and a 25 basis point decrease would reduce that obligation by US$0.8 million.

A variation of 25 basis point in the average rate of growth in future compensation would have no material impact, less than US$0.1 million, on service cost or on interest expense (income).

NOTE 17 CONTRACTUAL OBLIGATIONS, COMMITMENTS AND CONTINGENCIES

Status of contractual obligations

In millions of US$	December 31 2020	2019
Long-term debt obligations	1,636.6	1,688.9
Lease obligations – other than bareboat agreements	139.9	173.1
Lease obligations – bareboat charters [a]	-	326.3
TOTAL CONTRACTUAL OBLIGATIONS	**1,776.5**	**2,188.3**

(a) At December 31, 2019, obligations in respect of bareboat charters of our fleet came to US$326.3 million. This figure included US$261.0 million in respect of vessels operated and US$65.3 million in respect of one vessel not operated.

The following table presents payments in future periods relating to contractual obligations as at December 31, 2020:

	Payments due by period				
In millions of US$	Less than 1 year	2-3 years	4-5 years	After 5 years	Total
Financial debt (including cumulated PIK) [a]	-	643.6	751.8	0.6	1,396.0
Other long-term obligations (cash interests)	83.5	147.9	9.2	-	240.6
Total long-term debt obligations	**83.5**	**791.5**	**761.0**	**0.6**	**1,636.6**
Lease obligations	53.6	56.0	19.3	11.1	139.9
TOTAL CONTRACTUAL OBLIGATIONS [b] [c]	**137.1**	**847.5**	**780.3**	**11.7**	**1,776.5**

(a) PIK: Payment-In-Kind interest.
(b) Payments in other currencies are converted into US dollar at December 31, 2020 exchange rates.
(c) These amounts are principal amounts and do not include any accrued interests

Capacity Agreement and Idle Vessel Compensation

CGG and Shearwater signed a Capacity Agreement on January 8, 2020, a marine data acquisition service contract, under the terms of which, as indicated in note 2, CGG is committed to using Shearwater's vessel capacity in its Multi-Client business over a five-year period, at an average of 730 days per year.

The Capacity Agreement provides compensation of Shearwater for days when more than one of its high-end seismic vessels are idle, up to a maximum of three vessels.

The maximum Idle Vessel Compensation amount for a full year came to US$(21.9) million. At December 31, 2020, the residual commitment in respect of Idle Vessel Compensation through to the end of the five-year period was US$(88.1) million.

Step-In Agreements

As indicated in note 2, under the Payment Instructions Agreement CGG committed to paying part of the amounts due under the Capacity Agreement directly to the GSS subsidiaries to cover Shearwater CharterCo's obligations under its bareboat charter agreements under the bareboat Charter Agreement.

The Step-In Agreements will not impact our balance sheet unless a triggering event, as described in note 2, occurs. In that event, our obligations under the Capacity Agreement would be terminated and replaced by our obligations under the Step-In Agreements, representing a lower amount of commitment compared to the Capacity Agreement.

Eidesvik Put Option

Eidesvik had a put option granting it the right to sell all of its Shearwater shares to CGG at a strike price of US$30 million. *Please refer to notes 2, 14 and 30.*

Legal proceedings, claims and other contingencies

From time to time we are involved in legal proceedings arising in the normal course of our business. To date, there are no legal proceedings underway, either individually or collectively, likely to result in a material adverse effect on our consolidated financial statements.

Guarantees

In millions of US$	December 31, 2020	December 31, 2019
OPERATIONS		
Guarantees issued in favor of clients (guarantees issued by the Company to mainly support bids made at the subsidiaries level)	209.0	304.3
Other guarantees and commitments issued (guarantees issued by the Company on behalf of subsidiaries and affiliated companies in favor of customs or other governmental administrations)	5.3	6.0
FINANCING ACTIVITIES		
Guarantees issued in favor of banks (mainly to support credit facilities)	11.7	15.8
TOTAL	**226.0**	**326.1**

The maturity dates of the net guarantees and commitments are as follows:

In millions of US$	Maturity: Less than 1 year	2-3 years	4-5 years	After 5 years	Total
OPERATIONS					
Guarantees issued in favor of clients	101.1	64.7	10.3	32.9	209.0
Other guarantees and commitments issued	12.5	1.0	-	3.5	17.0
TOTAL	**113.6**	**65.7**	**10.3**	**36.4**	**226.0**

Other

The Group has no off-balance sheet obligations under IFRS that are not described above.

NOTE 18 OPERATING REVENUES

Disaggregation of operating revenues

The following table disaggregates our operating revenues by major sources for the period ended December 31, 2020:

In millions of US$	December 31, 2020			December 31, 2019		
	GGR	Equipment	Consolidated Total	GGR	Equipment	Consolidated Total
Multi-Client prefunding	143.7	-	143.7	173.9	-	173.9
Multi-Client after sales	126.8	-	126.8	356.2	-	356.2
Total Multi-Client	**270.5**	**-**	**270.5**	**530.1**	**-**	**530.1**
Geoscience	**328.3**	**-**	**328.3**	**385.2**	**-**	**385.2**
Equipment	**-**	**290.7**	**290.7**	**-**	**452.1**	**452.1**
Inter-segment revenues [a]	**-**	**(3.5)**	**(3.5)**	**-**	**(11.5)**	**(11.5)**
TOTAL OPERATING REVENUES	**598.8**	**287.2**	**886.0**	**915.3**	**440.6**	**1,355.9**

(a) Sale of equipment to the Contractual Data Acquisition segment which is classified as discontinued operations.

Analysis by geographical area – Analysis of operating revenues by customer location

In millions of US$	2020		2019	
North America	152.7	17.2%	375.5	27.7%
Central and South Americas	141.4	16.0%	180.2	13.3%
Europe, Africa and Middle East	409.9	46.3%	488.7	36.0%
Asia Pacific	182.0	20.5%	311.5	23.0%
TOTAL OPERATING REVENUES	**886.0**	**100%**	**1,355.9**	**100%**

Analysis of operating revenues by category

In millions of US$	2020		2019	
Services rendered and royalties	483.0	54.5%	765.7	56.5%
Sales of goods	268.9	30.4%	220.2	16.2%
After sales on Multi-Client surveys	126.8	14.3%	356.2	26.3%
Leases	7.3	0.8%	13.8	1.0%
TOTAL OPERATING REVENUES	**886.0**	**100%**	**1,355.9**	**100%**

In 2020, the Group’s two most significant customers accounted for 8.7% and 6.8% of the Group's consolidated revenues, compared with 6.7% and 6.5% in 2019.

Contracts balances

The contracts balances are presented below:

In millions of US$	Balance at December 31, 2020	Balance at December 31, 2019
Receivables	**263.7**	**349.9**
Unbilled revenue	61.3	86.1
Total contract assets	**61.3**	**86.1**
Advance billing	(6.5)	(16.4)
Deferred revenues	(226.5)	(280.7)
Total contract liabilities	**(233.0)**	**(297.1)**

The level of deferred revenues is a direct consequence of the impact of IFRS 15 as the Multi-Client prefunding revenue not recognized before delivery of the final data increase the deferred revenues balance (and decrease the unbilled revenues to a lesser extent).

The revenues generated for the period ended December 31, 2020 from contract liability balances as at January 1, 2020 amount to US$169.5 million.

The revenues generated for the period ended December 31, 2020 from performance obligations satisfied (or partially satisfied) prior to January 1, 2020 amount to US$54.4 million.

The revenues generated during the period ended December 31, 2019 from contract liability balances as at January 1, 2019 amounted to US$137.8 million.

The revenues generated during the period ended December 31, 2019 from performance obligations satisfied (or partially satisfied) prior to January 1, 2019 amounted to US$193.3 million.

Backlog – Transaction price allocated to remaining performance obligations

The aggregate amount of the transaction price allocated to the performance obligations that are unsatisfied or partially unsatisfied (i.e. the contractual backlog) as at December 31, 2020 amounts to US$685.9 million for continuing operations. Out of this amount, the Group expects to recognize US$539.0 million in 2021 and US$146.9 million in 2022 and beyond for continuing operations. These amounts include Multi-Client prefunding revenues recognized upon delivery. As of December 31, 2019, the aggregate amount of the transaction price allocated to the performance obligations that were unsatisfied or partially unsatisfied amounts to US$701.8 million for continuing operations.

Assets recognized in respect of the costs to obtain or fulfill a contract

The Group has no cost falling into the definition of a cost to obtain or fulfill a contract.

NOTE 19 ANALYSIS BY OPERATING SEGMENT

Group organization

Segment presentation and discontinued operations

The financial information by segment is reported in accordance with our internal reporting system and provides internal segment information that is used by the chief operating decision maker to manage and measure performance.

Until the last quarter of 2018, we organized our activities in four segments for financial reporting: (i) Contractual Data Acquisition, (ii) Geology, Geophysics & Reservoir ("GGR"), (iii) Equipment and (iv) Non-Operated Resources.

In November 2018, we announced the new strategy for our Group that included the transition to an asset-light model by reducing CGG's exposure to the Contractual Data Acquisition business. As a result of these strategic announcements and actions undertaken since then, our Contractual Data Acquisition segment and part of our Non-Operated Resources segment have been presented as discontinued operations in our income statement and as assets held for sale in our balance sheet in accordance with IFRS 5. The costs of implementation of our Strategic Plan described above, referred to as the "CGG 2021 Plan", are reported in discontinued operations in the related Contractual Data Acquisition business lines.

Our GGR and Equipment segments are reported in continuing operations.

GGR

This operating segment comprises the Geoscience business lines (processing and imaging of geophysical data, reservoir characterization, geophysical consulting and software services, geological data library and data management solutions) and the Multi-client Data business line (development and management of a seismic and geological data library that we undertake and license to a number of clients on a non-exclusive basis). Both activities regularly combine their offerings, generating overall synergies between their respective activities.

Equipment

This operating segment comprises our manufacturing and sales activities for seismic equipment used for data acquisition, both on land and marine. The Equipment segment carries out its activities through our subsidiary Sercel.

Internal reporting and segment presentation

Before the implementation of IFRS 15, the Group applied the percentage of completion method for recognizing Multi-Client prefunding revenues. Following the implementation of IFRS 15, the Group recognizes Multi-Client prefunding revenues only upon delivery of final processed data.

Although IFRS fairly presents the Group’s statement of financial position, for internal reporting purposes CGG's management continues to apply the pre-IFRS 15 revenue recognition principles, with Multi-Client prefunding revenues recorded based on percentage of completion. CGG's management believes this method aligns revenues closely with the activities and resources used to generate it and provides useful information as to the progress made on Multi-Client surveys, while also allowing for useful comparison across time periods.

CGG therefore presents the Group' results of operations in two ways:

- the “Reported” or “IFRS” figures, prepared in accordance with IFRS, with Multi-Client prefunding revenues recognized upon delivery of the final data ;
- the “Segment” figures, for purposes of internal management reporting, prepared in accordance with the Group’s previous method for recognizing Multi-Client prefunding revenues.

Other companies may present segment and related measures differently than we do. Segment figures are not a measure of financial performance under IFRS and should not be considered as an alternative to operating revenues, operating income or any other measures of performance derived in accordance with IFRS as indicators of our operating performance.

Alternative Performance Measures

As a complement to Operating Income, EBIT may be used by management as a performance measure for segments because it captures the contribution to our results of the significant businesses that are managed through our joint ventures. We define EBIT as Operating Income plus our share of income in companies accounted for under the equity method.

We define EBITDAs as earnings before interest, tax, income from equity affiliates, depreciation, amortization net of amortization expense capitalized to Multi-Client, and cost of share-based compensation. Share-based compensation includes both stock options and shares issued under our share allocation plans. EBITDAs is presented as additional information because we understand that it is a measure used by certain investors to determine our operating cash flow and historical ability to meet debt service and capital expenditure requirements.

Inter-segment transactions are made at arm’s length prices. They related primarily to geophysical equipment sales made by the Equipment segment to the Contractual Data Acquisition business lines. These inter-segment revenues and the related earnings are eliminated in consolidation in the tables that follow under the column “Eliminations and other”.

Operating Income and EBIT may include non-recurring or restructuring items, which are disclosed in the reportable segment if material. General corporate expenses, which include Group management, financing, and legal activities, have been included in the column “Eliminations and other” in the tables that follow. The Group does not disclose financial expenses or financial revenues by segment because they are managed at the Group level.

Identifiable assets are those used in the operations of each segment. Unallocated and corporate assets consist of “Investments and other financial assets, net” and “Cash and cash equivalents” of our consolidated statement of financial position. The group does not track its assets based on country of origin.

Capital employed is defined as "total assets" excluding “Cash and cash equivalents” less (i) “Current liabilities” excluding “Bank overdrafts” and “Current portion of financial debt” and (ii) non-current liabilities excluding “Financial debt”.

Analysis by segment (continuing operations)

The tables below provide a reconciliation of the Group's Segment figures to the Group's IFRS figures:

In millions of US$, except for assets and capital employed in billions of US$	2020					
	GGR	**Equipment**	**Eliminations and other** [c]	**Segment figures**	**IFRS 15 adjustments**	**Consolidated Total / IFRS figures**
Revenues from unaffiliated customers	668.0	287.2	-	955.2	(69.2)	886.0
Inter-segment revenues [a]	-	3.5	(3.5)	-	-	-
Operating revenues	**668.0**	**290.7**	**(3.5)**	**955.2**	**(69.2)**	**886.0**
Depreciation and amortization (excluding Multi-Client surveys)	(161.7)	(31.2)	(0.6)	(193.5)	-	(193.5)
Impairment and amortization of Multi-Client surveys	(345.6)	-	-	(345.6)	60.8	(284.8)
Operating income [b]	**(129.6)**	**(10.6)**	**(24.1)**	**(164.3)**	**(8.4)**	**(172.7)**
EBITDAs	**361.2**	**20.9**	**(21.4)**	**360.7**	**(69.2)**	**291.5**
Share of income from companies accounted for under the equity method	0.1	-	-	0.1		0.1
Earnings Before Interest and Tax [b]	**(129.5)**	**(10.6)**	**(24.1)**	**(164.2)**	**(8.4)**	**(172.6)**
Capital expenditures (excluding Multi-Client surveys) [d]	39.0	23.1	2.0	64.1	-	64.1
Investments in Multi-Client surveys, net of cash	239.0	-	-	239.0	-	239.0
Capital employed [e]	**1.6**	**0.6**	**-**	**2.2**	**-**	**2.2**
TOTAL IDENTIFIABLE ASSETS [e]	**2.1**	**0.7**	**0.2**	**3.0**	**-**	**3.0**

(a) Sale of equipment at the Contractual Data Acquisition segment which is classified as discontinued operations.
(b) Includes US$(99.6) million impairment loss on Multi-Client surveys and US$(75.5) million for the impairment of other tangible and intangible assets at December 31, 2020.
(c) For the year ended December 31, 2020, "Eliminations and other" included US$(24.1) million of general corporate expenses.
(d) Capital expenditures included capitalized development costs of US$(41.0) million for the year ended December 31, 2020. "Eliminations and other" corresponds to the change in payables to fixed asset suppliers for the year ended December 31, 2020.
(e) Capital employed and identifiable assets related to discontinued operations are included under the column "Eliminations and other".

	2019					
In millions of US$, except for assets and capital employed in billions of US$	GGR	Equipment	Eliminations and other [c]	Segment Figures	IFRS 15 adjustments	Consolidated Total/ IFRS figures
Revenues from unaffiliated customers	959.9	440.6	-	1,400.5	(44.6)	1,355.9
Inter-segment revenues [a]	-	11.5	(11.5)	-	-	-
Operating revenues	**959.9**	**452.1**	**(11.5)**	**1,400.5**	**(44.6)**	**1,355.9**
Depreciation and amortization (excluding Multi-Client surveys)	(108.1)	(29.4)	(0.7)	(138.2)	-	(138.2)
Impairment and amortization of Multi-Client surveys	(348.8)	-	-	(348.8)	40.8	(308.0)
Operating income [b]	**211.2**	**66.7**	**(30.6)**	**247.3**	**(3.8)**	**243.5**
EBITDAs	**652.1**	**96.6**	**(27.9)**	**720.8**	**(44.6)**	**676.2**
Share of income from companies accounted for under the equity method	(0.1)	-	-	(0.1)	-	(0.1)
Earnings Before Interest and Tax [b]	**211.1**	**66.7**	**(30.6)**	**247.2**	**(3.8)**	**243.4**
Capital expenditures (excluding Multi-Client surveys) [d]	49.1	25.0	1.2	75.3	-	75.3
Investments in Multi-Client surveys, net cash	185.7	-	-	185.7	-	185.7
Capital employed [e]	**1.8**	**0.5**	**-**	**2.3**	**-**	**2.3**
TOTAL IDENTIFIABLE ASSETS [e]	**2.5**	**0.6**	**0.3**	**3.4**	**-**	**3.4**

(a) Sale of equipment at the Contractual Data Acquisition segment which is classified as discontinued operations.
(b) Includes US$(33.0) million impairment loss on Multi-Client surveys and US$(5.5) million for the impairment of other tangible and intangible assets at December 31, 2019.
(c) For the year ended December 31, 2019, "Eliminations and other" included US$(30.3) million of general corporate expenses and US$(0.3) million of inter-segment eliminations.
(d) Capital expenditures included capitalized development costs of US$(18.8) million for the year ended, December 31, 2019. "Eliminations and other" corresponded to the change in payables to fixed asset suppliers for the year ended December 31, 2019.
(e) Capital employed and identifiable assets related to discontinued operations are included under the column "Eliminations and other".

NOTE 20 RESEARCH AND DEVELOPMENT COSTS

Research and development expenses break down as follows:

	December 31,	
In millions of US$	2020	2019
Research and development costs	(78.1)	(75.9)
Development costs capitalized	41.0	32.4
Research and development expensed	**(37.1)**	**(43.5)**
Government grants recognized in income	18.5	19.9
RESEARCH AND DEVELOPMENT COSTS – NET	**(18.6)**	**(23.6)**

Research and development expenditures related primarily to:

- for the GGR segment, projects concerning Geoscience services; and
- for the Equipment segment, projects concerning seismic data recording equipment and improvement of existing systems.

NOTE 21 OTHER REVENUES AND EXPENSES

In millions of US$	December 31, 2020	2019
Impairment of assets	(171.1)	(5.5)
Restructuring costs	(14.8)	(4.8)
Change in restructuring reserves	(26.8)	1.5
Other restructuring expenses	-	-
Impairment and restructuring expenses – net	**(212.7)**	**(8.8)**
Other revenues (expense)	(2.0)	0.1
Exchange gains (losses) on hedging contracts	0.7	(0.2)
Gains (losses) on sales of assets	(0.5)	(0.4)
OTHER REVENUES (EXPENSES) – NET [(a)]	**(214.5)**	**(9.3)**

(a) Other revenues (expenses) – net excluding income (loss) on discontinued operations as explained in note 5.

Year ended December 31, 2020

In 2020, we recognized other expenses for US$(214.5) million comprising:

- a US$(98.0) million non-recurring impairment loss on the Multi-Client data library (out of US$(99.6) million total impairment loss on the Multi-Client data library recognized in 2020). This non-recurring loss is related to the downward revision of expected sales of surveys in frontier exploration areas, due to political instability (Africa) and government decisions to limit exploration (Ireland) in the context of significant cuts in E&P spending (*see note 10*);
- a US$(24.0) million goodwill impairment loss related to the goodwill affected to our GeoConsulting CGU (*see note 11*);
- a US$(36.9) million impairment loss on the fair value remeasurement of our GeoSoftware business recorded in Assets held for sale (*see note 5*);
- a US$(41.6) million expense in respect of measures in the context of significant cuts in E&P spending;
- a US$(6.6) million impairment loss on customer relationships and trade name related to the GeoConsulting business; and
- a US$(4.1) million impairment loss on buildings right-of-use.

Year ended December 31, 2019

Impairment and restructuring costs

In 2019, we recognized other expenses for US$(9.3) million, comprising:

- US$(5.5) million impairment relating mainly to buildings (notably in the United States);
- US$(3.3) million in net restructuring costs, corresponding mainly to sundry rightsizing measures.

NOTE 22 COST OF FINANCIAL DEBT

In millions of US$	December 31, 2020	2019
Current interest expenses related to financial debt	(126.4)	(124.0)
Interest expense on lease liabilities	(9.9)	(11.2)
Income from cash and cash equivalents	2.2	3.5
COST OF FINANCIAL DEBT, NET	**(134.1)**	**(131.7)**

NOTE 23 OTHER FINANCIAL INCOME (LOSS)

In millions of US$	December 31 2020	2019
Exchange gains (losses), net	7.8	(2.7)
Other financial income (loss), net	(47.2)	8.3
OTHER FINANCIAL INCOME (LOSS)	**(39.4)**	**5.6**

At December 31, 2020, the Other Financial Income (Loss) consist of a US$(39.4) million charge, including:

- a US$(47.2) million charge for remeasurement to fair value of other financial assets and liabilities; and
- a US$7.8 million foreign exchange gain.

These remeasurements to fair value concern the Eidesvik Put Option, for US$(11.5) million, and the Shearwater Shares, for US$(35.7) million (*see note 2, 7, 14 and 30*).

NOTE 24 INCOME TAXES

Income tax benefit (expense)

CGG SA and its subsidiaries compute income taxes in accordance with the applicable tax legislations in numerous countries where the Group operates. The tax regimes and income tax rates legislated by these taxing authorities vary substantially.

In millions of US$	December 31, 2020	2019
FRANCE		
Current income tax expense	-	-
Adjustments on income tax recognized in the period for prior periods	-	0.0
Deferred taxes on temporary differences for the period	1.0	26.3
Deferred taxes recognized in the period for prior periods	–	(0.7)
Total France	**1.0**	**25.6**
FOREIGN COUNTRIES		
Current income tax expense, including withholding taxes	(12.3)	(15.5)
Adjustments on income tax recognized in the period for prior periods	2.5	0.7
Deferred taxes on temporary differences for the period	(25.2)	16.5
Deferred taxes recognized in the period for prior periods [a]	4.5	(18.4)
Total Foreign countries	**(30.5)**	**(16.7)**
TOTAL INCOME TAX BENEFIT (EXPENSE)	**(29.5)**	**8.9**

(a) In 2019, this line mainly consisted of US$11.0 million of deferred tax in the US.

Income tax reconciliation

The reconciliation between income tax benefit (expense) in the income statement and the theoretical tax benefit (expense) is detailed below:

In millions of US$	2020	2019
Consolidated net income (loss) from continuing operations	**(375.6)**	**126.2**
Income taxes	**(29.5)**	**8.9**
Income (loss) from continuing operations before taxes	(346.1)	117.3
Net income (loss) from companies accounted for under the equity method	0.1	(0.1)
Theoretical tax basis	**(346.2)**	**117.4**
Enacted tax rate in France	32.02%	34.43%
Theoretical tax	**110.8**	**(40.4)**
Tax differences:		
Differences in tax rates between France and foreign countries [b]	(15.5)	28.3
Change in local tax rates enacted by US and French tax laws	-	-
Non-deductible part of dividends	-	-
Adjustments on the tax expense recognized in the period for prior periods	2.5	0.7
Adjustments on the deferred tax expense recognized in the period for prior periods	1.8	17.6
Valuation allowance on deferred tax assets previously recognized on losses on foreign entities	2.7	(6.0)
Other permanent differences (including withholding taxes)	(22.0)	28.7
Deferred tax unrecognized on losses of the period [a]	(128.4)	(63.5)
Deferred tax unrecognized on losses of prior periods	18.6	43.5
Income taxes	**(29.5)**	**8.9**

(a) Notably corresponds to the French and US tax groups deferred tax not recognized on losses carried forward of the period according to short and medium term uncertainties and revised tax planning.
(b) Mainly corresponds to the difference in tax rates between France and the US.

Deferred tax assets and liabilities

	December 31,	
In millions of US$	2020	2019
Total deferred tax assets	**10.3**	**19.7**
Total deferred tax liabilities	**(16.3)**	**(10.4)**
TOTAL DEFERRED TAXES, NET	**(6.0)**	**9.3**

The net variation in deferred tax is mainly due to the impairment of deferred tax assets in the UK for US$8.9 million due to downward revision of the outlook following the drop in the oil price and significant cuts in E&P spending.

NET DEFERRED TAX ASSETS (LIABILITIES) BY NATURE

In millions of US$	December 31, 2020	2019
Non-deductible provisions (including provisions for pensions and profit sharing)	10.5	11.9
Tangible assets	10.9	15.8
Effects of translation adjustments not recognized in income statement	3.3	(9.0)
Multi-Client surveys (including deferred revenues)	(33.3)	(24.7)
Assets reassessed in purchase accounting of acquisitions	(27.4)	(27.5)
Development costs capitalized	(18.7)	(17.1)
Other deferred revenues	5.0	3.9
Convertible bonds and other financial instruments	-	-
Research tax credits	20.3	10.0
Other	0.7	0.8
Total deferred tax assets net of deferred tax assets (liabilities) related to timing differences	**(28.7)**	**(35.9)**
Tax losses carried forward	22.7	45.2
TOTAL DEFERRED TAX ASSETS NET OF DEFERRED TAX (LIABILITIES)	**(6.0)**	**9.3**

DEFERRED TAX ASSETS (LIABILITIES) PER TAX GROUP AS AT DECEMBER 31, 2020

In millions of US$	France	Foreign countries	Total [a]
Net deferred tax assets (liabilities) related to timing differences	-	(28.7)	(34.9)
Deferred tax assets recognized on tax loss carried forward [b]	-	22.7	28.9
TOTAL	**-**	**(6.0)**	**(6.0)**

(a) The deferred taxes recognized in respect of tax losses carried forward are indefinitely recoverable.
(b) See note 1.5.6 to the consolidated financial statements on the recognition method used for deferred tax assets.

Net operating losses carried forward not recognized at December 31, 2020

In millions of US$	France	Foreign countries	Total
Losses scheduled to expire in 2021	-	8.2	8.2
Losses scheduled to expire in 2022 and thereafter	-	429.0	429.0
Losses available indefinitely	2,368.3	335.3	2,703.6
TOTAL	**2,368.3**	**772.5**	**3,140.8**

Tax audit and litigation

US

The tax audit regarding CGG Holding (U.S.) Inc. for the 2007 fiscal year and extended to 2016 is finished and the Joint Committee has sent our refund claim to the IRS Service Center to be executed. CGG Holding (US) Inc. received in 2020 a refund for an amount of US$6.4 million.

The IRS has rejected part of the R&D credit claimed by CGG Holding (US) Inc. A “30 days” letter was received on January 27, 2020 and CGG Holding (US) Inc. submitted our appeal on February 27, 2020. On March 23, 2020, the IRS rebuttal was received, but CGG Holding (US) Inc. decided not to respond to it in writing. A R&D Appeal Officer and a Specialist have been appointed and an Appeals Conference has been scheduled on March 10, 2021.

Brazil

ISS disputes

The Municipality of Rio de Janeiro has assessed Veritas do Brazil Ltda services taxes (ISS) for 2001 to 2008 - which has been duly disputed. In the meanwhile, Veritas do Brazil Ltda has launched a declaratory and refund action to recover ISS unduly paid in the past for an amount of US$3.2 million.

Further to a favorable decision of the judicial court received by Veritas do Brasil Ltda in 2014, the administrative procedure

covering 2001 to May 2003 has been officially terminated in March 2015 and the tax assessment cancelled in January 2016. In March 2016, the Municipality filed a Rescission Action in order to have the favorable decision cancelled. Veritas do Brasil Ltda filed the response to the action in June 2016. In December 2016, the Public attorney's office agreed that there are no grounds to re-discuss the merit of the case, but understood that the action should be ruled. In February 2017, CGG filed a petition to object the ruling. The case is still on-going. The Group considers that there is no proper ground for this action.

For the years 2003-2008 (taxes at stake: US$9.5 million), the administrative procedure is still ongoing and should result in the same cancellation considering that the reassessment is based on the same arguments than those cancelled by the judicial court. In 2014, the Municipality Attorney's Office objected to the dismissal request. In September 2015, Veritas do Brasil Ltda was requested to present contracts and invoices related to the tax assessment, which were presented in October 2015. The decision is still pending. No provision is recognized as the Group considers that these contingencies should resolve in its favor.

In June 2014, Veritas do Brasil Ltda filed an action to recognize that there is no ISS on multi-client licenses and requesting the refund for amounts incorrectly paid. Veritas do Brasil Ltda has obtained a final decision in its favor in the judicial procedure in February 2014. However, due to a rescission action launched by the Municipality of Rio (see above), the refund has been delayed until now. In August 2019, the Judge ordered that the paperwork related to the refund be issued, which has been issued on October 24, 2019 but with some errors in it that could cause the amount of refund not to be correctly updated. Veritas do Brasil Ltda filed a motion to clarify on November 6, 2019. The judge ruled on January 29, 2020 but forgot some of the issues raised by Veritas do Brasil Ltda which obliged Veritas do Brasil Ltda to file a new motion to clarify on February 5, 2020. On October 27, 2020, Municipality of Rio filed a special appeal against the refund. Veritas do Brasil Ltda answered on December 7, 2020 to such appeal. Veritas do Brasil Ltda is waiting for the ruling.

In the meantime, Veritas do Brasil Ltda filed a motion to clarify on November 23, 2020 regarding the paperwork of the refund. Veritas do Brasil Ltda is waiting for the final draft of paperwork to be approved.

On March 23, 2018, the Municipality of Rio filed a Rescission Action in order to cancel the decision issued on favor of Veritas do Brasil Ltda on the refund action based on two arguments: i) on the merit of the refund and ii) on the refund approved. After several actions from the Municipality of Rio a new judge has been appointed in September 2019. Veritas do Brasil Ltda is waiting for a decision from the judge.

REFIS payments 2009

Veritas do Brazil Ltda participated in November 2009 in a voluntary disclosure and settlement program, allowing companies to settle old debts in exchange for total abatement of penalties and rebate of interest, provided they abandoned their ongoing litigations. The Brazilian IRS issued a tax assessment charging penalty on the non-recognition of the offset request that paid the debts later included in Refis. On June 24, 2019 Veritas do Brazil Ltda was notified of the first instance decision which was unfavorable to Veritas do Brazil Ltda . On July 24, 2019 Veritas do Brazil Ltda filed an appeal against the unfavorable decision. Considering that Veritas do Brazil Ltda has all proper documentation, the risk (US$2.1 million) is considered remote and is not reserved

Withholding tax and CIDE disputes

Following a 2012 audit on year 2009, CGG do Brazil Participacoes Ltda was reassessed $5 million of withholding tax on charter contracts. The reassessment was disputed. In August 2018, the decision from the Administrative Court on WHT reassessment was confirmed. In October 2018, CGG do Brazil Participacoes Ltda filed a motion to clarify the decision. In November 2019, CGG do Brazil Participacoes Ltda was notified of the unfavorable decision from the motion to clarify and has filed a special appeal. On April 7, 2020, the TaxPayers Council denied our special appeal. On June 5, 2020 CGG do Brazil Participacoes Ltda filed an appeal from the decision. On June 30, 2020, the special appeal was accepted for ruling. CGG do Brazil Participacoes Ltda is waiting for the ruling.

No provision is recognized as CGG do Brazil Participacoes Ltda considers the risk remote.

In 2016, a new audit was conducted for fiscal year 2013. CGG do Brazil Participacoes Ltda received tax reassessments on December 20, 2017 for amounts of US$10 million for withholding tax and US$7.2 million for CIDE. The company appealed in January 2018 against the reassessments. In August 2018, both WHT and CIDE on charter were ruled favorably to CGG do Brazil Participacoes Ltda and the Brazilian Tax authorities appealed against the decision. In October 2019, the judges ruled in favor of CGG do Brazil Participacoes Ltd. On March 31, 2020, the Federal Public Attorney filed a special appeal against the second instance decision based on the decision issues from the 2009 case (see above). On April 22, 2020, the TaxPayers Council accepted the special appeal for ruling. On June 17, 2020, CGG do Brazil Participacoes Ltda has filed its counterarguments to the special appeal. CGG do Brazil Participacoes Ltda is waiting for the decision of the TaxPayers Council.

No provision is recognized as CGG do Brazil Participacoes Ltda considers the risk remote

Exclusion of ISS from PIS and COFINS basis

Following a Supreme Court decision with general application to exclude ICMS from PIS/COFINS basis because it is not a revenue and therefore is excluded from the scope of such taxes, CGG do Brazil Participacoes Ltda decided to pursue the same discussion regarding ISS included in the PIS/COFINS basis. CGG do Brazil Participacoes Ltda requested to stop paying it for the future and to get a refund of amounts unduly paid in the past 5 years for an amount of US$1.8 million. A Writ of mandamus was filed on July 20, 2020. On July 23, 2020, injunction was granted to start excluding ISS from PIS/COFINS basis suspending its liability. On July 27, 2020, the IRS appealed from the injunction decision.

On August 21, 2020, a first instance decision decided in favor of CGG do Brazil Participacoes Ltda allowing the exclusion of ISS from PIS/COFINS basis and also the compensation of amounts unduly paid in the past 5 years. On August 31, 2020, a judge dismissed the IRS appeal from injunction. On

September 04, 2020 , the company filed a motion to clarify asking judge to say that we can both ask for a refund or compensate the amounts paid in the 5 years and also state the period where interest should be applied (from the date of payment onwards). On September 18, 2020, the judge ruled in our favor. On September 21, 2020, the Brazilan Tax Authorities appealed from such decision. CGG do Brazil Participacoes Ltda presented its counteraguments in November 2020. CGG do Brazil Participacoes Ltda is waiting for the decision.

Exclusion of PIS/COFINS from its own basis

Following a Supreme Court decision with general application to exclude ICMS from PIS/COFINS basis because it is not a revenue and therefore should be out of the scope of such taxes, CGG do Brazil Participacoes Ltda decided to pursue the same discussion regarding PIS/COFINS included in its own basis. CGG do Brazil Participacoes Ltda requested to stop paying it for the future and to get a refund of amounts unduly paid in the past 5 years for US$4.9 million. CGG do Brazil Participacoes Ltda filed a Writ of mandamus on July 21, 2020. On July 22, 2020, an injunction was granted to start excluding PIS/COFINS from its own basis suspending its liability. On July 27, 2020, the IRS appealed from the injunction decision. On September 18, 2020, a judge decided in favor of CGG do Brazil Participacoes Ltda allowing the exclusion of PIS/COFINS from its own basis and also the compensation of amounts unduly paid in the past 5 years with interest counting from undue payment. On October 01, 2020, CGG do Brazil Participacoes Ltda presented a motion to clarify asking the judge to say that we can both ask for a refund or compensate the amounts paid in the 5 years and to make it say that interest needs to be applied until compensation/refund. On October 07, 2020, the judge denied our motion to clarify saying he can opt for the refund or compensation in his decision and saying he already ruled about interest application in his decision. On October 22, 2020, CGG do Brazil Participacoes Ltda filed counterarguments to the IRS appeal and on October 28, filed an appeal to first instance decision to discuss application of interest/right for compensation or refund. CGG do Brazil Participacoes Ltda is waiting for the decision.

CGG Services SAS

CGG Services SAS initiated in 2011 an action in order to obtain that withholding taxes not be applied to services payments received from Brazil in application of the tax treaty between France and Brazil. Amounts of WHT supposedly due on services paid to France between April 2012 and June 2014 were deposited judicially in such proceeding. In mid 2014, following a public decision rendered by the Public Attorney office that states that non-technical services should not be subject to withholding taxes if a treaty applies, the IRS published a new Declaratory Act 5/2014 that envisages correct application of treaties. The recoverable judicial deposit and the recoverable WHT paid are booked as receivables (US$8.7 million) in CGGS SAS's books. There is no reserve on the principal. CGG Services SAS first filed the case in Rio de Janeiro Court. In August 2011, the company filed a request to withdraw the action in order to enter it in Brasilia court instead of Rio Court to avoid jurisdiction issues. In September 2011, the judge approved the withdrawal. CGG Services SAS then filed the case in Brasilia Court in September 2011. On January 31, 2014, the Brasilia Courts considered that the decision should be rendered by Rio Courts and we are now back in front of Rio Courts. In May 2017, the Tax Authorities filed a petition claiming that CGGS SAS had a Permanent Establishment (PE) in Brazil and/or that the remittances were royalties, trying to deny the application of the French-Brazilian Tax Treaty. On August 1, 2017, CGGS SAS presented a petition to refute the arguments brought by the national treasury, especially the one related to the existence of a PE in Brazil. On September 1, 2017, CGGS SAS filed a petition attaching a new power of attorney to avoid problems with absence of valid procedural representation. On October 30, 2017, the Brazilian Tax Authorities filed a petition refuting the Company's arguments.

An opinion from an academic expert was attached to the case on December 02, 2019. On March 10, 2020, the judge requested both parties to present their final arguments in the case. Public Attorneys presented it on April 23 and CGGS SAS on May 11. On June 02, 2020, our lawyers had a VC with the judge. The judge mentioned that this is one of the most difficult cases he has worked on, that the issue is very complex and new to him and that we should have a decision by year-end. On June 10, 2020, we filed a petition with a very recent precedent from the STJ. On September 1, 2020, the judge decided unfavorably to CGG Services SAS considering that article 7 of French-Brazilian Tax Treaty only prevents WHT on payment of profits and not of any income/revenue. On September 24, 2020, CGG Services SAS filed an appeal from such decision. On December 1, 2020, the Brazilian Tax Authorities presented their counterarguments to the CGG Services SAS appeal. CGG do Brazil Participacoes Ltda is waiting for the decision.

Peru

The Peru tax authorities assessed additional withholding taxes on technical services for 2012 and 2013 for CGG Land (U.S.) Inc. Sucursal del Peru for an amount of US$16.3 million. The company disputed the reassessment. A final resolution in favor of CGG was notified in May 2017. A nullity action was launched against this resolution by the Tax Authorities. In February 2019, the nullity action was denied by the judge. In February 2019, SUNAT appealed against the decision and in September 2019, CGG Land (U.S.) Inc. Sucursal del Peru was notified of the second instance decision in which the Superior Court declared the nullity of the first instance decision and ordered to the first instance to rule again the case. CGG Land (U.S.) Inc. Sucursal del Peru filed an annulment action to cancel this decision, which has been rejected. CGG Land (U.S.) Inc. Sucursal del Peru has provided all relevant documents for the new first instance decision and is waiting for the decision.

No provision has been recognized, as the risk is considered as remote.

NOTE 25 PERSONNEL

The analysis of personnel (included discontinued operations) is as follows:

	Year ended December 31	
	2020	**2019**
Personnel employed under French contracts	1,050	1,089
Personnel employed under local contracts	2,840	3,475
TOTAL	**3,890**	**4,564**
Including field staff of:	-	*168*

The total cost of personnel employed was US$427 million in 2020 (or US$390 million excluding Contactual Data Acquisition and the CGG 2021 Plan), US$600 million in 2019 (or US$451 million excluding Contactual Data Acquisition and the CGG 2021 Plan).

NOTE 26 KEY MANAGEMENT PERSONNEL COMPENSATION

The table below presents the director fees and the CEO compensation paid.

	Year ended December 31	
in US$	2020	2019
Short-term employee benefits paid [a]	2,080,658	1,802,094
Directors' fees	484,241	607,241
Post-employment benefits – pension [b]	14,134	13,626
Share-based payments [c]	451,641	472,286

(a) Excludes employers' contributions.
(b) Cost of services rendered and interest expense.
(c) Expense recognized in the income statement in respect of stock option and performance shares plans.

Contractual termination indemnity in force – Chief Executive Officer

The Board of Directors meeting on April 26, 2018, following the appointment of office by Mrs. Sophie ZURQUIYAH as Chief Executive Officer for a term of four years, also approved, for the duration of this term of office, the terms and conditions of the benefits granted to Mrs. Sophie ZURQUIYAH in the event of termination of her corporate office. Board of Directors on March 5, 2020 modified the conditions of these benefits in order to comply with the provisions of the AFEP-MEDEF Code to which the Company refers.

These benefits were ratified during the General Meeting of June 16, 2020.

It has the following characteristics:

- Mrs. Sophie ZURQUIYAH benefits from a contractual termination indemnity in the event of dismissal, and in the event of non-renewal of her term of office within twelve months following a change of control, in the absence of any situation of failure characterized by the non-achievement of the performance conditions described below;
- No payment may be made in the event of serious or gross misconduct, regardless of the reason for departure.

The payment of the contractual termination indemnity will depend on the average rate of achievement of the objectives relating to the annual variable portion of Mrs. Sophie ZURQUIYAH's remuneration for the last three financial years ended prior to the departure date, in accordance with the following rule:

(i) if the average achievement rate is less than 80%, no contractual termination indemnity fee will be paid;

(ii) if the average achievement rate is equal to or greater than 80% and less than 90%, the contractual termination indemnity will be due at 50% of its amount;

(iii) if the average achievement rate is equal to or greater than 90%, the contractual termination indemnity will be due on a straight-line basis between 90% and 100% of its amount.

This contractual termination indemnity will be equal to the difference between (i) a gross amount capped at 200% of the Annual Reference Remuneration and including all sums of any nature whatsoever, and on any basis whatsoever, to which Mrs. Sophie ZURQUIYAH may be entitled as a result of the termination, and (ii) all sums to which she may be entitled as a result of the implementation of the non-competition commitment.

The aggregate of the contractual termination indemnity and the non-competition indemnity may under no circumstances exceed 200% of the Corporate Officer's Annual Reference remuneration. Should the combined amount of the two benefits be greater, the contractual indemnity would be reduced to the level of this cap.

It is specified that the Board of Directors must acknowledge, prior to the payment of the contractual termination indemnity, (i) that the performance conditions described above have been met and (ii) that the contractual termination indemnity complies with the recommendations of the AFEP-MEDEF Code in force at the date of the departure of the person concerned.

NOTE 27 RELATED PARTY TRANSACTIONS

The following table presents the transactions with our joint ventures and associates.

As of December 31, 2019, the majority of them belonged to the Contractual Data Acquisition business. With the exit of this activity on January 8, 2020 and the sale of shares in Global Seismic Shipping AS ("GSS"), which indirectly owned five high-end vessels, and CGG's divestment from the Seabed Geosolutions BV ("Seabed") joint venture on April 1, 2020, the volume of these transactions was reduced during the year 2020.

As of December 31, 2020, CGG Group's joint ventures and associates are mostly belonging to the Land Contractual Data Acquisition business.

	December 31					
	2020			2019		
In millions of US$	Joint ventures [a]	Associates [b]	Total	Joint ventures [a]	Associates [b]	Total
Sales of geophysical equipment	-	23.1	23.1	-	21.0	21.0
Equipment rentals and services rendered	-	1.0	1.0	(0.1)	10.9	10.8
Operating Revenue	**-**	**24.1**	**24.1**	**(0.1)**	**31.9**	**31.8**
Charter expenses	-	-	-	(28.8)	-	(28.8)
Shipmanagement expenses	-	-	-	(18.4)	-	(18.4)
Costs of services rendered	(2.6)	(0.3)	(2.9)	(1.6)	(0.5)	(2.1)
Cost of operations	**(2.6)**	**(0.3)**	**(2.9)**	**(48.8)**	**(0.5)**	**(49.3)**
Other financial income (loss)	**-**	**(13.3)**	**(13.3)**	**(4.4)**	**19.6**	**(15.2)**
Trade accounts and notes receivable,including agency arrangements	2.3	21.9	24.2	9.4	30.3	39.7
Right of use-assets	-	-	-	156.2	-	156.2
Receivables and assets	**2.3**	**21.9**	**24.2**	**165.6**	**30.3**	**195.9**
Trade accounts and notes payable,including agency arrangements	-	0.9	0.9	4.6	2.4	7.0
Provisions for onerous contracts	-	-	-	61.0	-	61.0
Lease liabilities	-	-	-	190.7	-	190.7
Payables and liabilities	**-**	**0.9**	**0.9**	**256.3**	**2.4**	**258.7**

(a) Mainly correspond to investments in companies accounted for under the equity method at our Marine Data Acquisition business and presented as held for sale (see note 5) or as being in liquidation.
(b) Mainly correspond to investments in companies accounted for under the equity method at our Land Data Acquisition business and classified as held for sale (see note 5).

No credit facility or loan was granted to the Company by shareholders during the last two years.

NOTE 28 SUPPLEMENTARY CASH FLOW INFORMATION

Operating activities

Before changes in working capital, net cash provided by operating activities in 2020 was US$300.1 million compared to US$637.8 million in 2019, due to lower demand resulting from the Covid-19 pandemic. Changes in working capital had a negative impact on cash from operating activities of US$(35.8) million in 2020 driven by the rebound of Equipment sales in the fourth quarter of 2020, while a very favorable collection pattern materially impacted 2019.

In 2020, depreciation and amortization included US$(175.1) million of impairment losses out of which US$(99.6) million impairment losses on the Multi-Client data library, US$(24.0) million impairment losses on GGR Goodwill, US$(36.9) million impairment losses on Geosoftware business available for sale and US$(14.6) million impairment losses on other tangible and intangible assets. In 2019 depreciation and amortization included US$(38.5) million impairment out of which US$(33.0) million impairment losses on the Multi-Client data library.

Net cash provided by operating activities was US$264.3 million in 2020 compared to US$751.4 million in 2019.

Investing activities

The net cash used in investing activities was US$(289.6) million in 2020 compared to US$(261.5) million in 2019, mainly driven by an increase in Multi-Client Data investments in Brazil, North Sea and Australia (US$53.3 million).

In 2020 and 2019, the variation in other non-current financial assets mainly related to short-term investment securities and long-term deposits pledged to fulfill certain collateral requirements.

Financing activities

In 2020, net cash flow used by financing activities was mainly related to financial expenses paid of US$(80.2) millions, lease repayments (resulting from the application of IFRS 16 and detailed below) of US$(55.5) million, dividends paid to minority shareholders of US$(7.2) million and the early repayment of creditors as we completed our safeguard procedure of US$(5.2) million.

In millions of US$	December 31, 2020	December 31, 2019
Property lease	(29.2)	(32.9)
Property formerly classified as financial lease	*(5.6)*	*(5.3)*
Other property	*(23.6)*	*(27.6)*
Machinery & equipment lease	(26.3)	(24.0)
Total cash flow for leases	**(55.5)**	**(56.9)**

Cash and cash equivalents

	Year ended December 31	
In millions of US$	2020	2019
Cash and bank deposits	323.6	484.4
Cash equivalents and short-term deposits	61.9	126.1
TOTAL CASH AND CASH EQUIVALENTS	**385.4**	**610.5**

Cash and cash equivalents included trapped cash amounting to US$48.9 million as at December 31, 2020, compared to US$76 million as at December 31, 2019. Trapped cash means any cash and cash equivalent held by a subsidiary that operates in a country where exchange controls or other legal restrictions prevent these cash balances from being available for use by the Group or one of its subsidiaries. In 2020, cash equivalents and short-term deposits excludes US$21.1 million of cash pledged to fulfill certain collateral requirements. The cash pledged for more than one year is recorded for US$11.9 million in other financial assets (*see note 7*) and the cash pledged for less than one year is recorded for US$9.2 million in restricted cash (*see note 4*).

NOTE 29 EARNINGS PER SHARE

In millions of US$	Year 2020	2019
Net income attributable to shareholders [a]	(441.8)	(69.1)
Effect of dilution		
Ordinary shares outstanding at the beginning of the year [b]	709,956,358	709,944,816
Weighted average number of ordinary shares outstanding during the period resulting from the exercise of stock options and delivery of performance shares [c]	808,384	5,639
Weighted average number of shares outstanding (d)	(24,996)	
Weighted average number of ordinary shares outstanding [(e) = (b) + (c) - (d)]	**710,739,746**	**709,950,455**
Total dilutive potential shares from stock options	–	82,674
Total dilutive of potential shares from performance share plans	–	1,889,632
Total dilutive of potential shares from warrants	–	-
Dilutive weighted average number of shares outstanding adjusted when dilutive (f)	**710,739,746**	**711,922,761**
Earnings per share		
- **Basic (a)/(e)**	**(0.62)**	**(0.10)**
- **Diluted (a)/(f)**	**(0.62)**	**(0.10)**
Net income from continuing operations attributable to owners of the Group	(379.2)	118.7
- Earnings per share, basic	(0.53)	0.17
- Earnings per share, diluted	(0.53)	0.17
Net income from discontinued operations attributable to owners of the Group	(62.5)	(187.7)
- Earnings per share, basic	(0.09)	(0.26)
- Earnings per share, diluted	(0.09)	(0.26)

NOTE 30 SUBSEQUENT EVENTS

Eidesvik sold its shares in Shearwater to CGG and CGG accepted Rasmussengruppen's offer to buy the Shearwater shares.

On January 11, 2021, Eidesvik decided to exercise its put option and to sell all of its Shearwater Shares to CGG at a strike price of US$30 million. CGG thereby acquired 1,987,284 shares, increasing its shareholding in Shearwater to 6.64% of the latter's outstanding shares and 6.72% of shares carrying voting rights.

On January 12, 2021, CGG accepted Rasmussengruppen's binding offer to buy all of the Shearwater shares owned by CGG, including those it owned following the exercise of Eidesvik's put option. By way of this transaction, CGG sold a total of 3,945,532 Shearwater shares at their fair market value for a total cash consideration of US$27.6 million. The transaction was completed on January 18, 2021 and the payment was received.

Complaint to the French prosecutor

On February 2, 2021, CGG was informed that JG Capital Management filed a criminal complaint regarding the terms of the CGG's financial restructuring approved in 2017. The French public prosecutor has three months from the filing of the complaint to decide whether or not to pursue an action.

NOTE 31 LIST OF PRINCIPAL CONSOLIDATED SUBSIDIARIES AS AT DECEMBER 31, 2020

Subsidiaries are fully consolidated from the date of their acquisition, being the date on which the Group obtains the control.

Dormant subsidiaries of the Group have not been included in the list below.

Percentage of interest generally corresponds to the percentage of control in the Company.

Siren Number [a]	Company Names	Country of incorporation	% ownership interest
403 256 944	CGG Services SAS	France	100.0
410 072 110	CGG Explo SARL	France	100.0
413 926 320	Geomar SAS	France	100.0
	CGG Holding BV	Netherlands	100.0
	CGG Marine BV	Netherlands	100.0
	CGG Services (NL) BV	Netherlands	100.0
	CGG International SA	Switzerland	100.0
	CGG Data Services SA	Switzerland	100.0
	CGG Services (Norway) AS	Norway	100.0
	CGG Services (UK) Limited	United Kingdom	100.0
	CGG do Brasil Participaçoes Ltda	Brazil	100.0
	Veritas do Brasil Ltda	Brazil	100.0
	LASA Prospeccoes SA	Brazil	100.0
	CGG Mexico, SA de CV	Mexico	100.0
	Geoinnovation Corporativa S. de RL de CV	Mexico	100.0
	Vitzel SA de CV	Mexico	100.0
	CGG Holding (US) Inc.	Delaware, United States of America	100.0
	CGG Services (US) Inc.	Delaware, United States of America	100.0
	CGG Land (US) Inc.	Delaware, United States of America	100.0
	CGG Canada Services Ltd	Canada	100.0
	CGG Services (Canada) Inc.	Canada	100.0
	CGG Services (Australia) Pty Ltd	Australia	100.0
	CGG Aviation (Australia) Pty Ltd	Australia	100.0
	CGGVeritas Services (B) Sdn Bhd	Brunei	100.0
	PT CGG Services Indonesia [b]	Indonesia	95.0
	CGG Services India Private Ltd	India	100.0
	CGG Technology Services (Beijing) Co. Ltd	China	100.0
	CGG Services (Singapore) Pte Ltd	Singapore	100.0
	CGG Services (Malaysia) Sdn Bhd	Malaysia	100.0
	CGG Vostok	Russia	100.0
866 800 154	Sercel Holding SAS	France	100.0
378 040 497	Sercel SAS	France	100.0
	Sercel-GRC	Oklahoma, United States of America	100.0
	Sercel Inc.	Oklahoma, United States of America	100.0
	Hebei Sercel-Junfeng Geophysical Prospecting Equipment Co. Ltd [b]	China	51.0
	Sercel Singapore Pte Ltd	Singapore	100.0
	De Regt Marine Cables BV	Netherlands	100.0

(a) Siren number is an individual identification number for company registration purposes under French law.
(b) % control of these subsidiaries is 100%.

Non-controlling interests

The Group does not fully consolidate any significant entity in which it holds less than a majority of voting rights.

Subsidiaries with non-controlling interests do not contribute materially to the activities of the Group, the consolidated income, cash flows, liabilities or assets as at December 31, 2020.

Hebei Sercel-Junfeng Geophysical Prospecting Equipment Co. Ltd, a subsidiary of Sercel SAS based in China, is the main entity owned by CGG with non-controlling interests.

NOTE 32 AUDIT FEES

Annual audit fees for 2020 and 2019 are as follows:

	December 31			
	2020		2019	
In thousands of US$	EY	Mazars	EY	Mazars
Audit fees	1,704	823	1,991	953
Audit-related fees	88	68	59	38
Tax fees	-	-	11	29
Other fees	-	57	9	-
TOTAL	**1,792**	**948**	**2,070**	**1,020**

Audit related fees are linked to sustainability audits.

Statutory auditors' report on the consolidated financial statements

This is a translation into English of the statutory auditors' report on the consolidated financial statements of the Company issued in French and it is provided solely for the convenience of English speaking users.

This statutory auditors' report includes information required by European regulation and French law, such as information about the appointment of the statutory auditors or verification of the information concerning the Group presented in the management report and other documents provided to shareholders.

This report should be read in conjunction with, and construed in accordance with, French law and professional auditing standards applicable in France.

To the shareholders of CGG,

Opinion

In compliance with the engagement entrusted to us by your annual general meeting, we have audited the accompanying consolidated financial statements of CGG for the year ended December 31, 2020.

In our opinion, the consolidated financial statements give a true and fair view of the assets and liabilities and of the financial position of the Group as at December 31, 2020 and of the results of its operations for the year then ended in accordance with International Financial Reporting Standards as adopted by the European Union.

The audit opinion expressed above is consistent with our report to the Audit Committee.

Basis for opinion

Audit Framework

We conducted our audit in accordance with professional standards applicable in France. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Our responsibilities under those standards are further described in the "Statutory Auditors' Responsibilities for the Audit of the Consolidated Financial Statements" section of our report.

Independence

We conducted our audit engagement in compliance with independence requirement of the French Commercial Code (*Code de commerce*) and the French Code of Ethics (*Code de déontologie*) for statutory auditors for the period from January 1st, 2020 to the date of our report, and specifically we did not provide any prohibited non-audit services referred to in Article 5(1) of Regulation (EU) N° 537/2014.

Justification of Assessments - Key Audit Matters

Due to the global crisis related to the Covid-19 pandemic, the financial statements of this period have been prepared and audited under specific conditions. Indeed, this crisis and the exceptional measures taken in the context of the state of sanitary emergency have had numerous consequences for companies, particularly on their operations and their financing, and have led to greater uncertainties on their future prospects. Those measures, such as travel restrictions and remote working, have also had an impact on the companies' internal organization and the performance of the audits.

It is in this complex and evolving context that, in accordance with the requirements of Articles L. 823-9 and R. 823-7 of the French Commercial Code (code de commerce) relating to the justification of our assessments, we inform you of the key audit matters relating to risks of material misstatement that, in our professional judgment, were of most significance in our audit of the consolidated financial statements of the current period, as well as how we addressed those risks.

These matters were addressed in the context of our audit of the consolidated financial statements as a whole and in forming our opinion thereon, and we do not provide a separate opinion on specific items of the consolidated financial statements.

Disposal of the Marine Data Acquisition Business

Key audit matter	Our response
As presented in note 2 to the consolidated financial statements as of December 31, 2020, on January 8, 2020 (the "Marine Closing"), Shearwater acquired, the shares of Global Seismic Shipping AS (GSS) and the streamers, and the Capacity Agreement entered into force. At the Marine Closing date, this transaction resulted in the recognition of a Vendor Note exchangeable into Shearwater shares for US$ 52.9m, an "Idle Vessels Compensation" and an	Our procedures mainly consisted in: - gaining a thorough understanding of the objectives and structure of the January 8, 2020 transaction with Shearwater through interviews with management and the reading of the transaction's legal documents; - performing an accounting analysis of all the components of the transaction and assess the accounting treatments retained by management;

Key audit matter	Our response
operating liability ("Off-Market Component") related to the Capacity Agreement for a total amount of US$ (148.0)m and the Eidesvik Put Option for US$ (4.6)m. These assets and liabilities, as well as the judgments made by management in their initial and subsequent valuations, are described in note 2 to the consolidated financial statements. On December 29, 2020, your Group has converted the Vendor Notes for a residual nominal amount of US$ 49.4m into Shearwater shares. In addition, as described in note 30 to the consolidated financial statement, on January 11, 2021 Eidesvik decided to exercise its put option and sell all its Shearwater shares to your Group at a strike price of US$ 30m. On January 12, 2021, your Group accepted Rasmussengruppen's binding offer to buy all of the Shearwater shares owned by your Group including those it owned following the exercise by Eidesvik of its put option, for a total cash consideration of US$ 27.6m. The transaction was completed on January 18, 2021 and the payment was received. As of December 31, 2020, the fair value of the Shearwater shares and the fair value of the Eidesvik Put Option are based on the share value retained in the subsequent agreement with Rasmussengruppen. The January 8, 2020 transaction with Shearwater has multiple components and is supported by numerous legal agreements containing complex clauses. In addition, the initial estimate of the value of the assets and liabilities received as consideration for the disposal of the Marine Data Acquisition business required management to exercise judgment in its choice of assumptions. In particular, the fair value of the Capacity Agreement and the Eidesvik Put Option were based on multiple assumptions for which the effect of uncertainties on fair value was significant. The subsequent evaluation of the aforementioned Idle Vessels Compensation also required judgments and estimates as described in note 1 to the consolidated financial statements. We therefore considered the disposal of the Marine Data Acquisition business and the follow up of its consequences subsequent to the Marine Closing as a key audit matter.	- challenging the assumptions and calculation methods used for the initial valuation of the assets and liabilities arising from the disposal; - comparing the actual accounting of all the operations of the Marine Closing with the accounting analysis performed by us; - corroborating the consistency of the Shearwater fleet utilization assumptions over the remaining period of the commitment, retained in the context of the valuation of the Idle Vessels Compensation as of December 31, 2020, with regard to market conditions; - assessing the valuation of the Shearwater shares and the Put Option as at December 31, 2020, in particular with respect to the subsequent events of January 2021 in accordance with accounting standards. We have also examined the appropriateness of the disclosures related to this transaction and to the identified subsequent events, which are presented in the notes to the consolidated financial statements.

Valuation of goodwill

Key audit matter	Our response
As presented in note 11 to the consolidated financial statements as of December 31, 2020, goodwill net carrying amount totals US$ 1,186.5m split as follows: - Geoscience : US$ 724m; - Multi-clients : US$ 284m; - Equipement : US$ 178m. Management ensures, at least once a year at the statement of financial position date, that the carrying amount of goodwill is not higher than its recoverable amount and presents no risk of impairment. The principles of the impairment test performed and the retained assumptions are described in note 11 to the consolidated financial statements.	Our procedures thus mainly consisted in: - assessing the compliance of the methodology applied by Group management with the applicable accounting standards; - assessing the consistency of the estimated future cash flows with the main underlying operating assumptions, coming from the 2021 budget and the outlook for the period 2022-2023; - examining the main assumptions retained for estimating normative cash flows; - performing a retrospective analysis of the cash flow estimates;

Key audit matter	Our response
The determination of the recoverable amount of goodwill is very largely based on management judgment, in particular with regard to: - the future cash flows expected from the assessed cash-generating units, including normative cash flows that are used beyond the third year; - the discount rates applied to the future cash flows; - the long-term growth rate retained for the cash flow projection. In 2020, the Covid-19 pandemic led to a significant drop in demand for oil and gas. In response, your Group's customers reduced their 2020 E&P expenditures by approximately 30%. The valuation of goodwill in the consolidated financial statements as of December 31, 2020 was made in this context. As such, and as indicated in note 11 to the consolidated financial statements, impairment losses were recorded in the amount of US$ 24.0 million during the year ended December 31, 2020 on the GeoConsulting cash-generating unit (included in Geoscience). We considered the valuation of goodwill as a key audit matter, due to its significance in the accounts and the necessary management estimates and judgments, particularly in the context of the crisis triggered by the Covid-19 pandemic.	- assessing the existence of any external information which could contradict management's assumptions. We have also incorporated in our audit team valuation specialists, in particular for the purpose of assessing the discount rates and long-term growth rate retained by management. They independently determined acceptable rate ranges and examined the rates used by management as compared to those ranges. We have also examined the appropriateness of the disclosures relating to the valuation of goodwill presented in the notes to the consolidated financial statements. In particular, we have assessed the consistency of the sensitivities presented in the consolidated financial statements with respect to the crisis context described above, as well as the consistency of the scenario of gradual recovery of E&P expenses with regard to market expectations. We also verified the arithmetical accuracy of those sensitivities.

Valuation of multi-client surveys

Key audit matter	Our response
As presented in note 10 to the consolidated financial statements as of December 31, 2020, the net carrying amount of the multi-client surveys totals US$ 492.4m. As presented in note 1.7 to the consolidated financial statements, the multi-client surveys regroup seismic surveys for which non-exclusive licenses are granted to customers. All the costs of acquisition, processing and finalization of the surveys are recognized as intangible assets. The multi-client surveys are valued as the aggregate of those costs less accumulated amortization, or at their fair values if the latter is the lower. Management ensures once a year, or more frequently in the event of any indication of impairment, that the carrying amount of multi-client surveys does not exceed their recoverable amounts. In addition, an impairment test is performed for each survey at delivery date. The assessment of the recoverable amount of multi-client surveys is very largely based on management judgment, in particular with regard to the forecasting of future sales and the effect on them of the reduction in capital expenditures of the oil market players triggered by the Covid-19 pandemic. In that respect, and as indicated in note 10 to the consolidated financial statements, US$ 99.6 million of impairment losses were recognized during the year ended on December 31, 2020. Given the above, we considered the valuation of multi-client surveys as a key audit matter.	We assessed the consistency of forecasted future sales by comparison with management's forecasts established for the purpose of the previous year's impairment test, with sales actually generated, and with regard to survey's attractiveness for potential customers. We have assessed the existence of any external information that could contradict management's assumptions. When management identified an impairment, we inquired management about the reasons for the impairment and assessed its consistency with our understanding of the market. We have also examined the appropriateness of the disclosures relating to the valuation of multi-client surveys presented in the notes to the consolidated financial statements.

Specific verifications

We have also performed, in accordance with professional standards applicable in France, the specific verifications required by laws and regulations of the information relating to the Group given in the Board of Directors' management report.

We have no matters to report as to their fair presentation and their consistency with the consolidated financial statements.

We attest that the consolidated non-financial statement required by Article L. 225-102-1 of the French Commercial Code (*Code de commerce*) is included in information relating to the Group given in the management report, it being specified that, in accordance with Article L. 823-10 of this Code, we have verified neither the fair presentation nor the consistency with the consolidated financial statements of the information contained therein. This information should be reported on by an independent third party.

Report on Other Legal and Regulatory Requirements

Format of presentation of the financial statements included in the annual financial report

We have also verified, in accordance with the professional standard applicable in France relating to the procedures performed by the statutory auditor relating to the annual and consolidated financial statements presented in the European single electronic format, that the presentation of the consolidated financial statements included in the annual financial report mentioned in Article L. 451-1-2, I of the French Monetary and Financial Code (*Code monétaire et financier*), prepared under the responsibility of the Chief Executive Officer and Chief Financial Officer, complies with the single electronic format defined in the European Delegated Regulation No 2019/815 of 17 December 2018. As it relates to consolidated financial statements, our work includes verifying that the tagging of these consolidated financial statements complies with the format defined in the above delegated regulation.

Based on the work we have performed, we conclude that the presentation of the consolidated financial statements included in the annual financial report complies, in all material respects, with the European single electronic format.

Appointment of the Statutory Auditors

We were appointed as statutory auditors of CGG by the annual general meeting held on May 15, 2003 for MAZARS and on June 29, 1977 for ERNST & YOUNG et Autres.

As at December 31, 2020, MAZARS and ERNST & YOUNG et Autres were in the eighteenth year and forty-fourth year of total uninterrupted engagement (out of which forty years since securities of the Company were admitted to trading on a regulated market).

Responsibilities of Management and Those Charged with Governance for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with International Financial Reporting Standards as adopted by the European Union and for such internal control as management determines necessary to enable the preparation of consolidated financial statements free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, management is responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, the matters related to going concern and using the going concern basis for accounting unless it is expected to liquidate the Company or to cease operations.

The Audit Committee is responsible for monitoring the financial reporting process and the effectiveness of internal control and risk management systems and where applicable, its internal audit, regarding the accounting and financial reporting procedures.

The consolidated financial statements were authorized for issue by the Board of Directors.

Statutory Auditors' Responsibilities for the Audit of the Consolidated Financial Statements

Objectives and audit approach

Our role is to issue a report on the consolidated financial statements. Our objective is to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatements. Reasonable assurance is a high level of assurance but is not a guarantee that an audit conducted in accordance with professional standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users made on the basis of these consolidated financial statements.

As specified in Article L. 823-10-1 of the French Commercial Code (*Code de commerce*), our statutory audit does not include assurance on the viability of the Company or the quality of management of the affairs of your Company.

As part of an audit conducted in accordance with professional standards applicable in France, the statutory auditor exercises professional judgment throughout the audit and furthermore:

- identifies and assesses the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, designs and performs audit procedures responsive to those risks, and obtains audit evidence considered to be sufficient and appropriate to provide a basis for his opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control;
- obtains an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the internal control;
- evaluates the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management in the consolidated financial statements;

- assesses the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. This assessment is based on the audit evidence obtained up to the date of his audit report. However, future events or conditions may cause the Company to cease to continue as a going concern. If the statutory auditor concludes that a material uncertainty exists, there is a requirement to draw attention in the audit report to the related disclosures in the consolidated financial statements or, if such disclosures are not provided or inadequate, to modify the opinion expressed therein;
- evaluates the overall presentation of the consolidated financial statements and assesses whether these statements represent the underlying transactions and events in a manner that achieves fair presentation;
- obtains sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. The statutory auditor is responsible for the direction, supervision and performance of the audit of the consolidated financial statements and for the opinion expressed on these consolidated financial statements.

Report to the Audit Committee

We submit a report to the Audit Committee which includes in particular a description of the scope of the audit and the audit program implemented, as well as the results of our audit. We also report, if any, significant deficiencies in internal control regarding the accounting and financial reporting procedures that we have identified.

Our report to the Audit Committee includes the risks of material misstatement that, in our professional judgment, were of most significance in the audit of the consolidated financial statements of the current period and which are therefore the key audit matters that we are required to describe in this report.

We also provide the Audit Committee with the declaration provided for in Article 6 of Regulation (EU) N° 537/2014, confirming our independence within the meaning of the rules applicable in France such as they are set in particular by Articles L. 822-10 to L. 822-14 of the French Commercial Code (*Code de commerce*) and in the French Code of Ethics (*Code de déontologie*) for statutory auditors. Where appropriate, we discuss with the Audit Committee the risks that may reasonably be thought to bear on our independence, and the related safeguards.

Paris-La Défense, March 5, 2021

The statutory auditors

MAZARS	**ERNST & YOUNG et Autres**
Jean-Louis Simon	Nicolas Pfeuty & Claire Cesari-Walch

2018-2019 CGG consolidated financial statements

Consolidated statements of operations

		Year	
In millions of US$	Notes	**2019**	2018
Operating revenues	5, 19, 20	1,355.9	1,193.5
Other income from ordinary activities	19, 20	0.7	1.4
Total income from ordinary activities		**1,356.6**	**1,194.9**
Cost of operations		(967.0)	(931.0)
Gross profit		**389.6**	**263.9**
Research and development expenses – net	21	(23.6)	(30.5)
Marketing and selling expenses		(47.0)	(45.9)
General and administrative expenses		(66.2)	(81.1)
Other revenues (expenses) – net	5, 22	(9.3)	(286.1)
Operating income	**5, 20**	**243.5**	**(179.7)**
Expenses related to financial debt		(135.2)	(129.7)
Income provided by cash and cash equivalents		3.5	2.3
Cost of financial debt, net	**23**	**(131.7)**	**(127.4)**
Other financial income (loss)[(a)]	2, 5, 24	5.6	819.9
Income (loss) before income taxes and share of income (loss) in companies accounted for under the equity method		**117.4**	**512.8**
Income taxes	5, 25	8.9	(7.4)
Share of income (loss) in companies accounted for under the equity method	5	(0.1)	(1.2)
Net income (loss) from continuing operations		**126.2**	**504.2**
Net income (loss) from discontinued operations[(b)]	5	(187.7)	(600.0)
Net income (loss)		**(61.5)**	**(95.8)**
Attributable to:			
Owners of CGG SA	$	(69.1)	(101.6)
Non-controlling interests	$	7.6	5.8
Weighted average number of shares outstanding	30	709,950,455	608,438,241
Dilutive weighted average number of shares outstanding adjusted when dilutive	30	711,922,761	617,593,353
Net income (loss) per share	**30**		
• Basic		(0.10)	(0.17)
• Diluted		(0.10)	(0.17)
Net income (loss) from continuing operations per share			
• Basic		0.17	0.82
• Diluted		0.17	0.81

(a) See note 2 for more information regarding the impact of our financial restructuring on February 21, 2018.
(b) See note 5 for more information regarding the impact of IFRS 5 "Non-current assets held for sale and discontinued operations".

The accompanying notes are an integral part of the consolidated financial statements

Consolidated statements of comprehensive income (loss)

	Year	
In millions of US$	**2019***	2018*
Net income (loss) from statements of operations	**(61.5)**	**(95.8)**
Other comprehensive income to be reclassified in profit (loss) in subsequent period:		
Net gain (loss) on cash flow hedges	0.2	(0.1)
Exchange differences on translation of foreign operations	(1.9)	(14.0)
Net other comprehensive income to be reclassified in profit (loss) in subsequent period (1)	**(1.7)**	**(14.1)**
Other comprehensive income not to be classified in profit (loss) in subsequent period:		
Net gain (loss) on actuarial changes on pension plan	(7.1)	6.8
Net other comprehensive income not to be reclassified in profit (loss) in subsequent period (2)	**(7.1)**	**6.8**
Total other comprehensive income (loss) for the period, net of taxes (1)+(2)	**(8.8)**	**(7.3)**
Total comprehensive income (loss) for the period	**(70.3)**	**(103.1)**
Attributable to:		
Owners of CGG	(77.2)	(106.7)
Non-controlling interests	6.9	3.6

* *Including other comprehensive income related to the discontinued operations which is not material.*

The accompanying notes are an integral part of the consolidated financial statements

2018-2019 CGG consolidated financial statements

Consolidated statements of financial position

In millions of US$	Notes	December 31, 2019	2018
ASSETS			
Cash and cash equivalents	29	610.5	434.1
Trade accounts and notes receivable, net	1, 3, 19	436.0	520.2
Inventories and work-in-progress, net	4	200.1	204.8
Income tax assets		84.9	72.1
Other current assets, net	4	116.7	99.1
Assets held for sale, net[(a)]	5	316.6	195.5
Total current assets		**1,764.8**	**1,525.8**
Deferred tax assets	1, 19, 25	19.7	22.6
Investments and other financial assets, net	7	27.4	31.1
Investments in companies under the equity method	8	3.0	0.1
Property, plant and equipment, net	9	300.0	189.2
Intangible assets, net	1, 10, 19	690.8	898.9
Goodwill, net	11	1,206.9	1,229.0
Total non-current assets		**2,247.8**	**2,370.9**
TOTAL ASSETS		**4,012.6**	**3,896.7**
LIABILITIES AND EQUITY			
Bank overdrafts	13	–	–
Financial debt – current portion	2, 13	59.4	17.8
Trade accounts and notes payable		117.4	126.4
Accrued payroll costs		156.6	135.8
Income taxes payable		59.3	49.6
Advance billings to customers		36.9	35.7
Provisions – current portion	16	50.0	172.4
Other current liabilities	1, 12, 19	327.3	250.9
Liabilities directly associated with the assets classified as held for sale[(a)]	5	259.2	131.7
Total current liabilities		**1,066.1**	**920.3**
Deferred tax liabilities	1, 19, 25	10.4	44.4
Provisions – non-current portion	16	58.1	95.9
Financial debt – non-current portion	2, 13	1,266.6	1,148.9
Other non-current liabilities	17	4.0	13.1
Total non-current liabilities		**1,339.1**	**1,302.3**
Common stock: 1,181,522,927 shares authorized and 709,956,358 shares with a €0.01 nominal value outstanding at December 31, 2019	15	8.7	8.7
Additional paid-in capital		3,184.7	3,184.6
Retained earnings	1	(1,531.1)	(1,457.8)
Other Reserves		(23.5)	(27.9)
Treasury shares		(20.1)	(20.1)
Cumulative income and expense recognized directly in equity		(0.7)	(0.9)
Cumulative translation adjustment		(56.3)	(55.1)
Equity attributable to owners of CGG SA		**1,561.7**	**1,631.5**
Non-controlling interests		45.7	42.6
Total equity		**1,607.4**	**1,674.1**
TOTAL LIABILITIES AND EQUITY		**4,012.6**	**3,896.7**

(a) See note 5 for more information regarding the impact of IFRS 5 "Non-current assets held for sale and discontinued operations" as of December 31, 2019.

The accompanying notes are an integral part of the consolidated financial statements

Consolidated statements of cash flows

In millions of US$	Notes	Year 2019	Year 2018
OPERATING			
Net income (loss)	1, 19	(61.5)	(95.8)
Less: Net income (loss) from discontinued operations	5	187.7	600.0
Net income (loss) from continuing operations		**126.2**	**504.2**
Depreciation amortization and impairment	1, 19, 29	138.2	117.9
Multi-Client surveys impairment and amortization	10, 29	308.0	552.3
Depreciation and amortization capitalized in multi-client surveys	10	(18.8)	(18.8)
Variance on provisions		(10.5)	(18.2)
Share-based compensation expenses		5.3	2.5
Net (gain) loss on disposal of fixed and financial assets		1.0	(1.5)
Equity (income) loss of investees		0.1	1.2
Dividends received from investments in companies under the equity method		–	–
Other non-cash items		(4.3)	(823.3)
Net cash flow including net cost of financial debt and income tax		**545.2**	**316.3**
Less: Net cost of financial debt		131.7	127.4
Less: Income tax expense (gain)	1, 19	(8.9)	7.4
Net cash flow excluding net cost of financial debt and income tax		**668.0**	**451.1**
Income tax paid	29	(30.2)	(17.0)
Net cash flow before changes in working capital		**637.8**	**434.1**
Changes in working capital		113.6	(68.8)
• Change in trade accounts and notes receivable	1, 19	150.0	(75.5)
• Change in inventories and work-in-progress		(3.7)	33.3
• Change in other current assets		(33.7)	4.3
• Change in trade accounts and notes payable		7.7	(4.9)
• Change in other current liabilities		(6.7)	(26.0)
Net cash flow provided by operating activities		**751.4**	**365.3**
INVESTING			
Total capital expenditures (including variation of fixed assets suppliers, excluding multi-client surveys)	9	(75.3)	(78.0)
Investments in multi-client surveys, net cash	10	(185.7)	(222.8)
Proceeds from disposals of tangible and intangible assets		0.1	4.4
Total net proceeds from financial assets	29	0.1	–
Acquisition of investments, net of cash & cash equivalents acquired	29	–	–
Variation in loans granted	29	–	(0.4)
Variation in subsidies for capital expenditures		–	(0.2)
Variation in other non-current financial assets		(0.7)	(3.8)
Net cash flow used in investing activities		**(261.5)**	**(300.8)**
FINANCING			
Repayment of long-term debt		(0.4)	(195.9)
Total issuance of long-term debt		–	336.5
Lease repayments		(56.9)	(5.7)
Change in short-term loans		–	(0.2)
Financial expenses paid		(80.5)	(73.2)
Net proceeds from capital increase:			
from shareholders	29	–	129.3
from non-controlling interests of integrated companies		–	–
Dividends paid and share capital reimbursements:			
to shareholders		–	–
to non-controlling interests of integrated companies		(3.8)	–
Acquisition/disposal of treasury shares		–	–
Net cash flow provided by (used in) financing activities		**(141.6)**	**190.8**

In millions of US$	Notes	Year 2019	2018
Effect of exchange rates on cash		(4.3)	(17.3)
Impact of changes in consolidation scope		-	-
Net cash flows incurred by discontinued operations[(a)]	**5**	**(167.6)**	**(119.3)**
Net increase (decrease) in cash and cash equivalents		**176.4**	**118.7**
Cash and cash equivalents at beginning of year	29	434.1	315.4
Cash and cash equivalents at end of period	**29**	**610.5**	**434.1**

(a) See note 5 for more information regarding the impact of IFRS 5 "Assets held for sale and discontinued operations".

The accompanying notes are an integral part of the consolidated financial statements

Consolidated statements of changes in equity

Amounts in millions of US$, except share data	Number of shares issued	Share capital	Additional paid-in capital	Retained earnings	Other reserves	Treasury shares	Income and expense recognized directly in equity	Cumulative translation adjustment	Equity attributable to owners of CGG SA	Non-controlling interests	Total equity
Balance at December 31, 2017	**22,133,149**	**20.3**	**1,850.0**	**(1,354.6)**	**37.6**	**(20.1)**	**(0.8)**	**(43.3)**	**489.1**	**39.0**	**528.1**
IFRS 15 First Time Application				(11.6)					(11.6)		(11.6)
Balance at January 1, 2018	**22,133,149**	**20.3**	**1,850.0**	**(1,366.2)**	**37.6**	**(20.1)**	**(0.8)**	**(43.3)**	**477.5**	**39.0**	**516.5**
Net gain (loss) on actuarial changes on pension plan (1)				6.8					6.8		6.8
Net gain (loss) on cash flow hedges (2)							(0.1)		(0.1)		(0.1)
Exchange differences on foreign currency translation (3)								(11.8)	(11.8)	(2.2)	(14.0)
Other comprehensive income (1)+(2)+(3)				**6.8**	**–**	**–**	**(0.1)**	**(11.8)**	**(5.1)**	**(2.2)**	**(7.3)**
Net income (4)				(101.6)					(101.6)	5.8	(95.8)
Comprehensive income (1)+(2)+(3)+(4)				**(94.8)**	**–**	**–**	**(0.1)**	**(11.8)**	**(106.7)**	**3.6**	**(103.1)**
Share capital reduction		(20.0)	20.0						–		-
Capital increase[(a)]	71,932,731	0.9	126.5						127.4		127.4
Debt equitization[(a)]	484,509,122	5.9	1,187.8						1,193.7		1,193.7
Exercise of warrants[(a)]	131,369,814	1.6	0.3						1.9		1.9
Cost of share-based payment				2.9					2.9		2.9
Exchange differences on foreign currency translation generated by the parent company				–	(65.5)				(65.5)		(65.5)
Changes in consolidation scope and other				0.3					0.3	–	0.3
Balance at December 31, 2018	**709,944,816**	**8.7**	**3,184.6**	**(1,457.8)**	**(27.9)**	**(20.1)**	**(0.9)**	**(55.1)**	**1,631.5**	**42.6**	**1,674.1**

(a) See note 2 for information regarding the impact of our financial restructuring completed on February 21, 2018.

Amounts in millions of US$, except share data	Number of shares issued	Share capital	Additional paid-in capital	Retained earnings	Other reserves	Treasury shares	Income and expense recognized directly in equity	Cumulative translation adjustment	Equity attributable to owners of CGG SA	Non-controlling interests	Total equity
Balance at December 31, 2018	**709,944,816**	**8.7**	**3,184.6**	**(1,457.8)**	**(27.9)**	**(20.1)**	**(0.9)**	**(55.1)**	**1,631.5**	**42.6**	**1,674.1**
IFRS 16 First Time Application[(a)]											
Balance at January 1, 2019	**709,944,816**	**8.7**	**3,184.6**	**(1,457.8)**	**(27.9)**	**(20.1)**	**(0.9)**	**(55.1)**	**1,631.5**	**42.6**	**1,674.1**
Net gain (loss) on actuarial changes on pension plan (1)				(7.1)					(7.1)		(7.1)
Net gain (loss) on cash flow hedges (2)							0.2		0.2		0.2
Exchange differences on foreign currency translation (3)								(1.2)	(1.2)	(0.7)	(1.9)
Other comprehensive income (1)+(2)+(3)				(7.1)	–	–	0.2	(1.2)	(8.1)	(0.7)	(8.8)
Net income (4)				(69.1)					(69.1)	7.6	(61.5)
Comprehensive income (1)+(2)+(3)+(4)				**(76.2)**	**–**	**–**	**0.2**	**(1.2)**	**(77.2)**	**6.9**	**(70.3)**
Exercise of warrants	9,504										
Dividends									–	(3.8)	(3.8)
Cost of share-based payment	2,038		0.1	5.2					5.3		5.3
Exchange differences on foreign currency translation generated by the parent company				–	4.4				4.4		4.4
Changes in consolidation scope and other				(2.3)					(2.3)	–	(2.3)
Balance at December 31, 2019	**709,956,358**	**8.7**	**3,184.7**	**(1,531.1)**	**(23.5)**	**(20.1)**	**(0.7)**	**(56.3)**	**1,561.7**	**45.7**	**1,607.4**

(a) See note 1 and 18 for more information regarding the impact of IFRS 16 "Leases".

The accompanying notes are an integral part of the consolidated financial statements.

Notes to consolidated financial statements

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Note 1 Summary of significant accounting policies

CGG SA ("the Company"), along with its subsidiaries (together, the "Group") is a global geoscience technology leader, providing a comprehensive range of data, products, services and equipment that support the discovery and responsible management of the Earth's natural resources.

Given that the Company is listed on a European Stock Exchange and pursuant to European Regulation n(o)1606/2002 dated July 19, 2002, the accompanying consolidated financial statements have been prepared in accordance with International Financial Reporting Standards ("IFRS") and its interpretations as issued by the International Accounting Standards Board (IASB) and as adopted by the European Union as at December 31, 2019.

The consolidated financial statements were authorized for issue by the Board of Directors on March 5, 2020 and will be submitted to the General Meeting convened on June 16, 2020 for approval.

1.1 Critical Accounting Policies

Our accounting policies, which we have applied consistently, are described below. However, the accounting policies related to the accounts impacted by the judgments and estimates described below are particularly important to reflect our financial position and results of operations. As we must exercise significant judgment when we apply these policies, their application is subject to an inherent degree of uncertainty.

Those accounting policies are consistent with those used to prepare our consolidated financial statements as of December 31, 2018, except for the first adoption of the following Standards, Amendments, and Interpretations:

- IFRS 16 "Leases";
- amendments to IFRS 9 "Prepayment features with negative compensation and modifications of financial liabilities";
- IFRIC 23 "Uncertainty over income tax treatments";
- annual Improvements (2015-2017);
- amendments to IAS 19 "Employee Benefits";
- amendments to IAS 28 "Long-term interests in associates and joint ventures".

The impacts of the application of IFRS 16 "Leases" and IFRIC 23 "Uncertainty over income tax treatments" are detailed below. The adoption of the other Standards, Amendments, and Interpretations listed above had no impact on the consolidated financial statements.

The Group decided not to early adopt those Standards, Amendments and Interpretations that the European Union adopted but that were not effective as of December 31, 2019, namely:

- amendments to References to the Conceptual Framework in IFRS Standards;
- amendments to IAS 1 and IAS 8 "Definition of Material".

At the date of issuance of these consolidated financial statements, the following Standards, Amendments, and Interpretations were issued but not yet adopted by the European Union and were thus not effective:

- amendment to IFRS 3 "Business Combinations";
- amendments to IFRS 9, IAS 39 and IFRS 7 "Interest Rate Benchmark Reform";
- IFRS 17 "Insurance Contracts".

We are currently reviewing these Standards, Amendments, and Interpretations to measure their potential impact on our consolidated financial statements.

1.2 Key items and where to find them

	Statement of operations	Statement of financial position	Statement of cash flows
Consequences of November 7, 2018 Capital Market Day strategy announcement (CGG 2021). Change in profile and impacts.	Loss of discontinued operations of US$(187.7) million in 2019, broken down into US$(155.5) million impact of restructuring costs related to the implementation of CGG 2021 Plan and US$(32.2) million of operating losses. *See note 5*	US$206.4 million presented as Assets held for sale as of December 31, 2019. US$(256.0) million in liabilities directly associated with the assets held for sale as of December 31, 2019. *See note 5*	Net cash flows incurred of US$(167.6) million, presented as discontinued operations in 2019. *See note 5*
Segment figures of the new profile (continuing operations) See note 2 – Capital Market Day announcement	2019 Revenues of new profile is US$1,400.5 million 2019 Operating Income of new profile is US$247.3 million 2019 EBITDAs of new profile is US$720.8 million. *See note 20*	GGR capital employed as of December 31, 2019 is US$1.8 billion Equipment capital employed as of December 31, 2019 is US$0.5 billion. *See note 20*	2019 EBITDAs of new profile is US$720.8 million 2019 capital expenditures of new profile is US$(261.0) million. *See note 20*
Application of IFRS 16	2019 impact on net income is not material as the increase in depreciation and financial expense is largely offset by the decrease in operating lease expense.	Nil on opening equity Right-of-use assets recognized for continuing operations of US$175.1 million as of December 31, 2019 Discounted lease liability from continuing operations amounts for US$175.5 million as of December 31, 2019. *See notes 1, 9, 13*	No impact on net cash flow. Cash flows from operating and investing activities increase while cash flows from financing activities decrease. US$56.9 million of lease repayment in full-year 2019. *See notes 1. 29*
Multi-Client surveys impairment	Impairment of US$(33) million incurred in 2019. *See note 10*	The NBV of the multi-client library presented is reduced by US$(33) million due to the impairment. *See note 10*	No net impact on cash flows statement. Impacts on various lines disclosed.

1.3 New standards impacts

IFRS 16 "Leases", applicable as at January 1, 2019

IFRS 16 was issued in January 2016 and is endorsed by the EU. It supersedes IAS 17 "Leases" and a number of lease-related interpretations, and it results in almost all leases being recognized on the consolidated statement of financial position, as the distinction between operating and finance leases is removed for lessees. Under the new standard, both a right-of-use asset (the right to use the leased item) and a financial liability corresponding to the minimum lease payments are recognized. The only exemptions are for short-term leases and leases of low-value asset, and the Group has decided to use them both. Moreover, initial direct costs were not taken into account for the measurement of the right-of-use asset at the date of first time application. The Group has no material lease contracts as a lessor.

As at January 1, 2019, the Group had identified non-cancellable operating lease commitments of US$491 million (undiscounted) which are relevant for IFRS 16 adoption. The commitments related to lease assets consist mainly of vessels (c. 60%), offices (c. 33%) and Geoscience servers (6%). It is worth noting that the right-of-use asset and the debt related to vessels leases with our GSS JV and some assets and lease liabilities related to the Multi-physics Business lines are respectively classified as "Assets held for sale" and "Liabilities directly associated with the assets classified as held for sale" according to IFRS 5. The discounted lease liability is US$210 million for the assets classified as held for sale (US$299 million undiscounted).

The Group recognized right-of-use assets for continuing operations of US$129 million (after impairment) from the identified operating lease commitments and a discounted lease liability of US$146 million on January 1, 2019. In addition, the existing finance lease assets (US$67 million) and liabilities (US$50 million) determined in accordance with IAS 17 as at December 31, 2018 are classified in the same line item as the right-of-use assets and lease liabilities on operating leases determined in accordance with IFRS 16 on January 1, 2019.

The Group applies the modified retrospective approach. Therefore, the cumulative effect of adopting IFRS 16 (if any) is recognized as an adjustment to the opening balance of retained earnings on January 1, 2019, with no restatement of comparative information. We applied the following practical expedients, as permitted by IFRS 16, on the transition date:

- reliance on the previous definition of a lease (as provided by IAS 17 and IFRIC 4) for all contracts that existed on the date of initial application;
- the use of a single discount rate for a portfolio of leases with reasonably similar characteristics;
- reliance on previous assessments on whether vessels leases are onerous applying IAS 37 "Provisions, Contingent Liabilities and Contingent Assets" and accordingly adjusting the right-of-use assets, instead of performing an impairment review for vessel leases;
- the accounting for operating leases with a remaining lease term of less than 12 months as at January 1, 2019 as short-term leases.

In December 2019, the IFRIC published its final decision relating to the enforceable period of a lease, and to the useful life of any non-removable leasehold improvements. The Group will need to reassess the lease term for these contracts and determine if the enforceable period is beyond the date on which the contract can be terminated. As of December 31st 2019, the lease terms applied in our Group financial statements were the non-cancellable period of the lease and the period covered by an option to extend the lease if the lessee is reasonably certain to exercise that option or and the period covered by an option to terminate the lease if the lessee is reasonably certain not to exercise that option. The IFRIC decision may consequently require to revise the lease term for some contracts and an alignement of the useful life of any non-removable leasehold improvement related to such lease. This review may lead to the revision of the lease term of some of the building lease agreements. This would impact the lease liability and the associated right of use asset as well as the depreciation charges.

The following reconciliation to the opening balance for the lease liabilities as at January 1, 2019 is based upon the operating lease obligations as at December 31, 2018:

In millions of US$	
• Vessels commitments related to Global Seismic Shipping (GSS)	358
• Commitments related to vessels cold stacked	7
Total bareboats	365
Real estate (excluding real estate previously classified as financial lease)	152
Machinery & Equipment	21
Operating lease obligations at December 31, 2018[(a)]	**538**
Leases added – previously not reported under IAS 17[(b)] and hypothesis reassessment impact[(c)]	15
Future vessels commitments excluded[(d)]	(62)
Gross lease liabilities at January 1, 2019	**491**
Discounting	(135)
Leases liabilities directly associated with the assets classified as held for sale	(210)
Additional Lease liabilities at January 1, 2019	**146**
Present value of finance lease liabilities at December 31, 2018	50
Total – Lease liabilities at January 1, 2019	**196**

(a) Short-term leases and low-value assets not included in the operating lease obligations reported as of December 31, 2018.
(b) Mainly related to leases previously considered as non-material.
(c) Mainly impact of lease period reassessment when the exercise of the renewal option is estimated as being reasonably certain.
(d) Related to Vessel commitments were to begin in June 2020 prior to Marine exit (see note 2).

The weighted average discount rate calculated without the liabilities directly associated with the assets classified as held for sale is 7.0%.

Opening consolidated statement of financial position

The cumulative effects on our consolidated statement of financial position due to the changes related to the adoption of IFRS 16 are disclosed in the table below:

In millions of US$	Balance as of December 31, 2018	**Balance as of January 1, 2019**	Adjustments due to IFRS 16
ASSETS			
Assets held for sale, net	195.5	338.1	142.6
Property, plant & equipment, net	189.2	318.0	128.8
LIABILITIES			
Financial debt – current portion	17.8	53.3	35.5
Provisions – current portion	172.4	169.6	(2.8)
Liabilities directly associated with the assets classified as held for sale[(a)]	131.7	274.3	142.6
Provisions – non-current portion	95.9	91.0	(4.9)
Financial debt – non current-portion	1,148.9	1,259.2	110.3
Trade accounts and notes payables	126.4	125.0	(1.4)
Other current liabilities	250.9	250.4	(0.5)
Other non-current liabilities	13.1	5.6	(7.5)
Total Equity	1,674.1	1,674.1	-

(a) The adjustment due to IFRS 16 includes leases liabilities directly associated with the assets classified as held for sale for US$210 million and the release of US$68 million of provision for onerous contracts related to the assets classified as held for sale.

The impact of IFRS 16 on the net income from continuing operations in 2019 is not material as the increase in depreciation and financial expense is largely offset by the decrease in operating lease expense. Similarly, in 2019, operating and investing cash flows from continuing operations increased and financing cash flows from continuing operations decreased by approximately US$50 million as operating lease payments are now considered as financial debt repayment.

IFRIC 23 "Uncertainty over income tax treatments", applicable at January 1, 2019

IFRIC 23 supplements IAS 12 "Income Taxes" by clarifying how to apply the recognition and measurement requirements in IAS 12 when there is uncertainty over income tax treatments. This interpretation is mandatory for accounting periods beginning on or after January 1, 2019. The implementation of IFRIC 23 has no impact on opening equity at January 1, 2019.

The amount of provisions reclassified as tax liabilities is US$12 million as at January 1, 2019.

1.4 Use of judgments and estimates

The preparation of consolidated financial statements in accordance with IFRS requires management to make estimates, assumptions and judgments that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ materially from those estimates due to the change in economic conditions, changes in laws and regulations, changes in strategy and the inherent imprecision associated with the use of estimates.

Key judgments and estimates used in the financial statements are summarized in the following table:

Note	Judgments and estimates	Key assumptions
Note 1, 9 and 13	Discount rate IFRS 16	Assessment of implicit borrowing rate
Note 2	Fair value of the shares issued	Fair value of the shares at the date of restructuring
Note 3	Recoverability of client receivables	Assessment of clients' credit default risk
Notes 2 and 5	Classification of disposal groups as held for sale Valuation of disposal groups classified as held for sale	Likelihood of disposal within twelve months Assessment of disposal groups at fair value less cost to sell Final terms of disposals are in line with currently contemplated terms
Note 7	Valuation of investments	Financial assets fair value
Note 10	Impairment of multi-client surveys	Expected sales for each survey
Note 10	Depreciation and amortization of tangible and intangible assets	Assets useful lives
Note 10	Development costs	Assessment of future benefit of each project
Note 11	Recoverable amount of goodwill and intangible assets	Expected geophysical market trends and strength of recovery Discount rate (WACC)
Note 15	Stock options	Fair value of each plans
Note 16	Post-employment benefits	Discount rate Participation rate to post employment benefit plans Inflation rate
Note 16	Provisions for restructuring and onerous contracts	Assessment of future costs related to restructuring plans and onerous contracts
Note 16	Provisions for risks, claims and litigations	Assessment of risks considering court rulings and attorney's positions
Note 20	Revenue recognition	Geoscience contract completion rates
Note 25	Income tax liabilities – Uncertain tax positions	Assessment of most likely amount or expected value of the tax treatment
Note 25	Deferred tax assets	Hypothesis supporting the achievement of future taxable benefits

1.5 Accounting policies

1. Basis of consolidation

Our consolidated financial statements include CGG SA and all its subsidiaries.

Subsidiaries are fully consolidated from the date of acquisition, being the date on which we obtain control, and continue to be consolidated until the date when such control ceases. Control is achieved when we are exposed or have rights to variable returns from our involvement with the investee and have the ability to affect those returns through our power over the investee. When we have less than a majority of the voting or similar rights of an investee, we consider all relevant facts and circumstances in assessing whether we have power over the investee, including contractual arrangements with the other holders or potential voting rights.

The financial statements of the subsidiaries are prepared for the same reporting period as the parent company, using consistent accounting policies. All intra-group balances, transactions, unrealized gains and losses resulting from intra-group transactions and dividends are eliminated in full.

Losses within a subsidiary are attributed to the non-controlling interest even if that results in a deficit balance. A change in the ownership interest of a subsidiary, without a loss of control, is accounted for as an equity transaction.

We use the equity method for investments classified as joint venture. A joint venture is a joint arrangement whereby the parties that have joint control of the arrangement have rights to the net assets of the arrangement. Joint control is the contractually agreed sharing of control of an arrangement, which exists only when decisions about the relevant activities require the unanimous consent of the parties sharing control.

2. Foreign currency

Effective January 1, 2012, we changed the presentation currency of our consolidated financial statements from the euro to the US dollar to better reflect the profile of our revenues, costs and cash flows, which are primarily generated in US dollars, and hence, to better present the financial performance of the Group.

The functional currency is the currency in which the subsidiaries primarily conduct their business. The functional currency of most of our subsidiaries is the US dollar. Goodwill attributable to subsidiaries is accounted for in the functional currency of the applicable entities.

For the subsidiaries with a functional currency different than US dollar, the financial statements are translated to US dollars using the following method:

- year-end exchange rates are applied to the statement of financial position items;
- average annual exchange rates are applied to statement of financial operations items;
- adjustments resulting from this process are recorded in a separate component of shareholders' equity.

With respect to affiliates accounted for using the equity method, the effects of exchange rates changes on the net assets of the affiliates are recorded in a separate component of shareholders' equity.

Transactions denominated in currencies other than the functional currency of a given entity are recorded at the

exchange rate prevailing on the date of the transaction. Monetary assets and liabilities denominated in foreign currencies other than the functional currency are revalued at year-end exchange rates and any resulting unrealized exchange gains and losses are included in income. Unrealized exchange gains and losses arising from monetary assets and liabilities for which settlement in neither planned nor likely to occur in the foreseeable future are recorded in a separate component of shareholder's equity.

3. Business combinations

Business combinations are accounted for using the acquisition method. The cost of an acquisition is measured as the aggregate of the consideration transferred, measured at acquisition date fair value and the amount of any non-controlling interest in the acquiree. For each business combination, we measure the non-controlling interest in the acquiree either at fair value or at the proportionate share in the recognized amounts of the acquiree's identifiable net assets. Acquisition costs incurred are expensed and included in administrative expenses.

After initial recognition, goodwill is measured at cost less any accumulated impairment losses. For the purpose of impairment testing, goodwill acquired in a business combination is, from the acquisition date, allocated to each of the Group's cash-generating units that are expected to benefit from the combination, irrespective of whether other assets or liabilities of the acquiree are assigned to those units.

Where goodwill forms part of a cash-generating unit and part of the operation within that unit is disposed of, the goodwill associated with the operation disposed of is included in the carrying amount of the operation when determining the gain or loss on disposal of the operation. Goodwill disposed of in this circumstance is measured based on the relative values of the operation disposed of and the portion of the cash-generating unit retained.

4. Operating revenues

Revenues from contracts with customers are recognized using the five-step model of the IFRS 15 standard. The following provides a description of the main nature of our performance obligations broken down by business line, the timing of their satisfaction, and detail on the transaction prices and their allocations, if applicable.

GGR

Geoscience (previously known as Subsurface Imaging & Reservoir) contracts

Under our Geoscience contracts, we process seismic data for a specific customer. These contracts may encompass one or several performance obligations. For each performance obligation, we recognize the revenues over time as the services are rendered. The measure of revenue recognized is based on the time spent over the total time expected to satisfy the performance obligation. The balance of revenue recognized that has not yet been invoiced to the clients is recorded as an unbilled revenue, *i.e.* as a contract asset.

We also recognize revenue related to the sale of software upon delivery of the software and of the access code/key as the case may be, to the client. We recognize revenue related to the maintenance of the software over time during the specific contractual period. In case of a contract providing for both the sale and maintenance of software, the price allocation is based on the stand alone selling price of each component and the revenue for the software is recognized upon delivery, while the maintenance revenue is recognized over time. In most cases, only one invoice is issued for such contracts upon license delivery and the amount corresponding to the maintenance is recorded as deferred revenues, *i.e.* as a contract liability, at invoicing.

We also provide geological consulting services or training for specific customers. We recognize the revenues over time as the services are rendered.

We provide licenses to use geological data to several clients. We recognize the revenue upon delivery of the data to the client.

In addition, we provide licenses to access dynamic geological databases for a specific duration. We recognize the revenue related to such licenses over the duration of the contract. In most cases, only one invoice is issued for such contracts at the beginning of the year and the total amount is recorded as deferred revenues, *i.e.* as a contract liability, at invoicing.

Multi-Client after sales contracts and prefunding contracts

Pursuant to our multi-client contracts, we provide non-exclusive licenses to use seismic processed data to several clients. We recognize the revenue upon delivery of the data to the client. In certain cases, significant after sales agreements contain multiple deliverable elements, and the associated revenues are allocated to the various elements based on specific objective evidence of the stand-alone sale price for such elements, regardless of any separate allocations stated within the contract for each element. In these cases, one invoice is issued upon delivery of the data for the total contractual amount.

In certain circumstances, revenues can also be recognized relating to a performance obligation that has already been fulfilled in the past. This happens when a customer is already in possession of the license for certain data and either (i) the customer is taken-over by a competitor who does not yet have the license for such data (and thus is required to pay a transfer fee) or (ii) the customer involves another partner, not already having access to the licensed data, for the exploration of the block (farm-in, uplift). Such revenues are recognized when there is an agreement on the fee and, in the case of transfer fee, when the buyer notifies us that they will not return the data to the Group.

Equipment

We recognize revenues on equipment sales upon delivery to the customer, *i.e.* when control is transferred. When such contracts require a partial or total advance payment, such payments are recorded as advance billings to customers, *i.e.* as a contract liability.

We recognize the sale of software upon delivery of the software to the client. We recognize the maintenance of the software over time during the specific contractual period. In case of a contract providing for both the sale and maintenance of software, the price allocation is based on the stand alone selling price of the software, the price of the maintenance being the total price less the stand alone selling price of the software. The revenue for the software is recognized upon delivery, while the maintenance revenue is recognized over time. In most cases, we issue only one invoice, issued upon license delivery, and the amount corresponding to the maintenance is recorded as deferred revenues, *i.e.* as a contract liability, at invoicing.

Contractual Data Acquisition (classified as discontinued operations)

As a result of our 2021 strategic roadmap announcements and actions undertaken subsequently, we have presented our data acquisition operations, in accordance with IFRS 5, as discontinued operations and assets held for sale in our Consolidated Financial Statements as of and for the years ended December 31, 2018 and 2019.

Please refer to note 5 "Assets held for sale and discontinued operations" as of December 31, 2018 and 2019.

Marine exclusive contracts

Under our marine exclusive contracts, we acquire seismic data for a specific customer. We recognize these revenues over time. The measurement of revenue recognized is based on the data acquired and delivered to the customer.

Either the total price of the contract, for turnkey and lump sum contracts, or the unitary prices, for day-rate contracts or contracts based on square kilometers are specified in the contract. With respect to contracts for both the acquisition and processing of data, the allocation is based on the stand alone selling price of each service with revenue recognized according to respective percentages of completion.

In most cases, invoicing is carried out on a monthly basis, based on the amount of data acquired and delivered to the customer, as evidenced by a customer acceptance. As the acceptance is often obtained a few days after the balance sheet date, the counterpart of the revenue during the month is recorded as unbilled revenue, *i.e.* as a contract asset.

When the costs are expected to be recovered, *i.e.* when the contract margin is positive, the costs related to the transit of the vessel toward the survey area are recognized as an asset to fulfil the contract. They are then expensed over the duration of the survey.

Land exclusive and Multi Physics contracts

Under our land exclusive and multi physics contracts, we acquire seismic data for a specific customer. We recognize these revenues over time. For Land turnkey contracts, the measure of revenue recognized is based on direct cash costs. For land day rate and multi physics contracts, the measure of revenue recognized is based on monthly reports of data acquired or services rendered.

Either the total price of the contract, for turnkey and lump sum contracts, or the unitary prices, for day-rate or contracts on square kilometers, are specified in the contract. With respect to contracts for both the acquisition and processing of data, the allocation is based on the stand alone selling price of each service with revenue recognized according to respective percentages of completion.

In most cases, invoicing is carried out on a monthly basis, based on the amount of data acquired and delivered to the customer, evidenced by a customer acceptance. As the acceptance is often obtained after the balance sheet date, the counterpart of the revenue during the month is recorded as unbilled revenue, *i.e.* as a contract asset.

When the costs are expected to be recovered, *i.e.* when the contract margin is positive, the costs related to the mobilization of a Land crew are recognized as an asset to fulfill the contract. They are then expensed over the duration of the survey.

5. Cost of net financial debt

Cost of net financial debt includes:

- the expenses related to long-term financial debt composed of bonds and other loans;
- the lease expenses and income from the lease obligations for the year 2019 (IFRS 16 first time application);
- other charges paid to financial institutions for financing operations;
- net income provided by cash and cash equivalents.

6. Income taxes and deferred taxes

Income taxes includes all tax based on taxable profit.

Deferred taxes are recognized on all temporary differences between the carrying value and the tax value of assets and liabilities, as well as on carry-forward losses. Deferred tax assets are recognized only when their recovery is considered as probable or when there are existing taxable temporary differences, of an appropriate type, that reverse in an appropriate period. When tax laws limit the extent to which unused tax losses can be recovered against future taxable profits in each year, the amount of deferred tax assets recognized from unused tax losses as a result of suitable existing taxable temporary differences is restricted as specified by the tax law.

Deferred tax assets and deferred tax liabilities are not discounted.

7. Intangible and tangible assets

In accordance with IAS 16 "Property, Plant and equipment" and IAS 38 "Intangible assets" only items for which cost can be reliably measured and for which the future economic benefits are likely to flow to us are recorded in our consolidated financial statements.

Property, plant and equipment

Property, plant and equipment are valued at historical cost less accumulated depreciation and impairment losses. Depreciation is generally calculated over the following useful lives:

- equipment and tools: 3 to 10 years;
- vehicles: 3 to 5 years;
- buildings for industrial use: 20 years;
- buildings for administrative and commercial use: 20 to 40 years.

Depreciation expense is determined using the straight-line method.

We exclude residual value when calculating the depreciable amount. We segregate tangible assets into their separate components if there is a significant difference in their expected useful lives, and depreciate them accordingly.

Lease agreements

IFRS 16 was issued in January 2016 and is endorsed by the EU. It supersedes IAS 17 "Leases" and a number of lease-related interpretations, and it results in almost all leases being recognized on the consolidated statement of financial position, as the distinction between operating and finance leases is removed for lessees. Under the new standard, both a right-of-use asset (the right to use the leased item) and a financial liability corresponding to the minimum lease payments are recognized. The only exemptions are for short-term leases and leases of low-value asset, and the Group has decided to use them both. Moreover, initial direct costs were not taken into account for the measurement of the right-of-use asset at the date of first time application.

Goodwill

Goodwill is determined according to IFRS 3 "Revised – Business Combinations". Goodwill is not amortized but subject to an impairment test at least once a year at the statement of financial position dates or when a triggering event occurs.

Multi-Client surveys

Multi-Client surveys consist of seismic surveys to be licensed to customers on a non-exclusive basis. All costs directly incurred in acquiring, processing and otherwise completing seismic surveys are capitalized into the multi-client surveys (including transit costs when applicable). The carrying amount of our multi-client library is stated on our statement of financial position at the aggregate of those costs less accumulated amortization. A systematic impairment test of all delivered surveys is performed at least at delivery date and for the yearly closing. Whenever there is an indication that a survey may be impaired, an impairment test is performed.

Before October 1, 2018, each survey was amortized in a manner that reflected the pattern of consumption of its economic benefits during both prefunding and after-sale periods. An amortization rate of 80% corresponding to the ratio of capitalized costs to total expected sales over the accounting life of the survey was applied to each normative sale, unless specific indications led to application of a different rate. If that was the case, the amortization rate was adjusted to reflect the commercial effects of price elements.

The Group decided from October 1, 2018 to adopt a four-year straight-line post-delivery amortization in accordance with the industry standard. Prefunding revenue is recognized upon delivery of the final product to the pre-funder(s) and the prefunding cost of sales is calculated as the difference between the total capitalized cost of a survey upon delivery and the fair value based upon discounted future expected sales. The net book value of the survey upon delivery thus equals the net present value of future expected sales. After sale revenues are recognized upon delivery of the final product to the client.

Development costs

Expenditures on research activities undertaken with the prospect of gaining new scientific or technological knowledge and understanding are recognized in the income statement as expenses as incurred and are presented as "Research and development expenses – net". Expenditures on development activities, whereby research findings are applied to a plan or design for the production of new or substantially improved products and processes, are capitalized if:

- the project is clearly defined, and costs are separately identified and reliably measured;
- the product or process is technically and commercially feasible;
- we have sufficient resources to complete development; and
- the intangible asset is likely to generate future economic benefits, either because it is useful to us or through an existing market for the intangible asset itself or for its products.

The expenditures capitalized include the cost of materials, direct labor and an appropriate proportion of overhead. Other development expenditures are recognized in the income statement as expenses as incurred and are presented as "Research and development expenses – net".

Capitalized development expenditures are stated at cost less accumulated amortization and impairment losses.

Capitalized development costs are amortized over 5 years.

Research and development expenses in our income statement represent the net cost of development costs that are not capitalized, of research costs, offset by government grants acquired for research and development.

Other intangible assets

Other intangible assets consist primarily of customer relationships, technology and trade name acquired in business combinations. Customer relationships are generally amortized over periods ranging from 10 to 20 years and acquired technology are generally amortized over periods ranging from 5 to 10 years.

Impairment of assets

The carrying amounts of our assets (excluding inventories, contract assets and assets arising from costs to obtain or fulfil a contract that are recognized in accordance with IFRS 15, non-current assets classified as held for sale in accordance with IFRS 5, deferred tax assets, assets arising from employee benefits and financial assets) are reviewed at each statement of financial position date and whenever any indication exists that an asset may be impaired, in compliance with IAS 36 "Impairment of assets". Factors we consider important that could trigger an impairment review include the following:

- significant underperformance relative to expected operating results based upon historical and/or projected data;
- significant changes in the manner of our use of the tested assets or the strategy for our overall business; and
- significant negative industry or economic trends.

The recoverable amount of tangible and intangible assets is the greater of their net fair value less costs of disposal and value in use.

Goodwill, assets that have an indefinite useful life and intangible assets are allocated to cash generating units or groups of cash generating units whose recoverable value is assessed as soon as an indication of loss of value of a cash generating unit arises.

We determine the value in use by estimating future cash flows expected from the assets or from the cash generating units, discounted to their present value using the sector weighted average cost of capital (WACC) estimated on a yearly basis by the Group. When the recoverable amount retained is the fair value less cost of disposal, the fair value is determined by reference to an active market.

We recognize an impairment loss whenever the carrying amount of an asset exceeds its recoverable amount. For an asset that does not generate largely independent cash inflows, the recoverable amount is determined for the cash-generating unit to which the asset belongs.

Impairment losses are recognized in the statement of operations. Impairment losses recognized in respect of a group of non-independent assets allocated to a cash-generating unit are allocated first to reduce the carrying amount of any goodwill allocated to cash-generating units (group of units) and then, to reduce the carrying amount of the other assets in the unit (group of units) on a pro rata basis provided that the carrying amount of an individual asset is not reduced below its value in use or fair value less costs of disposal.

A previously recognized impairment loss is reversed only if there has been a change in the assumptions used to determine the asset's recoverable amount since the last impairment loss was recognized. The reversal is limited so that the carrying amount of the asset does not exceed its recoverable amount, nor exceed the carrying amount that would have been determined, net of depreciation or amortization, had no impairment loss been recognized for the asset in prior years. Such reversal is recognized in the income statement unless the asset is carried at a revalued amount, in which case the reversal is treated as a revaluation increase.

Impairment losses recognized on goodwill cannot be reversed.

Non-current assets held for sale and discontinued operations

Non-current assets and disposal groups comprising assets and liabilities that are expected to be recovered primarily through sale rather than through continuing use are classified as held for sale. They are valued at the lower of carrying amount and fair value less costs to sell.

Non-current assets classified as held for sale and the assets of a disposal group classified as held for sale are presented separately from the other assets in the consolidated statement of financial position. The liabilities of a disposal group are presented separately from other liabilities in the consolidated statement of financial position.

A discontinued operation is a component of an entity that has either been disposed of or is classified as held for sale, and represents a separate major line of business or geographical area of operations; and is a part of a single coordinated plan to dispose of a separate major line of business or geographical area of operations; or is a subsidiary acquired exclusively with a view to resale.

Any gain or loss from disposal, together with the results of these operations until the date of disposal, is reported separately as discontinued operations in the consolidated statements of cash flows and consolidated statements of operations. The prior periods are restated accordingly.

Further information on discontinued operations and non-current assets held for sale can be found in note 5.

8. Investments in companies under the equity method

Under the equity method, the investments in our associates or joint ventures are carried in the statement of financial position at cost plus post acquisition changes in our share of net assets of the associates or joint ventures. Goodwill relating to the associates is included in the carrying amount of the investment and is neither amortized nor individually tested for impairment.

After application of the equity method, we determine whether it is necessary to recognize an additional impairment loss on our investment in the associates. We determine at each reporting date whether there is any objective evidence that the investments in our associates are impaired. If this is the case we calculate the amount of impairment as the difference between the recoverable amount of the associates and their carrying value and usually recognize the amount in the 'share of profit of an associate' in the statement of operations.

From the date when an investment ceases to be an associate or a joint venture and becomes a financial asset we discontinue the use of the equity method. The retained interests are measured at fair value. We recognize in profit or loss any difference between (i) the fair value of any retained interest and any proceeds from disposing of a part interest in the associate or joint venture; and (ii) the carrying amount of the investment at the date the equity method was discontinued.

9. Investments and other financial assets

Investments and other financial assets include investments in non-consolidated entities, loans and non-current receivables.

Investments and other financial assets currently in our statement of financial position are measured at fair value through profit and loss. The fair value for listed securities is their market price at the statement of financial position date.

We derecognize a financial asset (or, where applicable, a part of a financial asset or part of a group of similar financial assets) when:

- the rights to receive cash flows from the asset have expired; or
- we have transferred the rights to receive cash flows from the asset or have assumed an obligation to pay the received cash flows in full without material delay to a third party under a 'pass-through' arrangement; and either (a) we have transferred substantially all the risks and rewards of the asset, or (b) we have neither transferred nor retained substantially all the risks and rewards of the asset, but have transferred control of the asset.

When we have transferred the rights to receive cash flows from an asset, we evaluate if and to what extent we have retained the control of this asset. When we have neither transferred nor retained substantially all of the risks and rewards of the asset, nor transferred control of the asset, the asset is recognized to the extent of our continuing involvement in the asset. In that case, we also recognize an associated liability. The transferred asset and the associated liability are measured on a basis that reflects the rights and obligations that we have retained.

Continuing involvement that takes the form of a guarantee over the transferred asset is measured at the lower of the original carrying amount of the asset and the maximum amount of consideration that we could be required to repay.

10. Treasury shares

We value treasury shares at their cost, as a reduction of shareholders' equity. Proceeds from the sale of treasury shares are included in shareholders' equity and have no impact on the statement of operations.

11. Inventories

We value inventories at the lower of cost (including direct production costs where applicable) and net realizable value.

We calculate the cost of inventories on a weighted average price basis for our Equipment segment and on a first-in first-out basis for Contractual Data Acquisition segment.

The additions and deductions in valuation allowances for inventories and work-in-progress are presented in the consolidated statements of operations as "Cost of sales".

12. Trade accounts and notes receivable

In the Contractual Data Acquisition and Geology, Geophysics & Reservoir (GGR) segments, customers are generally large national or international oil and gas companies, which management believes reduces potential credit risk.

In the Equipment segment, a significant portion of sales is paid by irrevocable letters of credit.

The Group maintains an allowance for doubtful accounts based upon factors surrounding the credit risk of specific customers, historical trends and other information. Credit losses have not been material for the periods presented and have consistently been within management's expectations.

Contract assets represent the Group's right to consideration in exchange for goods or services that the Group has transferred to a customer when that right is conditioned by something other than the passage of time *(e.g.* revenue recognised from the application of the Percentage of Completion method before the Group has a right to invoice).

13. Provisions

We record a provision when the Group has a present obligation (legal or constructive) as a result of a past event for which it is probable that an outflow of resources embodying economic benefits (that can be reliably determined) will be required to settle the obligation.

Onerous contracts

We record a provision for onerous contracts equal to the excess of the unavoidable costs of meeting the obligations under the contract over the economic benefits expected to be received under it, as estimated by the Group.

Pension and other post-employment benefits

We record obligations for contributions to defined contribution pension plans as an expense in the income statement as incurred. We do not record any provision for such plans as we have no further obligation.

Our net obligation in respect of defined benefit pension plans is calculated separately for each plan by estimating the amount of future benefit that employees have earned in return for their service in the current and prior periods. We perform the calculation by using the projected unit credit method.

The methodology of calculation and booking of the defined benefit pension plans is as follows:

- That benefit is discounted to determine its present value, and the fair value of any plan assets is deducted.
- Net interest is calculated by applying the discount rate to the net defined benefit liability or asset. Interest is recorded in the profit and loss.
- Unvested past services costs are recognized immediately if the benefits have vested immediately following the introduction of, or changes to, a pension plan.
- We record actuarial gains and losses on defined benefits plans directly in equity.

14. Financial debt

Bond debts and other interest-bearing loans are initially recognized at their fair value less transaction costs directly attributable to the issuance of the debt. These financial liabilities are then valued at their amortized cost using the effective interest method. Where applicable, the financial debt is increased by capitalized interest.

By exception of this accounting policy, the issuing costs of the First and Second Lien issued in 2018 were recognized, as incurred, as an expense of the period.

15. Derivative financial instruments

We use over-the-counter derivative financial instruments to hedge our exposure to foreign exchange fluctuations from operational, financing and investment activities denominated in a currency different from the functional currency. In accordance with our treasury policy, we do not hold or issue derivative financial instruments for trading purposes. However, derivatives that do not qualify for hedge accounting are accounted for as trading instruments in "Other financial income (loss)".

Over-the-counter derivatives are entered into in the frame master agreements that provide a right of set-off in the event of default, insolvency or bankruptcy of one of the parties to the agreement (those netting agreements do not fulfill IAS 32 criteria to offset the fair value of derivatives on the statement of financial position).

Exchange gains or losses on foreign currency financial instruments that represent the efficient portion of an economic hedge of a net investment in a foreign subsidiary are reported as translation adjustments in shareholder's equity under the line item "Cumulative translation adjustments", the inefficient portion being recognized in the statement of operations. The cumulative value of foreign exchange gains and losses recognized directly in equity will be transferred to statement of operations when the net investment is sold.

Derivative financial instruments are stated at fair value. The gain or loss on reassessment to fair value is recognized immediately in the statement of operations. However, where derivatives qualify for cash flow hedge accounting, we account for changes in the fair value of the effective portion of the hedging instruments in shareholder's equity. The ineffective portion is recorded in "Other financial income (loss)". Amounts recorded in other comprehensive income are reclassified into the statement of operations when the hedged risks impact the statement of operations.

When derivatives do not qualify for cash flow hedge accounting, we account for changes in the fair value into the statement of operations in "Other financial income (loss)".

16. Cash flow statement

The cash flows of the period are presented in the cash flow statement within three activities: operating, investing and financing activities:

Operating activities

Operating activities are the principal revenue-producing activities of the entity and other activities that are not investing or financing activities.

Investing activities

Investing activities are the acquisition and disposal of long-term assets and other investments not included in cash equivalents. When a subsidiary is acquired, a separate item, corresponding to the consideration paid net of cash and cash equivalents held by the subsidiary at the date of acquisition, provides the cash impact of the acquisition.

Investments in multi-client surveys are presented net of depreciation and amortization capitalized in multi-client surveys. Depreciation and amortization capitalized in multi-client surveys are also restated in operating activities.

Financing activities

Financing activities are activities that result in changes in the size and composition of the contributed equity and borrowings of the entity.

They include the cash impact of financial expenses and lease repayments.

Cash and cash equivalents

Cash and cash equivalents in the consolidated statement of financial position comprise cash at banks and on hand and short-term deposits with a maturity of three months or less that are readily convertible to known amounts of cash.

17. Share-based payments, including stock options

Employees (including senior executives) of the Group receive remuneration in the form of share-based payments. These rights can be settled either in equity (equity-settled transactions) or in cash (cash-settled transactions).

Equity-settled transactions

We include stock options granted to employees in the financial statements using the following principles: the stock option's fair value is determined on the grant date and is recognized in personnel costs, with a corresponding increase in equity, on a straight-line basis over the period between the grant date and the end of the vesting period. We calculate stock option fair value using the Black-Scholes mathematical model.

Cash-settled transactions

The cost of cash-settled transactions is measured initially at the grant date using a binomial model. A provision is recognized over the period until the vesting date. This liability is re-measured at fair value at each reporting date up to and including the settlement date, with changes in fair value recognized in the statement of operations.

18. Grants

Government grants, including non-monetary grants at fair value, are not recognized until there is reasonable assurance that the entity will comply with the conditions of the grant and that the grants will be received.

Government grants are recognized as income over the periods necessary to match them with the related costs which they are intended to compensate. They are presented as a reduction of the corresponding expenses in the item "Research and development expenses, net" in the statement of operations.

Refundable grants are presented in the statement of financial position as "Other non-current liabilities".

19. Earnings per share

Basic earnings per share amounts are calculated by dividing net income for the year attributable to ordinary equity holders of the Company by the weighted average number of ordinary shares outstanding during the year.

Diluted earnings per share amounts are calculated by dividing the net income attributable to ordinary equity holders of the Company, by the weighted average number of ordinary shares outstanding during the year plus the weighted average number of ordinary shares that would be issued on the exercise of stock options and shares from performance share plans.

Note 2 Significant events, acquisitions and divestitures

During 2019

Exit from Data Acquisition business

During 2019, we delivered several key milestones on our strategic path. Aiming at ensuring growth and sustainable returns through the cycles, the strategic roadmap announced in November 2018 (the "CGG 2021 Plan") includes a planned transition to an asset-light business model by reducing our exposure to the Data Acquisition business. The Data Acquisition business has been adversely affected over the years by structural industry overcapacity, lack of differentiation, commodity pricing and a heavy fixed cost base. The CGG 2021 Plan thus foresees the following changes:

Marine:

- reduction of seismic vessels in operation in 2019,
- search for a strategic partnership to cost efficiently operate and control the vessels,

- Land: wind down and exit the market;
- Multi-physics: market for sale and monetize when suitable;
- divest equity stakes in Argas and Seabed Geosolutions BV joint ventures;
- general and administrative expenses and support costs: adjust in line with new size and footprint.

As a result of these strategic announcements and actions undertaken subsequently, we have presented our Data Acquisition operations and the costs of implementation of the related measures, referred to as the "CGG 2021 Plan", in accordance with IFRS 5, as discontinued operations and assets held for sale in our Consolidated Financial Statements as of and for the years ended December 31, 2018 and 2019 (and applied retroactively as of and for the year ended December 31, 2016 and 2017).

The detail of these line items is disclosed in the note 5 as of December 31, 2018 and 2019.

For more information on the Group's strategy, see Chapter 1 "Presentation of the CGG group and its activities".

Marine Exit and Streamer NewCo

We, together with Shearwater GeoServices Holding AS ("Shearwater"), announced the signature of a binding term sheet in June 2019 that included the following elements:

(i) Shearwater's acquisition of all the shares in Global Seismic Shipping AS ("GSS"), the 50/50 joint venture between Eidesvik Offshore ASA and CGG. GSS, through subsidiaries, own five high-end seismic vessels and two legacy vessels with associated bank debt. Shearwater also agreed to acquire the streamers owned by CGG, which were associated with GSS's five high-end seismic vessels; and

(ii) a five-year services contract (the "Capacity Agreement") between Shearwater and CGG. Under this agreement, CGG commits to using Shearwater acquisition services for 730 vessel days annually in average over five years with flexibility in term of actual annual utilization. The Capacity Agreement ensures our access to strategic capacity for our future multi-client projects through Shearwater's global fleet of high-end 3D and source vessels; and

(iii) the establishment of a technology partnership through the creation of a company under the Sercel brand name and with CGG's majority ownership to which the parties will contribute their respective towed marine streamer equipment businesses. The Company will be focused on the development, manufacturing, commercialization and support of streamers, navigation software and steering systems (the "Streamer Newco Transaction").

The closing of Shearwater's acquisition of the shares in GSS and the streamers and the entry into force of the Capacity Agreement, took place on January 8, 2020 (the "Marine Closing"). The agreements for the Streamer Newco Transaction remain under negotiation.

All impacts of the Marine closing have been taken into consideration in the financial statement of position as at December 31, 2019 through the remeasurement of the fair value less cost to sell of the Marine disposal group for a net amount of US$(108.3) million.

On January 8, 2020, the following transactions have occurred:

- CGG has acquired the 50% interest held by Eidesvik in GSS and has indemnified Eidesvik for the end of the relationship against Shearwater shares. CGG also granted Eidesvik with an associated put option (the "Eidesvik Put Option");
- Shearwater has acquired 100% of GSS and the streamers from CGG against Shearwater vendor notes exchangeable into Shearwater shares (the "Shearwater Vendor Notes");
- the existing umbrella agreement and the existing bareboat charter agreements between CGG and GSS subsidiaries have been terminated as well as the guarantee granted by CGG;
- Shearwater CharterCo AS entered into five-year bareboat charter agreements with GSS subsidiaries, guaranteed by Shearwater, for the five high end vessels equipped with streamers (the "Shearwater Charter Agreements") and CGG Services SAS entered into the Capacity Agreement;
- under payment instructions agreement (the "Payment Instructions Agreement"), Shearwater and Shearwater CharterCo AS direct CGG Services SAS to pay amounts due under the Capacity Agreement directly to GSS subsidiaries to cover Shearwater CharterCo's obligations under its bareboat charter agreements;
- CGG also entered into step-in agreements with Shearwater and GSS (the "Step-In Agreements") which could come into force if certain conditions are met and would require CGG to substitute itself for Shearwater CharterCo AS as charterer of GG subsidiaries' fve high end seismic vessels (equipped with streamers).

After those transactions, CGG will have in its statement of financial position the main following items:

- US$53.3 million of Shearwater Vendor Notes;
- US$(148.0) million of liabilities related to the Capacity Agreement;
- US$(4.6) million of liability related to fair value of the Eidesvik Put Option.

Shearwater Vendor Notes

Those notes are exchangeable into Shearwater shares. They can also be used to setoff payment obligations or buy assets, but only as agreed with Shearwater. Shearwater is in no case required to settle the notes with cash. If those notes are not settled by December 31, 2020, Shearwater may require CGG to use the notes as consideration in kind for the purchase of shares in Shearwater at the price of US$25.2262 per share.

Capacity Agreement

The main terms of the Capacity Agreement are as follows:

- work exclusively with Shearwater, for seismic streamer acquisition and source vessels for nodes projects, up to 730 vessel days per year on average for the next five years;
- pay a pre-agreed day rate for the first 2.5 years and the higher of market rate or the pre-agreed day rate for the remaining 2.5 years;
- reimburse Shearwater for project-related operational costs and fuel; and
- compensate Shearwater for days during which more than one of its high end seismic vessels are idle, for a maximum of three vessels (the “Idle Vessels Compensation”).

The pre-agreed day rate as negotiated in summer 2019 is higher than the current estimated average market day rate. Thus, an operational liability of US$(69) million will be recognized at Marine closing date representing the net present value of the positive difference between the pre-agreed rate and the estimated market rate over the five-year contractual term.

The Idle Vessels Compensation will give rise to a US$(79) million financial liability at Marine closing date representing the net present value of expected payments under this clause. The expected payments are estimated based on Shearwater fleet utilization assumptions over the five-year commitment period.

Eidesvik Put Option

Eidesvik has the right to sell all its Shearwater shares to CGG at a strike price of US$30 million. The exercise period starts at the earlier of: i) the date of Shearwater IPO, and ii) 1 year after Marine closing. It ends at the earlier of: i) 6 months after the date of Shearwater IPO, and ii) 3 years after Marine closing. The fair value of this put option has been assessed to be US$(4.6) million.

Step-In Agreements

As described above, following the Marine Closing, Shearwater CharterCo AS has entered into five-year bareboat charter agreements with GSS subsidiaries, guaranteed by Shearwater, for the five high end vessels equipped with streamers. CGG has agreed to substitute itself for Shearwater CharterCo AS as charterer of GSS subsidiaries’ five high end seismic vessels (equipped with streamers) in the event of a payment default under the charter party agreement between the GSS subsidiaries and Shearwater CharterCo AS. Given that CGG is required under the Payment Instructions Agreement to pay amounts due under the Capacity Agreement directly to the GSS subsidiaries to cover Shearwater CharterCo’s obligations under its bareboat charter agreements, a payment default can be triggered by CGG only, or a Shearwater insolvency.

Were the Step-in Agreements to be triggered:

- CGG would be entitled to terminate the Capacity Agreement;
- CGG would have the right to use the five high end seismic vessels equipped with streamers under bareboat charter agreements;
- CGG would be entitled, through pledge in its favor, to acquire all the share capital of GSS, knowing that GSS and subsidiaries’ principal assets would be the vessels and streamers and its principal liabilities would be the debt associated with the vessels.

The Step-In Agreements shall not impact the financial statement of position unless a trigger, as described above,occurs. In such circumstance, the obligations under the Capacity Agreement shall be terminated and replaced by the obligations under the Step-In Agreements, for a lower amount compared to the Capacity Agreement.

Divestment from Seabed Geosolutions BV

In line with our strategy to exit the Contractual Data Acquisition business, on December 30, 2019 CGG SA entered into in a Share Purchase and Exit Agreement (“Exit Agreement”) to transfer on that date 15% (out of its total 40% stake) of its shares in the Seabed Geosolutions BV joint venture (“Seabed”) to its partner Fugro NV (“Fugro”), with its remaining 25% shareholding to be transferred before April 1, 2020.

In addition, CGG SA paid US$35 million to Fugro to settle any disputes and claims between them relating to Seabed, such as those related to the partners’ respective obligations to jointly finance Seabed and the differing interpretations of non-competition provisions in the Seabed joint venture agreement.

Land exit

We progressively reduced the land data acquisition business over 2019 and fully shut down activity in the first quarter of 2020. Some of the assets used in this business were sold for US$3 million during 2019, and the rest are currently for sale. Most of the corresponding staff have departed under the social plan described below.

Multi-Physics exit

We started negotiations with potential acquirers in 2019 with the intention of selling our Multi-Physics business. These discussions are progressing and we signed a memorandum of understanding in February 2020.

CGG continues to carry out these strategic changes in compliance with all legal requirements.

GeoSoftware

In 2019, after CGG was approached by several potential buyers interested in GeoSoftware, part of GGR segment, the related assets were reclassified to the line “assets held for sale” and liabilities to the line “liabilities directly associated with the asset classified as held for sale”. The GeoSoftware activity does not meet the criteria of a major line of business under IFRS 5, therefore the GeoSoftware operations were not presented as discontinued operations in the consolidated statements of operations and in the consolidated statements of cash flows (hence triggering no retrospective presentation). Any sale of these related assets would be independent from the CGG 2021 strategic roadmap.

Convertible bondholders' appeal

On July 17, 2018, certain holders of CGG's convertible bonds filed a recourse before the French Supreme Court *(Cour de cassation)* against the ruling rendered on May 17, 2018 by the Appeals Court of Paris rejecting a claim by a group of Convertible Bondholders against the ruling of the Commercial Court of Paris sanctioning the Safeguard Plan on December 1, 2017.

On February 26, 2020, the French Supreme Court (Cour de cassation) confirmed the ruling rendered by the Appeals Court of Paris and rejected the claim from a group of Convertible Bondhlders, putting a definitive end to this litigation.

Social Plan

In the affected countries, CGG group has complied with the administrative and legal procedures required by the employment reductions in the data acquisition business and the related support functions. In France, CGG group implemented a social plan after reaching an agreement with union representatives that was approved by the relevant regulatory body, DIRECCTE *(Direction régionale des enterprises, de la concurrence et de la consummation, du travail et de l'emploi).* Because CGG SA remains subject to certain undertakings given as part of the Safeguard Plan, we sought and received approval to the French Commercial Courts in June 2019 to carry out the strategic changes in our data acquisition business.

See note 16 for related provision for restructuring costs.

During 2018

Financial restructuring process

In the Extraordinary General Meeting of Shareholders held on November 13, 2017, the shareholders decided to reduce the Company's share capital by a total amount of €17,485,188, by reducing the nominal value of each share from €0.80 to €0.01. The completion of such share capital reduction was acknowledged by the Board of Directors on January 15, 2018, with the Board's approval of a reduction of the share capital from €17,706,519 to €221,331 by reducing the nominal value of the Company's shares from €0.80 to €0.01. The amount of €17,485,188, corresponding to the share capital reduction, was allocated in full to the "additional paid in capital" account.

On February 21, 2018, CGG successfully completed a rights issue with preferential subscription rights for an amount of €112,215,060.36 (including the share premium), through the issuance of 71,932,731 shares of the Company (the "New Shares") each with one warrant attached (the "Warrants #2" and together with the New Shares, the "ABSA") at a subscription price of €1.56 per ABSA (*i.e.* €0.01 nominal value and €1.55 share premium).

At the end of the subscription period, on February 2, 2018, the total demand, which amounted to €132.5 million, was €20.3 million higher than the target amount (amounting to a subscription rate of 118.06%). The number of ABSA subscribed on a non-reducible basis *(à titre irréductible)* was 65,283,036 and represented 90.76% of the ABSA to be issued. Additionally, 19,639,466 ABSA were subscribed on a reducible basis and such subscription has therefore been only partially satisfied, up to 6,649,695 ABSA.

On February 21, 2018, CGG finalized the implementation of its financial restructuring plan, which meets the Company's objectives of strengthening its balance sheet and providing financial flexibility to continue investing in the future. This plan comprised (i) the equitization of nearly all of the unsecured senior debt, (ii) the extension of the maturities of the secured senior debt and (iii) the provision of additional liquidity to meet various business scenarios.

As part of the implementation of its financial restructuring plan, the following securities were issued on February 21, 2018:

- US$663.6 million in principal amount of first lien senior secured notes due 2023, bearing floating rate interest at Libor (floor of 1%) + 6.5% in cash, and 2.05% paid-in-kind (PIK) issued by CGG Holding (US) Inc. in exchange for the balance of the Secured Loans (taking into account an upfront paydown of US$150 million of the Secured Loans). The first lien senior secured notes due 2023 were refinanced with the New First Lien Notes on April 24, 2018;
- US$355.1 million and €80.4 million in principal amount of second lien senior secured notes due 2024, bearing floating rate interest at Libor/Euribor (floor of 1%) depending on the currency + 4% in cash, and 8.5% paid-in-kind (PIK) issued by CGG SA. This issuance comprised US$275 million and €80.4 million as new money and US$80.2 million in exchange for part of the accrued interest claims under the Group's existing senior notes (the "Senior Notes") (with the US$ new money notes and accrued interest notes being fungible);
- 71,932,731 shares of the Company (the "New Shares") each with one share purchase warrant (the "Warrants #2" and together with the New Shares, the "ABSA"), all of which were subscribed by holders of preferential subscription rights. The final gross proceeds amounted to €112 million;
- 35,311,528 new shares (the "Creditor Shares 1") resulting from the equitization of the Convertible Bonds;
- 449,197,594 new shares (the "Creditor Shares 2") resulting from the equitization of the Senior Notes;
- 22,133,149 warrants allocated to the shareholders of CGG (the "Warrants #1");
- 113,585,276 warrants in favor of the subscribers to the Second Lien Notes (the "Warrants #3");
- 7,099,079 warrants allocated to the members of the *Ad Hoc* Committee of holders of Senior Notes (the "Coordination Warrants");
- 10,648,619 warrants allocated to the members of the *Ad Hoc* Committee of holders of Senior Notes (the "Backstop Warrants").

Following the issuance of New Shares, Creditor Shares 1 and Creditor Shares 2, the Company's share capital as of February 21, 2018 amounted to €5,785,750.02, divided into 578,575,002 shares with a nominal value of €0.01 per share.

	Warrants#1	Warrants#2	Warrants#3	Coordination Warrants	Backstop Warrants
Number of warrants issued	22,133,149	71,932,731	113,585,276	7,099,079	10,648,619
Exercise ratio	3 Warrants #1 for 4 new shares	3 Warrants #2 for 2 new shares	1 Warrant #3 for 1 new share	1 Coordination Warrant for 1 new share	1 Backstop Warrant for 1 new share
Exercise price	€3.12 per new share	€4.02 per new share	€0.01 per new share	€0.01 per new share	€0.01 per new share
Maximum number of shares to be issued upon exercise of the warrants (subject to adjustments)	29,477,536	47,955,154	113,585,276	7,099,079	10,648,619
Expiry date of the warrants	February 21, 2022	February 21, 2023	August 21, 2018	August 21, 2018	August 21, 2018

Please refer to note 15 for more information regarding the exercise of Warrants between February 21, 2018 and December 31, 2018.

Prior to the equitization of the unsecured senior debt, the Senior Notes and the Convertible Bonds were delisted from the Euro MTF market of the Luxembourg Stock Exchange and Euronext Paris, respectively.

CGG's financial restructuring plan was finalized on February 21, 2018.

Following its financial restructuring, and with the settlement and delivery of all securities and instruments contemplated thereby, CGG benefits from a healthier balance sheet with notably:

- net proceeds from the completion of the financial restructuring on February 21, 2018 of US$308 million (or US$260 million after payment of financial restructuring fees) converted at the February 21, 2018 exchange rate of US$1.2312 per €1.00;

	Part denominated *(in €)*	Part denominated *(in US$)*	Total
	(in M€)	*(in MUS$)*	*(in MUS$)*
Rights issue with preferential subscription rights net proceeds	103.5	–	127.4
Second lien senior secured notes due 2024 net proceeds	72.1	247.8	336.5
First lien senior secured notes due 2023 repayment	–	(150.0)	(150.0)
Convertible Bonds interests payment	(4.5)	–	(5.5)
Net proceeds from financial restructuring	**171.1**	**97.8**	**308.4**
Financial restructuring fees payment	(20.3)	(22.9)	(48.0)
Net proceeds	**150.8**	**74.9**	**260.4**

- in the twelve months ended December 31, 2018, the financial restructuring, the settlement and delivery of all securities and instruments contemplated thereby, and the expenses linked to the equitized unsecured senior debt, resulted in a US$759 million gain in our consolidated statement of operations. In addition, the equity increased by US$1,323 million through the issuance of new shares (as a result of the equitization of the unsecured debt, the rights issue and the future exercise of Warrants #3, Coordination Warrants and Backstop Warrants), to reach a total equity increase of US$2,082 million.

The table below details the impacts of the financial restructuring:

	Statements of operations	Other retained earnings	Total *(in MUS$)*
Unsecured debt equitization	1,062.1	930.6	1,992.7
Rights issue with preferential subscription rights	–	127.4	127.4
Future exercise of Warrants #3, Coordination Warrants and Backstop Warrants	(250.6)	250.6	–
Second lien backstop & commitment fees	(37.4)	–	(37.4)
Rollover Fees[(a)]	–	–	–
Consulting Fees	(12.5)	–	(12.5)
Deferred tax impact	–	12.6	12.6
Others	(2.9)	1.8	(1.1)
TOTAL	**758.7**	**1,323.0**	**2,081.7**

(a) *Pursuant to the indenture governing the first lien senior secured notes issued on February 21, 2018 in connection with the financial restructuring, a 3% rollover fee (US$19.9 million) would have applied if the notes were not refinanced within three months following the financial restructuring. However, given the refinancing of such notes on April 24, 2018 as described below no such rollover fee were due.*

The conversion into shares of the unsecured debt impacts the equity up to the debt carrying value. Under IFRS (IFRIC 19), the impact on the Statements of Operations (in other financial income) is the difference between the carrying value of the debt converted and the fair value of the shares issued. Considering the share price evolution on February 21 and 22, 2018, the Group concluded that €1.56 per share was a reasonable fair value estimation.

The issuance of Warrants #3, Coordination Warrants and Backstop Warrants negatively impacted the other financial income (loss) line item in the Statement of Operations, according to IFRS 2, without any impact on the equity. Given the strike price of €0.01 and the very short maturity of six months, the Black & Sholes fair value is equivalent to 1.56-0.01 = €1.55 per warrant. An equity impact will be recognized when the warrants are exercised, equal to the cash consideration received (which will be marginal given the €0.01 strike price).

All the fees have been expensed (in other financial income for the second lien backstop and commitment fees and in other revenues and expenses for the consulting fees) without any portion capitalized.

The deferred tax liabilities linked to the equity portion of the convertible bonds have been reversed through equity, without any impact on the Statements of Operations.

First lien senior secured notes due 2023 refinancing

Because the terms of the first lien senior secured notes due 2023 issued on February 21, 2018 by CGG Holding (US) Inc., a wholly-owned indirect subsidiary of CGG SA, as part of the restructuring plan (the "Refinanced First Lien Notes") provided a window to refinance them at par until May 21, 2018, we commenced an offering of new first lien senior secured notes in April 2018 to refinance the Refinanced First Lien Notes.

On April 24, 2018, CGG Holding (US) Inc. issued US$300 million in aggregate principal amount of 9.000% first lien senior secured notes due 2023 and €280 million in aggregate principal amount of 7.875% first lien senior secured notes due 2023 (together, the "New First Lien Notes").

These New First Lien Notes represented at issuance a total principal amount of US$645 million (using an exchange rate of $1.2323 per €1.00) at a weighted average coupon of 8.40%. The refinancing of the Refinanced First Lien Notes during the par window allowed the CGG group to save the 3% rollover fee (representing US$19.9 million), reduces the Group's interest cost compared to the Refinanced First Lien Notes (which bore cash interest at a rate equal to three-month LIBOR plus 6.50% *per annum* and interest paid-in-kind at 2.05% per annum) and provides a shorter non-call period (April 2020 under the New First Lien Notes *versus* February 2021 under the Refinanced First Lien Notes).

CGG Holding (US) Inc. used the net proceeds from the issuance, together with cash on hand, to redeem the Refinanced First Lien Notes in full on May 9, 2018 in accordance with their terms.

The New First Lien Notes and the second lien senior secured notes due 2024 share the same security package encompassing notably the US Multi-Client Library, the shares of the main Sercel operating entities (Sercel SAS and Sercel Inc.), the shares of significant GGR operating entities, and certain intercompany loans.

Renewal of the governance

In 2018, CGG completed the process of renewing its governance with the cooptation of five Directors (Philippe SALLE, Colette LEWINER, Mario RUSCEV, Helen LEE BOUYGUES and Heidi PETERSEN) and the appointment of one Director (Sophie ZURQUIYAH).

The members of the Board of Directors are:

Name	Position
Mr. Philippe SALLE[(a)]	Independent director and Chairman of the Board
Mrs. Sophie ZURQUIYAH[(a)]	Director and Chief Executive Officer
Mr. Mario RUSCEV[(a)]	Independent director
Mr. Robert F. SEMMENS	Director (this office expired on May 15, 2019)
Mrs. Anne-France LACLIDE-DROUIN	Independent director
Mrs. Gilberte LOMBARD	Independent director (this office expired on May 15, 2019)
Mrs. Colette LEWINER[(a)]	Independent director
Mrs. Helen LEE BOUYGUES[(a)]	Independent director
Mrs. Heidi PETERSEN[(a)]	Independent director
Mr. Michael DALY	Independent director
Mr. Patrice GUILLAUME[(b)]	Director representing the employees

(a) Appointed in 2018.
(b) Director representing employees pursuant to section L. 225-27-1 of the French Commercial Code.

Geowave Voyager

SeaBird Exploration Plc announced on July 11, 2018 that it was in an exclusive process to acquire our seismic vessel Geowave Voyager and certain seismic equipment for cash consideration of US$17 million. The transfer of ownership of the Vessel and closing of the transaction was effective in November 2018.

NYSE delisting and SEC deregistration

On September 11, 2018 CGG announced that the Board of Directors has unanimously approved the voluntary delisting of its American Depositary Shares ("ADSs") from the New York Stock Exchange ("NYSE") and its voluntary deregistration with the United States Securities and Exchange Commission ("SEC"). CGG believes that the costs associated with continuing the listing and registration of its ADSs exceed the benefits received by CGG, as the primary market for CGG shares is Euronext Paris.

Accordingly, CGG filed a Form 25 with the SEC on September 21, 2018 to effect the delisting with the NYSE and filed a Form 15F with the SEC on October 1, 2018 to terminate its SEC reporting obligations and the registration of its ADSs under the Securities Exchange Act of 1934, as amended.

The termination of the registration of its ADSs is effective 90 days after the date of filing of the Form 15F with the SEC. However, as a result of the filing of a Form 15F, CGG's obligation to file certain reports, including its obligation to file annual reports on Form 20-F and to furnish reports on Form 6-K with the SEC is immediately suspended.

Following delisting of the ADSs from the NYSE, CGG has maintained its American Depositary Receipt program at "level one". This will enable investors to retain their ADSs and facilitate trading on the US over-the-counter market.

Capital Market Day announcements

Following the "CGG 2021" strategic plan announced on November 7, 2018 and actions undertaken afterwards, Contractual Data Acquisition is accounted under IFRS 5 as discontinued operations and therefore its contributions to statements of operations and statements of cash flows are aggregated in a single line item in both statements, respectively "Net income (loss) from discontinued operations" and "Net cash flows incurred by Discontinued Operations" for all periods presented.

The Group "continuing operations" namely GGR (Geoscience and Multi-Client) & Equipment represent the new profile of the Group going forward.

Implementation of the CGG 2021 strategic plan must comply with the undertakings and requirements in the CGG Safeguard Plan and other applicable local legal requirements.

Please refer to note 5 and 20 for more information on the impact of the Capital Market Day announcements and the new organization of the Group.

Note 3 Trade accounts and notes receivable

Analysis of trade accounts and notes receivable is as follows:

	December 31,	
In millions of US$	**2019**	2018
Trade accounts and notes receivable gross – current portion	376.9	425.5
Less: allowance for doubtful accounts – current portion	(27.0)	(33.4)
Trade accounts and notes receivable net – current portion	**349.9**	**392.1**
Trade accounts and notes receivable gross – non-current portion	–	–
Less: allowance for doubtful accounts – non-current portion	–	–
Trade accounts and notes receivable net – non-current portion	**–**	**–**
Contract assets	86.1	128.1
TOTAL TRADE ACCOUNTS AND NOTES RECEIVABLE[(a)]	**436.0**	**520.2**

(a) The amount does not include US$17.0 million of trade accounts and notes receivable, net, reclassified as assets held for sale as of December 31, 2019 (US$14.3 million of trade accounts and notes receivable, net, reclassified as assets held for sale as of December 31, 2018).

Allowances for doubtful accounts only relate to overdue receivables at the closing date.

As of December 31, 2019 the ageing analysis of net trade accounts and notes receivable is as follows:

In millions of US$	Not past due	30 days	30-60 days	60-90 days	90-120 days	> 120 days	**Total**
2019	238.6	39.3	12.3	6.5	10.1	43.0	349.9
2018	275.8	46.8	10.4	5.6	5.3	48.2	392.1

Litigation

On March 18, 2013, CGG Services SAS and Wavefield Inseis AS (together “CGG”), both fully owned subsidiaries of CGG SA, initiated arbitration proceedings against ONGC, an Indian company, to recover certain unpaid amounts under three commercial contracts entered into by ONGC and CGG Services SAS on one hand and ONGC and Wavefield Inseis AS on the other hand, between 2008 and 2010. The Arbitration Tribunal issued an award in favor of CGG on July 26, 2017 and at the same date dismissed ONGC’s counter claims against CGG. ONGC submitted an application against the Tribunal award on October 27, 2017. On January 6, 2020, ONGC’s application to set aside the Tribunal awards was dismissed by the Single Judge of the Bombay High Court without costs. ONGC has filed an appeal on March 2, 2020 against this judgment, which appeal is pending before the Division Bench of the Bombay High Court. We believe that the Tribunal’s award which is affirmed by the recent Bombay High Court’s judgment will allow us to recover at a minimum the amount of the receivables that are recorded on our balance sheet as unpaid receivables as of December 31, 2019.

Factoring agreements

There were no factoring agreements as of December 31, 2019 and 2018.

Note 4 Inventories, work in progress and other current assets

	December 31, 2019			December 31, 2018		
In millions of US$	**Cost**	Valuation Allowance	Net	Cost	Valuation Allowance	Net
Consumables and spares parts	8.2	(2.5)	5.7	15.8	(0.4)	15.4
Raw materials and sub-assemblies	73.5	(16.6)	56.9	71.6	(20.3)	51.3
Work in progress	140.0	(36.9)	103.1	127.4	(40.1)	87.3
Finished goods	74.7	(40.3)	34.4	91.3	(40.5)	50.8
INVENTORIES AND WORK IN PROGRESS	**296.4**	**(96.3)**	**200.1**	**306.1**	**(101.3)**	**204.8**

Variation of inventories and work in progress

VARIATION OF THE PERIOD

	December 31,	
In millions of US$	**2019**	2018
Balance at beginning of period	**204.8**	**239.3**
Variations	(10.0)	(0.9)
Movements in valuation allowance[(a)]	3.3	(29.0)
Change in exchange rates	(3.0)	(9.3)
Change in consolidation scope	–	–
Others	5.0	4.7
BALANCE AT END OF PERIOD	**200.1**	**204.8**

(a) Following the November 7, 2018 Capital Market Day announcements, the Equipment division revised its perspectives of sales of its inventories as external outputs could not fully replace expected internal outputs. The revision of perspectives led to a provision of US$30 million of its inventories (mainly Land equipment).

The US$5 million in other variation is due to the reclassification of finished goods to asset under construction under the Equipment segment.

Other current assets

	December 31,	
In millions of US$	**2019**	2018
Personnel and other tax assets	51.3	43.3
Fair value of financial instruments	–	–
Restricted cash	13.4	12.4
Other miscellaneous receivables	22.5	12.3
Supplier prepayments	12.0	15.6
Prepaid expenses	17.5	15.5
OTHER CURRENT ASSETS[(a)]	**116.7**	**99.1**

(a) The amount does not include US$1.9 million of other current assets reclassified as assets held for sale as of December 31, 2019 (US$2.9 million of other current assets reclassified as assets held for sale as of December 31, 2018).

Note 5 Assets held for sale and discontinued operations

Assets held for sale

The 2021 strategic roadmap includes a transition to an asset-light model by reducing CGG's exposure to the data acquisition business, which has been impacted over the years by structural industry overcapacity, lack of differentiation, commodity pricing and a heavy fixed cost base. As a result of these strategic announcements and actions undertaken subsequently, we presented our data acquisition operations and the costs of implementation of the related measures, referred to as the CGG 2021 Plan, in accordance with IFRS 5, as discontinued operations and assets held for sale in our Consolidated Financial Statements as of and for the years ended December 31, 2018 and 2019 (and applied retroactively as of and for the year ended December 31, 2016 and 2017).

The fair value measurement of assets held for sale is categorized within Level 3 of the fair value hierarchy. The valuation technique and inputs are described in note 2.

In 2019, after CGG was approached by several potential buyers interested in GeoSoftware business, part of our GGR segment, the related assets were reclassified to the line "assets held for sale" and liabilities to the line "liabilities directly associated with the asset classified as held for sale". The GeoSoftware activity does not meet the criteria of a major line of business under IFRS 5, therefore the GeoSoftware operations were not presented as discontinued operations in the consolidated statements of operations and in the consolidated statements of cash flows (hence triggering no retrospective presentation). Any sale of these related assets would be independent from the CGG 2021 Plan.

Disaggregation of assets

	December 31, 2019				December 31, 2018
In millions of US$	**Marine**	**GeoSoftware**	**Other**	**Net**	
Goodwill	-	23.0	-	23.0	
Intangible assets, net	-	76.0	1.2	77.2	–
Property, plant and equipment, net	36.2	1.2	11.0	48.4	46.7
Right of use-assets[(a)]	82.0	0.0	-	82.0	
Investments in companies formerly under the equity method	26.4	0.0	45.6	72.0	131.6
Trade accounts and notes receivable, net	-	8.6	3.5	12.1	14.3
Other current assets, net	-	1.4	0.5	1.9	2.9
ASSETS HELD FOR SALE, NET	**144.6**	**110.2**	**61.8**	**316.6**	**195.5**

(a) Due to first application of IFRS 16 "Leases", the bareboat charter agreements have been recognized on January 1, 2019 as right-of-use assets for US$208.2 million before impairment. The provisions for onerous contracts related to the operating fleet under lease contracts have been reclassified from provisions for onerous contracts to impairment of right-of-use assets for US$(52) million.

Disaggregation of liabilities

	December 31, 2019				December 31, 2018
In millions of US$	**Marine**	**GeoSoftware**	**Other**	**Net**	
Trade accounts and notes payable			2.6	2.6	4.1
Accrued payroll costs		3.2		3.2	0.2
Other non-current liabilities	1.1		0.6	1.7	1.1
Lease liability[(a)]	190.7			190.7	
Provisions for onerous contracts[(a)]	61.0			61.0	126.3
LIABILITIES DIRECTLY ASSOCIATED WITH THE ASSETS CLASSIFIED AS HELD FOR SALE	**252.8**	**3.2**	**3.2**	**259.2**	**131.7**

(a) See footnote 1 in "disaggregation of assets" table.

Net income (loss) from discontinued operations:

In millions of US$	December 31, 2019	2018
Operating revenues	191.4	225.9
Operating expenses[(a)]	(198.1)	(339.8)
Other revenues (expenses) – net	(155.5)	(425.3)
Operating income	**(162.2)**	**(539.2)**
Interest on lease contracts	(18.5)	
Other financial income (loss)	(1.6)	(31.6)
Income taxes	(5.4)	(25.0)
Share of income (loss) in companies accounted for under the equity method	(0)	(4.2)
NET INCOME (LOSS) FROM DISCONTINUED OPERATIONS	**(187.7)**	**(600.0)**

(a) Includes cost of operations, research and development expenses, net, marketing and selling expenses, and general and administrative expenses.

For the period ended December 31, 2019, we recognized US$(155.5) million of restructuring costs as part of the CGG 2021 plan. The breakdown is as follows:

(i) US$(50.0) million of impairment of assets, coming from the loss recognized on the remeasurement to fair value less cost to sell of our disposal groups including, US$(25.7) million for marine disposal group, US$(11.1) million for Multi-physics disposal group, US$(6.1) million for Multi-physics intangible assets, US$(7.9) million of equity investment impairment, and US$0.8 million for Land assets;

(ii) US$(11.8) million of other costs, mostly related to exit and wind down costs for US$(5.2) million and transaction fees for US$(6.6) million;

(iii) US$(93.7) million of losses on divestment in Seabed Geosolutions BV, including US$(35) million settlement payment to Fugro.

As part of the CGG 2021 plan, we recognized US$(422.8) million of restructuring costs for the period ended December 31, 2018. These restructuring costs included:

(i) US$(139.1) million impairment of which US$116.9 million of impairment loss recognized on the remeasurement to fair value less cost to sell, US$16.0 million of vessels related equipment's and US$6.1 million of equity investment impairment;

(ii) US$(126.3) million of provision for onerous contracts related to the reduction of our operating fleet from 5 to 3 vessels;

(iii) US$(113.9) million additional provisions relating to the reduction of 712 positions worldwide and across the Group;

(iv) US$(22.8) million of other costs related to our CGG 2021 plan;

(v) US$(17.2) million of fair value decrease of our Global Seismic Shipping AS vendor loan; and

(vi) US$(3.5) million of provisions for tax contingencies.

Net cash flows incurred by discontinued operations

In millions of US$	December 31, 2019	2018
Net cash flow provided by (used in) operating activities	(92.7)	(113.6)
Net cash flow used in investing activities[(b)]	(37.5)	(5.7)
Net cash flow provided by (used in) financing activities[(a)]	(37.4)	–
NET CASH FLOWS INCURRED BY DISCONTINUED OPERATIONS	**(167.6)**	**(119.3)**

(a) Related to the first application of IFRS 16 "Leases" in 2019, lease repayments are recognized in financing activities.
(b) Includes US$35 million settlement payment for the Seabed Geosolutions BV divestment.

The net cash flow incurred by discontinued operations was US$(167.6) million in 2019 and US$(119.3) million in 2018. In 2019, the net cash flow includes disbursements related to CGG 2021 Plan for an amount of US$(136) million, including the settlement payment of US$(35) million to Fugro.

Note 6 Assets Valuation allowance

	December 31, 2019					
In millions of US$	Balance at beginning of year	Additions	Deductions	Unused Deductions	Others[(a)]	Balance at end of period
Trade accounts and notes receivable	33.4	7.8	(14.4)	–	0.2	27.0
Inventories and work-in-progress	101.3	4.2	(7.5)	–	(1.7)	96.3
Tax assets	4.9	–	(0.3)	–	–	4.6
Other current assets	3.0	–	(0.1)	–	–	2.9
TOTAL ASSETS VALUATION ALLOWANCE	**142.6**	**12.0**	**(22.3)**	**–**	**(1.5)**	**130.8**

(a) *Includes the effects of exchange rate changes and changes in the scope of consolidation.*

	December 31, 2018					
In millions of US$	Balance at beginning of year	Additions	Deductions	Unused Deductions	Others[(a)]	Balance at end of period
Trade accounts and notes receivable	33.1	9.1	(8.6)	–	(0.2)	33.4
Inventories and work-in-progress[(b)]	75.2	30.7	(1.7)	–	(2.9)	101.3
Tax assets	8.2	–	(3.2)	–	(0.1)	4.9
Other current assets	3.8	–	(0.8)	–	–	3.0
TOTAL ASSETS VALUATION ALLOWANCE	**120.3**	**39.8**	**(14.3)**	**–**	**(3.2)**	**142.6**

(a) *Includes the effects of exchange rate changes and changes in the scope of consolidation.*
(b) *Following the November 7, 2018 Capital Market Day announcements, the Equipment division revised its perspectives of sales of its inventories as external outputs could not fully replace expected internal outputs. The revision of perspectives led to a provision of US30 million of its inventories (mainly Land equipment).*

Note 7 Investments and other financial assets

In millions of US$	2019	2018
Non-consolidated investments	1.1	1.8
Loans and advances	7.3	10.2
Deposits and other[(a)]	19,0	19.1
TOTAL	**27.4**	**31.1**

(a) *In 2019, the amount of pledged financial assets is US$18.3 million.*

Non-consolidated investments

	December 31,	
In millions of US$	2019	2018
Investments in non-consolidated companies[(a)]	1.1	1.8
TOTAL NON-CONSOLIDATED INVESTMENTS	**1.1**	**1.8**

(a) *Mainly Interactive Network for US$1 million.*

No restriction or commitment exists between CGG and the non-consolidated investments.

Note 8 Investments in companies under the equity method

In millions of US$	Country/Head office	2019 % of interests	December 31, 2019	2018
Marine acquisition				
CGG Eidesvik Ship Management AS	Norway/Bergen	49.0%	–	0.2
PT Elnusa-CGGVeritas Seismic	Indonesia/Jakarta	49.0%	0.3	0.3
PTSC CGGV Geophysical Survey Limited	Vietnam/Vung Tau City	49.0%	–	–
GGR				
Petroleum Edge Limited[(a)]	UK/London	–	–	(3.4)
Reservoir Evaluation Services LLP	Kazakhstan/Almaty	49.0%	2.7	3.0
Investments in companies under the equity method			**3.0**	**0.1**

(a) Petroleum Edge Limited has been dissolved on December 24, 2019.

Subsequently to the presentation on November 7, 2018 of the CGG strategic roadmap during the Capital Market Day, the investments in the following companies under the equity method have been reclassified as assets held for sale:

In millions of US$	Country/Head office	2019 % of interests
Marine acquisition		
Global Seismic Shipping AS	Norway/Bomlo	50.0%
Land and Multi-physics acquisition		
Argas	Saudi Arabia/Al-Khobar	49.0%
Seabed Geosolutions BV[(a)]	The Netherlands/Amsterdam	25.0%

(a) On December 30, 2019, in line with its strategy to exit the data acquisition business, CGG has agreed to transfer its 40% shareholding in Seabed Geosolutions to Fugro before April 1, 2020. 15% out 40% have been transferred to Fugro as of December 31, 2019.

The variation of "Investments in companies under the equity method" is as follows:

In millions of US$	December 31, 2019	2018
Balance at beginning of period	**0.1**	**192.7**
Change in consolidation scope	–	0.4
Investments made during the year	3.1	–
Equity in income	(0.2)	(5.4)
Impairment		(6.1)
Dividends received during the period, reduction in share capital	–	–
Investments reclassified as Assets held for sale	–	(181.6)
Change in exchange rate and other	–	0.1
BALANCE AT END OF PERIOD	**3.0**	**0.1**

The investments in 2019 corresponded for US$3.1 million to our participation in Petroleum Edge Limited capital increase through the conversion of part of the existing debt.

For transactions with investments in companies under the equity method, please see note 28 "Related party transactions".

Note 9 Property, plant and equipment

	December 31,					
	2019			2018		
In millions of US$	**Gross**	**Accumulated depreciation**	**Net**	Gross	Accumulated depreciation	Net
Land	6.8	–	6.8	14.7	–	14.7
Buildings[(a)]	156.5	(110.1)	46.4	234.0	(130.1)	103.9
Machinery & equipment	215.0	(147.4)	67.6	245.2	(195.3)	49.9
Other tangible assets	122.7	(118.6)	4.1	108.4	(87.7)	20.7
Right-of-use assets[(a)]	264.5	(89.4)	175.1	–	–	–
• Property	207.9	(67.1)	140.8	–	–	–
• Machinery & Equipment	56.6	(22.3)	34.3	–	–	–
TOTAL PROPERTY, PLANT AND EQUIPMENT	**765.5**	**(465.5)**	**300.0**	**602.3**	**(413.1)**	**189.2**

(a) Prior to IFRS 16 first application, capital leases were disclosed by nature of tangible assets and are presented in right-of-use assets as of December 31, 2019.

Short-term leases and leases of low-value assets

As allowed by IFRS 16 the Group decided to use the exemptions for short-term leases (<12 months) and leases of low-value assets (US$5,000) which are not material as of December 31, 2019.

Revenues from subleases

The Group entered into arrangements to sublease leased office assets to a third party, these subleases are classified as operating leases and the revenues are not material as of December 31, 2019.

Variation of the period

	December 31,	
In millions of US$	**2019**	2018
Balance at beginning of period	**189.2**	**330.3**
IFRS 16 first time application right-of-use assets (net)[(a)]	128.8	–
Acquisitions[(b)]	73.8	63.0
Depreciation[(c)]	(75.0)	(65.9)
Disposals	(3.4)	(4.6)
Change in exchange rates	(1.2)	(6.0)
Change in consolidation scope	–	–
Impairment of assets[(d)]	(5.5)	(16.0)
Reclassification of tangible assets as "Assets held for sale"	(1.1)	(104.5)
Other	(5.6)	(7.1)
BALANCE AT END OF PERIOD	**300.0**	**189.2**

(a) The line item "IFRS 16 first time application right-of-use assets" includes impairments of US$17 million.
(b) Including US$33.2 million additional right-of-use assets.
(c) US$45.2 million are related to right-of-use assets.
(d) US$5.5 million are related to the impairment of right-of-use assets.

On January 1, 2019, for the first application of IFRS 16, the Group recognized right-of-use assets of US$128.8 million (after impairments) from the identified operating lease commitments. See note 1 for more information on the first application of IFRS 16.

In 2018, the Reclassification of tangible assets as "Assets held for sale" line item included reclassification of assets related to the Contractual Data Acquisition segment (see note 5 "Non-current assets held for sale and discontinued operations"). The Impairment of assets line item included impairment loss recognized following our Capital Market Day announcement.

Reconciliation of acquisitions with the consolidated statements of cash flows and capital expenditures in note 20

In millions of US$	December 31, 2019	2018
Acquisitions of tangible assets, excluding lease	40.6	63.0
Development costs capitalized (see notes 10 and 21)	32.4	33.1
Additions in other intangible assets, excluding non-exclusive surveys (see note 10)	1.2	3.0
Variance of fixed assets suppliers	1.1	4.4
Reclassification of flows as discontinued operations	–	(25.5)
TOTAL PURCHASES OF TANGIBLE AND INTANGIBLE ASSETS ACCORDING TO CASH FLOW STATEMENT ("CAPITAL EXPENDITURES")	**75.3**	**78.0**

Note 10 Intangible assets

	December 31, 2019			2018		
In millions of US$	**Gross**	**Accumulated depreciation**	**Net**	Gross	Accumulated depreciation	Net
Multi-Client surveys Marine	5,013.5	(4,554.0)	459.5	4,845.8	(4,279.1)	566.7
Multi-Client surveys Land	784.5	(713.0)	71.5	751.2	(684.6)	66.6
Development costs capitalized	418.8	(316.0)	102.8	445.3	(266.3)	179.0
Software	102.8	(95.4)	7.4	107.2	(92.1)	15.1
Customer relationships	227.4	(182.2)	45.2	232.1	(173.8)	58.3
Other intangible assets	209.3	(204.9)	4.4	215.8	(202.6)	13.2
TOTAL INTANGIBLE ASSETS	**6,756.3**	**(6,065.5)**	**690.8**	**6,597.4**	**(5,698.5)**	**898.9**

VARIATION OF THE PERIOD

In millions of US$	December 31, 2019	2018
Balance at beginning of period	**898.9**	**1,152.2**
IFRS 15 First time application	–	119.0
Increase in multi-client surveys	204.5	241.6
Development costs capitalized	32.4	33.1
Other acquisitions	1.2	3.1
Depreciation on multi-client surveys	(308.0)	(552.3)
Other depreciation	(58.7)	(78.0)
Disposals	–	(0.3)
Change in exchange rates	(1.3)	(10.6)
Reclassification of intangible assets as "Assets held for sale"[(a)]	(76.0)	(9.1)
Other	(2.2)	0.3
BALANCE AT END OF PERIOD	**690.8**	**898.9**

(a) In 2019, intangible assets related to GeoSoftware activity and reclassified in asset held for sale. See note 5.

In 2019, the "Depreciation on multi-client surveys" includes US$(33.0) million of impairment of multi-client surveys. These impairment are mainly coming from the Irish Prime Minister decision to restrict oil exploration in Ireland in 2019 as well as the potential lifting of the obligation to use CGG's services for oil groups in Gabon.

In 2018, the "Depreciation on multi-client surveys" line item included:

(i) US$(226) million of impairment of multi-client surveys, including StagSeis survey fully impaired for US$(197.0) million;

(ii) US$(94) million impact of the multi-client changes in estimate, including catch-up effect.

Reconciliation of acquisitions with the consolidated statements of cash flows and capital expenditures in note 20

	December 31,	
In millions of US$	**2019**	2018
Increase in multi-client surveys	204.5	241.6
Multi-Client depreciations & amortizations capitalized	(18.8)	(18.8)
INVESTMENT IN MULTI-CLIENT SURVEYS ACCORDING TO CASH FLOW STATEMENT	**185.7**	**222.8**

Note 11 Goodwill

Analysis of goodwill is as follows:

VARIATION OF THE PERIOD

In millions of US$	**2019**	2018
Balance at beginning of period	1,229.0	1,234.0
Additions	–	–
Reclassification of intangible assets as "Assets held for sale"[(a)]	(23.0)	–
Change in exchange rates	0.9	(5.0)
BALANCE AT END OF PERIOD	**1,206.9**	**1,229.0**

(a) Goodwill associated to GeoSoftware activity is reclassified in asset held for sale. See note 5.

Impairment review

The Group management undertakes at least an annual impairment test covering goodwill, intangible assets and indefinite lived assets allocated to the cash generating units to consider whether impairment is required.

For this year's impairment test, due to IFRS 16 first time application, the capital employed included the net amount between Right Of Use of assets and lease liabilities. There was no impact on the impairment test result

The recoverable amount retained by the Group corresponds to the value in use of the assets, cash generating units or group of cash generating units, defined as the discounted expected cash flows. In certain occasions, the recoverable amount retained is the fair value less costs of disposal.

There are nine cash generating units. A cash generating unit is a homogeneous group of assets that generates cash inflows that are largely independent of the cash inflows from other groups of assets.

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The following table provides the split of the total Group Goodwill per segment:

In millions of US$	**2019**	2018
Contractual Data Acquisition	**–**	**–**
Non-Operated Resources	**–**	**–**
CGU Multi-Client	*284*	*284*
CGUs in Geoscience	*748*	*771*
GGR	**1,032**	**1,055**
Equipment	**175**	**174**
TOTAL	**1,207**	**1,229**

Key assumptions used in the determination of recoverable amount

In determining the asset recoverable amount through value in use, management makes estimates, judgments and assumptions on uncertain matters. For each cash generating unit tested for goodwill impairment, the value in use is determined based on economic assumptions and forecasted operating conditions as follows:

- expected cash flows estimated in the 2020 budget and 2021-2022 outlook as presented to the Board of Directors on December 11, 2019;
- use of normative cash flows beyond Year 3, the discounted normative cash flows weigh more than 80% of the total value in use;
- long-term growth rate at 2.0% for all the CGUs;
- discount rates which we consider reflect the respective sector weighted average cost of capital (WACC):
  - 9.75% for the Equipment segment (compared to 10.0% in 2018) corresponding to a pre-tax rate of 12.6%,
  - 9.0% for the cash generating units within the GGR segment (compared to 10.0% in 2018) corresponding to a pre-tax rate from 11.1% up to 11.7%.

Our WACCs are calculated using the standard capital asset pricing model (CAPM) methodology. We requested an external valuation firm to perform an independent assessment in 2019. The pre-tax WACC is the discount rate leading to the same net present value calculated with post-tax WACC with tax expenses excluded from cash flows projections.

In 2019

GGR

Increasing oil and gas prices have significantly improved the profitability and cash flows within customer base, which should lead to an improved market for GGR. However, most large clients have publicly stated that they will maintain tight spending discipline and structure their companies to generate cash flows and returns at commodity prices lower than today's prices. Many customers are focusing their exploration and production budgets on increasing production from current installations. GGR participates in and benefits from this activity through our leading 4D and ocean bottom nodes processing, and through sales of licenses to our multi-client surveys, covering these mature areas.

We believe that our strategy based on high-end technology, services and data that support our clients' reservoir development and production optimization efforts should allow us to navigate more favorably through cycles, close to our customers.

In such an environment we plan to:

- increase our investment in new multi-client surveys from the relatively low level of 2019 while maintain acceptable levels of pre-funding and returns;
- continue to invest in research and development, people, and computer equipment to maintain our lead in high-end imaging and advance our software offering.

The capital employed of the Multi-Client cash generating unit amounts to US$707 million as of December 31, 2019, including US$284 million of goodwill.

The capital employed of the Geoscience cash generating units amounted to US$1,005 million as of December 31, 2019, including US$748 million of goodwill.

No impairment of goodwill was recognized in 2019.

Equipment

The worldwide demand for geophysical equipment increased by 30% in terms of revenues in 2019 after an increase of 50% in 2018. The demand in land seismic equipment should sustain the growth going forward while the marine streamer market should remain at a very low level, with the demand for seabed equipment driving the growth in demand, which should remain limited. The marine contractors should indeed continue to face a difficult market, restricting their ability to invest in new equipment. However, their current fleets are aging and their excess of equipments generated by the stacking of vessels is shrinking.

We believe that technology should remain the principal competitive advantage, as oil and gas companies have increasingly demanded new equipment for activities such as reservoir management and data acquisition in difficult terrain. Oil and gas companies have also become more demanding with regard to the quality of data acquired. Other competitive factors include price and customer support services.

In this environment, and notably considering its important installed base, Sercel believes that it should maintain its leading position in the seismic equipment market by capitalizing on growth opportunities resulting from the strength of its current product range, the application of new technologies in all of its products as well as from its diversified geographical presence.

The capital employed of the Equipment cash generating unit amounted to US$490 million as of December 31, 2019, including US$175 million of goodwill.

No impairment of goodwill was recognized in 2019.

In 2018

The capital employed of the Multi-Client cash generating unit amounts to US$876 million as of December 31, 2018, including US$284 million of goodwill.

The capital employed of the Subsurface Imaging and Reservoir cash generating units amounted to US$1,151 million as of December 31, 2018, including US$771 million of goodwill.

The capital employed of the Equipment cash generating unit amounted to US$534 million as of December 31, 2018, including US$174 million of goodwill.

No impairment of goodwill was recognized in 2018.

Sensitivity to changes in assumptions

Changing the assumptions selected by Group management, in particular the discount rate and the normative cash flows (based on EBITDAs – see definition in note 20) could significantly affect the evaluation of the value in use of our cash generating units and, hence, the Group's impairment test result. The profile of the business cycle could affect, to a lesser extent compared to the two previous assumptions, the evaluation of the value in use of our cash generating units.

The following changes to the assumptions used in the impairment test lead to the following:

In millions of US$	Goodwill	Excess of the expected future Discounted cash flows over the carrying value of assets including goodwill	Sensitivity on 2021 cash flows		Sensitivity on normative cash flows		Sensitivity on discount rate (after tax)	
			Decrease by 10%	Increase by 10%	Decrease by 10%	Increase by 10%	Decrease by 0.25bps	Increase by 0.25bps
CGU Multi-Client	284	910	(12)	+12	(128)	+128	+58	(54)
CGUs in Geoscience	748	426	(8)	+8	(119)	+119	+54	(50)
CGU Equipment	175	591	(3)	+3	(102)	+102	+41	(39)
TOTAL	**1,207**							

Note 12 Other current liabilities

In millions of US$	December 31, 2019	2018
Value added tax and other taxes payable	40.8	45.3
Deferred revenue	280.7	199.9
Fair value of financial instruments (see note 14)	0.1	0.3
Other liabilities	5.7	5.4
OTHER CURRENT LIABILITIES	**327.3**	**250.9**

Note 13 Financial debt

Gross financial debt as of December 31, 2019 was US$1,326.0 million compared to US$1,166.7 million as of December 31, 2018.

The breakdown of our gross debt is as follows as of December 2019:

	December 31,					
	2019			2018		
In millions of US$	Current	Non-current	Total	Current	Non-current	Total
New First lien senior secured notes due 2023	–	614.5	614.5	–	620.6	620.6
Second lien senior secured notes due 2024 (including PIK)[(a)]	–	520.8	520.8	–	480.7	480.7
Bank loans and other loans	0.0	3.3	3.3	0.4	3.0	3.4
Lease liabilities	47.5	128.0	175.5	5.4	44.6	50.0
Sub-total	**47.5**	**1,266.6**	**1,314.1**	**5.8**	**1,148.9**	**1,154.7**
Accrued interests	11.9	–	11.9	12.0	–	12.0
Financial debt	**59.4**	**1,266.6**	**1,326.0**	**17.8**	**1,148.9**	**1,166.7**
Bank overdrafts	–	–	–	–	–	–
TOTAL	**59.4**	**1,266.6**	**1,326.0**	**17.8**	**1,148.9**	**1,166.7**

(a) PIK: payment-in-kind interest.

Changes in liabilities arising from financing activities

In the frame of IFRS 16 adoption, the Group has recognized from the identified operating lease commitments, for continuing operations, a discounted lease liability of $US146 million on January 1, 2019. It is worth noting that the debt related to vessels leases with our GSS joint-venture and some assets related to the Multi-physics business lines are classified as "Liabilities directly associated with the assets classified as held for sale" according to IFRS 5.

In 2018, CGG finalized the implementation of its financial restructuring plan and the refinancing of the first lien secured note due 2023. *See note 2 for further details.*

	December 31,	December 31,
In millions of US$	2019	2018
Balance at beginning of period	**1,166.7**	**2,955.1**
First time application of IFRS 16 at January 1, 2019	146.0	
Decrease in long term debts	(0.4)	(195.9)
Increase in long term debts	–	336.5
Lease repayments	(56.9)	(5.7)
Financial interests paid	(80.5)	(73.2)
Total cash flows	(137.8)	61.7
Cost of financial debt, net	131.7	127.4
Increase in lease liabilities	33.5	–
Unsecured debt equitization (see note 2)	–	(1,992.7)
Commitment fees on 1st lien and 2nd lien (see note 2)	–	57.9
Change in exchange rates	(8.3)	(34.3)
Other	(5.8)	(8.4)
BALANCE AT END OF PERIOD	**1,326.0**	**1,166.7**

Financial debt by financing sources

	Issuing date	Maturity	Nominal amount 12.31.2019 *(in millions of currency)*	Net balance 12.31.2019 *(in MUS$)*	Interest rate
New First lien secured notes due 2023	2018	2023	€280.0	314.5	7.875%
New First lien secured notes due 2023	2018	2023	US$300.0	300.0	9.0%
Sub-total New First lien				**614.5**	
Second lien secured notes due 2024	2018	2024	€80.4	90.3	Euribor 3M + 4% in cash, + 8.5% PIK
Second lien secured notes due 2024	2018	2024	US$355.1	355.1	Libor 3M + 4% in cash, + 8.5% PIK
PIK Second lien secured notes due 2024[(a)]	–	–	–	75.4	Same as principal amount
Sub-total Second lien				**520.8**	
Other loans	–	–	–	3.3	–
Sub-total bank loans and other loans				**3.3**	
Sub-total Lease liabilities				**175.5**	
TOTAL FINANCIAL DEBT, EXCLUDING ACCRUED INTERESTS AND BANK OVERDRAFTS				**1,314.1**	

(a) PIK: payment-in-kind interests.

Financial debt by currency

	December 31,	
In millions of US$	**2019**	2018
USD	802.8	682.8
EUR	475.1	471.9
GBP	11.7	
AUD	5.5	
CAD	5.3	
NOK	4.4	
SGD	3.2	
RUB	1.0	
Other	5.1	
TOTAL FINANCIAL DEBT, EXCLUDING ACCRUED INTERESTS AND BANK OVERDRAFTS	**1,314.1**	**1,154.7**

Financial debt by interest rate

	December 31,	
In millions of US$	**2019**	2018
Variable rates (average effective rate December 31, 2019: 13.39%, 2018: 14.37%)	520.8	480.7
Fixed rates (average effective rate December 31, 2019: 7.97%, 2018: 8.08%)	793.3	674.0
TOTAL FINANCIAL DEBT, EXCLUDING ACCRUED INTERESTS AND BANK OVERDRAFTS	**1,314.1**	**1,154.7**

Variable interest rates are generally based on inter-bank offered rates of the related currency.

New First lien secured notes due 2023

The outstanding value at December 31, 2019, is US$614.6 million.

These New First Lien Notes represented at issuance a total principal amount of US$645 million (using an exchange rate of $1.2323 per €1.00) at a weighted average coupon of 8.40%.

CGG Holding (US) Inc. used the net proceeds from the issuance, together with cash on hand, to redeem the Refinanced First Lien Notes in full on May 9, 2018 in accordance with their terms.

The New First Lien Notes and the second lien senior secured notes due 2024 share the same security package encompassing notably the US Multi-Client Library, the shares of the main Sercel operating entities (Sercel SAS and Sercel Inc.), the shares of significant GGR operating entities, and certain intercompany loans.

Second lien senior secured notes due 2024

The outstanding value at December 31, 2019, is US$520.8 million.

On February 21, 2018, CGG SA issued US$355.1 million and €80.4 million in principal amount of second lien senior secured notes due 2024 (US$480.7 million as of December 31, 2018, including the paid-in-kind (PIK) from February 21, 2018 to December 31, 2018 and converted at the December 31, 2018 exchange rate of US$1.1450 per €1.00), bearing floating rate interest at Libor/Euribor (floor of 1%) depending on the currency + 4% in cash, and 8.5% PIK. This issuance comprises US$275 million and €80.4 million as new money and US$80.2 million in exchange for part of the accrued interest claims under the Senior Notes (with the US$ new money notes and accrued interest notes being fungible).

The New First Lien Notes due 2023 and the second lien senior secured notes due 2024 share the same security package encompassing notably the US Multi-Client Library, the shares of the main Sercel operating entities (Sercel SAS and Sercel Inc.), the shares of significant GGR operating entities, and certain intercompany loans.

Other Loan

As part of the financial restructuring plan, each Senior Noteholder was offered the option for the Accrued Senior Note Interest claim computed as at October 31, 2017 to (i) subscribe on a pro rata basis to their interest claim for New Second lien senior secured notes due 2024 for a global maximum amount of US$86 million, or to (ii) retain its claim in respect of Accrued Senior Note Interest amended as follow:

(a) maturity extended by 10 years

(b) rescheduling of payments as follows:

(i) 1% p.a. in Y1 to Y2 from December 1st, 2017,

(ii) 5% p.a. in Y3 to Y9, and

(iii) 63% in Y10;

(c) existing guarantee package released (in accordance with “Chapter 11” proceedings);

(d) for the avoidance of doubt, does not benefit from the security and guarantee package granted in respect of the Second Lien Notes.

A portion of equivalent US$5.7 million didn’t choose the option (i), and was therefore rescheduled following the payment terms above, this amount is presented on a discounted basis in the CGG accounts. The outstanding value of this loan at December 31, 2019, is US$3.2 million.

Note 14 Financial instruments

Because we operate internationally, we are exposed to general risks linked to operating abroad. Our major market risk exposures are changing interest rates and currency fluctuations. We do not enter into or trade financial instruments including derivative financial instruments for speculative purposes. Please also refer to Chapter 2 of our annual report for qualitative information.

Foreign currency risk management

As a company that derives a substantial amount of its revenue from sales internationally, we are subject to risks relating to fluctuations in currency exchange rates. Our revenues and expenses are mainly denominated in US dollars and euros, and to a significantly lesser extent, in Canadian dollars, Mexican pesos, Brazilian reals, Australian dollars, Norwegian kroner, British pounds and Chinese yuan.

Foreign currency sensitivity analysis

Fluctuations in the exchange rate of other currencies, particularly the euro, against the US dollar, have had in the past and will have in the future a significant effect upon our results of operations. We manage our balance sheet exposures (including debt exposure) by maintaining our monetary assets and liabilities in the same currency to the extent practicable and rebalances through spot and forward currency sales or equity purchases or transactions. Although we attempt to reduce the risks associated with exchange rate fluctuations, the fluctuations in the values of the currencies in which we operate may materially adversely affect our future results of operations.

As of December 31, 2019, we estimate our annual fixed needs in euros to be approximately €250 million and as a result, an unfavorable variation of US$0.10 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$25 million.

The following table shows our exchange rate exposure as of December 31, 2019:

	As of December 31, 2019					
	Assets	Liabilities	Currency commitments	Net position before hedging	Forward contracts applied	Net position after hedging
Converted in millions of US$	(a)	(b)	(c)	(d) = (a) – (b) ± (c)	(e)	(f) = (d) + (e)
US$[(a)]	897.4	1,218.3	–	(320.9)	–	(320.9)
EUR[(b)]	134.4	433.6	–	(299.2)	–	(299.2)
US$[(c)]	2.5	(8.9)	–	11.4	2.3	13.7
BRL[(d)]	11.1	–	–	11.1	–	11.1

(a) US$-denominated assets and liabilities in the entities whose functional currency is the euro.
(b) Euro-denominated assets and liabilities in the entities whose functional currency is the US$.
(c) US$-denominated assets and liabilities in the entities whose functional currency is the Brazilian real.
(d) BRL-denominated assets and liabilities in the entities whose functional currency is the US$.

"Gross financial debt" is the amount of bank overdrafts, plus current portion of financial debt, plus financial debt, and "net financial debt" is gross financial debt less cash and cash equivalents. Net financial debt is presented as additional information because we understand that certain investors believe that netting cash against debt provides a clearer picture of our financial liability exposure. However, other companies may present net financial debt differently than we do. Net financial debt is not a measure of financial performance under IFRS and should not be considered as an alternative to any other measures of performance derived in accordance with IFRS.

Our financial debt is partly denominated in euro and converted in US dollars at the closing exchange rate. As of December 31, 2019, our US$716 million of net financial debt included a part of debt denominated in euro of €217 million based on the closing exchange rate of US$1.1233.

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$22 million.

Foreign forward exchange contracts

Forward exchange transactions are aimed at hedging future cash flows against rate fluctuation in relation with awarded commercial contracts. Usually these foreign forward exchange contracts maturity is less than one year.

We do not enter into forward foreign currency exchange contracts for trading purpose.

As of December 31, 2019, contracts were outstanding for the US dollar equivalent of US$10.8 million (of which US$2.6 million were applied), of which US$7.5 million against euros, US$2.4 million against Brazilian reals, and US$0.9 million against Chinese yuan.

Effects of forward exchange contracts on financial statements are as follows:

	December 31,	
In millions of US$	2019	2018
Carrying value of forward exchange contracts (see notes 4 and 12)	(0.1)	(0.3)
Gains (losses) recognized in profit and loss (see note 22)	(0.2)	(0.8)
Gains (losses) recognized directly in equity	0.2	(0.1)

Interest rate risk management

We are subject to interest rate risk on our floating rate debt and when we refinance any of our debt. As of December 31, 2019, we had US$521 million of debt, under our second lien notes, bearing variable interest, and an increase of one percentage point in the applicable three-month interest rate would have had a negative impact on our net results before taxes of US$5.2 million. Our second lien notes are subjects to paid-in-kind (PIK) interests at a fixed rate of 8.5%. As a result, the principal amount increases each period and as such, the variable component of interest is paid on an increasing amount each period. Changes in the monetary policies of the US Federal Reserve and the European Central Bank, developments in financial markets and changes in our perceived credit quality may increase our financing costs and consequently adversely impact our ability to refinance our indebtedness, which could have a negative impact on our business, liquidity, results of operations and financial condition. We aim at having medium-term fixed rates debts.

Interest rate sensitivity analysis

The following table shows our variable interest rate exposure by maturity as of December 31, 2019.

	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)	
12.31.2019 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	117	89	47	–	70	89	–	–	70	89
1 to 2 years	–	–	55	–	(55)	–	–	–	(55)	–
3 to 5 years	–	–	675	521	(675)	(521)	–	–	(675)	(521)
More than 5 years	–	–	16	–	(16)	–	–	–	(16)	–
TOTAL	**117**	**89**	**793**	**521**	**(676)**	**(432)**	**–**	**–**	**(676)**	**(432)**

* *Excluding bank overdrafts and accrued interest.*

Our sources of liquidity include debt securities which are or may be subject to variable interest rates. As a result, our interest expenses could increase if short-term interests' rates increase. The sensitivity analysis is based on a net liability exposure of US$432 million. Our variable interest rate indebtedness carried an average interest rate of 13.4% in 2019. Each 100 basis points increase would increase our interest expenses by US$4.3 million per year and each 100 basis point decrease in this rate would decrease our interest expenses by US$4.3 million per year.

Commercial and counterparty risk

Our receivables and investments do not represent a significant concentration of credit risk due to the wide variety of markets in which we sell our services and products. Nevertheless, some of our clients are National Oil Companies, which can lead to longer payment terms and expose us to political risk. Finally, in relation with our international operations, we operate with a wide network of banks and are subject to counterparty risks.

While we seek to reduce commercial risk by monitoring our customer credit profile, in 2019, our two most significant customers accounted for 6.7% and 6.5% of our consolidated revenues, compared with 7.1% and 6.3% in 2018. The loss of any of our significant customers or deterioration in our relations with any of them could affect our business, results of operations and financial condition.

Liquidity risk management

Our principal financing needs are the funding of ongoing operations and capital expenditures, investments in our multi-client data library, the funding of restructuring measures relating to the "CGG 2021 plan" and of our debt services obligations. We do not have any major debt repayment scheduled before the 2023, the maturity date of our first lien notes. We intend to fund our capital requirements through cash generated by operations and liquidity on hand. In the past we have obtained financing through bank borrowings, capital increases and issuances of debt and equity-linked securities.

Our ability to make scheduled payments of principal, or to pay the interest or additional amounts, if any, or to refinance our indebtedness, or to fund planned capital expenditures will depend on our future performance, which, to a certain extent, is subject to general economic, financial, competitive, legislative, regulatory and other factors that are beyond our control.

Financial instruments by categories in the Statement of financial position

The impact and the breakdown of the Group's financial instruments in the statement of financial position as of December 31, 2019 are as follows:

	December 31, 2019						
In millions of US$	**Fair value hierarchy[(a)]**	**Carrying Amount**	**Fair Value**	**Fair value in income statement**	**Loans, receivables**	**Debts at amortized cost**	**Derivatives**
Non-consolidated investments	Level 3	1.1	1.1	1.1	–	–	–
Financial and non-current assets	Level 3	26.3	26.3	–	26.3	–	–
Notes receivable	Level 3	436.0	436.0	–	436.0	–	–
Financial instruments	Level 2	–	–	–	–	–	–
TOTAL ASSETS		**463.4**	**463.4**	**1.1**	**462.3**	**–**	**–**
Financial debts (see note 13)	Level 1	1,314.1	1,433.0	–	–	1,433.0	–
Bank overdraft facilities	Level 2	0.0	0.0	0.0	–	–	–
Notes payable	Level 3	117.4	117.4	–	117.4	–	–
Financial instruments	Level 2	0.1	0.1		–	–	0.1
TOTAL LIABILITIES		**1,431.6**	**1,550.5**	**0.0**	**117.4**	**1,433.0**	**0.1**

(a) Level 1 – Quoted (unadjusted) market prices in active markets for identical assets or liabilities.
Level 2 – Valuation techniques for which the lowest level input that is significant to the fair value measurement is directly or indirectly observable.
Level 3 – Valuation techniques for which the lowest level input that is significant to the fair value measurement is unobservable.

There was no change of fair value hierarchy in 2019 compared to previous years.

Due to their short maturities, the fair value of cash, cash equivalents, trade receivables and trade payables is considered as being equivalent to carrying value.

As of December 31, 2019:

- the **New First lien notes due 2023** in US dollars currency were traded at a price reflecting a discount of 106.0% of their nominal value;
- the **New First lien notes due 2023** in Euro currency were traded at a price reflecting a discount of 106.3% of their nominal value;
- the **Second lien senior secured notes due 2024** in US dollars currency were traded at a price reflecting a discount of 115.9% of their nominal value;
- the **Second lien senior secured notes due 2024** in Euro currency were traded at a price reflecting a discount of 114.5% of their nominal value.

Note 15 Common stock and stock option plans

The Company's share capital at December 31, 2019 consisted of 709,956,358 shares, each with a nominal value of €0.01 and 709,944,816 as of December 31, 2018 with a nominal value of €0.01.

Rights and privileges related to ordinary shares

Ordinary shares give right to dividend. Ordinary shares registered held for more than two years give a double voting right.

Dividends may be distributed from the statutory retained earnings, subject to the requirements of French law and the Company's articles of incorporation.

Retained earnings available for distribution amounted to €1,855.2 million (US$2,084.0 million) at December 31, 2019. We did not pay any dividend during the years ended December 31, 2019 and 2018.

Common stock in 2019

Common stock operations for 2019 result from the exercise of warrants for 9.504 shares and stock options for 2.038 shares.

Common stock in 2018

Common stock operations for 2018 were:

- a reduction of the nominal value of each share from €0.80 to €0.01 (refer to note 2“Significant events” for more information),
- the issuance on February 21, 2018 of (refer to note 2 “Significant events” for more information):
  - 71,932,731 shares of the Company (the “New Shares”) each with one share purchase warrant (the “Warrants #2” and together with the New Shares, the “ABSA”), all of which were subscribed by holders of preferential subscription rights. The final gross proceeds amounted to €112 million,
  - 35,311,528 new shares (the “Creditor Shares 1”) resulting from the equitization of the Convertible Bonds,
  - 449,197,594 new shares (the “Creditor Shares 2”) resulting from the equitization of the Senior Notes,
  - 22,133,149 warrants allocated to the shareholders of CGG (the “Warrants #1”),
  - 113,585,276 warrants in favor of the subscribers to the Second Lien Notes (the “Warrants #3”);
  - 7,099,079 warrants allocated to the members of the *Ad Hoc* Committee of holders of Senior Notes (the “Coordination Warrants”);
  - 10,648,619 warrants allocated to the members of the *Ad Hoc* Committee of holders of Senior Notes (the “Backstop Warrants”).

Following the issuance of New Shares, Creditor Shares 1 and Creditor Shares 2, the Company's share capital as of February 21, 2018 amounted to €5,785,750.02, divided into 578,575,002 shares with a nominal value of €0.01 per share.

The exercise of warrants between February 21, 2018 and December 31, 2018 is as follows:

	Warrants #1	Warrants #2	Warrants #3	Coordination Warrants	Backstop Warrants
Number of warrants issued	22,133,149	71,932,731	113,585,276	7,099,079	10,648,619
Number of warrants exercised or lapsed	32,590	33,696	113,585,276	7,099,079	10,648,619
Number of warrants remaining	22,100,559	71,899,035	0	0	0
Exercise ratio	3 Warrants #1 for 4 new shares	3 Warrants #2 for 2 new shares	1 Warrant #3 for 1 new share	1 Coordination Warrant for 1 new share	1 Backstop Warrant for 1 new share
Exercise price	€3.12 per new share	€4.02 per new share	€0.01 per new share	€0.01 per new share	€0.01 per new share
Maximum number of shares to be issued upon exercise of the warrants (subject to adjustments)	29,477,536[(a)]	47,955,154	113,585,276	7,099,079	10,648,619
Number of shares issued	43,452	22,464	113,556,200	7,099,079	10,648,619
Number of shares to be issued	29,434,084	47,932,690	0	0	0
Expiry date of the warrants	February 21, 2022	February 21, 2023	August 21, 2018	August 21, 2018	August 21, 2018

(a) *The 24,996 Warrants #1 allocated to the Company in connection with the treasury shares were cancelled.*

Stock options

Pursuant to various resolutions adopted by the Board of Directors, the Group has granted options to purchase Ordinary Shares to certain employees, Executive Officers and directors of the Group.

The detail of the beneficiaries and performance conditions for the plans before 2016 are not disclosed below as the expense is not significant in the consolidation statement. Details regarding the adjustments of the number of option are not presented for these aforementioned plans.

On June 23, 2016, the Board of Directors allocated:

- 4,126,368 options to certain employees. Their exercise price is €0.68. The options vest in three batches, in June 2018 (for 50% of the options allocated), June 2019 (for 25% of the options allocated) and June 2020 (for 25% of the options allocated). The options have an eight-year duration;
- 882,400 options to the Chief Executive Officer and 444,000 to each of the Corporate Officers. Their exercise price is €0.68. The options vest in three batches, in June 2018 (for 50% of the options allocated), June 2019 (for 25% of the options allocated) and June 2020 (for 25% of the options allocated). The options have an eight-year duration. Such vesting is subject to performance conditions based on the fulfillment of the following objectives:
  - a share price performance objective relative to the share price considering the SBF 120 index,
  - a share price performance objective relative to the ADS price considering the PHLX Oil Service Sector^{SM} (OSX^{SM}) index,
  - a financial indicator in the form of an EBITDAs objective expressed in US dollars and related to the target for the annual variable part of compensation of the Chief Executive Officer and Corporate Officers,
  - a share price performance objective relative to the share price increase over the vesting period;
- 318,080 options to the other Corporate Committee members. Their exercise price is €0.68. The options vest in three batches, in June 2018 (for 50% of the options allocated), June 2019 (for 25% of the options allocated) and June 2020 (for 25% of the options allocated). The options have an eight-year duration. Such vesting is subject to performance conditions based on the fulfillment of the following objectives:
  - a share price performance objective relative to the share price considering the SBF 120 index,
  - a share price performance objective relative to the ADS price considering the PHLX Oil Service Sector^{SM} (OSX^{SM}) index,
  - a financial indicator in the form of an EBITDAs objective expressed in US dollars and related to the target for the annual variable part of compensation of the Corporate Committee members,
  - a share price performance objective relative to the share price increase over the vesting period.

The exercise price of each option is the average market value of the share during the twenty-day period ending the day before the date the option is allocated.

On June 27, 2018, the Board of Directors allocated:

- 732,558 options to the Chief Executive Officer. Their exercise price is €2.15. The options vest in four batches, in June 2019 (for 25% of the options allocated), June 2020 (for 25% of the options allocated), June 2021 (for 25% of the options allocated) and June 2022 (for 25% of the options allocated). Such vesting is subject to performance condition related to CGG share price. The options have an eight-year duration;
- 1,141,088 options to the Executive Leadership members. Their exercise price is €2.15. The options vest in four batches, in June 2019 (for 25% of the options allocated), June 2020 (for 25% of the options allocated), June 2021 (for 25% of the options allocated) and June 2022 (for 25% of the options allocated). Such vesting is subject to performance conditions related to CGG share price. The options have an eight-year duration;
- 4,670,743 options to certain employees. Their exercise price is €2.15. The options vest in four batches, in June 2019 (for 25% of the options allocated), June 2020 (for 25% of the options allocated), June 2021 (for 25% of the options allocated) and June 2022 (for 25% of the options allocated). The options have an eight-year duration.

The exercise price of each option is the average market value of the share during the twenty-day period ending the day before the date the option is allocated.

On December 11, 2018, the Board of Directors allocated:

- 671,171 options to the Executive Leadership members. Their exercise price is €1.39. The options vest in four batches, in June 2019 (for 25% of the options allocated), June 2020 (for 25% of the options allocated), June 2021 (for 25% of the options allocated) and June 2022 (for 25% of the options allocated). Such vesting is subject to performance conditions related to CGG share price. The options have a seven-year and 7 months duration.

On June 27, 2019 and November 5, 2019, the Board of Directors allocated:

- 360,000 options to the Chief Executive Officer. Their exercise price is €1.52. The options vest in one batch in June 2022. Such vesting is subject to performance condition related to CGG share price. The options have an eight-year duration;
- 851,330 options to the Executive Leadership members. Their exercise price is €1.52. The options vest in two batches, in June 2021 (for 50% of the options allocated) and June 2022 (for 50% of the options allocated). Such vesting is subject to performance conditions related to CGG share price. The options have an eight-year duration;
- 1,062,190 options to certain employees. Their exercise price is €1.52. The options vest in two batches, in June 2021 (for 50% of the options allocated) and June 2022 (for 50% of the options allocated). The options have an eight-year duration.

The exercise price of each option is the average market value of the share during the twenty-day period ending the day before the date the option is allocated.

Information related to options outstanding at December 31, 2019 is summarized below:

Date of Board of Directors' Resolution	Options granted	Options granted after capital operations[(a)]	Options outstanding at Dec. 31, 2019[(b)(c)]	Exercise price per share *(in €)*[(b)(c)]	Expiration date	Remaining duration
June 26, 2012 to June 25, 2015	6,478,932	625,901	275,135	62.92-186.62	June 26, 2020 to June 25, 2023	5.9 to 41.1 months
June 23, 2016	6,658,848	531,281	288,665	8.52	June 23, 2024	53.8 months
June 28, 2018	6,544,389	6,544,389	5,705,070	2.15	June 28, 2026	78 months
December 11, 2018	671,171	671,171	637,612	1.39	June 28, 2026	78 months
June 27, 2019 & November 5,2019	2,273,520	2,273,520	2,264,990	1.52	June 27, 2027	89.9 months
TOTAL	**22,626,860**	**10,646,262**	**9,171,472**			

(a) *Options granted adjusted following 2012, 2016 and 2018 capital increases and 2016 reverse split.*
(b) *Following the reverse split in July 2016, the stock options were adjusted as follows:*
(c) *Following the capital increase in February 2018, the stock options were adjusted as follows:*

Date of stock options	Adjustment of number of options as of July 20, 2016	Exercise price before adjustment per share *(in €)*	Adjusted exercise price per share *(in €)*
June 23, 2016	208,089	0.68	21.76

Date of stock options	Adjustment of number of options as of February 21, 2018	Exercise price before adjustment per share *(in €)*	Adjusted exercise price per share *(in €)*
June 23, 2016	471,856	21.76	8.52

A summary of the Company's stock option activity, and related information for the years ended December 31, 2019 follows:

weighted average exercise price in €	**2019**		2018	
	Number of options	**Weighted average exercise price**	Number of options	Weighted average exercise price
Outstanding-beginning of year	**7,460,676**	**10.52**	**424,383**	**239.72**
Granted	2,273,520	1.52	7,215,560	2.08
Adjustments followings the reverse split	–	–	–	–
Adjustments followings the capital increase	–	–	567,078	199.14
Exercised	(2,038)	2.15	–	–
Forfeited	(560,686)	48.16	(746,345)	30.73
Outstanding-end of year	**9,171,472**	**5.99**	**7,460,676**	**10.52**
Exercisable-end of year	2,077,304	19.76	530,459	116.19

The average price of CGG share was €1.72 in 2019 and €1.94 in 2018, after adjustment following the reverse stock split and the capital increase in 2018.

Performance units

Allocation plan dated June 23, 2016

On June 23, 2016, the Board of Directors implemented a performance units plan for a maximum amount of 2,566,880 performance units out of which 108,960 were allocated to the Chief Executive Officer, 49,600 were allocated to each of the Corporate Officers, 39,680 were allocated to the other Corporate Committee members and 2,269,440 were allocated to certain employees.

The performance units vest upon the expiry of a three-year period from the vesting date subject to a presence condition in the Group at the time of vesting and achievement of certain performance conditions. These performance conditions are based on the achievement of Group objectives related to the return on capital employed and statement of financial position structure along with achievement of the segments' financial objectives aligned with the Group strategic orientations over a three-year period.

The number of vested 2016 performance units is determined upon achievement of the Group objectives up to 60% of the global allocation. The balance will be acquired based on the achievement of the segments' objectives.

The valuation of each vested 2016 performance unit shall be equal to the average closing prices of the CGG share on Euronext over the five trading days prior to the vesting date. The vested performance units will be paid half in cash and half in existing CGG shares.

Allocation plan dated June 27, 2018

On June 27, 2018, the Board of Directors allocated 157,500 performance shares to the Chief Executive Officer, 242,841 performance shares to the Executive Leadership members, and 2,708,180 performance shares to certain employees.

The performance shares vest in two batches, in June 2020 (for 50% of the shares allocated) and June 2021 (for 50% of the shares allocated). The end of the acquisition period for the first batch of these performance shares is set at the latest of the two following dates: June 27, 2020 or the date of the Annual Shareholders' Meeting convened to approve the financial statements for fiscal year 2019, provided that the Board of Directors decides that the performance conditions set forth in the plan regulation have been fulfilled. The end of the acquisition period for the second batch of these performance shares is set at the latest of the two following dates: June 27, 2021 or the date of the Annual Shareholders' Meeting convened to approve the financial statements for fiscal year 2020, provided that the Board of Directors decides that the performance conditions set forth in the plan regulation have been fulfilled.

Allocation plan dated December 11, 2018

On December 11, 2018, the Board of Directors allocated 132,821 performance shares to the Executive Leadership members.

The performance shares vest in two batches, in June 2020 (for 50% of the shares allocated) and June 2021 (for 50% of the shares allocated). The end of the acquisition period for the first batch of these performance shares is set at the latest of the two following dates: June 27, 2020 or the date of the Annual Shareholders' Meeting convened to approve the financial statements for fiscal year 2019, provided that the Board of Directors decides that the performance conditions set forth in the plan regulation have been fulfilled. The end of the acquisition period for the second batch of these performance shares is set at the latest of the two following dates: June 27, 2021 or the date of the Annual Shareholders' Meeting convened to approve the financial statements for fiscal year 2020, provided that the Board of Directors decides that the performance conditions set forth in the plan regulation have been fulfilled.

Allocation plan dated June 27, 2019

On June 27, 2019, the Board of Directors allocated 220,000 performance shares to the Chief Executive Officer, 518,660 performance shares to the Executive Leadership members, and 1,269,060 performance shares to certain employees.

The performance shares vest in two batches, in June 2021 (for 50% of the shares allocated) and June 2022 (for 50% of the shares allocated). The end of the acquisition period for the first batch of these performance shares is set at the latest of the two following dates: June 27, 2021 or the date of the Annual Shareholders' Meeting convened to approve the financial statements for fiscal year 2020, provided that the Board of Directors decides that the performance conditions set forth in the plan regulation have been fulfilled. The end of the acquisition period for the second batch of these performance shares is set at the latest of the two following dates: June 27, 2022 or the date of the Annual Shareholders' Meeting convened to approve the financial statements for fiscal year 2021, provided that the Board of Directors decides that the performance conditions set forth in the plan regulation have been fulfilled.

Compensation cost on stock options, performance shares and units

The following table lists the assumptions used to value the 2016, 2018 and 2019 options plans, the 2016, 2018 and 2019 performance units allocation plan according to IFRS 2, and the resulting fair values. The other previous plans have a non-significant impact on the IFRS 2 expense. The Group uses the Black & Scholes model. Dividend yield used is nil for all plans.

	Options granted	Volatility[(a)]	Risk-free rate	Exercise price per share *(in €)*	Estimated Maturity *(in years)*	Fair value per share at the grant date *(in €)*	Total cost *(in millions of €)*
2016 stock options plan	6,658,848	47%	(0.31)%	8.52	4	0.23	1.5
June 2018 stock options plan	6,544,389	56%	0%	2.15	2.5	0.63	4.1
December 2018 stock options plan	671,171	56%	0%	1.39	2.5	0.57	0.4
June 2019 stock options plan	2,273,520	57%	0%	1.52	2.5	0.50	1.1

	Performance shares granted	performance Conditions[(b)]	Fair value per share at the grant date *(in €)*[(c)]	Total cost *(in millions of €)*
2016 performance units allocation plan	2,566,880	0%	0.67	1.7
June 2018 performance units allocation plan	3,108,521	100%	2.15	6.7
December 2018 performance units allocation plan	132,821	100%	1.39	0.2
June 2019 performance units allocation plan	2,007,720	100%	1.52	3.1

(a) Corresponds to the average of restated historical volatility and implied volatility.
(b) Estimated.
(c) Corresponds to CGG share price at the date of allocation.

According to IFRS 2, fair value of stock options and performance shares and units must be recognized as an expense over the life of the plan. All plans are equity-settled, and thus are booked through equity. Detail of these expenses by year is as follows:

	IFRS 2 expense		Of which for the executive managers of the Group	
In millions of US$	**2019**	2018	**2019**	2018
2014 stock options plan	–	0.1	–	–
2015 stock options plan	0.0	0.1	0.0	–
2016 stock options plan	0.0	0.2	0.0	0.1
2018 stock options plans	1.7	0.9	0.7	0.3
2019 stock options plans	0.3	–	0.1	–
2016 performance units plan – paid in shares	–	(0.2)	–	–
2018 performance units plans – paid in shares	3.2	1.4	0.5	0.2
2019 performance units plan – paid in shares	0.8	–	0.3	–
RECOGNIZED EXPENSE FROM EQUITY-SETTLED SHARE BASED PAYMENT TRANSACTIONS	**6.0**	**2.5**	**1.6**	**0.6**

Note 16 Provisions

	31 December, 2019					
In millions of US$	Balance at beginning of year	Additions	Deductions (used)	Deductions (unused)	Others[a]	**Balance at end of period**
Provisions for restructuring costs	123.9	5.8	(95.6)	(1.0)	(0.5)	32.6
Provisions for onerous contracts	31.1	0.4	(32.3)	(2.5)	5.1	1.8
Provisions for litigations	4.4	0.2	(0.4)	–	(3.5)	0.7
Other provisions related to contracts	13.0	4.9	(2.3)	–	(0.7)	14.9
Total current provisions	**172.4**	**11.3**	**(130.6)**	**(3.5)**	**0.4**	**50.0**
Provisions for cash-settled share-based payment arrangements (see note 15)[b]	0.3	0.8	–	–	–	1.1
Retirement indemnity provisions	36.2	2.3	(6.9)	(0.3)	8.7	40.0
Provisions for tax contingencies[c]	9.2	–	(0.1)	–	(8.9)	0.2
Provisions for onerous contracts	12.7	0.2	–	–	(11.9)	1.0
Customers Guarantee provisions	2.5	2.8	(2.6)	–	–	2.7
Provisions for customs and other contingencies	35.0	2.8	(24.1)	–	(0.6)	13.1
Total non-current provisions	**95.9**	**8.9**	**(33.7)**	**(0.3)**	**(12.7)**	**58.1**
TOTAL PROVISIONS	**268.3**	**20.2**	**(164.3)**	**(3.8)**	**(12.3)**	**108.1**

(a) *Includes the effects of exchange rates changes, variations in scope (see note 2), IFRS 16 first adoption and IFRIC 23, reclassification, and gain (loss) on actuarial changes.*
(b) *Cash-settled linked to social charges.*
(c) *A reclassification to tax liabilities has been done for an amount of US$12 million (US$3.5 million provisions on litigations and US$8.9 million on provision for tax contingencies) as of January 1, 2019 (IFRIC 23).*

Provision for restructuring costs

In 2019, the Group used US$(95.6) million of the provision for restructuring costs and facilities exit costs recognized last year.

In 2018, the Group recognized provisions for restructuring costs as part of our Group CGG 2021. They mainly included redundancy costs and facilities exit costs (see note 5 and note 22).

Provision for onerous contract (current and non-current)

In 2019, the variance on provisions for onerous contracts is due to the redelivery of 3 cold-stacked vessels (mainly Champion vessel).

In 2018, we recognized additional provisions for onerous contracts following Group decision to redeliver Champion vessel. A specific provision of US$(126.3) million linked to the reduction of our operating fleet from 5 to 3 vessels is booked in “Liabilities directly associated with the assets classified as held for sale” (see note 5).

Provision for customs and other contingencies

For the explanation on provision for customs and other contingencies (see note 25).

Retirement indemnity provisions

The Group main defined benefit pension plans are in France and in the UK. The UK scheme was closed to new entrants on December 1st, 1999 and closed to future accruals on November 30th, 2016.

In addition, a supplemental pension and retirement plan was implemented in December 2004 for the members of the Group’s Management Committee and members of the Management Board of Sercel Holding. Contributions amounting to US$2.4 and US$5.7 million were paid respectively in 2019 and 2018.

The Group records retirement indemnity provisions based on the following actuarial assumptions:

- historical staff turnover and standard mortality schedule;
- age of retirement between 62 and 66 years old in France;
- actuarial rate and average rate of increase in future compensation;
- taxes on supplemental pension and retirement plan;

As of December 31, 2019, the net liability for these plans amounted to US$40.0 million.

The status of the retirement indemnity plans is as follows:

	December 31,	
	2019	2018
Amount recognized in the statement of financial position		
Present value of the obligation[(a)]	135.5	109.2
Fair value of plan assets	(95.5)	(73.0)
Deficit (surplus) of funded plans	**40.0**	**36.2**
Net liability (asset) recognized in the statement of financial position	**40.0**	**36.2**
Amounts recognized in the income statement		
Service cost	1.2	3.0
Interest cost (income)	0.8	1.7
Effects of curtailments/settlements	(1.9)	(11.1)
Payroll tax	–	–
Net periodic expense (profit)	**0.1**	**(6.4)**
Movements in the net liability recognized in the statement of financial position		
Net liability at January 1	**36.2**	**62.7**
Expense as above	0.1	(6.4)
Actuarial (gains)/losses recognized in other comprehensive income[(b)]	9.7	(8.8)
Contributions paid	(2.7)	(7.8)
Benefits paid by the Company	(2.3)	(1.1)
Consolidation scope entries and changes in exchange rates	(1.0)	(2.4)
Other	–	–
Net liability at December 31	**40.0**	**36.2**
Change in benefit obligation		
Benefit obligation at January 1	**109.2**	**152.4**
Payroll tax adjustment	–	–
Current service cost	1.2	3.0
Contributions paid	–	–
Interest cost	3.1	3.6
Past service cost	–	–
Benefits paid from plan	(6.3)	(11.4)
Actuarial (gains)/losses recognized in other comprehensive income	19.7	(11.8)
Effects of curtailments/settlements	(1.9)	(11.1)
Consolidation scope entries and changes in exchange rates	10.5	(15.5)
Other	–	–
Benefit obligation at December 31	**135.5**	**109.2**
Change in plan assets		
Fair value of plan assets at January 1	**73.0**	**89.7**
Interest income	2.3	1.9
Contributions paid	2.7	7.8
Benefits paid from plan	(4.0)	(10.3)
Actuarial gains/(losses) recognized in other comprehensive income	10.0	(3.0)
Effects of curtailments/settlements	–	–
Consolidation scope entries and changes in exchange rate	11.5	(13.1)
Other	–	–
Benefit obligation at December 31	**95.5**	**73.0**
Key assumptions used in estimating the Group's retirement obligations are:		
Discount rate[(d)]	1.75%	1.75%
Average rate of increase in future compensation[(e)]	2.20%	2.49%

(a) In 2019 the obligation amounts to US$135.5 million of which US$23.4 million for defined benefit plans not covered by plan assets (US$23.1 million in 2018). The average duration of the defined benefit plan obligation at the end of the reporting period is 17.6 in 2019 and 16.8 in 2018.

(b) Other comprehensive income.

Cumulative actuarial losses recognized in other comprehensive income amount to US$27.1 million as of December 31, 2019.

Changes in the defined benefit obligation and fair value of plan assets are, as follows:

	December 31,	
In millions of US$	**2019**	2018
Amount recognized in the other comprehensive income		
Experience adjustment	1.1	(4.5)
Actuarial changes arising from changes in demographic assumptions	(0.7)	(0.4)
Actuarial changes arising from changes in financial assumptions	19.3	(6.9)
Return on plan assets (excluding amounts included in net interest expense)	(10.0)	3.0
Sub-total included in the other comprehensive income	**9.7**	**(8.8)**

(c) Plan assets

The major categories of plan assets as a percentage of the fair value of total plan assets are as follows:

	December 31,	
	2019	2018
Equity securities	49%	42%
Debt securities	18%	23%
Real estate	7%	8%
Other	26%	27%

(d) Discount rate

The discount rate for entities belonging to the “euro zone” is 0.75% in 2019 (1.75% in 2018). The discount rate is determined by reference to the yield on private investment grade bonds (AA), using the Iboxx index.

The discount rate used for the United Kingdom is 2.00% in 2019 (3.30% in 2018).

An increase of 0.25bps of the discount rate would decrease the defined benefit plan (“DBO”) by US$5.7 million, and a decrease of the discount rate of 0.25bps would increase the DBO by US$6.0 million.

A variation of 0.25bps of the discount rate would have no significant impacts on Service Cost and on Interest Cost (calculated impact is within US$0.1 million).

(e) Increase in future compensation

An increase of 0.25bps of the average rate would increase the future compensation by US$0.8 million, and a decrease of the average rate of 0.25bps would decrease the future compensation by US$0.8 million.

A variation of 0.25bps of the average rate would have no significant impacts on Service Cost and on Interest Cost (calculated impact is within US$0.1 million).

Note 17 Other non-current liabilities

Detail of other non-current liabilities is as follows:

	December 31,	
In millions of US$	**2019**	2018
Research and development subsidies	0.2	0.3
Profit sharing scheme	3.2	4.7
Other non-current liabilities	0.6	8.1
OTHER NON-CURRENT LIABILITIES	**4.0**	**13.1**

Note 18 Contractual obligations, commitments and contingencies

Status on contractual obligations

	December 31,	
In millions of US$	**2019**	2018
Long-term debt obligations	1,688.9	1,799.3
Lease obligations – other than bareboat agreements	173.1	198.8
Lease obligations – bareboat agreements[(a)]	326.3	365.4
TOTAL OBLIGATIONS	**2,188.3**	**2,363.5**

(a) As of December 31, 2019, the aggregate amount of our commitments for bareboat charters through our Global Seismic Shipping AS JV is US$326.3 million, out of which US$261.0 million corresponded to the operated vessels, and US$65.3 million corresponded to a cold stacked vessel.

The following table presents payments in future periods relating to contractual obligations as of December 31, 2019:

	Payments due by period				
In millions of US$	Less than 1 year	2-3 years	4-5 years	After 5 years	Total
Long-term debt obligations:					
• Repayments: fixed rates	0.3	0.6	615.2	4.4	620.5
• Repayments: variables rates[(a)]	–	–	738.0	–	738.0
• Bonds and facilities interests	82.4	172.7	75.3	–	330.4
Total Long-term debt obligations	**82.7**	**173.3**	**1,428.5**	**4.4**	**1,688.9**
Lease obligations – other than bareboat agreements	**55.9**	**66.7**	**35.4**	**15.1**	**173.1**
Lease obligations – bareboat agreements	**45.0**	**90.0**	**90.0**	**101.3**	**326.3**
TOTAL CONTRACTUAL OBLIGATIONS[(B)]	**183.6**	**330.0**	**1553.9**	**120.8**	**2,188.3**

(a) Payments are based on the variable rates applicable as of December 31, 2019.
(b) Payments in foreign currencies are converted in US$ at December 31, 2019 exchange rates.

Guarantees

In millions of US$	December 31, 2019	2018
OPERATIONS		
Guarantees issued in favor of clients (guarantees issued by the Company to mainly support bids made at the subsidiaries level)	304.3	352.6
Other guarantees and commitments issued (guarantees issued by the Company on behalf of subsidiaries and affiliated companies in favor of customs or other governmental administrations)	6.0	13.2
FINANCING		
Guarantees issued in favor of banks (mainly to support credit facilities)	15.8	29.5
TOTAL	**326.1**	**395.3**

The maturity of the guarantees and commitments is as follows:

	Due date				
In millions of US$	Less than 1 year	2-3 years	4-5 years	After 5 years	Total
OPERATIONS					
Guarantees issued in favor of clients	101.5	130.8	39.6	32.4	320.1
Other guarantees and commitments issued	16.6	1.4	0.1	3.7	6.0
TOTAL	**118.1**	**132.2**	**39.7**	**36.1**	**326.1**

Others

The Group has no off-balance sheet obligations under IFRS that are not described above.

Legal proceedings, claims and other contingencies

From time to time we are involved in legal proceedings arising in the normal course of our business. We do not expect that any of these proceedings, either individually or in the aggregate, will result in a material adverse effect on our consolidated financial statements.

Note 19 Revenue

Disaggregation of revenues

The following table disaggregates our operating revenues by major sources for the period ended December 31, 2019:

	December 31, 2019		
In millions of US$	GGR	Equipment	Consolidated Total
Multi-Client prefunding	173.9	–	173.9
Multi-Client after sales	356.2	–	356.2
Total Multi-Client	530.1	–	530.1
Geoscience	385.2	–	385.2
Equipment	–	452.1	452.1
Internal revenues[(a)]	–	(11.5)	(11.5)
TOTAL OPERATING REVENUES	**915.3**	**440.6**	**1,355.9**

(a) Sale of equipment to the Contractual Data Acquisition segment which is classified as discontinued operations.

Analysis by geographical area – Analysis of operating revenues by location of customers

In millions of US$	2019		2018	
North America	375.5	27.7%	244.2	20.5%
Central and South Americas	180.2	13.3%	267.7	22.4%
Europe, Africa and Middle East	488.7	36.0%	446.5	37.4%
Asia Pacific	311.5	23.0%	235.1	19.7%
TOTAL OPERATING REVENUES	**1,355.9**	**100%**	**1,193.5**	**100%**

Analysis of operating revenues by category

In millions of US$	2019		2018	
Services rendered and royalties	765.7	56.5%	587.5	49.2%
Sales of goods	220.2	16.2%	292.7	24.5%
After-sales on multi-client surveys	356.2	26.3%	301.8	25.3%
Leases	13.8	1.0%	11.5	1.0%
TOTAL OPERATING REVENUES	**1,355.9**	**100%**	**1,193.5**	**100%**

In 2019, the Group's two most significant customers accounted for 6.7% and 6.5% of the Group's consolidated revenues compared with 7.1% and 6.3% in 2018.

Contracts balances

The contracts balances are presented below:

In millions of US$	Balance as of December 31, 2019	Balance as of December 31, 2018
Receivables	**349.9**	**392.1**
Unbilled revenues	86.1	128.1
Total contracts assets	**86.1**	**128.1**
Advance billing	(16.4)	(14.1)
Deferred revenues	(280.7)	(194.8)
Total contracts liabilities	**(297.1)**	**(208.9)**

The level of deferred revenues is a direct consequence of the impact of IFRS 15 as the multi-clent prefunding revenues not recognized before delivery of the final data increase the deferred revenues balance (and decrease the unbilled revenues to a lesser extent).

The revenues generated during the period ended December 31, 2019 from contract liabilities balances as of January 1, 2019 amount to US$137.8 million.

The revenues generated during the period ended December 31, 2019 from performance obligations satisfied (or partially satisfied) prior to January 1, 2019 amount to US$193.3 million.

Backlog – Transaction price allocated to remaining performance obligations

The aggregate amount of the transaction price allocated to the performance obligations that are unsatisfied or partially unsatisfied (*i.e.* the contractual backlog) as of December 31, 2019 amounted to US$701.8 million for continuing operations. Out of this amount, the Group expects to recognize US$557.5 million in 2020 and US$144.3 million in 2021 and beyond for continuing operations. These amounts include multi-client prefunding revenues recognized at delivery.

Assets recognized from costs to obtain or fulfill a contract

The Group has no cost falling into the definition of a cost to obtain or fulfill a contract.

Note 20 Analysis by operating segment

Group organization

Strategic Plan

Aiming at ensuring growth and sustainable returns through the cycles, the strategic roadmap announced in November 2018 (the "CGG 2021 Plan") includes a planned transition to an asset-light business model by reducing our exposure to the Data Acquisition business. The Data Acquisition business has been adversely affected over the years by structural industry overcapacity, lack of differentiation, commodity pricing and a heavy fixed cost base. The 2021 strategy hence foresees the following changes:

- Marine: reduction of seismic vessels in operation in 2019 and search for a strategic partnership to cost efficiently operate and control the vessels;
- Land: wind down and exit the market;
- Multi-physics: market for sale and monetize when suitable;
- Divest equity stakes in Argas and Seabed Geosolutions BV joint ventures;
- Implement the appropriate adjustments to general & administrative expenses and support costs to adapt to our new size and footprint.

During 2019, we delivered several key milestones on our strategic path.

- Marine partnership;

  In June 2019, we announced the signature of a binding term sheet with Shearwater GeoServices Holding AS ("Shearwater"). The closing of the Marine Partnership with Shearwater took place on January 8, 2020 (the "Marine Closing"). All impacts of the Marine closing have been included in the financial statement of position as at December 31, 2019 through the remeasurement of the fair value less cost to sell of the Marine disposal group for a net amount of US$(108.3) million.

- Land wind down;

  We progressively reduced the land data acquisition business over 2019 and fully shut down activity in the first quarter of 2020 with last crew stopped early February 2020. Some of the assets used in this business were sold for US$3 million during 2019, and the remaining equipments are currently for sale. Most of the corresponding staff have departed under the social plan described below.

- Multi-Physics exit;

  We started negotiations with potential acquirers in 2019 with the intention of selling our Multi-Physics business. These discussions are progressing and we signed a memorandum of understanding in February 2020.

- Divestment in Seabed Geosolutions BV;

  In December 30, 2019 CGG entered into Share Purchase and Exit Agreement ("Exit Agreement") to transfer on this very date 15% (out of its total 40% stake) of the shares of the Seabed Geosolutions BV joint venture ("Seabed") to its partner Fugro NV ("Fugro"), with its remaining 25% shareholding to be transferred before April 1, 2020.

In addition, CGG SA paid US$35 million to Fugro to settle any disputes and claims between them relating to Seabed, such as those related to the partners' respective obligations to jointly finance Seabed and the differing interpretations of non-competition provisions in the Seabed joint venture agreement.

CGG continues to carry out these strategic changes in compliance with all legal requirements.

The detail of these line items is disclosed in note 2 and note 5 to our Consolidated Financial Statements. For further detail, please also refer to Chapter 1 "Presentation of the CGG Group and its activities".

Segments presentation and discontinued operations

Financial information by segment is reported in accordance with our internal reporting system and provides internal segment information that is used by the chief operating decision maker to manage and measure performance.

Until the least quarter of 2018, we organized our activities in four segments for financial reporting: (i) Contractual Data Acquisition, (ii) Geology, Geophysics & Reservoir ("GGR"), (iii) Equipment and (iv) Non-Operated Resources. As a result of the strategic announcements and actions undertaken afterwards (see above), our Contractual Data Acquisition segment and part of our Non-Operated Resources segment are presented as discontinued operations and assets held for sale in accordance with IFRS 5. This presentation applied for the first time as of and for the year ended December 31, 2018.

The costs of implementation of the exit of Data Acquisition business, referred to as the "CGG 2021 Plan" are reported in the related Contractual Data Acquisition business lines. A summary of our segments is set out below.

Continuing operations

GGR

This operating segment comprises the Geoscience business lines (processing and imaging of geophysical data, reservoir characterization, geophysical consulting and software services, geological data library and data management solutions) and the multi-client business line (development and management of seismic surveys that we undertake and license to a number of clients on a non-exclusive basis). Both activities regularly combine their offerings, generating overall synergies between their respective activities.

Equipment

This operating segment comprises our manufacturing and sales activities for seismic equipment used for data acquisition, both on land and marine. The Equipment segment carries out its activities through our subsidiary Sercel.

Discontinued operations

- Contractual Data Acquisition. This operating segment comprises the following business lines:
  - Marine: offshore seismic data acquisition undertaken by us on behalf of a specific client, and
  - Land and Multi-physics: other seismic data acquisition undertaken by us on behalf of a specific client;
- Non Operated ressources (NOR)

We started implementing our Transformation Plan in the first quarter of 2014 to address the cyclical trough in the seismic market, and as market conditions deteriorated further, we implemented additional steps, ultimately downsizing our marine fleet to five 3D high-end vessels. As a result, some of our owned vessels were not operated for a certain period of time. The costs of the non-operated acquisition resources as well as the costs of the implementation linked to the downsizing of our Contractual Data Acquisition businesses are reported in the discontinued operations portion of this segment.

As a complement to Operating Income, EBIT may be used by management as a performance indicator for segments because it captures the contribution to our results of the significant businesses that are managed through our joint ventures. We define EBIT as Operating Income plus our share of income in companies accounted for under the equity method.

We define EBITDAs as earnings before interest, tax, income from equity affiliates, depreciation, amortization net of amortization expense capitalized to multi-client, and share-based compensation cost. Share-based compensation includes both stock options and shares issued under our share allocation plans. EBITDAs is presented as additional information because we understand that it is one measure used by certain investors to determine our operating cash flow and historical ability to meet debt service and capital expenditure requirements.

Inter-segment transactions are made at arm's length prices. They relate primarily to geophysical equipment sales made by the Equipment segment. These inter-segment revenues and the related earnings are eliminated in consolidation in the tables that follow under the column "Eliminations and other".

Operating Income and EBIT may include non-recurring items, which are disclosed in the reportable segment if material. General corporate expenses, which include Group management, financing, and legal activities, have been included in the column "Eliminations and other" in the tables that follow. The Group does not disclose financial expenses or financial revenues by segment because they are managed at the Group level.

Identifiable assets are those used in the operations of each segment.

Capital employed is defined as "total assets" excluding "cash and cash equivalents" less (i) "current liabilities" excluding "bank overdrafts" and "current portion of financial debt" and (ii) "non-current liabilities" excluding "financial debt".

The following tables also present operating revenues, Operating Income and EBIT by segment, and operating revenues by geographic area (by location of customers).

IFRS 15 application, Internal Reporting and Segment presentation

CGG implemented the new accounting standard for revenue, IFRS 15, on January 1, 2018 with a modified retrospective application. Therefore, the cumulative effects of adopting IFRS 15 were recognized as an adjustment of the opening balances on January 1, 2018, with no restatement of comparative information.

The only change from Group historical practices related to recognition of multi-client prefunding revenues. Before the implementation of IFRS 15, the Group applied the percentage of completion method for these revenues. Following the implementation of IFRS 15, the Group, instead recognizes multi-client prefunding revenues only upon delivery of final processed data. Consequently, the implementation of IFRS 15 impacts the timing of revenue recognition and amortization compared to previous accounting principles that provided for recognition of revenues and amortization over time as work was carried out. Multi-client prefunding revenues and related amortization are generally recognized later under IFRS 15 compared to the previous accounting principles.

Although IFRS fairly presents the Group's statement of financial position, for internal reporting purposes, CGG management continues to apply the previous (pre-IFRS 15) revenue recognition principle, with multi-client prefunding revenues recorded based on percentage of completion. CGG management believes this method aligns revenues more closely with the activities and resources used to generate it and provides useful information as to the progress made on multi-client surveys, while also allowing for useful comparison across time periods.

CGG therefore presents the Group's results of operations in two ways:

(i) the "Reported" or "IFRS" figures, prepared in accordance with IFRS, with multi-client prefunding revenues recognized upon delivery of the final data;

(ii) the "Segment" figures, for purposes of internal management reporting, prepared in accordance with the Group's previous method for recognizing multi-client prefunding revenues.

Beyond IFRS 15 effects, the "Segment" figures also exclude the financial impacts of events and/or decisions made in consideration of exceptional conditions, such as the Group's Transformation Plan and its financial restructuring completed in February 2018. CGG management believes that Segment figures presented this way provide a useful indication of the underlying profitability of operating activities for the period, while allowing for better tracking of organic performance and comparison across periods.

However, other companies may present Segment and related measures differently than we do. Segment figures are not a measure of financial performance under IFRS and should not be considered as an alternative to operating revenues, operating income or any other measures of performance derived in accordance with IFRS as indicators of our operating performance.

For more information, please refer to paragraph 1.5 - Accounting policies, note 19 – Revenues and note 22 – Other Revenues and Expenses to our Consolidated Financial Statements.

The tables below provide a reconciliation of the Group's Segment figures to the Group's the Reported figures.

ANALYSIS BY SEGMENT (CONTINUING OPERATIONS)

	2019						
In millions of US$, except for assets and capital employed in billions of US$	**GGR**	**Equipment**	**Eliminations and other**	**Segment figures**	**IFRS 15 adjustments**	**Non-recurring charges**	**Consolidated Total / IFRS figures**
Revenues from unaffiliated customers	959.9	440.6	–	1,400.5	(44.6)	–	1,355.9
Inter-segment revenues[(a)]	–	11.5	(11.5)	–	–	–	–
Operating revenues	**959.9**	**452.1**	**(11.5)**	**1,400.5**	**(44.6)**	**-**	**1,355.9**
Depreciation and amortization (excluding multi-client surveys)	(108.1)	(29.4)	(0.7)	(138.2)	–	–	(138.2)
Impairment and amortization of multi-client surveys	(348.8)	–	–	(348.8)	40.8	–	(308.0)
Operating income[(b)]	**211.2**	**66.7**	**(30.6)**	**247.3**	**(3.8)**	**-**	**243.5**
EBITDAs	**652.1**	**96.6**	**(27.9)**	**720.8**	**(44.6)**	**-**	**676.2**
Share of income in companies accounted for under the equity method	(0.1)	–	–	(0.1)		–	(0.1)
Earnings Before Interest and Tax[(b)]	**211.1**	**66.7**	**(30.6)**	**247.2**	**(3.8)**	**-**	**243.4**
Capital expenditures (excluding multi-client surveys)[(c)]	49.1	25.0	1.2	75.3	–	–	75.3
Investments in multi-client surveys, net cash	185.7	–	–	185.7	–	–	185.7
Capital employed[(d)]	**1.8**	**0.5**	**-**	**2.3**	**-**	**-**	**2.3**
TOTAL IDENTIFIABLE ASSETS[(d)]	**2.5**	**0.6**	**0.3**	**3.4**	**–**	**–**	**3.4**

(a) *Sale of equipment to the Contractual Data Acquisition segment which is classified as discontinued operations.*

(b) *Includes US$(33.0) million impairment of multi-client assets and US$(5.9) million relating to other tangible and intangible assets impairment as of December 31, 2019.*
For the year ended December 31, 2019, "eliminations and other" included US$(30.3) million of general corporate expenses and US$(0.3) million of intra-group margin.

(c) *Capital expenditures included capitalized development costs of US$(18.8) million for the year ended December 31, 2019. "Eliminations and other" corresponded to the variance of suppliers of assets for the year ended December 31, 2019.*

(d) *Capital employed and identifiable assets related to discontinued operations are included under the column "Eliminations and other".*

	2018						
In millions of US$, except for assets and capital employed in billions of US$	GGR	Equipment	Eliminations and other	Segment figures	IFRS 15 adjustments	Non-recurring charges	Consolidated Total/IFRS figures
Revenues from unaffiliated customers	913.4	314.0	–	1,227.4	(33.9)	–	1,193.5
Inter-segment revenues[(a)]	–	36.8	(36.8)	–	–	–	–
Operating revenues	**913.4**	**350.8**	**(36.8)**	**1,227.4**	**(33.9)**	**–**	**1,193.5**
Depreciation and amortization (excluding multi-client surveys)	(73.6)	(30.1)	(0.3)	(104.0)	–	(13.9)	(117.9)
Impairment and amortization of multi-client surveys	(326.0)	–	–	(326.0)	(0.3)	(226.0)	(552.3)
Operating income[(b)]	**175.8**	**11.7**	**(45.2)**	**142.3**	**(34.2)**	**(287.8)**	**(179.7)**
EBITDAs	**557.8**	**42.1**	**(43.9)**	**556.0**	**(33.9)**	**(47.9)**	**474.2**
Share of income in companies accounted for under the equity method	(1.2)	–	–	(1.2)		–	(1.2)
Earnings Before Interest and Tax[(b)]	**174.6**	**11.7**	**(45.2)**	**141.1**	**(34.2)**	**(287.8)**	**(180.9)**
Capital expenditures (excluding multi-client surveys)[(c)]	54.4	24.8	(1.2)	78.0	–	–	78.0
Investments in multi-client surveys, net cash	222.8	–	–	222.8	–	–	222.8
Capital employed[(d)]	**2.0**	**0.5**	**(0.1)**	**2.4**	**–**	**–**	**2.4**
TOTAL IDENTIFIABLE ASSETS[(d)]	**2.3**	**0.6**	**0.5**	**3.4**	**–**	**–**	**3.4**

(a) Sale of equipment to the Contractual Data Acquisition segment which is classified as discontinued operations.

(b) For the year ended December 31, 2018, "non-recurring charges" included US$(226.0) million impairment of multi-client surveys (of which US$197 million on StagSeis survey), US$(30.1) million inventory write-off in Equipment division, and US$(13.9) million relating to other tangible and intangible assets impairment.

For the year ended December 31, 2018, "eliminations and other" included US$(39.1) million of general corporate expenses and US$(5.0) million of intra-group margin.

(c) Capital expenditures included capitalized development costs of US$(33.1) million for the year ended December 31, 2018. "Eliminations and other" corresponded to the variance of suppliers of assets for the year ended December 31, 2018.

(d) Capital employed and identifiable assets related to discontinued operations are included under the column "Eliminations and other".

Note 21 Research and development expenses

Analysis of research and development expenses is as follows:

	December 31,	
In millions of US$	**2019**	2018
Research and development costs	(75.9)	(71.3)
Development costs capitalized	32.4	33.1
Research and development expensed	**(43,5)**	**(38.2)**
Government grants recognized in income	19.9	7.7
RESEARCH AND DEVELOPMENT COSTS – NET	**(23.6)**	**(30.5)**

Research and development expenditures related primarily to:

- for the GGR segment, projects concerning data processing services; and
- for the Equipment segment, projects concerning seismic data recording equipment and improvement of existing equipment.

The variance in Government grants year-on-year is mainly due to a write-down of US R&D tax credit in 2018.

Note 22 Other revenues and expenses

	December 31,	
In millions of US$	**2019**	2018
Impairment of assets	(5.5)	(239.9)
Restructuring costs	(4.8)	(79.4)
Change in restructuring reserves	1.5	61.6
Other restructuring expenses	–	(30.1)
Impairment and restructuring expenses – net	**(8.8)**	**(287.8)**
Other revenues (expenses)	0.1	1.0
Exchange gains (losses) on hedging contracts	(0.2)	(0.8)
Gains (losses) on sales of assets	(0.4)	1.5
OTHER REVENUES (EXPENSES) – NET[(a)]	**(9.3)**	**(286.1)**

(a) Other revenues (expenses) – net excluding income (loss) from discontinued activities which are explained in note 5.

Year ended December 31, 2019

Impairment and restructuring costs

In 2019, we recognized other expenses for US$9.3 million comprising:

(i) US$5.5 million of impairment relating mainly to building (notably in the United States);

(ii) US$3.3 million of net restructuring costs corresponding mainly to sundry rightsizing measures.

Restructuring costs and change in restructuring reserves

As part of the Group Transformation Plan, we recognized US$(17.8) million of restructuring costs. These restructuring costs included:

(i) US$15.1 million of professional fees mainly linked to the US Chapter 11 and French Safeguard procedures (see note 2 “Financial restructuring process”);

(ii) US$2.7 million of other costs related to our Transformation Plan.

Year ended December 31, 2018

Impairment of assets

In 2018, we recognized a US$(226.0) million impairment of multi-client surveys (of which US$197 million on StagSeis survey) due to specific market conditions.

Other restructuring expenses

In 2018, we recognized a US$(30.1) million of inventory valuation allowance at Sercel.

Note 23 Cost of financial debt

In millions of US$	December 31, 2019	2018
Current interest expenses related to financial debt	(124.0)	(127.3)
Interest expenses on lease liabilities	(11.2)	(2.4)
Amortization of deferred expenditures on financial debts	–	–
Income provided by cash and cash equivalents	3.5	2.3
COST OF FINANCIAL DEBT, NET	**(131.7)**	**(127.4)**

Note 24 Other financial income (loss)

In millions of US$	December 31, 2019	2018
Exchange gains (losses) net	(2.7)	32.0
Other financial income (expenses)	8.3	787.9
OTHER FINANCIAL INCOME (LOSS)	**5.6**	**819.9**

In 2018, the Other Financial Income mainly came (i) for US$771 million from the strong positive impact of our financial restructuring (ii) for US$74 million in one-off income mainly linked to the positive foreign exchange effect, associated with the shift of Euro/US$ balance sheet exposure following the financial restructuring and the subsequent first lien refinancing (our Euro/US$ balance sheet position is now balanced), partly offset by (iii) the first lien refinancing costs for US$21 million.

Note 25 Income taxes

Income tax benefit (expense)

The Company and its subsidiaries compute income taxes in accordance with the applicable tax rules and regulations of the numerous tax authorities where the Group operates. The tax regimes and income tax rates legislated by these taxing authorities vary substantially. In foreign countries, income taxes are often accrued based on deemed profits calculated as a percentage of sales as defined by local government tax authorities.

	December 31,	
In millions of US$	**2019**	2018
France		
Current income tax expense	–	–
Adjustments on income tax recognized in the period for prior periods	0.0	0.0
Deferred taxes on temporary differences for the period	26.3	3.3
Deferred taxes recognized in the period for prior periods	(0.7)	0.5
Total France	**25.6**	**3.8**
Foreign countries		
Current income tax expense, including withholding taxes	(15.5)	(19.0)
Adjustments on income tax recognized in the period for prior periods	0.7	1.4
Deferred taxes on temporary differences for the period	16.5	14.0
Deferred taxes recognized in the period for prior periods[(a)] [(b)]	(18.4)	(7.6)
Total Foreign countries	**(16.7)**	**(11.2)**
TOTAL INCOME TAX BENEFIT (EXPENSE)	**8.9**	**(7.4)**

(a) In 2019, included mainly US$11 million of deferred tax in US.
(b) In 2018, included valuation allowances on deferred tax assets of US$8.3 million in Mexico.

Income tax reconciliation

The reconciliation between income tax expense in the income statement and the theoretical tax expense is detailed below:

In millions of US$	**2019**	2018
Net income from continuing operations (loss)	**126.2**	**504.2**
Income taxes	**8.9**	**(7.4)**
Net Income from continuing operations (loss) before taxes	**117.3**	**511.6**
Equity investment companies income	(0.1)	(1.2)
Theoretical tax basis	**117.4**	**512.8**
Enacted tax rate in France	34.43%	34.43%
Theoretical taxes	**(40.4)**	**(176.6)**
Differences on tax:		
Differences in tax rates between France and foreign countries[(e)]	28.3	(44.5)
Change in local tax rates enacted by US and French tax laws	–	–
Non-deductible part of dividends	–	–
Adjustments on the tax expense recognized in the period for prior periods[(b)]	0.7	1.4
Adjustments on the deferred tax expense recognized in the period for prior periods	17.6	1.2
Valuation allowance on deferred tax assets previously recognized on losses on foreign entities[(a)]	(6.0)	(8.3)
Other permanent differences (including withholding taxes)[(d)]	28.7	239.5
Deferred tax unrecognized on losses of the period[(c)]	(63.5)	(30.0)
Unrecognized deferred tax on losses of prior periods	43.5	9.9
Income taxes	**8.9**	**(7.4)**

(a) (b) See comments on income tax benefit (expense) above.
(c) Corresponds notably to the French, and US tax groups according to short and medium term uncertainties and revised tax planning.
(d) Correspond notably, in 2018, to the permanent differences relatives to the debt equitization (see note 2).
(e) Correspond notably, in 2018, to the difference in tax rates between France and US for US$37 million.

Deferred tax assets and liabilities

In millions of US$	December 31, 2019	2018
Total deferred tax assets	**19.7**	**22.6**
Total deferred tax liabilities	**(10.4)**	**(44.4)**
TOTAL DEFERRED TAXES, NET	**9.3**	**(21.8)**

Net deferred tax assets (liabilities) per nature

In millions of US$	December 31, 2019	2018
Non-deductible provisions (including pensions and profit sharing)	11.9	33.3
Tangible assets	15.8	19.5
Effect of currency translation adjustment not recognized in income statement	(9.0)	(10.5)
Multi-Client surveys (including deferred revenues)	(24.7)	(57.1)
Assets reassessed in purchase accounting of acquisitions	(27.5)	(29.5)
Development costs capitalized	(17.1)	(18.8)
Other deferred revenues	3.9	(1.6)
Convertible bonds and other financial instruments	–	–
R&D credits	10.0	32.0
Other	0.8	(30.6)
Total deferred tax assets net of deferred tax (liabilities) related to timing differences	**(35.9)**	**(63.3)**
Tax losses carried forward	45.2	41.5
TOTAL DEFERRED TAX ASSETS NET OF DEFERRED TAX (LIABILITIES)	**9.3**	**(21.8)**

Deferred tax assets (liabilities) per tax group as of December 31, 2019

In millions of US$	France	Foreign countries	Total[a]
Net deferred tax assets (liabilities) related to timing differences	–	(35.9)	(35.9)
Deferred tax assets on losses carried forward[b]	–	45.2	45.2
TOTAL	**–**	**9.3**	**9.3**

(a) The deferred taxes recognized on losses carried forward are recoverable without expiration date.
(b) See note 1.5.6 to the consolidated statements for rules of recognition of deferred tax assets.

Net operating loss carried forward not recognized as of December 31, 2019

In millions of US$	France	Foreign countries	Total
Losses scheduled to expire in 2020	–	14.4	14.4
Losses scheduled to expire in 2021 and thereafter	–	230.2	230.2
Losses available indefinitely	2,052.1	313.2	2,365.3
TOTAL	**2,052.1**	**557.8**	**2,609.9**

Tax audit and litigation

United States

The tax audit regarding CGG Holding (US) Inc. for the 2007 fiscal year and extended to 2016 is finished and the Joint Committee has sent our refund claim to the IRS Service Center to be executed. A minimum refund plus interest is expected in Q1 2020.

The IRS has rejected part of the R&D credit claimed by CGG Holding (US) Inc. CGG Holding (US) Inc. has appealed this decision and has received a first refund of US$3 million.

Brazil

ISS disputes

Municipality of Rio de Janeiro has assessed Veritas do Brazil Ltda services taxes (ISS) for 2001 to 2008 – which has been duly disputed.

Further to the favorable decision of the judicial court received by Veritas do Brasil Ltda in 2014, the administrative procedure covering 2001 to May 2003 has been officially terminated in March 2015 and the tax assessment cancelled in January 2016. In March 2016, the Municipality filed a Rescission Action in order to have the favorable decision cancelled; the Group filed the response to the action in June 2016. In December 2016, Public attorney's office agreed that there are no grounds to re-discuss the merit of the case, but understood that the action should be ruled. In February 2017, CGG filed a petition to object the ruling. The case is still on-going. The Group considers that there is no proper ground for this action.

For years September 2003-2008 (taxes at stake: US$11 million), the administrative procedure is still ongoing and should result in the same cancellation considering that the reassessment is based on the same arguments than those cancelled by the judicial court.

No provision is recognized as the Group considers that these contingencies should resolve in its favor.

In December 2019, CGG do Brazil Participacoes Ltd has reached two agreements with Municipality of Rio through Concilia Program. The first one is on ISS on import of services for the years 2009 to 2019 where CGG do Brazil Participacoes Ltd payment agreed to pay an amount of US$8.4 million. The provision has been released. The second agreement is on ISS on licenses where CGG do Brazil Participacoes Ltd has dropped the refund litigation action for the years 2008-2009 and has paid an amount of US$5.8 million for the past years. Municipality of Rio has released the administrative deposit, plus monetary correction, for an amount of US$22.4 million.

Withholding tax and CIDE disputes

Following a 2012 audit on year 2009, CGG do Brazil Participacoes Ltda was reassessed US$6.1 million of withholding tax and US$4 million of CIDE (Contribution for Intervening in Economic Domain) on charter contracts. The reassessment was disputed. In 2014, the Company received and appealed against an unfavorable decision from the Administrative Court. In July 2017, CIDE case was ruled against CGG and the Company decided to enter into an amnesty program (PERT). The litigation has been dropped and parties agreed on a final settlement of approximately US$2.7 million fully settled in January 2018. In August 2018, the decision from the Administrative Court on WHT reassessment has been confirmed. In October 2018, CGG filed a motion to clarify the decision. In November 2019, CGG do Brazil Participacoes Ltda has been notified of the unfavorable decision from the motion to clarify and has filed a special appeal. No provision is recognized.

In 2016, a new audit was conducted for fiscal year 2013. CGG do Brazil Participacoes Ltda received tax reassessments on December 20, 2017 for amounts of US$15 million for withholding tax and US$10 million for CIDE. The Company appealed in January 2018 against the reassessments. In August 2018, both WHT and CIDE on charter were ruled favorably to CGG. Tax authorities appealed against the decision. In October 2019, the judges ruled in favor of CGG do Brazil Participacoes Ltd. We are waiting to see if Tax Authorities file an appeal. No provision is recognized.

Peru

The Peru tax authorities assessed additional withholding taxes on technical services for 2012 and 2013 for CGG Land (US) Inc. Sucursal del Peru for an amount of US$15 million. The Company disputed the reassessment. A final resolution in favor of CGG was notified in May 2017. A nullity action was launched against this resolution by the Tax Authorities. In February 2019, the nullity action was denied by the judge. In February 2019, the peruvian tax authorities appealed against the decision and in September 2019, CGG Land (US) Inc. Sucursal del Peru was notified of the second instance decision in which the Superior Court declared the nullity of the first instance decision and ordered to the first instance to rule again the case. CGG Land (US) Inc. Sucursal del Peru filed an annulment action to cancel this decision, which has been rejected. CGG Land (US) Inc. Sucursal del Peru is preparing all relevant documents for the new first instance decision. No provision is recognized for this litigation.

Note 26 Personnel

The analysis of personnel (including discontinued operations) is as follows:

	Year ended December 31,	
	2019	2018
Personnel employed under French contracts	1,089	1,253
Personnel employed under local contracts	3,475	3,846
TOTAL	**4,564**	**5,099**
Including field staff of:	*168*	*418*

The total cost of personnel employed was US$600 million in 2019 (or US$451 million excluding acquisition and CGG Transformation Plan 2021), US$559 million in 2018 (or US$452 million excluding acquisition).

Note 27 Key management personnel compensation

The table below presents the director fees and the CEO remuneration

	Year ended December 31,	
in US$	**2019**	2018
Short-term employee benefit paid[a]	1,802,094	4,490,770
Directors' fees	607,241	763,753
Long-term employee benefit – pension[b]	13,626	–
Long-term employee benefit – supplemental pension[c]	–	429,986
Share-based payments[d]	472,286	279,920

(a) Excludes social contributions.
(b) Cost of services rendered and interest cost.
(c) Cost of services rendered and interest cost on the supplemental pension implemented by the end of 2004.
(d) Expense in the income statement related to the stock options and performance shares plans.

Contractual termination indemnity in effect – Chief Executive Officer

The Board of Directors meeting on April 26, 2018, following the appointment of office by Mrs. Sophie ZURQUIYAH as Chief Executive Officer for a term of four years, also approved, for the duration of this term of office, the terms and conditions of the benefits granted to Mrs. Sophie ZURQUIYAH in the event of termination of her corporate office. These benefits were ratified during the General Meeting of May 15, 2019.

In order to comply with the provisions of the AFEP-MEDEF Code to which the Company refers, the terms and conditions of the benefit have been modified on several points: no compensation in the event of resignation and in the event of the possibility of exercising pension rights at the time of departure, and review of the performance scale giving rise to the payment of the indemnity.

They now have the following characteristics:

- Mrs. Sophie ZURQUIYAH benefits from a contractual termination indemnity in the event of dismissal, and in the event of non-renewal of her term of office within twelve months following a change of control, in the absence of any situation of failure characterised by the non-achievement of the performance conditions described below;
- No payment may be made in the event of serious or gross misconduct, regardless of the reason for departure.

The payment of the contractual termination indemnity will depend on the average rate of achievement of the objectives relating to the annual variable portion of Mrs. Sophie ZURQUIYAH's remuneration for the last three financial years ended prior to the departure date, in accordance with the following rule:

(i) if the average achievement rate is less than 80%, no contractual termination indemnity fee will be paid;

(ii) if the average achievement rate is equal to or greater than 80% and less than 90%, the contractual termination indemnity will be due at 50% of its amount;

(iii) if the average achievement rate is equal to or greater than 90%, the contractual termination indemnity will be due on a straight-line basis between 90% and 100% of its amount.

In the event of departure from the Group during the financial year 2020, the achievement of performance conditions will exceptionally be measured by the Board of Directors over the two financial years ending prior to the date of the beginning of the notice period.

This contractual termination indemnity will be equal to the difference between (i) a gross amount capped at 200% of the Annual Reference Remuneration and including all sums of any nature whatsoever, and on any basis whatsoever, to which Mrs. Sophie ZURQUIYAH may be entitled as a result of the termination, and (ii) all sums to which she may be entitled as a result of the implementation of the non-competition commitment.

The aggregate of the contractual termination indemnity and the non-competition indemnity may under no circumstances exceed 200% of the Corporate Officer's annual reference remuneration. Should the combined amount of the two benefits be greater, the contractual indemnity would be reduced to the level of this cap.

It is specified that the Board of Directors must acknowledge, prior to the payment of the contractual termination indemnity, (i) that the performance conditions described above have been met and (ii) that the contractual termination indemnity complies with the recommendations of the AFEP-MEDEF Code in force at the date of the departure of the person concerned.

Note 28 Related party transactions

The following table presents the transactions with our joint-ventures and associates. The vast majority of them belong to the contractual data acquisition segment which is classified as discontinued operation in our consolidated statements of operations.

	December 31,					
	2019			2018		
In millions of US$	**Joint Ventures[a]**	**Associates[b]**	**Total**	Joint Ventures[a]	Associates[b]	Total
Sales of geophysical equipment	–	21.0	21.0	–	14.5	14.5
Equipment rentals and services rendered	(0.1)	10.9	10.8	4.5	10.9	15.4
Operating Revenue	**(0.1)**	**31.9**	**31.8**	**4.5**	**25.4**	**29.9**
Charter expenses	(28.8)	–	(28.8)	(31.7)	–	(31.7)
Ship management expenses	(18.4)	–	(18.4)	(32.4)	–	(32.4)
Costs of services rendered	(1.6)	(0.5)	(2.1)	(6.1)	(0.5)	(6.6)
Cost of operations	**(48.8)**	**(0.5)**	**(49.3)**	**(70.2)**	**(0.5)**	**(70.7)**
Other financial income (loss)	**(4.4)**	**19.6**	**(15.2)**	**(35.0)**	**-**	**(35.0)**
Trade accounts and notes receivable, including agency arrangements	9.4	30.3	39.7	15.9	14.9	30.8
Financial assets (see note 7)	–	–	–	2.9	–	2.9
Right-of-use assets[c] [d]	156.2	–	156.2			
Receivables and assets	**165.6**	**30.3**	**195.9**	**18.8**	**14.9**	**33.7**
Trade accounts and notes payable, including agency arrangements	4.6	2.4	7.0	6.0	3.9	9.9
Provisions for onerous contracts[c]	61.0	–	61.0			
Lease liabilities[c]	190.7	–	190.7	–	–	–
Payables and liabilities	**256.3**	**2.4**	**258.7**	**6.0**	**3.9**	**9.9**
Future leases commitments	–	–	–	358.2	–	358.2
Future ship management costs	–	–	–	94.6	–	94.6
Contractual Obligations	**-**	**-**	**-**	**452.8**	**-**	**452.8**

(a) Mainly correspond to investments in companies accounted for using the equity method in our Marine disposals groups and presented as held for sale (see note 5).
(b) Mainly correspond to investments in companies accounted for using the equity method in our Land disposals groups and presented as held for sale (see note 5).
(c) Prior IFRS 16 first time adoption, future leases commitments were presented undiscounted in contractual obligations.
(d) Marine only, non-revalued.

No credit facility or loan was granted to the Company by shareholders during the last three years.

Note 29 Supplementary cash flow information

Operating activities

Depreciation and amortization, together with multi-client surveys impairment and amortization, included US$(33.0) million of assets impairment in 2019 (US$(239.9) million in 2018).

In 2018, other non-cash items mainly related to the financial restructuring plan as described in note 2.

Investing activities

In 2019 and 2018, proceeds from disposals of tangible and intangible assets related to the sale of some of our assets.

In 2019 and 2018, variation in other financial assets mainly related to long-term deposits made to fulfil some collateral.

Financing activities

In 2019, with the application of IFRS 16, the Group recognized in the cash flow statement US$56.9 million of lease repayments compared to US$5.7 in 2018 corresponding to property formerly classified as financial lease.

In millions of US$	**December 31, 2019**
Property lease	(32.9)
Property formerly classified as financial lease	(5.3)
Other property	(27.6)
Machinery & equipment lease	(24.0)
Total cash flow for leases	**(56.9)**

In 2018, total issuance of long-term debts related to the second lien senior secured notes due 2024 issued in by CGG SA for US$355.1 million and €80.4 million in principal amount. This issuance comprises US$275 million and €80.4 million as new money and US$80.2 million in exchange for part of the accrued interest claims under the Senior Notes (with the US$ new money notes and accrued interest notes being fungible) (see note 13).

In 2018, CGG Holding (US) Inc. issued US$663.6 million in principal amount of first lien senior secured notes due 2023, in exchange for the balance of the Secured Loans taking into account an upfront paydown of US$150 million.

Cash and cash equivalents

In millions of US$	**Year ended December 31,**	
	2019	2018
Cash	484.4	353.2
Cash equivalents (mainly short-term deposits)	126.1	80.9
TOTAL CASH AND CASH EQUIVALENTS	**610.5**	**434.1**

Cash and Cash equivalents included trapped cash amounting to US$76 million as of December 31, 2019 from US$93 million December 31, 2018 mainly driven by the release of administrative deposit in Brazil. Trapped cash means any cash and cash equivalent held by a subsidiary that operates in a country where exchange controls or other legal restrictions apply when the balances are not available for general use by the Group (cash in subsidiaries not available at Group level). The cash equivalents do not include US$31.7 million of cash pledged to fulfill some collateral requirements in 2019. The cash pledged for more than one year is recorded for US$18.3 million in other financial assets (see note 7) and the cash pledged for less than one year is recorded for US$13.4 million in restricted cash (see note 4).

Note 30 Earnings per share

In millions of US$	Year 2019	2018
Net income attributable to shareholders (a)	(69.1)	(101.6)
Effect of dilution		
Ordinary shares outstanding at the beginning of the year (b)	709,944,816	46,038,287
Weighted average number of ordinary shares outstanding during the year (c)	5,639	562,399,954
Weighted average number of ordinary shares outstanding ((d) = (b) + (c))	**709,950,455**	**608,438,241**
Total dilutive potential shares from stock options	82,674	–
Total dilutive potential shares from performance shares allocation	1,889,632	–
Total dilutive potential shares from warrants	–	9,155,112
Dilutive weighted average number of shares outstanding adjusted when dilutive (e)	**711,922,761**	**617,593,353**
Earnings per share		
Basic (a)/(d)	**(0.10)**	**(0.17)**
Diluted (a)/(e)	**(0.10)**	**(0.17)**
Net income attributable to shareholders from continuing operations	118.7	498.4
Earnings per share Basic	0.17	0.82
Earnings per share Diluted	0.17	0.81
Net income attributable to shareholders from discontinued operations	(187.7)	(600.0)
Earnings per share Basic	(0.26)	(0.99)
Earnings per share Diluted	(0.26)	(0.99)

Note 31 Subsequent events

Marine acquisition exit

On January 8 2020, CGG announced that it has completed exit from marine acquisition business by closing its strategic partnership transaction for marine seismic acquisition with Shearwater GeoServices Holding AS (Shearwater). *See Note 2.*

Land acquisition wind down

On February 18 2020, CGG announced that it has fully withdrawn from the land seismic data acquisition business after completing its last land seismic acquisition contract in Tunisia. *See Note 2.*

Multi-Physics acquisition

A Memorandum of Understanding was signed early February 2020. *See Note 2.*

Convertible bondholders' appeal

On February 26th, 2020, the French Supreme Court (Cour de cassation) confirmed the ruling rendered by the Appeals Court of Paris and rejected the claim from a group of Convertible Bondholders, putting a definitive end to this litigation. *See Note 2.*

Outlook

The Covid-19 crisis, which started in China in December 2019, impacted the overall commodity demand since the beginning of 2020 and caused significant drop in Brent oil price, which decreased from US$63/bl on December 31, 2019 down to US$50/bl on March 5, 2020, the date of approval of 2019 accounts by the CGG Board of Directors. This evolutive situation which may negatively affect the activity is scrutinized. It had no impact as of December 31, 2019.

There is no other significant subsequent event.

Note 32 List of principal consolidated subsidiaries as of December 31, 2019

Subsidiaries are fully consolidated from the date of their acquisition, being the date on which the Group obtains the control.

Dormant subsidiaries of the Group have not been included in the list below.

Percentage of interest generally corresponds to percentage of control in the Company.

Siren Number[(a)]	Companies Names	Country of incorporation	% of interest
403 256 944	CGG Services SAS	France	100.0
410 072 110	CGG Explo SARL	France	100.0
413 926 320	Geomar SAS	France	100.0
	CGG Holding BV	Netherlands	100.0
	CGG Marine BV	Netherlands	100.0
	CGG Services (NL) BV	Netherlands	100.0
	CGG International SA	Switzerland	100.0
	CGG Data Services SA	Switzerland	100.0
	CGG Services (Norway) AS	Norway	100.0
	CGG Services (UK) Limited	United Kingdom	100.0
	CGG do Brasil Participaçoes Ltda	Brazil	100.0
	Veritas do Brasil Ltda	Brazil	100.0
	LASA Prospeccoes SA	Brazil	100.0
	CGG Mexico, SA de CV	Mexico	100.0
	Geoinnovation Corporativa S. de RL de CV	Mexico	100.0
	Vitzel SA de CV	Mexico	100.0
	CGG Holding (US) Inc.	Delaware, United States of America	100.0
	CGG Services (US) Inc.	Delaware, United States of America	100.0
	CGG Land (US) Inc.	Delaware, United States of America	100.0
	CGG Canada Services Ltd	Canada	100.0
	CGG Services (Canada) Inc.	Canada	100.0
	CGG Services (Australia) Pty Ltd	Australia	100.0
	CGG Aviation (Australia) Pty Ltd	Australia	100.0
	CGGVeritas Services (B) Sdn Bhd	Brunei	100.0
	PT CGG Services Indonesia[(b)]	Indonesia	95.0
	CGG Services India Private Ltd	India	100.0
	CGG Technology Services (Beijing) Co. Ltd	China	100.0
	CGG Services (Singapore) Pte Ltd	Singapore	100.0
	CGG Services (Malaysia) Sdn Bhd	Malaysia	100.0
	CGG Vostok	Russia	100.0
866 800 154	Sercel Holding SAS	France	100.0
378 040 497	Sercel SAS	France	100.0
	Sercel-GRC	Oklahoma, United States of America	100.0
	Sercel Inc.	Oklahoma, United States of America	100.0
	Hebei Sercel-Junfeng Geophysical Prospecting Equipment Co. Ltd[(b)]	China	51.0
	Sercel Singapore Pte Ltd	Singapore	100.0
	De Regt Marine Cables BV	Netherlands	100.0

(a) *Siren number is an individual identification number for company registration purposes under French law.*
(b) *% of control for these subsidiaries amount to 100%.*

Non-controlling interests

The Group does not fully consolidate any significant entity in which it holds less than a majority of voting rights.

Subsidiaries with non-controlling interests do not contribute materially to the activities of the Group, the consolidated net income, cash flows, liabilities or assets as of December 31, 2019. Hebei Sercel-Junfeng Geophysical Prospecting Equipment Co. Ltd, a subsidiary of Sercel SAS based in China, is the major entity with non-controlling interests.

Note 33 Audit Fees

Annual audit fees for 2019 and 2018 are as follows:

	December 31,			
	2019		2018	
In thousands of US$	**EY**	**Mazars**	EY	Mazars
Audit fees	1,991	953	3,236	1,165
Audit-related fees	59	38	33	–
Tax fees	11	29	106	–
All other fees	9	–	–	–
TOTAL	**2,070**	**1,020**	**3,375**	**1,165**

Audit related fees are linked to sustainability audits.

Statutory auditors' report on the consolidated financial statements

This is a translation into English of the statutory auditors' report on the consolidated financial statements of the Company issued in French and it is provided solely for the convenience of English speaking users.

This statutory auditors' report includes information required by European regulation and French law, such as information about the appointment of the statutory auditors or verification of the information concerning the Group presented in the management report and other documents provided to shareholders.

This report should be read in conjunction with, and construed in accordance with, French law and professional auditing standards applicable in France.

Statutory auditors' report on the consolidated financial statements

To the shareholders of CGG,

Opinion

In compliance with the engagement entrusted to us by your annual general meeting, we have audited the accompanying consolidated financial statements of CGG for the year ended December 31, 2019. These consolidated financial statements have been approved by the Board of Directors on March 5, 2020 based on information available at that date regarding the evolving context of Covid-19's sanitary crisis.

In our opinion, the consolidated financial statements give a true and fair view of the assets and liabilities and of the financial position of the Group as at December 31, 2019 and of the results of its operations for the year then ended in accordance with International Financial Reporting Standards as adopted by the European Union.

The audit opinion expressed above is consistent with our report to the Audit Committee.

Basis for Opinion

Audit Framework

We conducted our audit in accordance with professional standards applicable in France. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Our responsibilities under those standards are further described in the "Statutory Auditors' Responsibilities for the Audit of the Consolidated Financial Statements" section of our report.

Independence

We conducted our audit engagement in compliance with independence rules applicable to us, for the period from January 1st, 2019 to the date of our report and specifically we did not provide any prohibited non-audit services referred to in Article 5(1) of Regulation (EU) No 537/2014 or in the French Code of ethics (*code de déontologie*) for statutory auditors.

Emphasis of matter

We draw your attention to the Note 1.3 to the consolidated financial statements which presents the change in accounting method arising from the first application of accounting standard IFRS 16 "Leases" as of January 1, 2019. Our opinion is not modified in respect of this matter.

Justification of Assessments - Key Audit Matters

In accordance with the requirements of articles L.823-9 and R.823-7 of the French Commercial Code (*code de commerce*) relating to the justification of our assessments, we inform you of the key audit matters relating to risks of material misstatement that, in our professional judgment, were of most significance in our audit of the consolidated financial statements of the current period, as well as how we addressed those risks.

These matters were addressed in the context of our audit of the consolidated financial statements as a whole approved in the aforementioned context, and in forming our opinion thereon, and we do not provide a separate opinion on specific items of the consolidated financial statements.

SALE OF THE MARINE DATA ACQUISITION BUSINESS

Key audit matter	Our response
The closing of Shearwater's acquisition of the shares in Global Seismic Shipping and the streamers and the entry into force of the Capacity Agreement, took place on January 8, 2020. As presented in note 2 to the consolidated financial statements, this transaction includes the main following components: ▸ CGG acquired the shares held by Eidesvik in Global Seismic Shipping AS ("GSS") and has indemnified Eidesvik for the end of the relationship against Shearwater shares. CGG also granted Eidesvik with an associated put option (the "Eidesvik Put Option"); ▸ Shearwater acquired all shares in GSS and the streamers associated to the five GSS high end vessels; ▸ The existing umbrella agreement and the existing bareboat charter agreements between CGG and GSS subsidiaries were terminated. Shearwater CharterCo AS entered into five-year bareboat charter agreements with GSS subsidiaries; ▸ Setting up a five-year services contract (the "Capacity Agreement") between Shearwater and CGG. Under this agreement, CGG commits to using Shearwater acquisition services for 730 vessel days annually in average over five years; ▸ CGG also entered into step-in agreements with Shearwater and GSS (the "Step-In Agreements"). Through this agreement, CGG consents to substituting itself for Shearwater CharterCo AS as charterer of GSS subsidiaries' five high end seismic vessels equipped with streamers, in the event of payment default from Shearwater CharterCo AS or the insolvency of Shearwater. In accordance with IFRS 5, and as mentioned in note 1, the assets and liabilities concerned by the transaction described above are classified respectively as "assets held for sale" and "liabilities directly associated with the assets held for sale". The results and cash flows related to this activity are presented in "discontinued operations". The conditions of the disposal in the subsequent period are taken into account in the fair value, less costs to sell, of the business held for sale at December 31, 2019, which amounts to USD (108.3) million. This transaction has multiple components and is supported by numerous legal agreements including complex clauses. Therefore, the estimate of the fair value less costs to sell of the Marine Data Acquisition business held for sale at December 31, 2019 requires management to exercise its judgment in selecting the assumptions to be used. Especially, the fair value of the Capacity agreement and the fair value of the Eidesvik put option are based on multiple assumptions, for which uncertainties might significantly impact the fair values. We therefore considered the Exit from data Acquisition business as a key audit matter.	We have obtained a detailed knowlegde of the objectives and structure of the transaction through interviews with management and reading of the legal documentation relating to the transaction. We have performed an accounting analysis of all the components of the transaction and assessed the accounting treatment retained by the management. In particular, we examined the assumptions and the calculation methods used to assess the fair values of the Capacity Agreement and the Eidesvik put option. Regarding the Capacity Agreement, our procedures thus mainly consisted in: ▸ Review the consistency of the market rate and utilization assumptions for the Shearwater fleet over the five-year commitment period with respect to market expectations; ▸ Assessing the discount rate used in relation to the level of risk associated with the liabilities. We have incorporated valuation specialists to our team in order to analyze the fair value of Eidesvik put option retained by management. These specialists independently determined the fair value of the put option, and we reviewed the value selected by management in relation to the fair value we have calculated. In addition, we assessed the appropriateness of the disclosures presented in the consolidated financial statements related to this transaction.

VALUATION OF GOODWILL

Key audit matter	Our response
As of December 31, 2019, goodwill amounted to USD 1,207 million or 30% of the consolidated statement of financial position, breaking down as follows by cash-generating unit (or group of cash-generating units): ▸ Geoscience: USD 748 million ▸ Multi-client: USD 284 million ▸ Equipment: USD 175 million Management ensures, at least once a year at the statement of financial position dates, that the carrying amount of goodwill is not higher than its recoverable amount and presents no risk of impairment. The principles of the impairment testi performed and the applicable assumptions are described in note 11 to the consolidated financial statements. The determination of the recoverable amount of goodwill is very largely based on management judgment, in particular with regard to: ▸ The future cash flows expected from the cash-generating units assessed, including normative cash flows that are used beyond the third year; ▸ The discount rates applied to the future cash flows; ▸ The long-term growth rate retained for the cash flow projection. We therefore considered the valuation of goodwill as a key audit matter.	We assessed the compliance of the methodology applied by Group management with the applicable accounting standards. We focused our procedures on those assumptions to which the the recoverable value is the most sensitive, and thus the assumptions that might have a significant impact on the result of the impairment testi. Our procedures thus mainly consisted in: ▸ Assessing the consistency of the estimated future cash flows with the main underlying operating assumptions; ▸ Assessing the existence of any external information which could contradict management's assumptions; ▸ Examining the assumptions retained for the purpose of estimating normative cash flows beyond the third year; ▸ Performing a retrospective analysis of the cash flow estimates. We have incorporated valuation specialists for the purpose, in particular, of assessing the discount rates and long-term growth rate retained by management. They independently determined acceptable rate ranges and examined the rates used by management in relation to those ranges.

VALUATION OF MULTI-CLIENT SURVEYS

Key audit matter	Our response
As of December 31, 2019, the carrying amount of the multi-client surveys totals USD 531 million, or 13% of the consolidated statement of financial position, compared to USD 633 million as of December 31, 2018. The Group's multi-client surveys regroup seismic surveys for which non-exclusive licenses are granted to customers. All the costs of acquisition, processing and finalization of the surveys are recognized as intangible assets. The multi-client surveys are valued at the aggregate of those costs less accumulated amortization, or at their fair values if the latter is the lower. Management ensures, at least once a year and more frequently in the event of any indication of impairment, that the carrying amounts of multi-client surveys does not exceed their recoverable amounts. In addition, an impairment test is performed for each survey at delivery date. The assessment of the recoverable amount of multi-client surveys is very largely based on management judgment, in particular with regard to the forecasting of future sales. In that respect, and as indicated in note 10, USD 33 million of impairment losses were recognized at the end of 2019. Given the elements described above, we considered measurement of the multi-client surveys as a key audit matter.	We challenged forecasted future sales by comparison with management's revenue forecasts for the purpose of impairment testing of the previous year, with the revenue actually generated and with surveys' attractiveness for potential customers. In particular, we assessed the consistency of the revenue forecasts with the momentum of each basin. When management judged that impairment should be recognized, we inquired management about the reasons for the impairment and assessed its consistency with our understanding of the market.

Specific verifications

We have also performed, in accordance with professional standards applicable in France, the specific verifications that are required by laws and regulations about the Group's information given in the management report of the Board of Directors approved on March 5, 2020. Regarding the events that occurred and elements that have become known since the date the financial statements were approved and in relation to the effects of Covid-19's crisis, management informed us that this would be subject to a specific communication addressed to the shareholders' meeting called to vote on said financial statements.

We have no matters to report as to their fair presentation and their consistency with the consolidated financial statements.

We attest that the consolidated non-financial statement required by Article L. 225-102-1 of the French Commercial Code (Code de commerce) is included in the Group's information given in the management report, it being specified that, in accordance with article L. 823-10 of this Code, we have verified neither the fair presentation nor the consistency with the consolidated financial statements of the information contained therein. This information should be reported on by an independent third party.

Report on Other Legal and Regulatory Requirements

Appointment of the Statutory Auditors

We were appointed as statutory auditors of CGG by the annual general meeting held on May 15, 2003 for MAZARS and on June 29, 1977 for ERNST & YOUNG et Autres.

As at December 31, 2019, MAZARS and were in the seventeenth year and forty-third year of total uninterrupted engagement (out of which respectively seventeen years and thirty nine years since securities of the Company were admitted to trading on a regulated market).

Responsibilities of Management and Those Charged with Governance for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with International Financial Reporting Standards as adopted by the European Union and for such internal control as management determines necessary to enable the preparation of consolidated financial statements free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, management is responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, the matters related to going concern and using the going concern basis for accounting unless it is expected to liquidate the Company or to cease operations.

The Audit Committee is responsible for monitoring the financial reporting process and the effectiveness of internal control and risk management systems and where applicable, its internal audit, regarding the accounting and financial reporting procedures.

The consolidated financial statements were authorized for issue by the Board of Directors.

Statutory Auditors' Responsibilities for the Audit of the Consolidated Financial Statements

Objectives and audit approach

Our role is to issue a report on the consolidated financial statements. Our objective is to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatements. Reasonable assurance is a high level of assurance but is not a guarantee that an audit conducted in accordance with professional standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users made on the basis of these consolidated financial statements.

As specified in Article L.823-10-1 of the French Commercial Code (*code de commerce*), our statutory audit does not include assurance on the viability of the Company or the quality of management of the affairs of your Company.

As part of an audit conducted in accordance with professional standards applicable in France, the statutory auditor exercises professional judgment throughout the audit and furthermore:

- Identifies and assesses the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, designs and performs audit procedures responsive to those risks, and obtains audit evidence considered to be sufficient and appropriate to provide a basis for his opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control;
- Obtains an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the internal control;
- Evaluates the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management in the consolidated financial statements;

- Assesses the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. This assessment is based on the audit evidence obtained up to the date of his audit report. However, future events or conditions may cause the Company to cease to continue as a going concern. If the statutory auditor concludes that a material uncertainty exists, there is a requirement to draw attention in the audit report to the related disclosures in the consolidated financial statements or, if such disclosures are not provided or inadequate, to modify the opinion expressed therein;
- Evaluates the overall presentation of the consolidated financial statements and assesses whether these statements represent the underlying transactions and events in a manner that achieves fair presentation;
- Obtains sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. The statutory auditor is responsible for the direction, supervision and performance of the audit of the consolidated financial statements and for the opinion expressed on these consolidated financial statements.

Report to the Audit Committee

We submit a report to the Audit Committee which includes in particular a description of the scope of the audit and the audit program implemented, as well as the results of our audit. We also report, if any, significant deficiencies in internal control regarding the accounting and financial reporting procedures that we have identified.

Our report to the Audit Committee includes the risks of material misstatement that, in our professional judgment, were of most significance in the audit of the consolidated financial statements of the current period and which are therefore the key audit matters that we are required to describe in this report.

We also provide the Audit Committee with the declaration provided for in Article 6 of Regulation (EU) N° 537/2014, confirming our independence within the meaning of the rules applicable in France such as they are set in particular by Articles L.822-10 to L.822-14 of the French Commercial Code (*code de commerce*) and in the French Code of Ethics (*code de déontologie*) for statutory auditors. Where appropriate, we discuss with the Audit Committee the risks that may reasonably be thought to bear on our independence, and the related safeguards.

Paris-La Défense, April 14, 2020

The statutory auditors

MAZARS	ERNST & YOUNG et Autres
Jean-Louis Simon	Nicolas Pfeuty

2018 FINANCIAL STATEMENTS — FINANCIAL INFORMATION CONCERNING THE ASSETS, FINANCIAL POSITION AND RESULTS

2016-2017-2018 CGG CONSOLIDATED FINANCIAL STATEMENTS

Consolidated statements of financial position

		December 31,		
(In millions of US$)	Notes	2018	2017	2016
ASSETS				
Cash and cash equivalents	29	434.1	315.4	538.8
Trade accounts and notes receivable, net [(2)]	1, 3, 19	520.2	522.6	434.8
Inventories and work-in-progress, net	4	204.8	239.3	266.3
Income tax assets		72.1	61.6	112.2
Other current assets, net	4	99.1	117.0	105.8
Assets held for sale, net [(4)]	5	195.5	14.6	18.6
Total current assets		**1,525.8**	**1,270.5**	**1,476.5**
Deferred tax assets	1, 19, 25	22.6	21.9	26.0
Investments and other financial assets, net	7	31.1	62.6	51.9
Investments in companies under equity method	8	0.1	192.7	190.5
Property, plant and equipment, net	9	189.2	330.3	708.6
Intangible assets, net [(2)] [(3)]	1, 10, 19	898.9	1,152.2	1,184.7
Goodwill, net	11	1,229.0	1,234.0	1,223.3
Total non-current assets		**2,370.9**	**2,993.7**	**3,385.0**
TOTAL ASSETS		**3,896.7**	**4,264.2**	**4,861.5**
LIABILITIES AND EQUITY				
Bank overdrafts	13	—	0.2	1.6
Current portion of financial debt [(1)]	2, 13	17.8	2,902.8	2,782.1
Trade accounts and notes payable		126.4	169.9	157.4
Accrued payroll costs		135.8	153.6	138.9
Income taxes payable		49.6	38.7	31.6
Advance billings to customers		35.7	25.9	24.4
Provisions — current portion	16	172.4	58.3	110.7
Current liabilities associated with funded receivables	3	—	9.8	—
Other current liabilities [(2)]	1, 12, 19	250.9	123.1	140.2
Liabilities directly associated with the assets classified as held for sale [(4)]	5	131.7	—	—
Total current liabilities		**920.3**	**3,482.3**	**3,386.9**
Deferred tax liabilities	1, 19, 25	44.4	62.0	67.6
Provisions — non-current portion	16	95.9	121.6	162.1
Financial debt [(1)]	2, 13	1,148.9	52.3	66.7
Other non-current liabilities	17	13.1	17.9	21.4
Total non-current liabilities		**1,302.3**	**253.8**	**317.8**
Common stock: 829,153,000 shares authorized and 709,944,816 shares with a €0.01 nominal value issued and outstanding at December 31, 2018	15	8.7	20.3	20.3
Additional paid-in capital [(1)]		3,184.6	1,850.0	1,850.0
Retained earnings [(1)]	1	(1,457.8)	(1,354.6)	(845.7)
Other Reserves		(27.9)	37.6	171.1
Treasury shares		(20.1)	(20.1)	(20.1)
Cumulative income and expense recognized directly in equity		(0.9)	(0.8)	(0.8)
Cumulative translation adjustment		(55.1)	(43.3)	(54.1)
Equity attributable to owners of CGG S.A.		**1,631.5**	**489.1**	**1,120.7**
Non-controlling interests		42.6	39.0	36.1
Total equity [(1)] [(2)]		**1,674.1**	**528.1**	**1,156.8**
TOTAL LIABILITIES AND EQUITY		**3,896.7**	**4,264.2**	**4,861.5**

(1) See note 2 for more information regarding the impact of our financial restructuring completed on February 21, 2018.
(2) See note 1.3 for more information regarding the impact of application of "IFRS 15 — revenues from contracts with customers".
(3) See note 1.4 for more information regarding the impact of changes in estimates on multi-client amortization.
(4) See note 5 for more information regarding the impact of IFRS 5 "Assets held for sale and discontinued operations" as of December 31, 2018.

The accompanying notes are an integral part of the consolidated financial statements

Consolidated statements of operations

(In millions of US$, except per share data)	Notes	Year 2018	2017 (restated*)	2016 (restated*)
Operating revenues [5]	5, 19, 20	1,193.5	1,035.1	963.3
Other income from ordinary activities	19, 20	1.4	0.8	1.4
Total income from ordinary activities		**1,194.9**	**1,035.9**	**964.7**
Cost of operations [6]		(931.0)	(849.7)	(857.5)
Gross profit		**263.9**	**186.2**	**107.2**
Research and development expenses — net	21	(30.5)	(17.9)	(16.7)
Marketing and selling expenses		(45.9)	(46.6)	(50.1)
General and administrative expenses		(81.1)	(74.1)	(76.3)
Other revenues (expenses) — net	5, 22	(286.1)	(105.5)	(110.7)
Operating income	**5, 20**	**(179.7)**	**(57.9)**	**(146.6)**
Expenses related to financial debt		(129.7)	(214.0)	(176.9)
Income provided by cash and cash equivalents		2.3	3.0	2.7
Cost of financial debt, net	**23**	**(127.4)**	**(211.0)**	**(174.2)**
Other financial income (loss) [4]	2, 5, 24	819.9	21.5	6.0
Income (loss) before income taxes and share of income (loss) in companies accounted for under equity method		**512.8**	**(247.4)**	**(314.8)**
Income taxes	5, 25	(7.4)	(18.7)	18.7
Share of income (loss) in companies accounted for under equity method	5	(1.2)	(0.4)	(2.2)
Net income (loss) from continuing operations		**504.2**	**(266.5)**	**(298.3)**
Net income (loss) from discontinued operations [7]	5	(600.0)	(247.6)	(278.3)
Net income (loss) [5]		**(95.8)**	**(514.1)**	**(576.6)**
Attributable to:				
Owners of CGG S.A.	$	(101.6)	(514.9)	(573.4)
Owners of CGG S.A. [1]	€	(85.9)	(458.6)	(518.6)
Non-controlling interests	$	5.8	0.8	(3.2)
Weighted average number of shares outstanding [2]	30	608,438,241	46,038,287	43,255,753
Dilutive potential shares from stock options	30	(3)	(3)	(3)
Dilutive potential shares from performance share plans	30	(3)	(3)	(3)
Dilutive potential shares from warrants	30	(3)	—	—
Dilutive weighted average number of shares outstanding adjusted when dilutive [2]	30	608,438,241	46,038,287	43,255,753
Net income (loss) per share *(see note 30 for more detail on EPS for continuing and discontinued operations)*				
— Basic	$	(0.17)	(11.18)	(13.26)
— Basic [1]	€	(0.14)	(9.96)	(11.99)
— Diluted	$	(0.17)	(11.18)	(13.26)
— Diluted [1]	€	(0.14)	(9.96)	(11.99)

* *In accordance with IFRS 5 "Non-current Assets Held for Sale and Discontinued Operations", the profit and loss accounts related to the discontinued operations have been presented in the separate line item "Net income (loss) from discontinued operations" at December 31, 2018, 2017 and 2016.*

(1) *Converted at the average exchange rate of US$1.1828, US$1.1227 and US$1.1057 per € for 2018, 2017 and 2016 respectively.*

(2) *As a result of the February 21, 2018 CGG S.A. capital increase via an offering of preferential subscription rights to existing shareholders, the calculation of basic and diluted earnings per share for 2017 and 2016 has been adjusted retrospectively. Number of ordinary shares outstanding has been adjusted to reflect the proportionate change in the number of shares.*

(3) *As our net result was a loss, stock options, performance shares plans and warrants had an anti-dilutive effect; as a consequence, potential shares linked to those instruments were not taken into account in the dilutive weighted average number of shares or in the calculation of diluted loss per share.*

(4) *See note 2 for more information regarding the impact of our financial restructuring on February 21, 2018.*

(5) *See note 1.3 for more information regarding the impact of application of "IFRS 15 — revenues from contracts with customers".*

(6) *See note 1.4 for more information regarding the impact of changes in estimates on multi-client amortization*

(7) *See note 5 for more information regarding the impact of IFRS 5 "Assets held for sale and discontinued operations"*

The accompanying notes are an integral part of the consolidated financial statements

Consolidated statements of comprehensive income (loss)

	Year		
(In millions of US$)	**2018***	**2017***	**2016***
Net income (loss) from statements of operations	**(95.8)**	**(514.1)**	**(576.6)**
Other comprehensive income to be reclassified in profit (loss) in subsequent period:			
Net gain (loss) on cash flow hedges	(0.1)	—	(0.2)
Exchange differences on translation of foreign operations	(14.0)	12.9	(17.7)
Net other comprehensive income to be reclassified in profit (loss) in subsequent period (1)	**(14.1)**	**12.9**	**(17.9)**
Other comprehensive income not to be classified in profit (loss) in subsequent period:			
Net gain (loss) on actuarial changes on pension plan	6.8	5.2	(6.6)
Net other comprehensive income not to be reclassified in profit (loss) in subsequent period (2)	**6.8**	**5.2**	**(6.6)**
Total other comprehensive income (loss) for the period, net of taxes (1)+(2)	**(7.3)**	**18.1**	**(24.5)**
Total comprehensive income (loss) for the period	**(103.1)**	**(496.0)**	**(601.1)**
Attributable to:			
Owners of CGG	*(106.7)*	*(498.9)*	*(595.4)*
Non-controlling interests	*3.6*	*2.9*	*(5.7)*

* *Including other comprehensive income related to the discontinued operations.*

The accompanying notes are an integral part of the consolidated financial statements

Consolidated statements of changes in equity

Amounts in millions of US$, except share data	**Number of Shares issued [(a)]**	**Share capital**	**Additional paid-in capital**	**Retained earnings**	**Other reserves**	**Treasury shares**	**Income and expense recognized directly in equity**	**Cumulative Translation Adjustment**	**Equity attributable to owners of CGG S.A.**	**Non-controlling interests**	**Total equity**
Balance at January 1, 2016	**5,533,287**	**92.8**	**1,410.0**	**(268.5)**	**138.0**	**(20.6)**	**(0.6)**	**(38.9)**	**1,312.2**	**46.2**	**1,358.4**
Net gain (loss) on actuarial changes on pension plan (1)				(6.6)					(6.6)		(6.6)
Net gain (loss) on cash flow hedges (2)							(0.2)		(0.2)		(0.2)
Exchange differences on foreign currency translation (3)								(15.2)	(15.2)	(2.5)	(17.7)
Other comprehensive income *(1)+(2)+(3)*				**(6.6)**			**(0.2)**	**(15.2)**	**(22.0)**	**(2.5)**	**(24.5)**
Net income (4)				(573.4)					(573.4)	(3.2)	(576.6)
Comprehensive income *(1)+(2)+(3)+(4)*				**(580.0)**			**(0.2)**	**(15.2)**	**(595.4)**	**(5.7)**	**(601.1)**
Capital increase	16,599,862	231.6	135.9			0.5			368.0		368.0
Share capital reduction *(see note15)*		(304.1)	304.1						—		—
Dividends									—	(4.4)	(4.4)
Cost of share-based payment				2.6					2.6		2.6
Exchange differences on foreign currency translation generated by the parent company					33.1				33.1		33.1
Changes in consolidation scope and other				0.2					0.2		0.2
Balance at December 31, 2016	**22,133,149**	**20.3**	**1,850.0**	**(845.7)**	**171.1**	**(20.1)**	**(0.8)**	**(54.1)**	**1,120.7**	**36.1**	**1,156.8**

(a) Number of shares as of January 1, 2016 and capital increase have been restated to reflect the 32-for-one stock split on July 20, 2016.

Amounts in millions of US$, except share data	Number of Shares issued	Share capital	Additional paid-in capital	Retained earnings	Other reserves	Treasury shares	Income and expense recognized directly in equity	Cumulative Translation Adjustment	Equity attributable to owners of CGG S.A.	Non-controlling interests	Total equity
Balance at January 1, 2017	**22,133,149**	**20.3**	**1,850.0**	**(845.7)**	**171.1**	**(20.1)**	**(0.8)**	**(54.1)**	**1,120.7**	**36.1**	**1,156.8**
Net gain (loss) on actuarial changes on pension plan (1)				5.2					5.2		5.2
Net gain (loss) on cash flow hedges (2)									—		—
Exchange differences on foreign currency translation (3)								10.8	10.8	2.1	12.9
Other comprehensive income*(1)+(2)+(3)*				**5.2**				**10.8**	**16.0**	**2.1**	**18.1**
Net income (4)				(514.9)					(514.9)	0.8	(514.1)
Comprehensive income *(1)+(2)+(3)+(4)*				**(509.7)**				**10.8**	**(498.9)**	**2.9**	**(496.0)**
Cost of share-based payment				1.0					1.0		1.0
Exchange differences on foreign currency translation generated by the parent company					(133.5)				(133.5)		(133.5)
Changes in consolidation scope and other				(0.2)					(0.2)		(0.2)
Balance at December 31, 2017	**22,133,149**	**20.3**	**1,850.0**	**(1,354.6)**	**37.6**	**(20.1)**	**(0.8)**	**(43.3)**	**489.1**	**39.0**	**528.1**

Amounts in millions of US$, except share data	**Number of Shares issued**	**Share capital**	**Additional paid-in capital**	**Retained earnings**	**Other reserves**	**Treasury shares**	**Income and expense recognized directly in equity**	**Cumulative translation adjustment**	**Equity attributable to owners of CGG S.A.**	**Non-controlling interests**	**Total equity**
Balance at December 31, 2017	**22,133,149**	**20.3**	**1,850.0**	**(1,354.6)**	**37.6**	**(20.1)**	**(0.8)**	**(43.3)**	**489.1**	**39.0**	**528.1**
IFRS 15 First Time Application [a]				(11.6)					(11.6)		(11.6)
Balance at January 1, 2018	**22,133,149**	**20.3**	**1,850.0**	**(1,366.2)**	**37.6**	**(20.1)**	**(0.8)**	**(43.3)**	**477.5**	**39.0**	**516.5**
Net gain (loss) on actuarial changes on pension plan (1)				6.8					6.8		6.8
Net gain (loss) on cash flow hedges (2)							(0.1)		(0.1)		(0.1)
Exchange differences on foreign currency translation (3)								(11.8)	(11.8)	(2.2)	(14.0)
Other comprehensive income (1)+(2)+(3)				**6.8**	**—**	**—**	**(0.1)**	**(11.8)**	**(5.1)**	**(2.2)**	**(7.3)**
Net income (4)				(101.6)					(101.6)	5.8	(95.8)
Comprehensive income (1)+(2)+(3)+(4)				**(94.8)**	**—**	**—**	**(0.1)**	**(11.8)**	**(106.7)**	**3.6**	**(103.1)**
Share capital reduction		(20.0)	20.0						—		—
Capital increase [b]	71,932,731	0.9	126.5						127.4		127.4
Debt equitization [b]	484,509,122	5.9	1,187.8						1,193.7		1,193.7
Exercise of warrants [b]	131,369,814	1.6	0.3						1.9		1.9
Cost of share-based payment				2.9					2.9		2.9
Exchange differences on foreign currency translation generated by the parent company				—	(65.5)				(65.5)		(65.5)
Changes in consolidation scope and other				0.3					0.3	—	0.3
Balance at December 31, 2018	**709,944,816**	**8.7**	**3,184.6**	**(1,457.8)**	**(27.9)**	**(20.1)**	**(0.9)**	**(55.1)**	**1,631.5**	**42.6**	**1,674.1**

(a) Refer to note 1 and 19 for more information regarding the impact of "IFRS 15 – revenues from contracts with customers".
(b) Refer to note 2 for information regarding the impact of our financial restructuring completed on February 21, 2018.

The accompanying notes are an integral part of the consolidated financial statements

Consolidated statements of cash flows

		Year		
(In millions of US$)	Notes	2018	2017 (restated*)	2016 (restated*)
OPERATING				
Net income (loss)	1, 19	(95.8)	(514.1)	(576.6)
Less : Net income (loss) from discontinued operations	5	600.0	247.6	278.3
Net income (loss) from continuing operations		**504.2**	**(266.5)**	**(298.3)**
Depreciation and amortization	1, 19, 29	117.9	117.5	137.0
Multi-client surveys depreciation and amortization	10, 29	552.3	297.7	417.2
Depreciation and amortization capitalized in multi-client surveys	10	(18.8)	(30.0)	(42.3)
Variance on provisions		(18.2)	26.9	(25.3)
Stock based compensation expenses		2.5	0.5	1.7
Net (gain) loss on disposal of fixed and financial assets		(1.5)	(4.2)	4.9
Equity (income) loss of investees		1.2	0.4	2.2
Dividends received from investments in companies under equity method		—	—	—
Other non-cash items		(823.3)	(48.8)	0.3
Net cash flow including net cost of financial debt and income tax		**316.3**	**93.5**	**197.4**
Less net cost of financial debt		127.4	211.0	174.2
Less income tax expense	1, 19	7.4	18.7	(18.7)
Net cash flow excluding net cost of financial debt and income tax		**451.1**	**323.2**	**352.9**
Income tax paid	29	(17.0)	48.5	(7.6)
Net cash flow before changes in working capital		**434.1**	**371.7**	**345.3**
Change in working capital		(68.8)	13.9	116.4
— change in trade accounts and notes receivable	1, 19	(75.5)	(77.5)	230.7
— change in inventories and work-in-progress		33.3	55.0	57.0
— change in other current assets		4.3	(40.7)	(42.7)
— change in trade accounts and notes payable		(4.9)	27.7	(52.0)
— change in other current liabilities		(26.0)	49.4	(77.6)
Impact of changes in exchange rate on financial items		—	—	1.0
Net cash flow provided by operating activities		**365.3**	**385.6**	**461.7**
INVESTING				
Total capital expenditures (including variation of fixed assets suppliers, excluding multi-client surveys)	9	(78.0)	(67.2)	(73.8)
Investments in multi-client surveys, net cash	10	(222.8)	(251.0)	(295.1)
Proceeds from disposals of tangible and intangible assets		4.4	10.5	11.8
Total net proceeds from financial assets	29	—	4.5	—
Acquisition of investments, net of cash & cash equivalents acquired	29	—	—	—
Variation in loans granted	29	(0.4)	(1.5)	(1.2)
Variation in subsidies for capital expenditures		(0.2)	(0.5)	(0.6)
Variation in other non-current financial assets		(3.8)	4.2	(17.7)
Net cash flow used in investing activities		**(300.8)**	**(301.0)**	**(376.6)**

(In millions of US$)	Notes	Year 2018	2017 (restated*)	2016 (restated*)
FINANCING				
Repayment of long-term debt		(195.9)	(26.9)	(496.1)
Total issuance of long-term debt		336.5	2.3	458.1
Lease repayments		(5.7)	(5.7)	(8.7)
Change in short-term loans		(0.2)	(1.4)	0.9
Financial expenses paid		(73.2)	(85.0)	(141.8)
Net proceeds from capital increase:				
— from shareholders	29	129.3	—	367.5
— from non-controlling interests of integrated companies		—	—	—
Dividends paid and share capital reimbursements:				
— to shareholders		—	—	—
— to non-controlling interests of integrated companies		—	—	(4.4)
Acquisition/disposal from treasury shares		—	—	0.5
Net cash flow provided by (used in) financing activities		**190.8**	**(116.7)**	**176.0**
Effect of exchange rates on cash		(17.3)	6.1	3.6
Impact of changes in consolidation scope		—	(7.5)	—
Net cash flows incurred by Discontinued Operations (1)	5	(119.3)	(189.9)	(111.2)
Net increase (decrease) in cash and cash equivalents		**118.7**	**(223.4)**	**153.5**
Cash and cash equivalents at beginning of year	29	315.4	538.8	385.3
Cash and cash equivalents at end of period	**29**	**434.1**	**315.4**	**538.8**

* *In accordance with IFRS 5 "Non-current Assets Held for Sale and Discontinued Operations", financial information was restated to present comparative amounts for each period presented.*

(1) *See note 5 for more information regarding the impact of IFRS 5 "Assets held for sale and discontinued operations"*

The accompanying notes are an integral part of the consolidated financial statements

Notes to consolidated financial statements

NOTE 1 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

CGG S.A. ("the Company"), along with its subsidiaries (together, the "Group") is a global participant in the geophysical and geological services industry, providing a wide range of data acquisition, processing and interpretation services as well as related imaging and interpretation software to clients in the oil and gas exploration and production business. It is also a global manufacturer of geophysical equipment.

Given that the Company is listed on a European Stock Exchange and pursuant to European Regulation n(o)1606/2002 dated July 19, 2002, the accompanying consolidated financial statements have been prepared in accordance with International Financial Reporting Standards ("IFRS") and its interpretations as issued by the International Accounting Standards Board (IASB) and as adopted by the European Union as at December 31, 2018.

The consolidated financial statements were authorized for issue by the Board of Directors on March 7, 2019 and will be submitted to the General Meeting convened on May 15, 2019 for approval.

1.1-Critical Accounting Policies

Our accounting policies, which we have applied consistently, are described below. However, the accounting policies related to the accounts impacted by the judgments and estimates described below are particularly important to reflect our financial position and results of operations. As we must exercise significant judgment when we apply these policies, their application is subject to an inherent degree of uncertainty.

Those accounting policies are consistent with those used to prepare our consolidated financial statements as of December 31, 2017, except for the first adoption of the following Standards, Amendments, and Interpretations:

- IFRS 9 — Financial instruments
- IFRS 15 — Revenue from Contracts with Customers
- Amendments to IFRS 15 — Revenue from Contracts with Customers
- Annual Improvements (2014-2016)
- Amendments to IFRS 2 — Share-based payment
- IFRIC 22 — Foreign Currency Transactions and Advance Consideration

The impacts of the application of IFRS 15 (Revenue from Contracts with Customers) and IFRS 9 (Financial instruments) are detailed below. The adoption of the other Standards, Amendments, and Interpretations listed above had no significant impact on the consolidated financial statements.

The Group decided not to early adopt those Standards, Amendments and Interpretations that the European Union adopted but that were not effective as of December 31, 2018, namely:

- IFRS 16 — Leases
- Amendments to IFRS 9 — Prepayment features with negative compensation and modifications of financial liabilities
- IFRIC 23 — Uncertainty over income tax treatments
- Amendments to IAS 28 — Long-term interests in associates and joint ventures

A preliminary analysis of the impact of the application of IFRS 16 (Leases) and IFRIC 23 (Uncertainty over income tax treatments) is described below.

At the date of issuance of these consolidated financial statements, the following Standards, Amendments, and Interpretations were issued but not yet adopted by the European Union and were thus not effective:

- Annual Improvements (2015-2017)
- Amendments to IAS 19 — Employee Benefits
- Amendments to the Conceptual Framework in IFRS Standards
- Amendment to IFRS 3 Business Combinations
- Amendments to IAS 1 and IAS 8: Definition of Material

We are currently reviewing these Standards, Amendments, and Interpretations to measure their potential impact on our consolidated financial statements.

1.2-Key items and where to find them

	Statement of operations	Statement of financial position	Statement of cash flows
Financial restructuring completed on February 21, 2018	US$758.7 million positive impact in 2018 other financial income *See note 2, 24*	US$2,081.7 million impact on equity US$1,750 million reduction of gross debt as of February 21, 2018. *See note 2, 13*	US$260.4 million of net proceeds *See note 2*
Application of IFRS 15	US$(33.9) million on 2018 revenues and US$(38.3) million on 2018 net income *See note 1.3*	US$(11.6) million on opening equity and US$(46.4) million on December 31, 2018 equity Increase of US$114.7 million of multiclient library as of December 31, 2018 Increase of US$138.5 million of deferred revenues as of December 31, 2018 *See note 1.3*	No impact on net cash flow. Impacts on various lines disclosed. *See note 1.3*
Direct consequences of 7th of November 2018 Capital Market Day strategy announcement (CGG 2021). Change in profile and impacts.	Loss of discontinued operations of US$(600.0) million in 2018, including a US$(422.8) million impact of CGG 2021 plan *See note 5*	US$195.5 million presented as Assets held for sale as of December 31, 2018. US$ (131.7) million in liabilities directly associated with assets held for sale as of December 31, 2018. *See note 5*	Net cash flows incurred of US$(119.3) million, presented as discontinued operations in 2018 *See note 5*
Indirect consequences of 7th of November 2018 Capital Market Day strategy announcement.	Sercel inventory valuation allowance of US$(30) million *See note 4, 6, 20, 22*	Sercel inventory carrying amount is reduced by US$(30) million *See note 4, 6*	No impact on net cash flow. Impacts on various lines disclosed.
Segment figures of the new profile (continuing operations) See note 2 – Capital Market Day announcement	2018 Revenues of new profile is US$1,227.4 million 2018 Operating Income of new profile is US$142.3 million 2018 EBITDAS of new profile is US$556.0 million 2018 non-recurring charges of new profile is US$(287.8) million, including US$(226.0) million of multi-client impairment (see below) and US$(30.0) million of valuation allowance for Sercel inventory (see above) *See note 20*	GGR capital employed as of December 31, 2018 is US$2.0 billion Equipment capital employed as of December 31, 2018 is US$0.5 billion *See note 20*	2018 EBITDAS of new profile is US$556.0 million 2018 capital expenditures of new profile is US$(300.8) million *See note 20*
Changes in multi-client amortization accounting estimate with prospective application starting October 1st, 2018	Additional amortization of US$(94) million incurred in Q4'18 compared to previous estimate of amortization *See note 1.4, 10*	The NBV of the multi-client library presented is reduced by US$(94) million compared to the NBV calculated with previous amortization estimate *See note 1.4, 10*	No impact on cash flows statement. Impacts on various lines disclosed.
Multi-client surveys impairment	Impairment of US$(226) million incurred in 2018, including StagSeis survey fully impaired for US$197.0 million. *See note 10, 22*	The NBV of the multi-client library presented is reduced by US$(226) million due to the impairment. *See note 10*	No impact on cash flows statement. Impacts on various lines disclosed.

1.3-New standards impacts

IFRS 15 — Revenue from Contracts with Customers, applied starting January 1, 2018

CGG implemented IFRS 15 on January 1, 2018 with a modified retrospective application. The only change compared to Group historical practices is related to multi-client prefunding revenues. These prefunding revenues are recorded at delivery of the final data while they were historically recorded based on percentage of completion. For internal reporting purposes, CGG continues using historical method with prefunding revenues recorded based on percentage of completion.

CGG, as other seismic players, presents then a dual approach in the Group's results including:

(i) one set of figures (the "as reported" figures) with multi-client prefunding revenue recognized in full only upon delivery of the final data and

(ii) a second set of figures (the "Segment" figures) produced in accordance with the Group's historical method for multi-client prefunding revenues, corresponding to both the figures we use for internal management reporting purposes and the rules relating to the transition reporting periods that require figures being also published under the former method throughout 2018.

Opening consolidated statement of financial position

The cumulative effects on our consolidated statement of financial position due to the changes related to the adoption of IFRS 15 are disclosed in the table below:

In millions of US$	Balance as of December 31, 2017	Balance as of January 1, 2018	Adjustments due to IFRS 15
Assets			
Trade accounts and notes receivable, net	522.6	509.2	(13.4)
Deferred tax assets	21.9	39.0	17.1
Intangible assets, net	1,152.2	1,271.2	119.0
Liabilities			
Other current liabilities	123.1	251.9	128.8
Deferred tax liabilities	62.0	67.5	5.5
Total Equity	**528.1**	**516.5**	**(11.6)**

The adjustments all relate to multi-client prefunding revenues. During the years ended December 31, 2016 and 2017, US$142.2 million of revenues were recognized over time on surveys that were not completed as of December 31, 2017. US$13.4 million of these revenues were unbilled and recorded in the "Trade accounts and notes receivable, net" balance. To adjust for the application of IFRS 15, the US$128.8 million already invoiced and recognized as revenues should be considered deferred revenues and adjusted in the "other current liabilities" balance accordingly. The corresponding depreciation amounted to US$119.0 million and impacted the "intangible assets, net" balance. The net negative impact on equity as of January 1, 2018 amounted to US$(11.6) million.

Consolidated statement of operations as of December 31, 2018

The impacts of the adoption of IFRS 15 in our consolidated statement of operations are disclosed in the table below:

	As of December 31, 2018		
In millions of US$	As reported	Balances without adoption of IFRS 15	Adjustments due to IFRS 15
Operating revenues	1,193.5	1,227.4	(33.9)
Costs of operations	(931.0)	(930.7)	(0.3)
Operating income	**(179.7)**	**(145.5)**	**(34.2)**
Income taxes	(7.4)	(3.3)	(4.1)
Net income (loss) from continuing operations	**504.2**	**542.5**	**(38.3)**
Net income (loss)	**(95.8)**	**(57.5)**	**(38.3)**

Consolidated statement of financial position as of December 31, 2018

The impacts of the adoption of IFRS 15 in our consolidated statement of financial position are disclosed in the table below:

In millions of US$	As of December 31, 2018		
	As reported	**Balances without adoption of IFRS 15**	**Adjustments due to IFRS 15**
Assets			
Trade accounts and notes receivable, net	520.2	548.4	(28.2)
Deferred tax assets	22.6	17.5	5.1
Intangible assets, net	898.9	784.2	114.7
Liabilities			
Other current liabilities	250.9	112.4	138.5
Deferred tax liabilities	44.4	44.9	(0.5)
Total Equity	**1,674.1**	**1,720.5**	**(46.4)**

Consolidated statement of cash flows as of December 31, 2018

The impacts of the adoption of IFRS 15 in our consolidated statement of cash flow are disclosed in the table below:

In millions of US$	As of December 31, 2018		
	As reported	**Balances without adoption of IFRS 15**	**Adjustments due to IFRS 15**
Net income (loss)	(95.8)	(57.5)	(38.3)
Net income (loss) from continuing operations	504.2	542.5	(38.3)
Multi-client surveys depreciation and amortization	552.3	552.0	0.3
Less income tax expense	7.4	3.3	4.1
Change in trade accounts and notes receivable	(75.5)	(109.5)	33.9

IFRS 9 — Financial instruments, applied starting January 1, 2018

IFRS 9, issued on July 24, 2014, replaced IAS 39 — Financial Instruments: Recognition and Measurement on January 1, 2018. The application of IFRS 9 had no material impact on the Group's consolidated financial statements.

Impairment of financial assets and contract assets

IFRS 9 introduced a new forward-looking "expected loss" impairment model which replaced the existing "incurred loss" impairment model. The Group assessed the actual credit losses experienced over the past several years. Since our customers are generally large national or international oil and gas companies, our credit losses were insignificant over those years. Thus the outcome of the IFRS 9's "expected loss" impairment model does not differ materially from the IAS 39 impairment model.

IFRS 16 — Leases, applicable as at January 1, 2019 (figures provided below are rounded to the nearest US$10 million)

IFRS 16 was issued in January 2016 and is endorsed by the EU. It will supersede IAS 17 Leases and a number of lease-related interpretations and will result in almost all leases being recognized on the consolidated statement of financial position, as the distinction between operating and finance leases is removed for lessees. Under the new standard, both a right-of-use asset (the right to use the leased item) and a financial liability corresponding to the minimum lease payments are recognized. The only exemptions are for short-term leases and leases of low-value asset and the Group decided to use them both. The accounting for lessors will not change significantly for the Group.

As at December 31, 2018, the Group has identified non-cancellable operating lease commitments of approximately US$500 million (undiscounted) which are relevant for IFRS 16 adoption. The commitments related to lease assets consist mainly of vessels (c. 61%), offices (c. 34%) and Subsurface Imaging servers (4%). It is worth noting that the right-of-use asset and the debt related to vessels leases with our GSS JV will be respectively classified as "Assets held for sale" and "Liabilities directly associated with the assets classified as held for sale" according to IFRS 5. The discounted lease liability will be approximately US$210 million for the vessels leases (or approximately US$300 million undiscounted).

As a result, the Group expects to recognize right-of-use assets of approximately US$150 million (after adjustment related to provisions for onerous leases) from the identified operating lease commitments and a discounted lease liability of

approximately US$160 million on January 1, 2019. In addition, the existing finance lease assets (US$67 million) and liabilities (US$50 million) determined in accordance with IAS 17 as at December 31, 2018 will be reclassified and added to the right-of-use assets and lease liabilities on operating leases determined in accordance with IFRS 16 on January 1, 2019.

The Group will apply the modified retrospective approach starting January 1, 2019. Therefore, the cumulative effect of adopting IFRS 16 will be recognized as an adjustment to the opening balance of retained earnings on January 1, 2019, with no restatement of comparative information. The Group has elected to apply the standard to contracts that were previously identified as leases applying IAS 17 and IFRIC 4. The Group has elected to use the exemptions on lease contracts for which the lease terms ends within 12 months as of the date of initial application. The Group will rely on its assessment of whether leases are onerous applying IAS 37 Provisions, Contingent Liabilities and Contingent Assets and accordingly adjust its right-of-use asset.

If the lease portfolio and other parameters remain similar during the year 2019 compared to the status as of January 1, 2019, then the impact of IFRS 16 on the net income from continuing operations in 2019 is not expected to be material as the increase in depreciation and financial expense will be largely offset by the decrease in operating lease expense. Similarly, in 2019 operating cash flows from continuing operations are expected to increase and financing cash flows from continuing operations decrease by approximately US$50 million as repayment of the principal portion of the lease liabilities will be classified as cash flows from financing activities, while previously the operating lease payments were classified as cash flows from operating activities.

Impacts linked to deferred tax impacts are not included in the above figures.

IFRIC 23 — Uncertainty over income tax treatments, applicable as from January 1, 2019 (figures provided below are rounded to the nearest US$10 million)

IFRIC 23 supplements IAS 12 “Income Taxes” by specifying arrangements for measuring and recognizing uncertainty relating to income tax. This interpretation is mandatory for accounting periods beginning on or after 1 January 2019. The Group does not expect the implementation of IFRIC 23 to have a material impact on opening equity at 1 January 2019.

The amount of provisions to be reclassified as tax liabilities will be approximately US$10 million.

1.4-Changes in estimate for multi-client surveys amortization

Since the majority of the multi-client surveys sales are done during the prefunding phase plus the subsequent four years and in order to harmonize reporting practices with other European multi-client players, the Group decided from October 1, 2018 to adopt a four-year straight-line post-delivery amortization in accordance with the industry standard. Amortization was previously based on sales forecast method (80% of sales in most cases).

The introduction of the four-year straight-line post-delivery amortization led to recognizing US$146 million of amortization on after sales from October 1, 2018 to December 31, 2018 (US$57 million from surveys more than four years old and US$89 million from other surveys). The amortization of after sales would have been US$39 million without this change in estimate. The negative impact of this change in estimate is thus US$106 million.

The prefunding cost of sales, recognized concurrently with the revenue upon delivery of the survey, is calculated from October 1, 2018 as the difference between the total capitalized cost of a survey upon delivery and the fair value based upon discounted future expected sales. The net book value of the survey upon delivery thus equals the net present value of future expected sales. Prefunding cost of sales was previously 80% of the prefunding sales recognized upon delivery.

Two surveys were delivered between October 1, 2018 and December 31, 2018. The previous estimate based on 80% of the prefunding sales is US$12 million higher than the prefunding cost of sales derived on discounted future expected sales. The positive impact of this change in estimate is US$12 million.

The total negative impact of multi-client changes in estimate is US$94 million (US$106 million from after sales less the US$12 million from prefunding, represented as a net increase in amortization).

To summarize the Group accounting practices for multi-client accounting:

For IFRS purposes:

- Prefunding revenue is recognized upon delivery of the final product to the pre-funder(s).
- The prefunding cost of sales is recognized upon delivery and is calculated as the difference between the total capitalized cost of a survey upon delivery and the fair value based upon discounted future expected sales. The survey net book value upon delivery equals the discounted future expected sales.
- The net book value upon delivery is then amortized on a 4 year straight-line basis, in accordance with the industry standard.
- After sale revenues are recognized upon delivery of the final product to the client.

For segment reporting (non-IFRS) purposes:

- Prefunding revenue continues to be recognized over time on a percentage of completion basis
- Prefunding cost of sales is also recognized over time with revenue and is calculated using the sales forecast method (the amortization is 80% of the prefunding sales)
- Upon delivery, the cost of sales from the sales forecast method is adjusted to equal the cost of sales from the IFRS method.
- The net book value upon delivery is amortized on a 4 year straight-line basis, in accordance with the industry standard. The net book value upon delivery and subsequent amortization are the same in IFRS and segments figures.

- After sale revenues are recognized upon delivery of the final product to the client.

1.5-Use of judgment and estimates

The preparation of consolidated financial statements in accordance with IFRS requires management to make estimates, assumptions and judgments that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ materially from those estimates due to the change in economic conditions, changes in laws and regulations, changes in strategy and the inherent imprecision associated with the use of estimates.

Key judgments and estimates used in the financial statements are summarized in the following table:

Note	**Judgments and estimates**	**Key assumptions**
Note 2	Fair value of assets and liabilities acquired through purchase accounting	Pattern used to determine the fair value of assets and liabilities
Note 2	Fair value of the shares issued	Fair value of the shares at the date of restructuring
Note 3	Recoverability of client receivables	Assessment of clients' credit default risk
Note 5	Classification of disposal groups as held for sale	Likelihood of disposal within twelve months
	Valuation of disposal groups classified as held for sale	Assessment of disposal groups at fair value less cost to sell Final terms of disposals are in line with currently contemplated terms
Notes 7 and 8	Valuation of investments	Financial assets fair value Equity method companies fair value
Note 10	Amortization and impairment of multi-client surveys	Expected sales for each survey
Note 10	Depreciation and amortization of tangible and intangible assets	Assets useful lives
Note 11	Recoverable value of goodwill and intangible assets	Expected geophysical market trends and timing of recovery Discount rate (WACC)
Note 16	Post-employment benefits	Discount rate Participation rate to post employment benefit plans Inflation rate
Note 16	Provisions for restructuring and onerous contracts	Assessment of future costs related to restructuring plans and onerous contracts
Note 16	Provisions for risks, claims and litigations	Assessment of risks considering court rulings and attorney's positions
Note 20	Revenue recognition	Contract completion rates Assessment of fair value of contracts identifiable parts
Note 21	Development costs	Assessment of future benefits of each project
Note 25	Deferred tax assets	Hypothesis supporting the achievement of future taxable benefits

1.6-Accounting policies

1. Basis of consolidation

Our consolidated financial statements include CGG S.A. and all its subsidiaries.

Subsidiaries are fully consolidated from the date of acquisition, being the date on which we obtain control, and continue to be consolidated until the date when such control ceases. Control is achieved when we are exposed or have rights to variable returns from our involvement with the investee and have the ability to affect those returns through our power over the investee. When we have less than a majority of the voting or similar rights of an investee, we consider all relevant facts and circumstances in assessing whether we have power over the investee, including contractual arrangements with the other holders or potential voting rights.

The financial statements of the subsidiaries are prepared for the same reporting period as the parent company, using consistent accounting policies. All intra-group balances, transactions, unrealized gains and losses resulting from intra-group transactions and dividends are eliminated in full.

Losses within a subsidiary are attributed to the non-controlling interest even if that results in a deficit balance. A change in the ownership interest of a subsidiary, without a loss of control, is accounted for as an equity transaction. If we lose control over a subsidiary, we:

- derecognize the assets (including goodwill) and liabilities of the subsidiary,
- derecognize the carrying amount of any non-controlling interest,
- derecognize the cumulative translation differences, recorded in equity,
- recognize the fair value of the consideration received,
- recognize the fair value of any investment retained,
- recognize any surplus or deficit in profit or loss, and
- reclassify the parent's share of components previously recognized in other comprehensive income to profit or loss or retained earnings, as appropriate.

We use the equity method for investments classified as joint venture. A joint venture is a joint arrangement whereby the parties that have joint control of the arrangement have rights to the net assets of the arrangement. Joint control is the contractually agreed sharing of control of an arrangement, which exists only when decisions about the relevant activities require the unanimous consent of the parties sharing control.

2. Foreign currency

Effective January 1, 2012, we changed the presentation currency of our consolidated financial statements from the euro to the US dollar to better reflect the profile of our revenues, costs and cash flows, which are primarily generated in US dollars, and hence, to better present the financial performance of the Group.

The functional currency is the currency in which they primarily conduct their business. The functional currency of most of our subsidiaries is the US dollar. Goodwill attributable to subsidiaries is accounted for in the functional currency of the applicable entities.

For the subsidiaries with a functional currency different than US dollar, the financial statements are translated to US dollars using the following method:

- year-end exchange rates are applied to the statement of financial position items,
- average annual exchange rates are applied to statement of financial operations items.
- adjustments resulting from this process are recorded in a separate component of shareholders' equity.

With respect to affiliates accounted for using the equity method, the effects of exchange rates changes on the net assets of the affiliates are recorded in a separate component of shareholders' equity.

Transactions denominated in currencies other than the functional currency of a given entity are recorded at the exchange rate prevailing on the date of the transaction. Monetary assets and liabilities denominated in foreign currencies other than the functional currency are revalued at year-end exchange rates and any resulting unrealized exchange gains and losses are included in income. Unrealized exchange gains and losses arising from monetary assets and liabilities for which settlement in neither planned nor likely to occur in the foreseeable future are recorded in a separate component of shareholder's equity.

3. Business combinations

Business combinations are accounted for using the acquisition method. The cost of an acquisition is measured as the aggregate of the consideration transferred, measured at acquisition date fair value and the amount of any non-controlling interest in the acquiree. For each business combination, we measure the non-controlling interest in the acquiree either at fair value or at the proportionate share in the recognized amounts of the acquiree's identifiable net assets. Acquisition costs incurred are expensed and included in administrative expenses.

If the business combination is achieved in stages, the acquisition date fair value of the acquirer's previously held equity interest in the acquiree is remeasured to fair value at the acquisition date through profit or loss. Any contingent consideration to be transferred by us will be recognized at fair value at the acquisition date. Subsequent changes to the fair value of the contingent consideration which is deemed to be a financial instrument will be recognized in accordance with IFRS 9 in profit or loss. If the contingent consideration is classified as equity, it should not be remeasured until it is finally settled within equity. Goodwill is initially measured at cost being the excess of the aggregate of the consideration transferred measured at fair value and the amount recognized for non-controlling interest over the net identifiable assets acquired and liabilities assumed.

If this consideration is lower than the fair value of the net assets of the subsidiary acquired, the difference is recognized in profit or loss.

After initial recognition, goodwill is measured at cost less any accumulated impairment losses. For the purpose of impairment testing, goodwill acquired in a business combination is, from the acquisition date, allocated to each of the Group's cash-generating units that are expected to benefit from the combination, irrespective of whether other assets or liabilities of the acquiree are assigned to those units.

Where goodwill forms part of a cash-generating unit and part of the operation within that unit is disposed of, the goodwill associated with the operation disposed of is included in the carrying amount of the operation when determining the gain or loss on disposal of the operation. Goodwill disposed of in this circumstance is measured based on the relative values of the operation disposed of and the portion of the cash-generating unit retained.

4. Operating revenues (classified as discontinued operations)

Revenues from contracts with customers are recognized using the five-step model of the IFRS 15 standard. The following

provides a description of the main nature of our performances obligations broken down by business line, the timing of their satisfaction, and detail on the transaction prices and their allocations, if applicable.

Acquisition

Marine exclusive contracts

Under our marine exclusive contracts, we acquire seismic data for a specific customer. We recognize these revenues over time. The measure of revenue recognized is based on the data acquired and delivered to the customer.

Either the total price of the contract, for turnkey and lump sum contracts, or the unitary prices, for day-rate contracts or contracts based on square kilometers are specified in the contract. With respect to contracts for both the acquisition and processing of data, the allocation is based on the stand alone selling price of each service with revenue recognized according to respective percentages of completion.

In most cases, invoicing is carried out on a monthly basis, based on the amount of data acquired and delivered to the customer, as evidenced by a customer acceptance. As the acceptance is often obtained a few days after the balance sheet date, the counterpart of the revenue during the month is recorded as unbilled revenue, i.e. as a contract asset.

When the costs are expected to be recovered, i.e. when the contract margin is positive, the costs related to the transit of the vessel toward the survey area are recognized as an asset to fulfil the contract. They are then expensed over the duration of the survey.

Land exclusive and Multi Physics contracts

Under our land exclusive and multi physics contracts, we acquire seismic data for a specific customer. We recognize these revenues over time. For Land turnkey contracts, the measure of revenue recognized is based on direct cash costs. For land day rate and multi physics contracts, the measure of revenue recognized is based on monthly reports of data acquired or services rendered.

Either the total price of the contract, for turnkey and lump sum contracts, or the unitary prices, for day-rate or contracts on square kilometers, are specified in the contract. With respect to contracts for both the acquisition and processing of data, the allocation is based on the stand alone selling price of each service with revenue recognized according to respective percentages of completion.

In most cases, invoicing is carried out on a monthly basis, based on the amount of data acquired and delivered to the customer, evidenced by a customer acceptance. As the acceptance is often obtained after the balance sheet date, the counterpart of the revenue during the month is recorded as unbilled revenue, i.e. as a contract asset.

When the costs are expected to be recovered, i.e. when the contract margin is positive, the costs related to the mobilization of a Land crew are recognized as an asset to fulfill the contract. They are then expensed over the duration of the survey.

GGR

Geoscience (previously known as Subsurface Imaging & Reservoir) contracts

Under our Geoscience contracts, we process seismic data for a specific customer. These contracts may encompass one or several performance obligations. For each performance obligation, we recognize the revenues over time as the services are rendered. The measure of revenue recognized is based on the time spent over the total time expected to satisfy the performance obligation. The balance of revenue recognized that has not yet been invoiced to the clients is recorded as an unbilled revenue, i.e. as a contract asset.

We also recognize revenue related to the sale of software upon delivery of the software and of the access code/key as the case may be, to the client. We recognize revenue related to the maintenance of the software over time during the specific contractual period. In case of a contract providing for both the sale and maintenance of software, the price allocation is based on the stand alone selling price of each component and the revenue for the software is recognized upon delivery, while the maintenance revenue is recognized over time. In most cases, only one invoice is issued for such contracts upon license delivery and the amount corresponding to the maintenance is recorded as deferred revenues, i.e. as a contract liability, at invoicing.

We also provide geological consulting services or training for specific customers. We recognize the revenues over time as the services are rendered.

We provide licenses to use geological data to several clients. We recognize the revenue upon delivery of the data to the client.

In addition, we provide licenses to access dynamic geological databases for a specific duration. We recognize the revenue related to such licenses over the duration of the contract. In most cases, only one invoice is issued for such contracts at the beginning of the year and the total amount is recorded as deferred revenues, i.e. as a contract liability, at invoicing.

Multi-client after sales contracts and prefunding contracts

Pursuant to our multi-client after sales contracts, we provide non-exclusive licenses to use seismic processed data to several clients. We recognize the revenue upon delivery of the data to the client. In certain cases, significant after sales agreements contain multiple deliverable elements, and the associated revenues are allocated to the various elements based on specific objective evidence of the stand-alone sale price for such elements, regardless of any separate allocations stated within the contract for each element. In these cases, one invoice is issued upon delivery of the data for the total contractual amount.

In certain circumstances, revenue can also be recognized relating to a performance obligation that has already been fulfilled in the past. This happens when one client is already in possession of the license for certain data and either (i) the client is taken-over by a competitor who does not yet have the license for such data (and thus is required to pay a transfer fee) or (ii) the client involves another partner, not already having access to the licensed data, for the exploration of the

block (farm-in, uplift). Such revenue is recognized when there is an agreement on the fee and, in the case of transfer fee, when the buyer notifies us that they will not return the data to the Group.

Please refer to note 1.3 and 1.4 for changes on prefunding contracts revenue recognition linked to "IFRS 15 — Revenue from Contracts with Customers".

Equipment

We recognize revenues on equipment sales upon delivery to the customer, i.e. when control is transferred. When such contracts require a partial or total advance payment, such payments are recorded as advance billings to customers, i.e. as a contract liability.

We recognize the sale of software upon delivery of the software to the client. We recognize the maintenance of the software over time during the specific contractual period. In case of a contract providing for both the sale and maintenance of software, the price allocation is based on the stand alone selling price of the software and the revenue for the software is recognized upon delivery, while the maintenance revenue is recognized over time. In most cases, we issue only one invoice, issued upon license delivery, and the amount corresponding to the maintenance is recorded as deferred revenues, i.e. as a contract liability, at invoicing.

5. Cost of net financial debt

Cost of net financial debt includes expenses related to financial debt, composed of bonds, the debt component of convertible bonds, bank loans, capital-lease obligations and other financial borrowings, net of income provided by cash and cash equivalents.

Borrowing costs that relate to assets that take a substantial period of time to get ready for use or sale are capitalized as part of the acquisition cost of such assets.

6. Income taxes and deferred taxes

Income taxes includes all tax based on taxable profit.

Deferred taxes are recognized on all temporary differences between the carrying value and the tax value of assets and liabilities, as well as on carry-forward losses, using the balance sheet liability method. Deferred tax assets are recognized only when their recovery is considered as probable or when there are existing taxable temporary differences, of an appropriate type, that reverse in an appropriate period. When tax laws limit the extent to which unused tax losses can be recovered against future taxable profits in each year, the amount of deferred tax assets recognised from unused tax losses as a result of suitable existing taxable temporary differences is restricted as specified by the tax law.

Deferred tax liabilities are recognized on intangible assets identified and recognized as part of business combinations (technological assets, customer relationships).

Deferred tax assets and deferred tax liabilities are not discounted.

7. Intangible and tangible assets

In accordance with IAS 16 "Property, Plant and equipment" and IAS 38 "Intangible assets" only items for which cost can be reliably measured and for which the future economic benefits are likely to flow to us are recorded in our consolidated financial statements.

Property, plant and equipment

Property, plant and equipment are valued at historical cost less accumulated depreciation and impairment losses. Depreciation is generally calculated over the following useful lives:

- equipment and tools: 3 to 10 years
- vehicles: 3 to 5 years
- aircrafts: 5 to 10 years
- seismic vessels: 12 to 30 years
- buildings for industrial use: 20 years
- buildings for administrative and commercial use: 20 to 40 years

Depreciation expense is determined using the straight-line method.

We include residual value, if significant, when calculating the depreciable amount. We segregate tangible assets into their separate components if there is a significant difference in their expected useful lives, and depreciate them accordingly.

Lease agreements

Assets under a finance lease agreement or a long-term lease agreement that transfers substantially all the risks and rewards incidental to ownership to the Group are accounted for as fixed assets at the commencement of the lease term, at amounts equal to the fair value of the leased property or, if lower, the present value of the minimum lease payments, each determined at the inception of the lease. Minimum lease payments are apportioned between the finance charge and the reduction of the outstanding liability and the finance charge is allocated to each period during the lease term so as to produce a constant periodic rate of interest on the remaining balance of the liability. Assets under finance lease are depreciated over the shorter of its useful life and the lease term, if there is no reasonable certainty that the Group will obtain ownership by the end of the lease term. Depreciation is determined on the same basis as owned-assets and is included in depreciation expense.

Rent payments under operating leases are recognized as operating expenses on a straight-line basis over the lease term.

Goodwill

Goodwill is determined according to IFRS 3 Revised — Business Combinations. Goodwill is not amortized but subject to an impairment test at least once a year at the statement of financial position dates or when a triggering event occurs.

Multi-client surveys

Multi-client surveys consist of seismic surveys to be licensed to customers on a non-exclusive basis. All costs directly incurred in acquiring, processing and otherwise completing seismic surveys are capitalized into the multi-client surveys (including transit costs when applicable). The carrying amount of our multi-client library is stated on our statement of financial position at the aggregate of those costs less accumulated amortization. Whenever there is an indication that a survey may be impaired, an impairment test is performed. A systematic impairment test of all delivered surveys is performed at least at delivery date and for the yearly closing.

Before October 1, 2018, each survey was amortized in a manner that reflected the pattern of consumption of its economic benefits during both prefunding and after-sale periods. An amortization rate of 80% corresponding to the ratio of capitalized costs to total expected sales over the accounting life of the survey was applied to each normative sale, unless specific indications led to application of a different rate. If that was the case, the amortization rate was adjusted to reflect the commercial effects of price elements.

The Group decided from October 1, 2018 to adopt a four-year straight-line post-delivery amortization in accordance with the industry standard. Please refer to note 1.4.

Development costs

Expenditures on research activities undertaken with the prospect of gaining new scientific or technological knowledge and understanding are recognized in the income statement as expenses as incurred and are presented as "Research and development expenses — net". Expenditures on development activities, whereby research findings are applied to a plan or design for the production of new or substantially improved products and processes, are capitalized if:

- the project is clearly defined, and costs are separately identified and reliably measured,
- the product or process is technically and commercially feasible,
- we have sufficient resources to complete development, and
- the intangible asset is likely to generate future economic benefits, either because it is useful to us or through an existing market for the intangible asset itself or for its products.

The expenditures capitalized include the cost of materials, direct labor and an appropriate proportion of overhead. Other development expenditures are recognized in the income statement as expenses as incurred and are presented as "Research and development expenses — net".

Capitalized development expenditures are stated at cost less accumulated amortization and impairment losses.

Capitalized development costs are amortized over 5 years.

Research and development expenses in our income statement represent the net cost of development costs that are not capitalized, of research costs, offset by government grants acquired for research and development.

Other intangible assets

Other intangible assets consist primarily of customer relationships, technology and trade name acquired in business combinations. Customer relationships are generally amortized over periods ranging from 10 to 20 years and acquired technology are generally amortized over periods ranging from 5 to 10 years.

Impairment

The carrying values of our assets (excluding inventories, contract assets and assets arising from costs to obtain or fulfil a contract that are recognised in accordance with IFRS 15, non-current assets classified as held for sale in accordance with IFRS 5, deferred tax assets, assets arising from employee benefits and financial assets) are reviewed at each statement of financial position date or if any indication exists that an asset may be impaired, in compliance with IAS 36 "Impairment of assets". Factors we consider important that could trigger an impairment review include the following:

- significant underperformance relative to expected operating results based upon historical and/or projected data,
- significant changes in the manner of our use of the tested assets or the strategy for our overall business, and
- significant negative industry or economic trends.

The recoverable amount of tangible and intangible assets is the greater of their net fair value less costs of disposal and value in use.

Goodwill, assets that have an indefinite useful life and intangible assets are allocated to cash generating units or groups of cash generating units. We estimate the recoverable amount of these cash generating units at each statement of financial position closing date and whenever any indication exists that the cash generating unit may be impaired.

We determine the value in use by estimating future cash flows expected from the assets or from the cash generating units, discounted to their present value using the sector weighted average cost of capital (WACC) estimated on a yearly basis by the Group. When the recoverable value retained is a fair value less cost of disposal, the fair value is determined by reference to an active market.

We recognize an impairment loss whenever the carrying amount of an asset exceeds its recoverable amount. For an asset that does not generate largely independent cash inflows, the recoverable amount is determined for the cash-generating unit to which the asset belongs.

Impairment losses are recognized in the statement of operations. Impairment losses recognized in respect of a group of non-independent assets allocated to a cash-generating unit are allocated first to reduce the carrying amount of any goodwill allocated to cash-generating units (group of units) and then, to reduce the carrying amount of the other assets in the unit (group of units) on a pro rata basis provided that the carrying amount of an individual asset is not reduced below its value in use or fair value less costs of disposal.

A previously recognized impairment loss is reversed only if there has been a change in the assumptions used to determine the asset's recoverable amount since the last impairment loss was recognized. The reversal is limited so that the carrying amount of the asset does not exceed its recoverable amount, nor exceed the carrying amount that would have been determined, net of depreciation or amortization, had no impairment loss been recognized for the asset in prior years. Such reversal is recognized in the income statement unless the asset is carried at a revalued amount, in which case the reversal is treated as a revaluation increase.

Impairment losses recognized on goodwill cannot be reversed.

Discontinued operations and non-current assets held for sale

Assets classified as assets held for sale correspond to non-current assets for which the net book value will be recovered by a sale rather than by their use in operations. Assets held for sale are valued at the lower of historical cost and fair value less cost to sell.

Non-current assets and disposal groups comprising assets and liabilities that are expected to be recovered primarily through sale rather than through continuing use are classified as held for sale.

Non-current assets classified as held for sale and the assets of a disposal group classified as held for sale are presented separately from the other assets in the consolidated statement of financial position. The liabilities of a disposal group classified as held for sale are presented separately from other liabilities in the consolidated statement of financial position. The prior periods are not restated.

A discontinued operation is a component of an entity that has either been disposed of or is classified as held for sale, and represents a separate major line of business or geographical area of operations; and is a part of a single coordinated plan to dispose of a separate major line of business or geographical area of operations; or is a subsidiary acquired exclusively with a view to sell.

Any gain or loss from disposal, together with the results of these operations until the date of disposal, is reported separately as discontinued operations in the consolidated statements of cash flows and consolidated statements of operations presented. The prior periods are restated accordingly.

Further information on discontinued operations and non-current assets held for sale can be found in note 5.

8. Investments in companies under equity method

Under the equity method, the investments in our associates or joint ventures are carried in the statement of financial position at cost plus post acquisition changes in our share of net assets of the associates or joint ventures. Goodwill relating to the associates is included in the carrying amount of the investment and is neither amortized nor individually tested for impairment.

After application of the equity method, we determine whether it is necessary to recognize an additional impairment loss on our investment in the associates. We determine at each reporting date whether there is any objective evidence that the investments in our associates are impaired. If this is the case we calculate the amount of impairment as the difference between the recoverable amount of the associates and their carrying value and usually recognize the amount in the 'share of profit of an associate' in the statement of operations.

Upon loss of significant influence over the associate, we measure and recognize any retaining investment at its fair value. Any difference between the carrying amount of the associate upon loss of significant influence and the fair value of the retaining investment and proceeds from disposal is recognized in profit or loss.

From the date when an investment ceases to be an associate or a joint venture and becomes a financial asset we discontinue the use of the equity method. The retained interests are measured at fair value. We recognize in profit or loss any difference between (i) the fair value of any retained interest and any proceeds from disposing of a part interest in the associate or joint venture; and (ii) the carrying amount of the investment at the date the equity method was discontinued.

9. Investments and other financial assets

Investments and other financial assets include investments in non-consolidated entities, loans and non-current receivables.

In accordance with IFRS 9 "Financial instruments", we measure Investments and other financial assets at fair value through profit and loss. The fair value for listed securities is their market price at the statement of financial position date. If a reliable fair value cannot be established, securities are valued at historical cost.

- Derecognition

We derecognize a financial asset (or, where applicable, a part of a financial asset or part of a group of similar financial assets) when:

- The rights to receive cash flows from the asset have expired, or
- We have transferred the rights to receive cash flows from the asset or have assumed an obligation to pay the received cash flows in full without material delay to a third party under a 'pass-through' arrangement; and either (a) we have transferred substantially all the risks and rewards of the asset, or (b) we have neither transferred nor retained substantially all the risks and rewards of the asset, but have transferred control of the asset.

When we have transferred the rights to receive cash flows from an asset, we evaluate if and to what extent we have retained the control of this asset. When we have neither transferred nor retained substantially all of the risks and rewards of the asset, nor transferred control of the asset, the asset is recognized to the extent of our continuing involvement in the asset. In that case, we also recognize an associated liability. The transferred asset and the associated liability are measured on a basis that reflects the rights and obligations that we have retained.

Continuing involvement that takes the form of a guarantee over the transferred asset is measured at the lower of the original carrying amount of the asset and the maximum amount of consideration that we could be required to repay.

10. Treasury shares

We value treasury shares at their cost, as a reduction of shareholders' equity. Proceeds from the sale of treasury shares are included in shareholders' equity and have no impact on the statement of operations.

11. Inventories

We value inventories at the lower of cost (including direct production costs where applicable) and net realizable value.

We calculate the cost of inventories on a weighted average price basis for our Equipment segment and on a first-in first-out basis for Contractual Data Acquisition segment.

The additions and deductions in valuation allowances for inventories and work-in-progress are presented in the consolidated statements of operations as "Cost of sales".

12. Trade accounts and Notes receivable

In the Contractual Data Acquisition and Geology, Geophysics & Reservoir ("GGR") segments, customers are generally large national or international oil and gas companies, which management believes reduces potential credit risk.

In the Equipment segment, a significant portion of sales is paid by irrevocable letters of credit.

The Group maintains an allowance for doubtful accounts based upon factors surrounding the credit risk of specific customers, historical trends and other information. Credit losses have not been material for the periods presented and have consistently been within management's expectations.

Recoverable costs and accrued profit not billed comprise amounts of revenue recognized under the percentage of completion method on contracts for which billings had not been presented to the contract owners. Such unbilled accounts receivable are generally billed over the 30 or 60 days after services has been delivered.

13. Provisions

We record a provision when the Group has a present obligation (legal or constructive) as a result of a past event for which it is probable that an outflow of resources embodying economic benefits (that can be reliably determined) will be required to settle the obligation.

- Onerous contracts

We record a provision for onerous contracts equal to the excess of the unavoidable costs of meeting the obligations under the contract over the economic benefits expected to be received under it, as estimated by the Group.

- Pension, post-employment benefits and other post-employment benefits

We record obligations for contributions to defined contribution pension plans as an expense in the income statement as incurred. We do not record any provision for such plans as we have no further obligation.

Our net obligation in respect of defined benefit pension plans is calculated separately for each plan by estimating the amount of future benefit that employees have earned in return for their service in the current and prior periods. We perform the calculation by using the projected unit credit method.

- That benefit is discounted to determine its present value, and the fair value of any plan assets is deducted.
- Net interest is calculated by applying the discount rate to the net defined benefit liability or asset. Interest is recorded in the profit and loss.
- Unvested past services costs are recognized immediately if the benefits have vested immediately following the introduction of, or changes to, a pension plan.
- We record actuarial gains and losses on defined benefits plans directly in equity.

14. Financial debt

Financial debt is accounted for:

- As of the date of issuance, at the fair value of the consideration received, less issuance fees and/or issuance premium;
- Subsequently, at amortized cost, corresponding to the fair value at which it is initially recognized, less repayments at the nominal amount and increased or decreased for the amortization of all differences between this original fair value recognized and the amount at maturity; differences between the initial fair value recognized and the amount at maturity are amortized using the effective interest rate method.

15. Convertible debt

- The Company recognizes separately the components of convertible debt as respectively (i) a financial liability and (ii) an option to the holder of the instrument to convert it into an equity instrument of the Company.
- The Company first determines the carrying amount of the liability component by measuring the fair value of a similar liability (including any embedded non-equity derivative features) that does not have an associated equity component.
- The carrying amount of the equity instrument represented by the option to convert the instrument into ordinary shares is then determined by deducting the fair value of the financial liability from the fair value of the compound financial instrument as a whole. The carrying amount is presented net of associated deferred taxes.
- The sum of the carrying amounts assigned to the liability and equity components on initial recognition is always equal to the fair value that would be ascribed to the instrument as a whole.

16. Derivative financial instruments

We use over-the-counter derivative financial instruments to hedge our exposure to foreign exchange fluctuations from operational, financing and investment activities denominated in a currency different from the functional currency. In accordance with our treasury policy, we do not hold or issue derivative financial instruments for trading purposes. However, derivatives that do not qualify for hedge accounting are accounted for as trading instruments in "Other financial income (loss)".

Over-the-counter derivatives are entered into in the frame master agreements that provide a right of set-off in the event of default, insolvency or bankruptcy of one of the parties to the agreement (those netting agreements do not fulfill IAS 32 criteria to offset the fair value of derivatives on the balance sheet).

Exchange gains or losses on foreign currency financial instruments that represent the efficient portion of an economic hedge of a net investment in a foreign subsidiary are reported as translation adjustments in shareholder's equity under the line item "Cumulative translation adjustments", the inefficient portion being recognized in the statement of operations. The cumulative value of foreign exchange gains and losses recognized directly in equity will be transferred to statement of operations when the net investment is sold.

Derivative financial instruments are stated at fair value. The gain or loss on reassessment to fair value is recognized immediately in the statement of operations. However, where derivatives qualify for cash flow hedge accounting, we account for changes in the fair value of the effective portion of the hedging instruments in shareholder's equity. The ineffective portion is recorded in "Other financial income (loss)". Amounts recorded in other comprehensive income are reclassified into the statement of operations when the hedged risks impact the statement of operations.

When derivatives do not qualify for cash flow hedge accounting, we account for changes in the fair value into the statement of operations in "Other financial income (loss)".

17. Cash flow statement

The cash flows of the period are presented in the cash flow statement within three activities: operating, investing and financing activities:

- Operating activities

Operating activities are the principal revenue-producing activities of the entity and other activities that are not investing or financing activities.

- Investing activities

Investing activities are the acquisition and disposal of long-term assets and other investments not included in cash equivalents. When a subsidiary is acquired, a separate item, corresponding to the consideration paid net of cash and cash equivalents held by the subsidiary at the date of acquisition, provides the cash impact of the acquisition.

Investments in multi-client surveys are presented net of depreciation and amortization capitalized in multi-client surveys, in order to reflect actual cash outflows. Depreciation and amortization capitalized in multi-client surveys are also restated in operating activities.

- Financing activities

Financing activities are activities that result in changes in the size and composition of the contributed equity and borrowings of the entity.

They include the cash impact of financial expenses.

- Cash and cash equivalents

Cash and cash equivalents in the consolidated statement of financial position comprise cash at banks and on hand and short-term deposits with a maturity of three months or less that are readily convertible to known amounts of cash.

18. Share-based payments, including stock options

Employees (including senior executives) of the Group receive remuneration in the form of share-based payments. These rights can be settled either in equity (equity-settled transactions) or in cash (cash-settled transactions).

- Equity-settled transactions

We include stock options granted to employees in the financial statements using the following principles: the stock option's fair value is determined on the grant date and is recognized in personnel costs, with a corresponding increase in equity, on a straight-line basis over the period between the grant date and the end of the vesting period. We calculate stock option fair value using the Black-Scholes mathematical model.

- Cash-settled transactions

The cost of cash-settled transactions is measured initially at the grant date using a binomial model. A provision is recognized over the period until the vesting date. This liability is re-measured to fair value at each reporting date up to and including the settlement date, which changes in fair value recognized in the statement of operations.

19. Grants

Government grants, including non-monetary grants at fair value, are not recognized until there is reasonable assurance that the entity will comply with the conditions of the grant and that the grants will be received.

Government grants are recognized as income over the periods necessary to match them with the related costs which they are intended to compensate. They are presented as a reduction of the corresponding expenses in the item "Research and development expenses, net" in the statement of operations.

Refundable grants are presented in the statement of financial position as "Other non-current liabilities".

20. Earnings per share

Basic earnings per share amounts are calculated by dividing net income for the year attributable to ordinary equity holders of the Company by the weighted average number of ordinary shares outstanding during the year.

Diluted earnings per share amounts are calculated by dividing the net income attributable to ordinary equity holders of the Company, by the weighted average number of ordinary shares outstanding during the year plus the weighted average number of ordinary shares that would be issued on the conversion of convertible bonds, the exercise of stock options and shares from performance share plans.

In both basic and diluted, the net income attributable to ordinary equity holders of the Company is adjusted for the after-tax amounts of preference dividends, differences arising on the settlement of preferences shares, and other similar effects of preference shares classified as equity.

NOTE 2 SIGNIFICANT EVENTS, ACQUISITIONS AND DIVESTITURES

— During 2018

Financial restructuring process

In the extraordinary general meeting of shareholders held on November 13, 2017, the shareholders decided to reduce the Company's share capital by a total amount of €17,485,188, by reducing the nominal value of each share from €0.80 to €0.01. The completion of such share capital reduction was acknowledged by the Board of Directors on January 15, 2018, with the Board's approval of a reduction of the share capital from €17,706,519 to €221,331 by reducing the nominal value of the Company's shares from €0.80 to €0.01. The amount of €17,485,188, corresponding to the share capital reduction, was allocated in full to the "additional paid in capital" account.

On February 21, 2018, CGG successfully completed a rights issue with preferential subscription rights for an amount of €112,215,060.36 (including the share premium), through the issuance of 71,932,731 shares of the Company (the "New Shares") each with one warrant attached (the "Warrants #2" and together with the New Shares, the "ABSA") at a subscription price of €1.56 per ABSA (i.e. €0.01 nominal value and €1.55 share premium).

At the end of the subscription period, on February 2, 2018, the total demand, which amounted to €132.5 million, was €20.3 million higher than the target amount (amounting to a subscription rate of 118.06%). The number of ABSA subscribed on a non-reducible basis (à titre irréductible) was 65,283,036 and represented 90.76 % of the ABSA to be issued. Additionally, 19,639,466 ABSA were subscribed on a reducible basis and such subscription has therefore been only partially satisfied, up to 6,649,695 ABSA.

On February 21, 2018, CGG finalized the implementation of its financial restructuring plan, which meets the Company's objectives of strengthening its balance sheet and providing financial flexibility to continue investing in the future. This plan comprised (i) the equitization of nearly all of the unsecured senior debt, (ii) the extension of the maturities of the secured senior debt and (iii) the provision of additional liquidity to meet various business scenarios.

As part of the implementation of its financial restructuring plan, the following securities were issued on February 21, 2018:

- US$663.6 million in principal amount of first lien senior secured notes due 2023, bearing floating rate interest at Libor (floor of 1%) + 6.5% in cash, and 2.05% paid-in-kind (PIK) issued by CGG Holding (U.S.) Inc. in exchange for the balance of the Secured Loans (taking into account an upfront paydown of US$150 million of the Secured Loans). The first lien senior secured notes due 2023 were refinanced with the New First Lien Notes on April 24, 2018;
- US$355.1 million and €80.4 million in principal amount of second lien senior secured notes due 2024, bearing floating rate interest at Libor/Euribor (floor of 1%) depending on the currency + 4% in cash, and 8.5% paid-in-kind (PIK) issued by CGG S.A.. This issuance comprised US$275 million and €80.4 million as new money and US$80.2 million in exchange for part of the accrued interest claims under the Group's existing senior notes (the "Senior Notes") (with the US$ new money notes and accrued interest notes being fungible);
- 71,932,731 shares of the Company (the "New Shares") each with one share purchase warrant (the "Warrants #2" and together with the New Shares, the "ABSA"), all of which were subscribed by holders of preferential subscription rights. The final gross proceeds amounted to €112 million;
- 35,311,528 new shares (the "Creditor Shares 1") resulting from the equitization of the Convertible Bonds;
- 449,197,594 new shares (the "Creditor Shares 2") resulting from the equitization of the Senior Notes;
- 22,133,149 warrants allocated to the shareholders of CGG (the "Warrants #1");
- 113,585,276 warrants in favor of the subscribers to the Second Lien Notes (the "Warrants #3");
- 7,099,079 warrants allocated to the members of the ad hoc committee of holders of Senior Notes (the "Coordination Warrants");
- 10,648,619 warrants allocated to the members of the ad hoc committee of holders of Senior Notes (the "Backstop Warrants").

Following the issuance of New Shares, Creditor Shares 1 and Creditor Shares 2, the Company's share capital as of February 21, 2018 amounted to €5,785,750.02, divided into 578,575,002 shares with a nominal value of €0.01 per share.

	Warrants#1	Warrants#2	Warrants#3	Coordination Warrants	Backstop Warrants
Number of warrants issued	22,133,149	71,932,731	113,585,276	7,099,079	10,648,619
Exercise ratio	3 Warrants #1 for 4 new shares	3 Warrants #2 for 2 new shares	1 Warrant #3 for 1 new share	1 Coordination Warrant for 1 new share	1 Backstop Warrant for 1 new share
Exercise price	3.12 euros per new share	4.02 euros per new share	0.01 euro per new share	0.01 euro per new share	0.01 euro per new share
Maximum number of shares to be issued upon exercise of the warrants (subject to adjustments)	29,477,536	47,955,154	113,585,276	7,099,079	10,648,619
Expiry date of the warrants	February 21, 2022	February 21, 2023	August 21, 2018	August 21, 2018	August 21, 2018

Please refer to note 15 for more information regarding the exercise of Warrants between February 21, 2018 and December 31, 2018.

Prior to the equitization of the unsecured senior debt, the Senior Notes and the Convertible Bonds were delisted from the Euro MTF market of the Luxembourg Stock Exchange and Euronext Paris, respectively.

CGG's financial restructuring plan was finalized on February 21, 2018.

Following its financial restructuring, and with the settlement and delivery of all securities and instruments contemplated thereby, CGG benefits from a healthier balance sheet with notably:

- net proceeds from the completion of the financial restructuring on February 21, 2018 of US$308 million (or US$260 million after payment of financial restructuring fees) converted at the February 21, 2018 exchange rate of US$1.2312 per €1.00,

	Part denominated in Euros	Part denominated in US$	Total
	In millions of Euro	*In millions of US$*	*In millions of US$*
Rights issue with preferential subscription rights net proceeds	103.5	—	127.4
Second lien senior secured notes due 2024 net proceeds	72.1	247.8	336.5
First lien senior secured notes due 2023 repayment	—	(150.0)	(150.0)
Convertible Bonds interests payment	(4.5)	—	(5.5)
Net proceeds from financial restructuring	**171.1**	**97.8**	**308.4**
Financial restructuring fees payment	(20.3)	(22.9)	(48.0)
Net proceeds	**150.8**	**74.9**	**260.4**

- In the twelve months ended December 31, 2018, the financial restructuring, the settlement and delivery of all securities and instruments contemplated thereby, and the expenses linked to the equitized unsecured senior debt, resulted in a US$759 million gain in our consolidated statement of operations. In addition, the equity increased by US$1,323 million through the issuance of new shares (as a result of the equitization of the unsecured debt, the rights issue and the future exercise of Warrants #3, Coordination Warrants and Backstop Warrants), to reach a total equity increase of US$2,082 million.

The table below details the impacts of the financial restructuring:

	Statements of Operations	Other retained earnings	Total
			In millions of US$
Unsecured debt equitization	1,062.1	930.6	1,992.7
Rights issue with preferential subscription rights	—	127.4	127.4
Future exercise of Warrants #3, Coordination Warrants and Backstop Warrants	(250.6)	250.6	—
Second lien backstop & commitment fees	(37.4)	—	(37.4)
Rollover Fees [(1)]	—	—	—
Consulting Fees	(12.5)	—	(12.5)
Deferred tax impact	—	12.6	12.6
Others	(2.9)	1.8	(1.1)
Total	**758.7**	**1,323.0**	**2,081.7**

(1) Pursuant to the indenture governing the first lien senior secured notes issued on February 21, 2018 in connection with the financial restructuring, a 3% rollover fee (US$19.9 million) would have applied if the notes were not refinanced within three months following the financial restructuring. However, given the refinancing of such notes on April 24, 2018 as described below no such rollover fee were due.

The conversion into shares of the unsecured debt impacts the equity up to the debt carrying value. Under IFRS (IFRIC 19), the impact on the Statements of Operations (in other financial income) is the difference between the carrying value of the debt converted and the fair value of the shares issued. Considering the share price evolution on February 21 and 22, 2018, the Group concluded that €1.56 per share was a reasonable fair value estimation.

The issuance of Warrants #3, Coordination Warrants and Backstop Warrants negatively impacted the other financial income (loss) line item in the Statement of Operations, according to IFRS 2, without any impact on the equity. Given the strike price of €0.01 and the very short maturity of six months, the Black & Sholes fair value is equivalent to 1.56-0.01 = €1.55 per warrant. An equity impact will be recognized when the warrants are exercised, equal to the cash consideration received (which will be marginal given the €0.01 strike price).

All the fees have been expensed (in other financial income for the second lien backstop and commitment fees and in other revenues and expenses for the consulting fees) without any portion capitalized.

The deferred tax liabilities linked to the equity portion of the convertible bonds have been reversed through equity, without any impact on the Statements of Operations.

First lien senior secured notes due 2023 refinancing

Because the terms of the first lien senior secured notes due 2023 issued on February 21, 2018 by CGG Holding (U.S.) Inc., a wholly-owned indirect subsidiary of CGG S.A., as part of the restructuring plan (the "Refinanced First Lien Notes") provided a window to refinance them at par until May 21, 2018, we commenced an offering of new first lien senior secured notes in April 2018 to refinance the Refinanced First Lien Notes.

On April 24, 2018, CGG Holding (U.S.) Inc. issued US$300 million in aggregate principal amount of 9.000% first lien senior secured notes due 2023 and €280 million in aggregate principal amount of 7.875% first lien senior secured notes due 2023 (together, the "New First Lien Notes").

These New First Lien Notes represented at issuance a total principal amount of US$645 million (using an exchange rate of $1.2323 per €1.00) at a weighted average coupon of 8.40%. The refinancing of the Refinanced First Lien Notes during the par window allowed the CGG group to save the 3% rollover fee (representing US$19.9 million), reduces the Group's interest cost compared to the Refinanced First Lien Notes (which bore cash interest at a rate equal to three-month LIBOR plus 6.50% per annum and interest paid-in-kind at 2.05% per annum) and provides a shorter non-call period (April 2020 under the New First Lien Notes versus February 2021 under the Refinanced First Lien Notes).

CGG Holding (U.S.) Inc. used the net proceeds from the issuance, together with cash on hand, to redeem the Refinanced First Lien Notes in full on May 9, 2018 in accordance with their terms.

The New First Lien Notes and the second lien senior secured notes due 2024 share the same security package encompassing notably the US Multi- Client Library, the shares of the main Sercel operating entities (Sercel SAS and Sercel Inc.), the shares of significant GGR operating entities, and certain intercompany loans.

Renewing of the governance

On April 26, 2018, CGG's Board of Directors elected Philippe Salle as Chairman of the Board of Directors. Sophie Zurquiyah took up her position of CEO of the Group and was appointed as a director by the general meeting of shareholders on the same day. Since the beginning of the year, CGG's Board of Directors has completed the process of renewing its governance with the cooptation of six new Directors.

The members of the Board of Directors are:

Name	Position
Mr. Philippe Salle [(a)]	Independent director and Chairman of the Board
Mrs. Sophie Zurquiyah [(a)]	Director and Chief Executive Officer
Mr. Mario Ruscev [(a)]	Independent director
Mr. Robert F. Semmens	Director
Mrs. Anne-France Laclide-Drouin	Independent director
Mrs. Gilberte Lombard	Independent director
Mrs. Colette Lewiner [(a)]	Independent director
Mrs. Helen Lee Bouygues [(a)]	Independent director
Mrs. Heidi Petersen [(a)]	Independent director
Mr. Michael Daly	Independent director
Mr. Patrice Guillaume [(b)]	Director representing the employees

(a) appointed in 2018
(b) Director representing employees pursuant to section L.225-27-1 of the French commercial code

Geowave Voyager

SeaBird Exploration Plc announced on July 11, 2018 that it was in an exclusive process to acquire our seismic vessel Geowave Voyager and certain seismic equipment for cash consideration of US$17 million. The transfer of ownership of the Vessel and closing of the transaction was effective in November 2018.

Convertible bondholders' appeal

On July 17, 2018, certain holders of CGG's convertible bonds filed a recourse before the French Supreme Court (*Cour de cassation*) against the ruling rendered on May 17, 2018 by the Appeals Court of Paris rejecting a claim by a group of Convertible Bondholders against the ruling of the Commercial Court of Paris sanctioning the safeguard plan on December 1, 2017.

NYSE delisting and SEC deregistration

On September 11, 2018 CGG announced that the Board of Directors has unanimously approved the voluntary delisting of its American Depositary Shares ("ADSs") from the New York Stock Exchange ("NYSE") and its voluntary deregistration with the United States Securities and Exchange Commission ("SEC"). CGG believes that the costs associated with continuing the listing and registration of its ADSs exceed the benefits received by CGG, as the primary market for CGG shares is Euronext Paris.

Accordingly, CGG filed a Form 25 with the SEC on September 21, 2018 to effect the delisting with the NYSE and filed a Form 15F with the SEC on October 1, 2018 to terminate its SEC reporting obligations and the registration of its ADSs under the Securities Exchange Act of 1934, as amended.

The termination of the registration of its ADSs is now effective as 90 days have elapsed since the date of filing of the Form 15F with the SEC. However, as a result of the filing of a Form 15F, CGG's obligation to file certain reports, including its obligation to file annual reports on Form 20-F and to furnish reports on Form 6-K with the SEC is immediately suspended.

Following delisting of the ADSs from the NYSE, CGG intends to maintain its American Depositary Receipt program at "level one". This will enable investors to retain their ADSs and facilitate trading on the U.S. over-the-counter market.

Capital Market Day announcements

Following the 'CGG 2021' strategic plan announced on November 7, 2018 and actions undertaken afterwards, Contractual Data Acquisition is accounted under IFRS 5 as discontinued operations and therefore its contributions to statements of operations and statements of cash flows are aggregated in a single line item in both statements, respectively "Net income (loss) from discontinued operations" and "Net cash flows incurred by Discontinued Operations" for all periods presented.

The Group "continuing operations" namely GGR (Geoscience and Multi-Client) & Equipment represent the new profile of the group going forward.

Implementation of the CGG 2021 strategic plan must comply with the undertakings and requirements in the CGG safeguard plan and other applicable local legal requirements.

Please refer to note 5 and 20 for more information on the impact of the Capital Market Day announcements and the new organization of the Group.

During 2017

a — Proactive management of maritime liabilities

On January 20, 2017, CGG entered into agreements to substantially reduce the cash burden of the charter agreements in respect of three cold-stacked seismic vessels. As part of the agreements to settle those amounts on a

non-cash basis, CGG issued US$58.6 million of its 2021 Notes bearing a 6.5% interest to the relevant charter counterparties. On March 13, 2017, CGG entered into an agreement to substantially reduce the cash burden of the charter agreement in respect of the "Oceanic Champion", an active seismic vessel. As part of the agreements to settle those amounts on a non-cash basis, CGG issued US$12.1 million of its 2021 Notes bearing a 6.5% interest to the relevant charter counterparties. The consequences of these agreements are reflected in note 22 — "Other revenues and expenses" of this document.

b — New ownership set up for our seismic fleet

In April 2017, we entered into agreements with Eidesvik, the lenders under our Nordic credit facility and the lenders under the credit facilities of Eidesvik Seismic Vessels AS ("ESV") and Oceanic Seismic Vessels AS ("OSV") for the implementation of a new ownership set up for our seismic fleet.

Under the new arrangements, Global Seismic Shipping AS ("GSS"), a company organized under the laws of Norway and 50% owned by CGG (through our subsidiary, Exploration Investment Resources II AS) and Eidesvik, holds (i) Geo Vessels AS, our former wholly-owned subsidiary, which owns the five previously cold-stacked vessels (Geo Coral (re-rigged in March 2017), Geo Caribbean, Geo Celtic, CGG Alize and Oceanic Challenger), and (ii) ESV and OSV (in which we previously held 49% stakes), which respectively own the Oceanic Vega and Oceanic Sirius. Global Seismic Shipping AS is accounted for using the equity method.

The following table summarizes the consideration received and the carrying value of the assets and liabilities contributed:

(in millions of US$)	
Consideration received	
Fair value of our shares in Global Seismic Shipping AS	71.9
Total consideration received [a]	**71.9**
Carrying value of the contributed assets and liabilities	
Cash and cash equivalents	7.5
Investments in companies under equity method [1]	48.3
Property, plant and equipment, net	301.0
Finance lease net	(3.1)
Current portion of financial debt [2]	(182.5)
Provisions — current portion	(4.8)
Provisions — non-current portion	(13.4)
Other Current Liabilities	(30.0)
Liabilities linked to charter agreements	(72.1)
Total carrying value of the contributed assets and liabilities [b]	**50.9**
Net gain realized (c)= (a) – (b)	**21.0**
Reduction of the cash burden of the charter agreement [d]	(72.1)
Net impact of the transaction in operating income [3] (e) = (c) + (d)	**(51.1)**
Other financial income (loss)	(15.0)
Cost of financial debt, net	(3.3)
Net impact of the transaction in financial income (loss) [4] [f]	**(18.3)**
Net impact of the transaction in the Net Income (e) + (f)	**(69.4)**

(1) This relates to the 49% equity in income that we held in ESV and OSV, accounted for under the equity method as of March 31, 2017.
(2) This relates to the Nordic credit facility.
(3) The net impact of the transaction in operating income is a loss of US$51.1 million broken-down as follows:
- *a gain of US$21.0 million arising from our contribution to GSS is recorded in the line item "Gains (losses) on sales of assets" in our statement of operations (see note 22 — "Other revenues and expenses"),*
- *a loss of US$72.1 million linked to the renegotiation and extension of the charter agreement in respect of the operated seismic vessels "Vega" and "Sirius" to reduce the cash burden. This loss corresponds to the compensation granted to ESV and OSV following the renegotiation of the charter agreements. It is recorded in the line item "Other revenues (expenses) net" in our statement of operations (see note 22 — "Other revenues and expenses").*

(4) The net impact of the transaction in financial income is a loss of US$18.3 million broken-down as follows:
- *a loss of US$15.0 million recorded in the line item "Other financial income (loss)" in our statement of operations,*
- *a loss of US$3.3 million recorded in the line item "Cost of financial debt, net" in our statement of operations.*

c — Financial restructuring process

On February 6 2017, CGG solicited consents from the holders of each series of Senior Notes and the creditors under the Term Loan B to permit the appointment of a 'mandataire ad hoc' without such action constituting an Event of Default. CGG had previously received consents from the creditors under its French and US RCFs for the appointment.

On February 20, 2017, CGG announced the receipt of the requisite majority consent from holders of its Term Loan B, 2020 Notes, 2021 Notes and 2022 Notes and the extension of the consent solicitation in respect of its 2017 Notes.

On February 23, 2017, CGG announced execution of supplemental indentures in respect of its 2020 Notes, 2021 Notes and 2022 Notes to allow for appointment of a 'mandataire ad hoc' and its intention to discharge and satisfy the indenture in respect of its 2017 Notes. The payment to the indenture trustee, in trust for the bondholders, of the aggregate outstanding principal (US$8.3 million) and interest on the 2017 Notes was done on Friday, February 24, 2017. Following this operation, the amount of unsecured debt (Senior Notes and Convertibles) reached US$1,884 million.

On February 27, 2017, a 'mandataire ad hoc' was appointed to better organize and facilitate discussions with and between all stakeholders for the financial restructuring of the Group.

On March 3, 2017, CGG entered into a financial restructuring process with the aim of significantly reducing debt levels and related cash interest costs to align them with its cash flows. In order to facilitate such restructuring discussions held under the aegis of a mandataire ad hoc, CGG executed non-disclosure agreements ("NDAs") and initiated discussions with stakeholders.

Pursuant to the NDAs, CGG was required to publicly disclose, by May 12, 2017, the status at that date of the negotiations regarding the financial restructuring and certain previously confidential information, including selected financial targets and additional information on its business segments.

On June 2, 2017, CGG announced an agreement in principle on a financial restructuring plan that met the Company's objectives with its main creditors and DNCA, a creditor and shareholder.

On June 14, 2017, CGG announced that following agreement with key financial creditors, it has begun legal processes to implement balance sheet restructuring and create sustainable capital structure with the opening of a safeguard proceeding in France and Chapter 11 and Chapter 15 filings in the U.S.

As part of this process, the French Court which opened the safeguard proceedings appointed the former mandataire ad hoc, as judicial administrator of CGG S.A.

Prior to the legal proceedings in the U.S. and France, CGG and certain of its financial creditors entered into a lock-up agreement on June 13, 2017, pursuant to which the relevant parties committed to take all actions reasonably necessary and appropriate to support, implement and consummate the restructuring. The terms of the lock-up agreement are relatively customary and include a requirement for creditors to vote in favor of the safeguard and Chapter 11 plan (subject to receiving appropriate disclosure materials), to provide various waivers, to enter into the required documentation to effect the restructuring and not to sell their debt holdings unless the transferee enters into the lock-up agreement or is already a signatory (and is therefore bound by such terms). The lock-up agreement as of that date had been signed by (i) an ad hoc committee of secured lenders, who hold collectively approximately 53.8% of the aggregate principal amount of the Group's Secured Debt, (ii) an ad hoc committee of senior noteholders, who collectively hold approximately 52.4% of the aggregate principal amount of the Company's Senior Notes, and (iii) DNCA, which holds 5.5% of the aggregate principal amount of the Company's Senior Notes and approximately 20.7% of the aggregate principal amount of its convertible bonds. In addition, the Company entered into a restructuring support agreement with DNCA (in its capacity as shareholder) in connection with its holding of 7.9% of the Company's share capital, pursuant to which DNCA committed to take all reasonably, necessary and appropriate actions as a shareholder to support, implement and consummate the restructuring, including voting in favor of the relevant shareholder resolutions and not selling its shares in the Company during the restructuring process. In October 2017, following certain commitments made by us which are described in detail in the press release dated October 17, 2017, long-standing shareholder Bpifrance Participations (which represented approximately 9.35% of the share capital and 10.9% of the voting rights) undertook to vote in favor of the resolutions required to implement the financial restructuring.

Results of the private placement agreement: on July 13, 2017, CGG announced that as of July 7, 2017 (the end of the placement period) eligible holders representing 86.08% of the aggregate principal amount of the Senior Notes had committed to subscribe to the new secured lien senior notes with Warrants of US$375 million pursuant to the terms of a private placement agreement, and had acceded to the lock-up agreement. The issuance of the new secured lien senior notes with Warrants has been backstopped by members of the ad hoc committee of the holders of the Senior Notes holding, as of the date of the private placement agreement, 52.4% of the aggregate principal amount of the Senior Notes, who have also committed to subscribe for their pro rata shares of the new secured lien senior notes with warrants.

Approval of the draft safeguard plan by creditors' committees in France: on July 28, 2017, lenders' committee unanimously approved the draft safeguard plan, and the bondholder general meeting approved it with a majority of 93.5% of the creditors who cast a vote.

Acceptance by creditors entitled to vote on Chapter 11 plan: late September, all creditor classes entitled to vote on the Chapter 11 plan proposed in the Chapter 11 cases commenced on June 14, 2017 in the US Bankruptcy Court for the Southern District of New York by CGG's 14 main foreign, direct and indirect subsidiaries, each a borrower or guarantor in respect of the Group's funded financial indebtedness, voted to overwhelmingly accept the plan.

Specifically, 97.14% of holders who cast ballots in respect of the Secured Loans, and 97.96% of holders who cast ballots in respect of the Senior Notes, voted in favor of the plan.

On October 13, 2017, we made available to the public a prospectus (in the French language) in connection with certain issuances provided for under the draft safeguard plan and the

Chapter 11 plan in the context of the financial restructuring plan of CGG (AMF visa n°17-551). The prospectus comprised the CGG 2016 reference document (document de référence), filed with the French Financial Markets Authority (the "AMF") on May 1, 2017, the update of the Company's Reference Document filed with the AMF on October 13, the securities note (including a summary of the prospectus) dated October 13, 2017, and a summary of the prospectus.

On October 16, 2017, the relevant U.S. Bankruptcy court confirmed the Chapter 11 plan.

On October 17, 2017, a Securities Note Supplement was made available. It describes the undertaking of Bpifrance Participations to vote in favor of the resolutions required to implement the financial restructuring plan, as well as the related undertakings made by the Company and certain of its creditors in the context of the safeguard proceedings.

On October 31, 2017, a quorum of 22.48% of the share capital was present at the general meeting of shareholders, which allowed a vote on the ordinary part of the agenda, i.e. mainly approval of the 2016 consolidated annual financial statements. However, such representation was not sufficient to allow the general meeting to vote on the resolutions required to implement the financial restructuring plan. The required quorum for the extraordinary part of the general meeting on first notice is 25% of the share capital, and 20% on second notice.

On November 13, 2017, the extraordinary general meeting of shareholders, convened on second notice, approved all the resolutions required to implement the financial restructuring plan.

On December 1, 2017, the Commercial Court of Paris approved the safeguard plan of CGG, after finding the claims filed by certain holders of CGG's convertible bonds against this draft plan inadmissible.

On December 21, 2017, by an order in CGG's Chapter 15 Case, the US Bankruptcy Court recognized the ruling of the Commercial Court of Paris dated December 1, 2017 approving its safeguard plan.

Undertakings of the Company and certain of its creditors in the framework of the safeguard proceedings

(i) Undertakings of the Company

Bpifrance Participations (which held, as of December 31, 2017, 9.35% of the share capital and 10.90% of the voting rights of the Company) voted in favor of the resolutions required to implement the Financial Restructuring Plan at the general meeting of shareholders held on November 13, 2017 on second convening, in light of the undertakings made by the Company, upon authorization from its board of directors, in a letter dated October 16, 2017 sent to the supervising judge of the Paris Commercial Court (*juge commissaire*) and the judicial administrator (*administrateur judiciaire*). Pursuant to such letter, the Company:

- undertook to refrain from any form of disposal of its significant assets until December 31, 2019, pursuant to article L. 626-14 of the French Commercial Code, as such disposals are not provided for by its three-year business plan (the "Business Plan"); consequently, should such disposals appear necessary due to the evolution of market conditions that would impede implementation of the Business Plan, the Company would have to request the prior authorization of the Commercial Court of Paris;
- confirmed that the Business Plan does not provide for any form of disposal of significant assets held in France or abroad, including by its direct or indirect subsidiaries; should the disposal of such significant assets be foreseen and likely to result in a substantial change to the means or goals of the draft Safeguard Plan, the Company would have to request the prior authorization from the Commercial Court of Paris, pursuant to article L.626-26 of the French Commercial Code; the Company will keep the necessary flexibility to take an active part, as the case may be, in the potential consolidation or other form of evolution that may occur in the seismic acquisition market;
- confirmed that pursuant to the draft Safeguard Plan and in light of the underlying market assumptions of its Business Plan, no social or industrial restructuring is contemplated in France, and that the Transformation Plan, which implementation was completed by the end of 2016, had already led to the reduction of the Group's workforce by half compared to the end of 2013; more precisely, unless otherwise authorized by the Commercial Court of Paris, the Company undertook to refrain from any redundancy plan in France until December 31, 2019 and to maintain, and to do what is necessary for the French law subsidiaries it controls within the meaning of article L.233-3 of the French Commercial Code to maintain the decision centers currently located in France, including the Company's registered office, until December 31, 2022; and
- undertook (i) not to take any measure to oppose the governance undertakings made by the Signatory Creditors (as defined below), it being specified however, that the Company assumes no responsibility, and the Safeguard Plan will not be at risk of being terminated pursuant to articles L.626-25 and L.626-27 of the French Commercial Code in the event one or more third parties separate from the Signatory Creditors were to hold a sufficient number of voting rights to impose a composition of the board of directors of the Company that would differ from the one provided for under these undertakings, and (ii) to have Bpifrance Participations participate in the discussions that will take place notably with the Signatory Creditors with respect to the new composition of the Company's board of directors, in accordance with the provisions of the lock-up agreement referred to above.

The trustees in charge of overseeing the implementation of the plan (*commissaires à l'exécution du plan*), appointed by the Commercial Court of Paris, will issue a yearly report on the compliance with the undertakings that the Company makes under the Safeguard Plan and this letter, which have been acknowledged by the Commercial Court of Paris in its judgment approving the Safeguard Plan; any breach may potentially lead to the termination of the Safeguard Plan, in accordance with applicable laws and regulations. In accordance with article L. 626-26 of the French Code de commerce, any substantial change in the goals or the means

of the Safeguard Plan can only be decided by the Court, further to a report by the *commissaires à l'exécution du plan*.

(ii) Undertakings of certain Senior Notes holders creditors

Each of (i) Attestor Capital LLP, (ii) Boussard & Gavaudan Asset Management LP, and (iii) DNCA Finance, Oralie Patrimoine and DNCA Invest SICAV (each, a "Signatory Creditor") agreed to give the following undertakings on October 16, 2017, upon a request from the *Direction Générale des Entreprises*, which have been acknowledged by the Commercial Court of Paris in its judgment approving the Safeguard Plan on December 1, 2017:

- to have Bpifrance Participations involved in the discussions that will be notably held with each of the Signatory Creditors regarding the Company's board of directors' new composition, in accordance with the provisions of the lock-up agreement referred to above;
- to vote, during the first ordinary shareholders' meeting of the Company that will occur after the closing of the financial restructuring, in favor of the designation as director of candidates which will have been agreed between the Company's current board of directors and the relevant Signatory Creditor in the context of the above referred process;
- neither the relevant Signatory Creditor nor its affiliates or related persons will be represented on the Company's board of directors unless such Signatory Creditor or the funds, entities or accounts managed or advised directly or indirectly by it or its affiliates (i) hold together 10% or more of the Company's share capital or (ii) demonstrate the existence of fiduciary duties (including the duties of the relevant funds' management companies to manage the money entrusted to them by investors in the best interest of such investors);
- to vote in favor of any draft resolutions and, if necessary and subject to holding a sufficient shareholding in compliance with article L. 225-105 of the French Commercial Code, to submit any draft resolutions to the shareholders' meeting in order to maintain the Company's board of directors composed of 60% of independent directors and that such composition of the board continues to reflect, in accordance with the current situation, the diversity of geographical origins of the members of the board of directors, while complying with the Company's registered office location;
- to vote in favor of any draft resolutions and, if necessary and subject to holding a sufficient shareholding in compliance with article L. 225-105 of the French Commercial Code, to submit any draft resolutions to the shareholders' meeting in order to ensure that the Company's articles of association provide that any chief executive officer (*directeur général*) succeeding, as the case may be, the current chief executive officer (*directeur général*), will have his main place of residence located in France.

The abovementioned undertakings of each of the Signatory Creditors became effective when all the transactions for the implementation of the Safeguard Plan were completed (with the exception of the first undertaking, which took effect as from countersignature of the letter by the Signatory Creditors). The undertakings will remain valid until December 31, 2019, subject to the corresponding Signatory Creditor remaining a shareholder of the Company, it being specified that no undertaking to keep shares of the Company has been entered into.

The trustees in charge of overseeing the implementation of the plan (*commissaires à l'exécution du plan*) appointed by the Commercial Court of Paris, will issue a yearly report on the compliance with the undertakings that the Signatory Creditors make under the abovementioned letters; any breach potentially leading to the termination of the Safeguard Plan, in accordance with applicable laws and regulations.

Each of the Signatory Creditors also declared that it does not act in concert with any other Signatory Creditor, with Bpifrance Participations, or with any other third party.

During 2016

Initiation of the financial restructuring process

In November 2016 CGG announced that it would take steps to evaluate its short- and long-term alternatives to address its capital structure constraints.

Issued shares

CGG increased its share capital through the distribution of preferential subscription rights to existing shareholders launched on January 13, 2016. The final gross proceeds amounted to €350,589,080.16, corresponding to the issuance of 531,195,576 new shares. The net proceeds of the issuance amounted to €337 million (or US$367.5 million) and were used to reinforce the shareholders' equity of CGG and improve its liquidity as it finances its Transformation Plan.

The transaction was fully underwritten (excluding the Bpifrance Participations and IFP Energies Nouvelles subscription commitments) by a syndicate of banks. The fees and costs related to this transaction amounted to €13 million (US$14 million).

The listing of the new shares on the regulated market of Euronext Paris (Segment B) on the same line as the existing shares (FR0000120164) took place on February 5, 2016. As from that date, the share capital of CGG was composed of 708,260,768 shares with a nominal value of €0.40 each, for a total nominal share capital of €283,304,307.20.

Reverse stock split

The Company carried out on July 20, 2016 the reverse stock split that the Combined General Shareholders' Meeting approved on May 27, 2016. All shareholders received one new share (with all rights pertaining to shares), in exchange for 32 former shares. The first share price on July 20 was calculated on the basis of the last share price traded on July 19 (€0.69) multiplied by 32.

The listing of the new shares on the regulated market of Euronext Paris (Segment B) on a new line (FR0013181864) took place on July 20, 2016. As from that date, the share

capital of CGG was composed of 22,133,149 shares with a nominal value of €12.80 each, for a total nominal share capital of €283,304,307.20.

Change of nominal value of ordinary shares

The Company carried out on August 11, 2016 the change of nominal value of ordinary shares that the Combined General Shareholders' Meeting approved on May 27, 2016. The Company's share capital was reduced by €265,597,788 (or US$304.1 million at historical exchange rate) to bring it down from €283,304,307.20 to €17,706,519 (or US$20.3 million) by reducing the nominal value of the Company's shares after realization of the reverse split from €12.80 to €0.80.

The amount of €265,597,788, corresponding to the share capital reduction, was allocated in full to the "additional paid in capital" account.

Sale of the Multi-Physics Business Line

CGG announced on April 29, 2016, that it had entered into a binding agreement with NEOS for the sale of the Multi-Physics Business Line. On December 12, 2016, the transaction between NEOS and CGG did not proceed and the agreement for this sale was terminated.

Gardline CGG Pte Ltd

On March 24, 2016, CGG sold its 49% stake in Gardline CGG Pte Ltd., which was accounted for using the equity method in our financial statements.

NOTE 3 TRADE ACCOUNTS AND NOTES RECEIVABLE

Analysis of trade accounts and notes receivables by maturity is as follows:

(In millions of US$)	December 31, 2018	2017	2016
Trade accounts and notes receivable gross — current portion	425.5	391.9	330.9
Less: allowance for doubtful accounts — current portion	(33.4)	(33.1)	(37.1)
Trade accounts and notes receivable net — current portion	**392.1**	**358.8**	**293.8**
Trade accounts and notes receivable gross — non-current portion	—	3.1	6.9
Less: allowance for doubtful accounts — non-current portion	—	—	—
Trade accounts and notes receivable net — non-current portion	**—**	**3.1**	**6.9**
Recoverable costs and accrued profit, not billed	128.1	160.7	134.1
Total accounts and notes receivables [(1)]	**520.2**	**522.6**	**434.8**

(1) The amount does not include US$14.3 million of trade accounts and notes receivable, net, reclassified as assets held for sale as of December 31, 2018.

Allowances for doubtful accounts only relate to overdue receivables as of December 31, 2018.

As of December 31, 2018 the ageing analysis of net trade accounts and notes receivable is as follows:

(In millions of US$)	Not past due	30 days	30 - 60 days	60 - 90 days	90 - 120 days	> 120 days	Total
2018	275.8	46.8	10.4	5.6	5.3	48.2	**392.1**
2017	248.8	32.9	23.5	10.2	4.1	42.4	**361.9**
2016	189.1	33.6	17.5	3.1	6.5	50.9	**300.7**

Litigation

On March 18, 2013, CGG Services SAS, a fully owned subsidiary of CGG S.A., initiated arbitration proceedings against ONGC, an Indian company, to recover certain unpaid amounts under three commercial contracts entered into by ONGC and CGG Services SAS on one hand, and ONGC and Wavefield Inseis AS on the other hand, between 2008 and 2010. The Arbitration Tribunal issued an award in favor of CGG on July 26, 2017. ONGC appealed on October 27, 2017. We believe that the on-going procedure will allow us to recover at a minimum the amount of the receivables that are recorded on our balance sheet as unpaid receivables as of December 31, 2018.

Factoring agreements

There were no factoring agreements as of December 31, 2016 and 2018.

In 2017, we entered into an agreement with a financial institution to obtain advance payments for a marine acquisition

and processing project with a client. The collection right of the invoices to be issued was transferred to the financial institution, based on monthly client's acceptance of the work in progress. Nonetheless the terms of this agreement did not allow for de-recognition of the funded work in progress (which is thus recorded in "Trade accounts and notes receivable"). The debt corresponding to the cash received were accounted for in "Current liabilities associated with funded receivables" in the consolidated statement of financial position. As of December 31, 2017, an amount of US$9.8 million was accounted for in "Current liabilities associated with funded receivables" in the consolidated statement of financial position in respect of the above agreement.

In 2017, we also entered into a factoring agreement with the same financial institution. We transferred US$76.0 million of notes receivable as part of this agreement. The risks retained by the Group were mainly the risk of payment delay up to 60 days and the risk of commercial litigation. These risks were historically low with the transferred client. As a consequence, the Group retained an amount of US$7.6 million to the extent of its continuing involvement. Related costs recorded in operating income were not significant.

NOTE 4 INVENTORIES, WORK IN PROGRESS AND OTHER CURRENT ASSETS

	December 31, 2018			December 31, 2017			December 31, 2016		
(In millions of US$)	Cost	Valuation Allowance	Net	Cost	Valuation Allowance	Net	Cost	Valuation Allowance	Net
Consumables and spares parts	15.8	(0.4)	15.4	12.7	(0.6)	12.1	12.0	(0.9)	11.1
Raw materials and sub-assemblies	71.6	(20.3)	51.3	68.6	(20.6)	48.0	67.0	(17.2)	49.8
Work in progress	127.4	(40.1)	87.3	117.4	(33.3)	84.1	138.4	(28.5)	109.9
Finished goods	91.3	(40.5)	50.8	115.8	(20.7)	95.1	110.0	(14.5)	95.5
Inventories and work in progress [1]	**306.1**	**(101.3)**	**204.8**	**314.5**	**(75.2)**	**239.3**	**327.4**	**(61.1)**	**266.3**

Variation of inventories and work in progress

Variation of the period	December 31,		
(In millions of US$)	2018	2017	2016
Balance at beginning of period	**239.3**	**266.3**	**329.3**
Variations	(0.9)	(47.7)	(52.6)
Movements in valuation allowance [1]	(29.0)	(6.8)	(7.6)
Change in exchange rates	(9.3)	27.5	(6.8)
Change in consolidation scope	—	—	—
Others	4.7	—	4.0
Balance at end of period	**204.8**	**239.3**	**266.3**

(1) Following the 7th of November, 2018 Capital Market Day announcements, the Equipment division revised its perspectives of sales of its inventories as external outputs could not fully replace expected internal outputs. The revision of perspectives led to a provision of US30 million of its inventories (mainly Land equipment).

Other current assets

	December 31,		
(In millions of US$)	2018	2017	2016
Personnel and other tax assets	43.3	46.5	31.8
Fair value of financial instruments	—	—	—
Restricted cash	12.4	12.1	4.0
Other miscellaneous receivables	12.3	22.7	42.7
Supplier prepayments	15.6	19.6	12.0
Prepaid expenses	15.5	16.1	15.3
Other current assets [1]	**99.1**	**117.0**	**105.8**

(1) The amount does not include US$2.9 million of Other current assets, reclassified as assets held for sale as of December 31, 2018.

NOTE 5 ASSETS HELD FOR SALE AND DISCONTINUED OPERATIONS

Assets held for sale

On November 7, 2018, CGG presented its CGG 2021 strategic roadmap during the Capital Market Day. This strategic roadmap contains a transition to an asset-light model by reducing CGG's exposure to the data acquisition business, which has been impacted over the years by structural industry overcapacity, lack of differentiation, commodity pricing and a heavy fixed cost base. *See note 2.*

Disaggregation of assets:

	December 31, 2018			December 31, 2017	December 31, 2016
In millions of US$	Gross	Impairment loss recognized on the remeasurement to fair value less costs to sell	Net		
Intangible assets, net	9.1	(9.1)	—	—	—
Property, plant and equipment, net	104.5	(57.8)	46.7	14.6	18.6
Investments in companies formerly under equity method	181.6	(50.0)	131.6	—	—
Investments and other financial assets, net	—	—	—	—	—
Trade accounts and notes receivable, net	14.3	—	14.3	—	—
Other current assets, net	2.9	—	2.9	—	—
Assets held for sale, net	**312.4**	**(116.9)**	**195.5**	**14.6**	**18.6**

Disaggregation of liabilities:

In millions of US$	December 31, 2018
Trade accounts and notes payable	(4.1)
Accrued payroll costs	(0.2)
Other non-current liabilities	(1.1)
Provisions for onerous contracts [1]	(126.3)
Liabilities directly associated with the assets classified as held for sale	**(131.7)**

(1) related to the reduction of our operating fleet from 5 to 3 vessels.

Net income (loss) from discontinued operations:

	December 31,		
(In millions of US$)	2018	2017	2016
Operating revenues	225.9	284.9	232.2
Operating expenses [1]	(339.8)	(417.1)	(409.9)
Other revenues (expenses) — net	(425.3)	(73.4)	(72.2)
Operating income	**(539.2)**	**(205.6)**	**(249.9)**
Other financial income (loss)	(31.6)	(17.3)	(17.4)
Income taxes	(25.0)	(5.0)	(5.0)
Share of income (loss) in companies accounted for under equity method	(4.2)	(19.7)	(6.0)
Net income (loss) from discontinued operations	**(600.0)**	**(247.6)**	**(278.3)**

(1) Includes Cost of operations, Research and development expenses, net, Marketing and selling expenses, and General and administrative expenses

As part of the CGG 2021 plan, we recognized US$(422.8) million of restructuring costs for the period ended December 31, 2018. These restructuring costs include:

(i) US$139.1 million impairment of which US$116.9 million of impairment loss recognized on the remeasurement to fair value less cost to sell, US$16.0 million of vessels related equipment's and US$6.1 million of equity investment impairment;

(ii) US$126.3 million of provision for onerous contracts related to the reduction of our operating fleet from 5 to 3 vessels;

(iii) US$113.9 million additional provisions relating to the reduction of 712 positions worldwide and across the Group;

(iv) US$22.8 million of other costs related to our CGG 2021 plan;

(v) US$17.2 million of fair value decrease of our Global Seismic Shipping AS vendor loan; and

(vi) US$3.5 million of provisions for tax contingencies.

For the period ended December 31, 2017, we recognized US$101.1 million of restructuring costs and a revenue of US$27.7 million of which US$21 million arising from our contribution to the Global Seismic Shipping AS.

For the period ended December 31, 2016, we recognized US$35.3 million of restructuring costs and US$32.2 million of impairment mainly related to our vessels.

Net cash flows incurred by discontinued operations are as follows:

	December 31,		
(In millions of US$)	2018	2017	2016
Net cash flow provided by operating activities	(113.6)	(187.7)	(106.6)
Net cash flow used in investing activities	(5.7)	(2.2)	(4.6)
Net cash flow provided by (used in) financing activities	—	—	—
Net cash flows incurred by discontinued operations	**(119.3)**	**(189.9)**	**(111.2)**

NOTE 6 ASSET VALUATION ALLOWANCE

	December 31, 2018					
(In millions of US$)	Balance at beginning of year	Additions	Deductions	Unused Deductions	Others [(a)]	Balance at end of period
Trade accounts and notes receivable	33.1	9.1	(8.6)	—	(0.2)	33.1
Inventories and work-in-progress [(1)]	75.2	30.7	(1.7)	—	(2.9)	101.4
Tax assets	8.2	—	(3.2)	—	(0.1)	4.9
Other current assets	3.8	—	(0.8)	—	—	3.0
Total assets valuation allowance	**120.3**	**39.8**	**(14.3)**	**—**	**(3.2)**	**142.7**

(a) Includes the effects of exchange rate changes and changes in the scope of consolidation.
(1) Following the 7th of November, 2018 Capital Market Day announcements, the Equipment division revised its perspectives of sales of its inventories as external outputs could not fully replace expected internal outputs. The revision of perspectives led to a provision of US30 million of its inventories (mainly Land equipment).

	December 31, 2017					
(In millions of US$)	Balance at beginning of year	Additions	Deductions	Unused Deductions	Others [(a)]	Balance at end of period
Trade accounts and notes receivable	37.1	5.9	(11.3)	—	1.4	33.1
Inventories and work-in-progress	61.1	7.4	(0.6)	—	7.3	75.2
Tax assets	6.5	1.6	—	—	0.1	8.2
Other current assets	3.6	0.2	—	—	—	3.8
Total assets valuation allowance	**108.3**	**15.1**	**(11.9)**	**—**	**8.8**	**120.3**

(a) Includes the effects of exchange rate changes and changes in the scope of consolidation.

(In millions of US$)	December 31, 2016					
	Balance at beginning of year	Additions	Deductions	Unused Deductions	Others [(a)]	Balance at end of period
Trade accounts and notes receivable	42.3	12.3	(17.2)	—	(0.3)	37.1
Inventories and work-in-progress	55.4	9.0	(1.4)	—	(1.9)	61.1
Tax assets	6.9	0.5	(0.1)	—	(0.8)	6.5
Other current assets	7.5	0.3	(4.2)	—	—	3.6
Total assets valuation allowance	**112.1**	**22.1**	**(22.9)**	**—**	**(3.0)**	**108.3**

(a) Includes the effects of exchange rate changes and changes in the scope of consolidation.

NOTE 7 INVESTMENTS AND OTHER FINANCIAL ASSETS

(In millions of US$)	December 31,		
	2018	2017	2016
Non-consolidated investments	1.8	3.8	8.8
Loans and advances	10.2	38.4	18.2
Deposits and other	19.1	20.4	24.9
Total	**31.1**	**62.6**	**51.9**

In 2018, the Group has pledged US$18.1 million of its other financial assets in order to fulfil some collateral requirements.

Loans and advances included a loan granted by CGG Services (Norway) AS to Global Seismic Shipping AS for a net discounted amount of US$17.2 million as of December 31, 2018. It was fully impaired as of December 31, 2018 following CGG strategic roadmap presentation during the Capital Market Day.

Non-consolidated investments

(In millions of US$)	Country	2018 % of interests	December 31,		
			2018	2017	2016
Geokinetics Inc.	USA	16.0%	—	1.7	6.0
Other investments in non-consolidated companies			1.8	2.1	2.8
Total non-consolidated investments			**1.8**	**3.8**	**8.8**

On December 31, 2018, the fair value of our financial stake in Geokinetics Inc was set to nil.

No restriction or commitment exists between CGG and the non-consolidated investments.

NOTE 8 INVESTMENTS IN COMPANIES UNDER EQUITY METHOD

(In millions of US$)	Country / Head office	2018 % of interests	December 31, 2018	2017	2016
Marine acquisition					
CGG Eidesvik Ship Management AS	Norway/Bergen	49.0%	0.2	0.2	0.2
Eidesvik Seismic Vessels AS [1]	Norway/Bomlo	—	—	—	21.0
Global Seismic Shipping AS [1] [3]	Norway/Bomlo	50.0%	—	63.5	—
Oceanic Seismic Vessels AS [1]	Norway/Bomlo	—	—	—	27.0
PT Elnusa-CGGVeritas Seismic	Indonesia/Jakarta	49.0%	0.3	0.2	0.4
PTSC CGGV Geophysical Survey Limited [2]	Vietnam/Vung Tau City	49.0%	—	—	9.6
Land and Multi-Physics acquisition					
Argas [3]	Saudi Arabia/Al-Khobar	49.0%	—	68.3	64.5
Seabed Geosolutions BV [3]	The Netherlands/Amsterdam	40.0%	—	60.1	67.5
Veri-Illuq Geophysical Ltd.	Canada/Calgary	49.0%	—	(0.1)	(0.1)
Yamoria Geophysical Ltd.	Canada/Calgary	49.0%	—	(0.3)	(0.3)
GGR					
Petroleum Edge Limited	UK/London	50.0%	(3.4)	(2.3)	(1.1)
Reservoir Evaluation Services LLP [4]	Kazakhstan/Almaty	49.0%	3.0	3.1	1.8
Investments in companies under the equity method [3]			**0.1**	**192.7**	**190.5**

(1) On April, 2017, CGG entered into agreements with Eidesvik, the lenders under our Nordic credit facility and the lenders under the credit facilities of "ESV" and "OSV" for the implementation of a new ownership set up for our seismic fleet, through the creation of Global Seismic Shipping AS ("GSS") company. This new company, "GSS", holds 100% stake in "ESV" and "OSV" (see note 2).
(2) Our investment in PTSC was fully depreciated in 2017, following the decision to liquidate the JV.
(3) Following the presentation on November 7, 2018, of CGG strategic roadmap during the Capital Market Day, the investments in Global Seismic Shipping AS, Argas and Seabed Geosolutions BV were reclassified as Asset held for sale.
(4) On February 23, 2017, CGG acquired an additional 13% stake in Reservoir Evaluation Services LLP.

The variation of "Investments in companies under equity method" is as follows:

(In millions of US$)	December 31, 2018	2017	2016
Balance at beginning of period	**192.7**	**190.5**	**200.7**
Change in consolidation scope	0.4	23.6	(8.6)
Investments made during the year	—	0.7	19.0
Equity in income	(5.4)	(20.1)	(8.2)
Impairment	(6.1)	—	—
Dividends received during the period, reduction in share capital	—	(2.0)	(13.0)
Investments reclassified as *Assets held for sale*	(181.6)	—	—
Change in exchange rate and other	0.1	—	0.6
Balance at end of period	**0.1**	**192.7**	**190.5**

The changes in consolidation scope in 2017 corresponded for US$23.6 million to the implementation of the new ownership set up for our seismic fleet (see note 2 — New ownership set up for our seismic fleet). The changes in consolidation scope in 2016 corresponded for US$(8.6) million to the disposal of the shares we held in Gardline CGG PTE Ltd..

The investments in 2016 corresponded for US$19.0 million to our participation in Seabed Geosolutions BV capital increase through the conversion of part of the existing debt.

For transactions with investments in companies under the equity method, please see note 28 — Related party transactions.

NOTE 9 PROPERTY, PLANT AND EQUIPMENT

	December 31,						
	2018			2017			2016
(In millions of US$)	Gross	Accumulated depreciation	Net	Gross	Accumulated depreciation	Net	Net
Land	14.7	—	14.7	15.2	—	15.2	17.4
Buildings	234.0	(130.1)	103.9	244.0	(129.6)	114.4	108.3
Machinery & equipment	245.2	(195.3)	49.9	874.1	(741.6)	132.5	232.0
Vehicles & vessels	3.1	(2.9)	0.2	167.7	(124.7)	43.0	317.7
Other tangible assets	101.0	(84.8)	16.2	108.0	(92.5)	15.5	20.6
Assets under constructions	4.3	—	4.3	9.7	—	9.7	12.6
Total Property, plant and equipment	**602.3**	**(413.1)**	**189.2**	**1,418.7**	**(1,088.4)**	**330.3**	**708.6**

Variation of the period

	December 31,		
(In millions of US$)	2018	2017	2016
Balance at beginning of period	**330.3**	**708.6**	**885.2**
Acquisitions	63.0	45.4	57.2
Depreciation	(65.9)	(116.1)	(221.6)
Disposals	(4.6)	(18.7)	(4.4)
Change in exchange rates	(6.0)	15.6	(4.5)
Change in consolidation scope	—	(301.0)	—
Impairment of assets	(16.0)	—	—
Reclassification of tangible assets as “Assets held for sale”	(104.5)	(3.5)	(0.5)
Other	(7.1)	—	(2.8)
Balance at end of period	**189.2**	**330.3**	**708.6**

In 2018, the *Reclassification of tangible assets as “Assets held for sale*” line item includes reclassification of assets related to the Contractual Data Acquisition segment (see note 5 — non-current assets held for sale and discontinued operations). The *Impairment of assets* line item includes impairment loss recognized following our Capital Market Day announcement. In 2017, the “Change in consolidation scope” line item is related to the implementation of a new ownership set up for our seismic fleet (see note 2 — New ownership set up for our seismic fleet).

Disposals of assets mainly relate to marine seismic equipment scrapped or damaged.

Reconciliation of acquisitions with the consolidated statements of cash flows

	December 31,		
(In millions of US$)	2018	2017	2016
Acquisitions of tangible assets, excluding finance lease	63.0	45.4	57.2
Development costs capitalized (see notes 10 and 21)	33.1	34.1	34.0
Additions in other intangible assets, excluding non-exclusive surveys (see note 10)	3.0	4.7	9.0
Variance of fixed assets suppliers	4.4	(3.0)	4.3
Reclassification of flows as discontinued operations	(25.5)	(14.0)	(30.7)
Total purchases of tangible and intangible assets according to cash flow statement	**78.0**	**67.2**	**73.8**

Land, buildings and geophysical equipment recorded under finance leases

	December 31,						
	2018			2017			2016
(In millions of US$)	Gross	Accumulated depreciation	Net	Gross	Accumulated depreciation	Net	Net
Geophysical equipment and vessels under finance leases	—	—	—	5.6	(5.1)	0.5	5.4
Land and buildings under finance leases	92.4	(25.6)	66.8	92.5	(21.9)	70.6	64.4
Total Property, plant and equipment under finance leases	**92.4**	**(25.6)**	**66.8**	**98.1**	**(27.0)**	**71.1**	**69.8**

NOTE 10 INTANGIBLE ASSETS

	December 31,						
	2018			2017			2016
(In millions of US$)	Gross	Accumulated depreciation	Net	Gross	Accumulated depreciation	Net	Net
Multi-client surveys Marine	4,845.8	(4,279.1)	566.7	4,677.7	(3,936.8)	740.9	739.2
Multi-client surveys Land	751.2	(684.6)	66.6	716.5	(626.1)	90.4	108.7
Development costs capitalized	445.3	(266.3)	179.0	432.5	(228.5)	204.0	201.5
Software	107.2	(92.1)	15.1	113.2	(88.9)	24.3	30.7
Research — Technology	73.9	(73.9)	0.0	75.2	(75.1)	0.1	1.0
Customer relationships	232.1	(173.8)	58.3	232.3	(165.3)	67.0	75.3
Trade names	44.0	(31.9)	12.1	44.2	(31.6)	12.6	12.5
Other intangible assets	97.9	(96.8)	1.1	103.4	(90.5)	12.9	15.8
Total intangible assets	**6,597.4**	**(5,698.5)**	**898.9**	**6,395.0**	**(5,242.8)**	**1,152.2**	**1,184.7**

Variation of the period	December 31,		
(In millions of US$)	2018	2017	2016
Balance at beginning of period	**1,152.2**	**1,184.7**	**1,286.7**
IFRS 15 First time application [(1)]	119.0	—	—
Increase in multi-client surveys	241.6	281.0	337.4
Development costs capitalized	33.1	34.1	34.0
Other acquisitions	3.1	4.7	9.0
Depreciation on multi-client surveys	(552.3)	(297.7)	(417.2)
Other depreciation	(78.0)	(65.1)	(64.4)
Disposals	(0.3)	—	(0.1)
Change in exchange rates	(10.6)	10.5	(2.6)
Reclassification of intangible assets as “Assets held for sale”	(9.1)	—	—
Other	0.3	—	1.9
Balance at end of period	**898.9**	**1,152.2**	**1,184.7**

(1) Refer to note 1 for more information regarding the impact of “IFRS 15 – revenues from contracts with customers”.

In 2018 the “Depreciation on multi-client surveys” line item includes:

(i) US$(226) million of impairment of multi-client surveys, including StagSeis survey fully impaired for US$(197.0) million

(ii) US$(94) million impact of the multi-client changes in estimate, see note 1.4 for more information.

In 2016, it included US$96.8 million of impairment of multi-client surveys.

Reconciliation of acquisitions with the consolidated statements of cash flows and capital expenditures in note 20

	December 31,		
(In millions of US$)	**2018**	**2017**	**2016**
Increase in multi-client surveys	241.6	281.0	337.4
Multi-client depreciations & amortizations capitalized	(18.8)	(30.0)	(42.3)
Investment in multi-client surveys according to cash flow statement	**222.8**	**251.0**	**295.1**

NOTE 11 GOODWILL

Analysis of goodwill is as follows:

Variation of the period	December 31,		
(In millions of US$)	**2018**	**2017**	**2016**
Balance at beginning of period	**1,234.0**	**1,223.3**	**1,228.7**
Additions	—	—	—
Impairment	—	—	—
Change in exchange rates	(5.0)	10.7	(5.4)
Balance at end of period	**1,229.0**	**1,234.0**	**1,223.3**

Impairment review

Group management undertakes at least an annual impairment test covering goodwill, intangible assets and indefinite lived assets allocated to the cash generating units to consider whether impairment is required.

The recoverable value retained by the Group corresponds to the value in use of the assets, cash generating units or group of cash generating units, defined as the discounted expected cash flows. In certain occasions, the recoverable value retained is the fair value less costs of disposal, in which case defined by reference to an active market.

There are nine cash generating units. A cash generating unit is a homogeneous group of assets that generates cash inflows that are largely independent of the cash inflows from other groups of assets.

The following table provides the split of the total Group Goodwill per segment:

	December 31,		
(In millions of US$)	**2018**	**2017**	**2016**
Contractual Data Acquisition	—	—	—
Non-Operated Resources	—	—	—
CGU Multi-client	*284*	*284*	*284*
CGUs in Subsurface Imaging and Reservoir	*771*	*771*	*770*
GGR	**1,055**	**1,055**	**1,054**
Equipment	**174**	**179**	**169**
Total	**1,229**	**1,234**	**1,223**

Key assumptions used in the determination of recoverable value

In determining the asset recoverability through value in use, management makes estimates, judgments and assumptions on uncertain matters. For each cash generating unit tested for goodwill impairment, the value in use is determined based on economic assumptions and forecasted operating conditions as follows:

- expected cash flows estimated in the 2019 budget and 2020-2021 outlook as presented to the Board of Directors on November 6, 2018 and December 11, 2018,
- use of normative cash flows beyond Year 3, the discounted normative cash flows weigh more than 80% of the total value in use,
- long-term growth rate at 2.0% for all the CGUs,
- discount rates which we consider reflect the respective sector weighted average cost of capital (WACC):
  - » 10.0% for the Equipment segment (unchanged compared to 2017) corresponding to a pre-tax rate of 12.8%;

» 10.0% for the cash generating units within the GGR segment (compared to 9.5% in 2017) corresponding to a pre-tax rate from 12.4% up to 13.1%.

Our WACCs are calculated with the standard Capital Asset Pricing Model (CAPM) methodology. We requested an external valuation firm to perform an independent assessment in 2018. Pre-tax WACCs are calculated by iteration: the pre-tax WACC is the discount rate leading to the same net present value calculated with post-tax WACC with tax expenses excluded from cash flows projections.

In 2018

GGR:

Increasing oil and gas prices have significantly improved the profitability and cash flow within GGR's customer base, which should lead to an improved market for GGR. However, most large clients are publicly stating that they will maintain tight spending discipline and will structure their companies to prosper at commodity prices lower than today's prices.

Many customers are focusing their exploration and production budgets on increasing production from current installations, and GGR benefits from services and imaging projects, given our leading ocean bottom nodes processing capability, as well as large multi-client projects over mature areas. Our clients also invest heavily in their land operations in the United States where our contributions are more modest, but GGR has established, and is continuing to invest in, a significant data library position in the popular onshore unconventional plays in the United States.

Our top line strategy for the GGR activities in 2019 continues to be:

- Maintain our investment in new multi-client surveys, at an acceptable level of pre-funding;
- Continue to invest in research and development and people to maintain our lead in high-end imaging and advance our software offering;
- Expand our reservoir and geological operations through increased multi-client / subscription product investment and the geographic expansion of certain technologies; and
- Gain more value from integrated offerings.

The capital employed of the Multi-client cash generating unit amounts to US$876 million as of December 31, 2018, including US$284 million of goodwill.

The capital employed of the Subsurface Imaging and Reservoir cash generating units amounted to US$1,151 million as of December 31, 2018, including US$771 million of goodwill.

Equipment:

In 2019, we expect that Sercel's revenue should improve compared to 2018 with a rebound of land activity worldwide due to the need for new equipment after years of under investment and the resumption of some high-channel count megacrews projects operating in the Middle East. Sercel should also benefit from the sales of the 508XT advanced technology compared to aging systems. Geographically, pockets of new opportunities are emerging in India and Algeria, beyond our traditional markets (Russia, China and Middle East).

The marine market should stabilize but at a low level. Marine contractors continue to face a difficult market, restricting their ability to invest in new equipment. However, their current fleets are aging and their excess of equipment generated by the stacking of vessels is shrinking.

In this market environment, and notably considering its important installed base, Sercel estimates that, for 2019, it should maintain its leading position in the seismic equipment market by capitalizing on growth opportunities resulting from the strength of its current product range, the application of new technologies in all of its products as well as from its diversified geographical presence.

The capital employed of the Equipment cash generating unit amounted to US$534 million as of December 31, 2018, including US$174 million of goodwill.

No impairment of goodwill recognized in 2018.

In 2017

The capital employed of the Multi-client cash generating unit amounts to US$1,096 million as of December 31, 2017, including US$284 million of goodwill.

The capital employed of the Subsurface Imaging and Reservoir cash generating units amounted to US$1,114 million as of December 31, 2017, including US$771 million of goodwill.

The capital employed of the Equipment cash generating unit amounted to US$604 million as of December 31, 2017, including US$179 million of goodwill.

No impairment of goodwill recognized in 2017.

In 2016

The capital employed by the Multi-client cash generating unit amounted to US$1,165 million as of December 31, 2016, including US$284 million of goodwill.

The capital employed of the Sub Surface Imaging and Reservoir cash generating units amounted to US$1,147 million as of December 31, 2016 including US$770 million goodwill.

The capital employed by the Equipment cash generating unit amounted to US$617 million as of December 31, 2016 including US$169 million of goodwill.

No impairment of goodwill recognized in 2016.

Sensitivity to changes in assumptions

Changing the assumptions selected by Group management, in particular the discount rate and the normative cash flows (based on EBITDAS — see definition in note 20) could significantly affect the evaluation of the value in use of our cash generating units and, hence, the Group's impairment

test result. The profile of the business cycle could affect, to a lesser extent compared to the two previous assumptions, the evaluation of the value in use of our cash generating units. The cash flow generated during 2020 (chosen as middle of the three years sequence) is an important assumption.

The following changes to the assumptions used in the impairment test lead to the following:

(In millions of US$)	Goodwill	Excess of the expected future Discounted cash flows over the carrying value of assets including goodwill	Sensitivity on 2020 cash flows		Sensitivity on normative cash flows		Sensitivity on discount rate (after tax)	
			Decrease by 10%	Increase by 10%	Decrease by 10%	Increase by 10%	Decrease by 0.25bps	Increase by 0.25bps
CGU Multi- client	284	627	(13)	+13	(113)	+113	+46	(43)
CGUs in Subsurface Imaging and Reservoir	771	411	(9)	+9	(128)	+128	+52	(49)
Equipment segment	174	373	(3)	+3	(81)	+81	+32	(30)
Total	**1,229**							

NOTE 12 OTHER CURRENT LIABILITIES

(In millions of US$)	December 31, 2018	2017	2016
Value added tax and other taxes payable	45.3	48.5	25.6
Deferred revenue [(1)]	199.9	58.0	72.0
Fair value of financial instruments (see note 14)	0.3	—	—
Other liabilities	5.4	16.6	42.6
Other current liabilities	**250.9**	**123.1**	**140.2**

(1) The increase in deferred revenue is directly linked to the application of IFRS 15 since January 1, 2018. See notes 1.3 and 19 for more details.

NOTE 13 FINANCIAL DEBT

Gross financial debt as of December 31, 2018 was US$1,166.7 million compared to US$2,955.3 million as of December 31, 2017. Refer to note 2 — "Significant events" for information on the impact on financial debt of the financial restructuring completed on February 21, 2018.

Our gross debt as of December 2018 breaks down as follows:

	December 31,						
	2018			2017			2016
(In millions of US$)	Current	Non-current	Total	Current	Non-current	Total	Total
High yield bonds	—	—	—	1,573.9	—	1,573.9	1,430.1
Convertible bonds	—	—	—	396.0	—	396.0	332.9
Term loans	—	—	—	337.4	—	337.4	332.8
Credit facilities	—	—	—	470.5	—	470.5	548.9
New First lien senior secured notes due 2023	—	620.6	620.6				
Second lien senior secured notes due 2024 (including PIK) [a]	—	480.7	480.7				
Bank loans and other loans	0.4	3.0	3.4	4.6	—	4.6	94.2
Finance lease debt	5.4	44.6	50.0	5.8	52.3	58.1	75.6
Sub-total	**5.8**	**1,148.9**	**1,154.7**	**2,788.2**	**52.3**	**2,840.5**	**2,814.5**
Accrued interests	12.0	—	12.0	114.6	—	114.6	34.3
Financial debt	**17.8**	**1,148.9**	**1,166.7**	**2,902.8**	**52.3**	**2,955.1**	**2,848.8**
Bank overdrafts	—	—	—	0.2	—	0.2	1.6
Total [b]	**17.8**	**1,148.9**	**1,166.7**	**2,903.0**	**52.3**	**2,955.3**	**2,850.4**

(a) PIK: payment-in-kind interest.
(b) After completion of the financial restructuring, the financial debt decreases from US$2,955 million as of December 31, 2017 down to US$1,205 million as of February 21, 2018, out of which US$10 million are current and US$1,195 million are non-current. See note 2

Changes in liabilities arising from financing activities

(In millions of US$)	December 31, 2018	December 31, 2017
Balance at beginning of period	**2,955.1**	**2,848.8**
Decrease in long term debts	*(195.9)*	*(26.9)*
Increase in long term debts	*336.5*	*2.3*
Reimbursement on leasing	*(5.7)*	*(5.7)*
Financial interests paid	*(73.2)*	*(85.0)*
Cash flows	61.7	(115.3)
Cost of financial debt, net	127.4	211.0
Unsecured debt equitization (see note 2)	(1,992.7)	—
Commitment fees on 1st lien and 2nd lien (see note 2)	57.9	—
Nordic credit facility (see note 2 — New ownership set up for our seismic fleet)	—	(182.5)
Liabilities linked to charter agreements (see note 2 — management of maritime liabilities)	—	70.7
Change in exchange rates	(34.3)	133.2
Other	(8.4)	(10.8)
Balance at end of period	**1,166.7**	**2,955.1**

Financial debt by financing sources

	Issuing date	Maturity	Nominal amount Dec 31, 2018	Net balance Dec 31, 2018	Interest rate
			(In millions of currency)	*(In millions of US$)*	
New First lien secured notes due 2023	2018	2023	€ 280.0	320.6	7.875%
New First lien secured notes due 2023	2018	2023	US$300.0	300.0	9.0%
Sub-total New First lien				**620.6**	
Second lien secured notes due 2024	2018	2024	€ 80.4	92.0	Euribor 3M + 4% in cash,+ 8.5% PIK
Second lien secured notes due 2024	2018	2024	US$355.1	355.1	Libor 3M + 4% in cash,+ 8.5% PIK
PIK Second lien secured notes due 2024 [1]	—	—	—	33.6	Same as principal amount
Sub-total Second lien				**480.7**	
Other bank loans	—	—	—	0.4	—
Other loans	—	—	—	3.0	—
Sub-total bank loans and other loans				**3.4**	
Real estate finance lease	2010	2022	€ 75.1	50.0	—
Other finance lease	—	—	—	0.0	—
Sub-total Finance lease debt				**50.0**	
Total financial debt, excluding accrued interests and bank overdrafts				**1,154.7**	

(1) PIK: payment-in-kind interest

Financial debt by currency

	December 31,		
(In millions of US$)	**2018**	**2017**	**2016**
US dollar	682.8	1,756.7	1,879.3
Euro	471.9	1,083.8	935.2
Total financial debt, excluding accrued interests and bank overdrafts	**1,154.7**	**2,840.5**	**2,814.5**

Financial debt by interest rate

	December 31,		
(In millions of US$)	**2018**	**2017**	**2016**
Variable rates (average effective rate December 31, 2018: 14.37%, 2017: 6.76%, 2016: 5.13%)	480.7	807.9	820.9
Fixed rates (average effective rate December 31, 2018: 8.08%, 2017: 5.42%, 2016: 5.43%)	674.0	2,032.6	1,993.6
Total financial debt, excluding accrued interests and bank overdrafts	**1,154.7**	**2,840.5**	**2,814.5**

Variable interest rates are generally based on inter-bank offered rates of the related currency.

First lien senior secured notes due 2023

On February 21, 2018, CGG Holding (U.S.) Inc. issued US$663.6 million in principal amount of first lien senior secured notes due 2023, bearing floating rate interest at

Libor (floor of 1%) + 6.5% in cash, and 2.05% PIK in exchange for the balance of the Secured Loans taking into account an upfront paydown of US$150 million.

New First lien secured notes due 2023

The outstanding value at December 31, 2018, is US$620.6 million.

Because the terms of the first lien senior secured notes due 2023 issued on February 21, 2018 by CGG Holding (U.S.) Inc., a wholly-owned indirect subsidiary of CGG S.A., as part of the restructuring plan (the "Refinanced First Lien Notes") provided a window to refinance them at par until May 21, 2018, we commenced an offering of new first lien senior secured notes in April 2018 to refinance the Refinanced First Lien Notes.

On April 24, 2018, CGG Holding (U.S.) Inc. issued US$300 million in aggregate principal amount of 9.000% first lien senior secured notes due 2023 and €280 million in aggregate principal amount of 7.875% first lien senior secured notes due 2023 (together, the "New First Lien Notes").

These New First Lien Notes represented at issuance a total principal amount of US$645 million (using an exchange rate of $1.2323 per €1.00) at a weighted average coupon of 8.40%. The refinancing of the Refinanced First Lien Notes during the par window allowed the CGG group to save the 3% rollover fee (representing US$19.9 million), reduces the Group's interest cost compared to the Refinanced First Lien Notes (which bore cash interest at a rate equal to three-month LIBOR plus 6.50% per annum and interest paid-in-kind at 2.05% per annum) and provides a shorter non-call period (April 2020 under the New First Lien Notes versus February 2021 under the Refinanced First Lien Notes).

CGG Holding (U.S.) Inc. used the net proceeds from the issuance, together with cash on hand, to redeem the Refinanced First Lien Notes in full on May 9, 2018 in accordance with their terms.

The New First Lien Notes and the second lien senior secured notes due 2024 share the same security package encompassing notably the US Multi- Client Library, the shares of the main Sercel operating entities (Sercel SAS and Sercel Inc.), the shares of significant GGR operating entities, and certain intercompany loans.

Second lien senior secured notes due 2024

The outstanding value at December 31, 2018, is US$480.7 million.

On February 21, 2018, CGG S.A. issued US$355.1 million and €80.4 million in principal amount of second lien senior secured notes due 2024 (US$480.7 million as of December 31, 2018, including the paid-in-kind (PIK) from February 21, 2018 to December 31, 2018 and converted at the December 31, 2018 exchange rate of US$1.1450 per €1.00), bearing floating rate interest at Libor /Euribor (floor of 1%) depending on the currency + 4% in cash, and 8.5% PIK. This issuance comprises US$275 million and €80.4 million as new money and US$80.2 million in exchange for part of the accrued interest claims under the Senior Notes (with the US$ new money notes and accrued interest notes being fungible).

The New First Lien Notes due 2023 and the second lien senior secured notes due 2024 share the same security package encompassing notably the US Multi- Client Library, the shares of the main Sercel operating entities (Sercel SAS and Sercel Inc.), the shares of significant GGR operating entities, and certain intercompany loans.

Term loans

On February 21, 2018, CGG finalized the implementation of its financial restructuring plan, which comprises the extension of the maturities of the secured senior debt (see *First lien notes due 2023* above).

On November 19, 2015, CGG S.A. announced that its subsidiary, CGG Holding (U.S.) Inc. ("CGG US"), launched an Exchange Offer in relation to CGG S.A.'s 7.75% Senior Notes due 2017, 6.50% Senior Notes due 2021 and 6.875% Senior Notes due 2022 (the Notes). CGG US offered senior secured term loans (Term Loans) in exchange for any and all of the 7.75% Senior Notes due 2017 and a combined total of up to US$135 million of the 6.5% Senior Notes due 2021 and/or 6.875% Senior Notes due 2022 if accompanied by the concurrent tender of an equal or greater corresponding amount of the 7.75% Senior Notes due 2017. US$135 million of the 7.75% Senior Notes due 2017 was outstanding as of September 30, 2015.

On December 18, 2015, CGG announced that:

- US$126.7 million out of US$135 million outstanding 2017 notes were replaced by a secured term loan due 2019.
- US$45.1 million out of US$650 million outstanding 2021 notes were replaced by a secured term loan due 2019.
- US$80.4 million out of US$500 million outstanding 2022 notes were replaced by a secured term loan due 2019.
- In addition of the Exchange Offer the €84.4 million Fugro loan was also replaced by a secured term loan due 2019 amounting to US$90 million.

The Term Loans would mature on May 15, 2019 and bear an interest, at the option of the Company, of adjusted LIBOR plus 5.50% per annum or adjusted base rate plus 4.50% per annum. Adjusted LIBOR had a floor of 1.00% and adjusted base rate shall not be less than 2.00%.

The term loans were secured indebtedness ranking pari passu with the existing US and French Revolving Credit Facilities sharing the same security package encompassing notably the fleet streamers, the US Multi-Client Library, the shares of the main Sercel operating entities (Sercel SAS and Sercel Inc), the shares of significant GGR operating entities, and some intercompany loans.

High Yield bonds

On February 21, 2018, CGG finalized the implementation of its financial restructuring plan, which comprises the equitization of all of the High Yield Bonds.

CGG S.A. issued several bonds in US dollar and euros, with maturities 2017 (fully redeemed), 2020, 2021 and 2022.

These notes were listed on the Luxembourg Stock Exchange; and were guaranteed on a senior basis by certain of our subsidiaries.

Those bonds included certain restrictive covenants, including limitations on additional indebtedness subscriptions, pledges arrangements, sales and lease-back transactions, issuance and sale of equity instruments and dividends payments by certain subsidiaries of the Group.

High yield bonds (US$500 million, 6.875% Senior Notes, maturity 2022)

As part of the restructuring plan, this debt was equitized on February 21, 2018

On May 1, 2014, we issued US$500 million principal amount of our 6.875% Senior Notes due 2022.

The Senior Notes were issued at a price of 100% of their principal amount. We used the net proceeds from the notes to redeem the entire US$225 million outstanding principal amount of our 9.50% Senior Notes due 2016 and to repay US$265 million in principal amount of our 7.75% Senior Notes due 2017.

High Yield bonds (US$71 million, 6.50% Senior Notes, maturity 2021)

As part of the restructuring plan, this debt was equitized on February 21, 2018

On January 20, 2017, CGG entered into agreements to substantially reduce the cash burden of the charter agreements in respect of three cold-stacked seismic vessels. As part of the agreements to settle those amounts on a non-cash basis, CGG issued US$58.6 million of its 2021 Notes bearing a 6.5% interest to the relevant charter counterparties. On March 13, 2017, CGG entered into an agreement to substantially reduce the cash burden of the charter agreement in respect of the "Oceanic Champion", an active seismic vessel. As part of the agreements to settle those amounts on a non-cash basis, CGG issued US$12.1 million of its 2021 Notes bearing a 6.5% interest to the relevant charter counterparties.

High Yield bonds (US$650 million, 6.50% Senior Notes, maturity 2021)

As part of the restructuring plan, this debt was equitized on February 21, 2018

On May 31, 2011, we issued US$650 million principal amount of 6.50% Senior Notes due June 1, 2021.

The Senior Notes were issued at a price of 96.45% of their principal amount, resulting in a yield of 7%. We used the net proceeds of the issuance to redeem the remainder of our US$530 million 7.50% Senior Notes due May 2015 and to repay in full the US$508 million outstanding under our term loan B facility.

High yield bonds (€400 million, 5.875% Senior Notes, maturity 2020)

As part of the restructuring plan, this debt was equitized on February 21, 2018

On April 23, 2014, we issued €400 million (or US$546.3 million, converted at historical closing exchange rate of US$1.3658) principal amount of our 5.875% Senior Notes due 2020.

The Senior Notes were issued at a price of 100% of their principal amount. We used the net proceeds from the notes to fully repurchase our 1.75% convertible bonds due 2016 amounting to €360 million. The remaining net proceeds were used to reimburse the €28.1 million installment of the vendor loan granted by Fugro due in 2015.

Convertible bonds

On February 21, 2018, CGG finalized the implementation of its financial restructuring plan, which comprises the equitization of all of the High Yield Bonds.

Convertible bonds (€325 million, 1.75% Senior Notes, maturity 2020)

As part of the restructuring plan, this debt was equitized on February 21, 2018

Following the reverse split and the change of nominal value of ordinary shares that occurred in 2017 (see note 15) the conversion ratio was 0.044 CGG share per one bond.

In May 2015, CGG initiated a simplified public exchange offer for its outstanding 11,200,995 bonds convertible into and/or exchangeable for new or existing share of the Company (convertible bonds) due 2019, with the intention to issue new convertible bonds due 2020 at a ratio of five 2020 convertible bonds for two 2019 convertible bonds tendered into the offer.

On June 26, 2015, holders exchanged 90.3% of the principal amount of the existing 2019 convertible bonds (or 10,114,014 bonds). In consideration, CGG issued 25,285,035 convertible bonds maturing on January 1, 2020 for a total nominal amount of €325.1 million (or US$363.7 million converted at the historical closing exchange rate of US$1.1189).

The 2020 convertible bonds' nominal value was set at €12.86 per bond (versus €32.14 for the 2019 convertible bonds). The new bonds bear interest at a rate of 1.75% payable semi-annually in arrears on January 1 and July 1 of each year (versus 1.25% for the 2019 convertible bonds). The bonds entitle the holders to receive new and/or existing CGG shares at the ratio of one share per one bond, subject to adjustments. Under certain conditions, the bonds may be redeemed prior to maturity at our option.

As of June 30, 2015, as a result of this transaction, we derecognized the financial liability and equity components related to the 2019 convertible bonds that were exchanged and we recognized the 2020 convertible bonds at their fair value. The impact of the transaction on the net income of the period was not significant. The impact on equity amounted to

US$8.5 million, net of taxes. The financial liability component was assessed using a 6.63% interest rate and amounted to €265.4 million (or US$296.9 million).

Convertible bonds (previously €360 million, now €35 million, 1.25% Senior Notes, maturity 2019)

As part of the restructuring plan, this debt was equitized on February 21, 2018

Following the reverse split and the change of nominal value of ordinary shares that occurred in 2017 the conversion ratio was 0.044 CGG share per one bond.

As a result of the simplified public exchange offer (see *Convertible bonds —€360 million, 1.25% Senior Notes, maturity 2020* above), the outstanding amount of the financial liability that corresponds to the 2019 convertible bonds that were not exchanged amounted to €30.3 million (or US$34 million) in the consolidated statement of financial position as of December 31, 2015.

On November 20, 2012, we issued 11,200,995 bonds convertible into and/or exchangeable for new or existing shares of our company to be redeemed on January 1, 2019 for a total nominal amount of €360 million. We used the net proceeds of the issuance to finance a portion of the €1.2 billion acquisition price for Fugro Geoscience.

The bonds' nominal value was set at €32.14 per bond, representing an issue premium of 40% of the CGG's reference share price on the regulated market of NYSE Euronext in Paris. The bonds bear interest at a rate of 1.25% payable semi-annually in arrears on January 1 and July 1 of each year. The bonds entitled the holders to receive new and/or existing CGG shares at the ratio of one share per one bond, subject to adjustments. Under certain conditions, the bonds could have be redeemed prior to maturity at our option.

As of November 20, 2012, the financial liability component was US$359 million (€277 million) and the equity component was US$98 million (€75 million), net of issuing fees. The fair value of the financial liability was assessed using a 5.47% interest rate.

Credit facilities

US$165 million Revolving Credit Agreement (US revolving facility)

On February 21, 2018, CGG finalized the implementation of its financial restructuring plan, which comprises the extension of the maturities of the secured senior debt (see *First lien notes due 2023* below).

On July 15, 2013, we entered into a new US revolving credit facility of up to US$165 million with a five-year maturity.

US$325 million Revolving Credit Agreement (French revolving facility)

On February 21, 2018, CGG finalized the implementation of its financial restructuring plan, which comprises the extension of the maturities of the secured senior debt (see *First lien notes due 2023* below).

On July 24, 2014, we extended the maturity of our French revolving credit facility.

On July 31, 2013, we entered into a new French revolving credit facility of up to US$325 million with a three-year maturity with two extension options of one year each.

Nordic revolving facility

See bank loans below

Bank loans

US$250 million Nordic credit facility

The "Fleet ownership changes" transaction led to a reduction of the gross debt of the Group in 2017 of US$182.5 million, corresponding to the principal amount of loans under the Nordic credit facility outstanding as of March 31, 2017.

On December 16, 2014, we completed the amendment and extension of our Nordic credit facility. The credit amount was increased from US$175 million to US$250 million and the maturity extended from May 2018 to December 2019. The new amount is split into a US$100 million authorized revolving facility and a US$150 million term loan. We entered into an interest rate swap to fix the annual rate at 4.3%.

On July 1, 2013, we entered into a five-year US$200 million financing secured by vessel assets, split into two tranches of US$100 million each, the proceeds of which were used in part to reimburse the 2013 tranche of the vendor loan granted by Fugro. We entered into an interest rate swap to fix the annual effective rate at 4.4%.

US$25 million streamer financing

We finished to reimbursed the streamer financing in 2018

On September 29, 2014, the US$25 million streamer financing line was reduced to US$12.5 million and further reduced to US$6.3 million on December 18, 2014, in line with the reduction of the capital expenditures and the fleet.

On December 19, 2013, we signed a loan agreement for a maximum amount of US$25 million with multiple drawings. This loan is dedicated to finance the acquisition of marine equipment to be delivered in up to twelve monthly lots over a period of one year. On December 30, 2014, we entered into an interest rate swap to fix the annual rate at 3.6%. This loan is to be reimbursed over five years after the deadline for drawing.

NOTE 14 FINANCIAL INSTRUMENTS

Because we operate internationally, we are exposed to general risks linked to operating abroad. Our major market risk exposures are changing interest rates and currency fluctuations. We do not enter into or trade financial instruments including derivative financial instruments for speculative purposes. Please also refer to chapter 2 of our annual report for qualitative information.

Foreign currency risk management

As a company that derives a substantial amount of its revenue from sales internationally, we are subject to risks relating to fluctuations in currency exchange rates. Our revenues and expenses are mainly denominated in US dollars and euros, and to a significantly lesser extent, in Canadian dollars, Brazilian reals, Australian dollars, Norwegian kroner, British pounds and Chinese yuan.

Foreign currency sensitivity analysis

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, 2018, we estimate our annual fixed needs in euros to be approximately €300 million and as a result, an unfavorable variation of US$0.10 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$30 million.

The following table shows our exchange rate exposure as of December 31, 2018:

(Converted in millions of US$)	As of December 31, 2018					
	Assets	**Liabilities**	**Currency commitments**	**Net position before hedging**	**Forward contracts applied**	**Net position after hedging**
	(a)	**(b)**	**(c)**	**(d) = (a) – (b) ± (c)**	**(e)**	**(f) = (d) + (e)**
US$ [1]	463.6	(865.3)	—	(401.7)	(2.2)	(403.9)
EUR [2]	69.4	(458.6)	—	(389.2)	—	(389.2)
US$ [3]	53.5	(109.1)	—	(55.6)	13.6	(42.0)
BRL [4]	11.1	—	—	11.1	—	11.1

(5) US$-denominated assets and liabilities in the entities whose functional currency is the euro.
(6) Euro-denominated assets and liabilities in the entities whose functional currency is the US$.
(7) US$-denominated assets and liabilities in the entities whose functional currency is the Brazilian real.
(8) BRL-denominated assets and liabilities in the entities whose functional currency is the US$.

"Gross financial debt" is the amount of bank overdrafts, plus current portion of financial debt, plus financial debt, and "net financial debt" is gross financial debt less cash and cash equivalents. Net financial debt is presented as additional information because we understand that certain investors believe that netting cash against debt provides a clearer picture of our financial liability exposure. However, other companies may present net financial debt differently than we do. Net financial debt is not a measure of financial performance under IFRS and should not be considered as an alternative to any other measures of performance derived in accordance with IFRS.

Our financial debt is partly denominated in euro and converted in US dollars at the closing exchange rate. As of December 31, 2018, our US$ 733 million of net financial debt included a part of debt denominated in euro of €254 million based on the closing exchange rate of US$1.1450.

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$25 million.

Foreign forward exchange contracts

Forward exchange transactions are aimed at hedging future cash flows against rate fluctuation in relation with awarded commercial contracts. Usually these foreign forward exchange contracts maturity is less than one year.

We do not enter into forward foreign currency exchange contracts for trading purpose.

As of December 31, 2018, contracts were outstanding for the US dollar equivalent of US$34.2 million (of which US$15.8 million were applied), of which US$13.6 million against Brazilian reals and US$20.6 million against Euros.

Effects of forward exchange contracts on financial statements are as follows:

(In millions of US$)	December 31, 2018	2017	2016
Carrying value of forward exchange contracts (see notes 4 and 12)	(0.3)	—	—
Gains (losses) recognized in profit and loss (see note 22)	(0.8)	—	0.2
Gains (losses) recognized directly in equity	(0.1)	—	(0.2)

Interest rate risk management

We are subject to interest rate risk on our floating rate debt and when we refinance any of our debt. As of December 31, 2018, we had US$481 million of debt, under our second lien notes, bearing variable interest, and an increase of one percentage point in the applicable three-month interest rate would have had a negative impact on our net results before taxes of US$4.8 million. Our second lien notes are subjects to paid-in-kind (PIK) interests at a fixed rate of 8.5%. As a result, the principal amount increases each period and as such, the variable component of interest is paid on an increasing amount each period. Changes in the monetary policies of the US Federal Reserve and the European Central Bank, developments in financial markets and changes in our perceived credit quality may increase our financing costs and consequently adversely impact our ability to refinance our indebtedness, which could have a negative impact on our business, liquidity, results of operations and financial condition.

Interest rate sensitivity analysis

The following table shows our variable interest rate exposure by maturity as of December 31, 2018.

12.31.2018 *In millions US$*	Financial assets (*) (a) Fix rate	Variable rate	Financial liabilities (*) (b) Fix rate	Variable rate	Net position before hedging (c) = (a) - (b) Fix rate	Variable rate	Off-balance sheet position (d) Fix rate	Variable rate	Net position after hedging (e) = (c) + (d) Fix rate	Variable rate
Overnight to 1 year	24	102	6	—	18	102	—	—	18	102
1 to 2 years	—	—	12	—	(12)	—	—	—	(12)	—
3 to 5 years	—	—	654	—	(654)	—	—	—	(654)	—
More than 5 years	—	—	3	480	(3)	(480)	—	—	(3)	(480)
Total	**24**	**102**	**675**	**480**	**(651)**	**(378)**	**—**	**—**	**(651)**	**(378)**

(*) Excluding bank overdrafts and accrued interest.

Our sources of liquidity include credit facilities and debt securities which are or may be subject to variable interest rates. As a result, our interest expenses could increase if short-term interests' rates increase. The sensitivity analysis is based on a net liability exposure of US$378 million. Our variable interest rate indebtedness carried an average interest rate of 6.5% in 2018. Each 100 basis points increase would increase our interest expenses by US$3.8 million per year and each 100 basis point decrease in this rate would decrease our interest expenses by US$3.8 million per year.

The following table shows our variable interest rate exposure over our financial assets and liabilities as of December 31, 2018:

(In millions of US$)	December 31, 2018 Impact on result before tax	Impact on shareholders' equity before tax
Impact of an interest rate increase of 100 basis points	(3.8)	(3.8)
Impact of an interest rate decrease of 100 basis points	3.8	3.8

Credit risk management

We seek to minimize our counter-party risk by entering into hedging contracts only with well rated commercial banks or financial institutions and by distributing the transactions among the selected institutions. Although our credit risk is the replacement cost at the then-estimated fair value of the instrument, we believe that the risk of incurring losses is remote and those losses, if any, would not be material.

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. Specific procedures have been put in place to monitor customers' payments and reduce risks. In 2018, the Group's two most significant customers accounted for 7.1% and 6.3% of the Group's consolidated revenues compared with 11.0% and 8.3% in 2017 and 8.4% and 7.3% in 2016.

Liquidity risk management

See "Chapter 2.1.1.4: Key Information — Risks related to our indebtedness" for a discussion on our indebtedness and our covenants.

Financial instruments by categories in the Statement of financial position

The impact and the breakdown of the Group's financial instruments in the statement of financial position as of December 31, 2018 are as follows:

	December 31, 2018						
(In millions of US$)	**Fair value hierarchy [1]**	**Carrying Amount**	**Fair Value**	**Fair value in income statement**	**Loans, receivables**	**Debts at amortized cost**	**Derivatives**
Non-consolidated investments [2]	Level 3	1.8	1.8	1.8	—	—	—
Financial and non-current assets	Level 3	29.3	29.3	—	29.3	—	—
Notes receivable	Level 3	520.2	520.2	—	520.2	—	—
Financial instruments	Level 2	—	—	—	—	—	—
Cash equivalents	Level 2	80.9	80.9	80.9	—	—	—
Cash	Level 2	353.2	353.2	353.2	—	—	—
Total assets		**985.4**	**985.4**	**435.9**	**549.5**	**—**	**—**
Financial debts (see note 13)	Level 2	1,154.7	1,212.8	—	—	1,212.8	—
Bank overdraft facilities	Level 2	0.0	0.0	0.0	—	—	—
Notes payable	Level 3	126.4	126.4	—	126.4	—	—
Financial instruments	Level 2	0.3	0.3		—	—	0.3
Total liabilities		**1,281.4**	**1,339.5**	**0.0**	**126.4**	**1,212.8**	**0.3**

(1) Level 1 — Quoted (unadjusted) market prices in active markets for identical assets or liabilities
Level 2 — Valuation techniques for which the lowest level input that is significant to the fair value measurement is directly or indirectly observable
Level 3 — Valuation techniques for which the lowest level input that is significant to the fair value measurement is unobservable
(2) Due to the new IFRS 9 standard, non-consolidated investments, which were classified in "Available-for-sale assets" for US$3.8 million in December 31, 2018, are now in the category "Fair value in income statement".

There was no change of fair value hierarchy in 2018 compared to previous years.

Due to their short maturities, the fair value of cash, cash equivalents, trade receivables and trade payables is considered as being equivalent to carrying value.

As of December 31, 2018:

- The **New First lien notes due 2023** in US dollars currency were traded at a price reflecting a discount of 99.9% of their nominal value;
- The **New First lien notes due 2023** in Euro currency were traded at a price reflecting a discount of 101.0% of their nominal value;
- The **Second lien senior secured notes due 2024** were traded at a price reflecting a discount of 111.5% of their nominal value;

NOTE 15 COMMON STOCK AND STOCK OPTION PLANS

The Company's share capital at December 31, 2018 consisted of 709,944,816 shares, each with a nominal value of €0.01 and 22,133,149 as of December 31, 2017 with a nominal value of €0.80 and 22,133,149 as of December 31, 2016 with a nominal value of €0.80.

Rights and privileges related to ordinary shares

Ordinary shares give right to dividend. Ordinary shares registered held for more than two years give a double voting right.

Dividends may be distributed from the statutory retained earnings, subject to the requirements of French law and the Company's articles of incorporation.

Retained earnings available for distribution amounted to €1,757.8 million (US$2,012.6 million) at December 31, 2018. We did not pay any dividend during the years ended December 31, 2018, 2017 and 2016.

Common stock and Warrants 2018

Common stock operations for 2018 were:

- a reduction of the nominal value of each share from €0.80 to €0.01 (refer to note 2 — "Significant events" for more information),
- the issuance on February 21, 2018 of (refer to note 2 – "Significant events" for more information):
  - 71,932,731 shares of the Company (the "New Shares") each with one share purchase warrant (the "Warrants #2" and together with the New Shares, the "ABSA"), all of which were subscribed by holders of preferential subscription rights. The final gross proceeds amounted to €112 million;
  - 35,311,528 new shares (the "Creditor Shares 1") resulting from the equitization of the Convertible Bonds;
  - 449,197,594 new shares (the "Creditor Shares 2") resulting from the equitization of the Senior Notes;
  - 22,133,149 warrants allocated to the shareholders of CGG (the "Warrants #1");
  - 113,585,276 warrants in favor of the subscribers to the Second Lien Notes (the "Warrants #3");
  - 7,099,079 warrants allocated to the members of the ad hoc committee of holders of Senior Notes (the "Coordination Warrants");
  - 10,648,619 warrants allocated to the members of the ad hoc committee of holders of Senior Notes (the "Backstop Warrants").

Following the issuance of New Shares, Creditor Shares 1 and Creditor Shares 2, the Company's share capital as of February 21, 2018 amounted to €5,785,750.02, divided into 578,575,002 shares with a nominal value of €0.01 per share.

The exercise of warrants between February 21, 2018 and December 31, 2018 is as follows:

	Warrants #1	Warrants #2	Warrants #3	Coordination Warrants	Backstop Warrants
Number of warrants issued	22,133,149	71,932,731	113,585,276	7,099,079	10,648,619
Number of warrants exercised or lapsed	32,590	33,696	113,585,276	7,099,079	10,648,619
Number of warrants remaining	22,100,559	71,899,035	0	0	0
Exercise ratio	3 Warrants #1 for 4 new shares	3 Warrants #2 for 2 new shares	1 Warrant #3 for 1 new share	1 Coordination Warrant for 1 new share	1 Backstop Warrant for 1 new share
Exercise price	3.12 euros per new share	4.02 euros per new share	0.01 euro per new share	0.01 euro per new share	0.01 euro per new share
Maximum number of shares to be issued upon exercise of the warrants (subject to adjustments)	29,477,536	47,955,154	113,585,276	7,099,079	10,648,619
Number of shares issued	43,452	22,464	113,556,200	7,099,079	10,648,619
Number of shares to be issued	29,434,084	47,932,690	0	0	0
Expiry date of the warrants	February 21, 2022	February 21, 2023	August 21, 2018	August 21, 2018	August 21, 2018

Issued shares 2016

CGG increased its share capital through the distribution of preferential subscription rights to existing shareholders launched on January 13, 2016. The final gross proceeds amounted to €350,589,080.16, corresponding to the issuance of 531,195,576 new shares. The net proceeds of the issuance amounted to €337 million (or US$367.5 million) and were used to reinforce the shareholders' equity of CGG and improve its liquidity as it finances its Transformation Plan.

The transaction was fully underwritten (excluding the Bpifrance Participations and IFP Energies Nouvelles subscription commitments) by a syndicate of banks. The fees and costs related to this transaction amounted to €13 million (US$14 million).

The listing of the new shares on the regulated market of Euronext Paris (Segment B) on the same line as the existing shares (FR0000120164) took place on February 5, 2016. As from that date, the share capital of CGG was composed of 708,260,768 shares with a nominal value of €0.40 each, for a total nominal share capital of €283,304,307.20.

For information on our February 21, 2018 capital increase, please refer to note 2.

Reverse stock split 2016

The Company carried out on July 20, 2016 the reverse stock split that the Combined General Shareholders' Meeting approved on May 27, 2016. All shareholders received one new share (with all rights pertaining to shares), in exchange for 32 former shares. The first share price on July 20, 2016 was calculated on the basis of the last share price traded on July 19, 2016 (€0.69) multiplied by 32.

The listing of the new shares on the regulated market of Euronext Paris (Segment B) on a new line (FR0013181864) took place on July 20, 2016. As from that date, the share capital of CGG was composed of 22,133,149 shares with a nominal value of €12.80 each, for a total nominal share capital of €283,304,307.20.

Change of nominal value of ordinary shares 2016

The Company carried out on August 11, 2016 the change of nominal value of ordinary shares that the Combined General Shareholders' Meeting approved on May 27, 2016. The Company's share capital was reduced by €265,597,788 (or US$304.1 million at historical exchange rate) to bring it down from €283,304,307.20 to €17,706,519 (or US$20.3 million) by reducing the nominal value of the Company's shares after realization of the reverse split from €12.80 to €0.80.

The amount of €265,597,788, corresponding to the share capital reduction, was allocated in full to the "additional paid in capital" account.

Stock options

Pursuant to various resolutions adopted by the Board of Directors, the Group has granted options to purchase Ordinary Shares to certain employees, Executive Officers and Directors of the Group.

On March 24, 2011, the Board of Directors allocated:

- 964,363 stock options to 364 beneficiaries pursuant to a shareholders' resolution. The exercise price of the stock options is €25.48. The stock options expire on March 24, 2019. Rights to these options vest by one-third during each of the first three years of the plan;
- 66,667 stock options to the Chairman and 133,333 stock options to the Chief Executive Officer. Their exercise price is €25.48. Rights to these options vest by one-third during each of the first three years of the plan. Such vesting is subject to performance conditions based on the fulfillment of one of the following objectives:
  - A share price performance objective relative to the share price considering the SBF 120 index;
  - A share price performance objective relative to the ADS price considering the PHLX Oil Service Sector^{SM} (OSX^{SM}) index; or
  - A financial indicator in the form of an EBITDAS objective expressed in US dollars and related to the target for the annual variable part of compensation of the Chairman and of the Chief Executive Officer.

The exercise price of each option is the average market value of the share during the 20-day period ending the day before the date the option is allocated.

On June 26, 2012, the Board of Directors allocated:

- 590,625 stock options to certain employees. Their exercise price is €18.77. The options vest in three batches, in June 2014 (for 50% of the options allocated), June 2015 (for 25% of the options allocated) and June 2016 (for 25% of the options allocated). The options have an eight-year duration.
- 420,000 stock options to the Executive Committee. Their exercise price is €18.77. The options vest in three batches, in June 2014 (for 50% of the options allocated), June 2015 (for 25% of the options allocated) and June 2016 (for 25% of the options allocated). The options have an eight-year duration. Such vesting is subject to performance conditions based on the fulfillment of the following objectives:
  - A share price performance objective relative to the share price considering the SBF 120 index;
  - A share price performance objective relative to the ADS price considering the PHLX Oil Service Sector^{SM} (OSX^{SM}) index;
  - A financial indicator in the form of an EBITDAS objective expressed in US dollars and related to the target for the annual variable part of compensation of the Executive Committee members;
  - A share price performance objective relative to the share price increase over the vesting period.
- 200,000 stock options to the Chief Executive Officer and 100,000 to each of the Corporate Officers. Their exercise price is €18.77. The options vest in three batches, in June 2014 (for 50% of the options allocated), June 2015 (for 25% of the options allocated) and June 2016 (for 25% of the options allocated). The options have an eight-year duration. Such vesting is subject to performance conditions based on the fulfillment of the following objectives:
  - A share price performance objective relative to the share price considering the SBF 120 index;
  - A share price performance objective relative to the ADS price considering the PHLX Oil Service Sector^{SM} (OSX^{SM}) index;
  - A financial indicator in the form of an EBITDAS objective expressed in US dollars and related to the target for the annual variable part of compensation of the Chief Executive Officer and Corporate Officers;
  - A share price performance objective relative to the share price increase over the vesting period.

The exercise price of each option is the average market value of the share during the 20-day period ending the day before the date the option is allocated.

On June 24, 2013, the Board of Directors allocated:

- 1,062,574 stock options to certain employees. Their exercise price is €18.47. The options vest in three batches, in June 2015 (for 50% of the options allocated), June 2016 (for 25% of the options allocated) and June 2017 (for 25% of the options allocated). The options have an eight-year duration.
- 200,000 stock options to the Chief Executive Officer and 100,000 to each of the Corporate Officers. Their exercise price is €18.47. The options vest in three batches, in June 2015 (for 50% of the options allocated), June 2016 (for 25% of the options allocated) and June 2017 (for 25% of the options allocated). The options have an eight-year duration. Such vesting is subject to performance conditions based on the fulfillment of the following objectives:
  - A share price performance objective relative to the share price considering the SBF 120 index;
  - A share price performance objective relative to the ADS price considering the PHLX Oil Service Sector℠ (OSX℠) index;
  - A financial indicator in the form of an EBITDAS objective expressed in US dollars and related to the target for the annual variable part of compensation of the Chief Executive Officer and Corporate Officers;
  - A share price performance objective relative to the share price increase over the vesting period.
- 180,000 stock options to the other Corporate Committee members. Their exercise price is €18.47. The options vest in three batches, in June 2015 (for 50% of the options allocated), June 2016 (for 25% of the options allocated) and June 2017 (for 25% of the options allocated). The options have an eight-year duration. Such vesting is subject to performance conditions based on the fulfillment of the following objectives:
  - A share price performance objective relative to the share price considering the SBF 120 index;
  - A share price performance objective relative to the ADS price considering the PHLX Oil Service Sector℠ (OSX℠) index;
  - A financial indicator in the form of an EBITDAS objective expressed in US dollars and related to the target for the annual variable part of compensation of the Corporate Committee members;
  - A share price performance objective relative to the share price increase over the vesting period.

The exercise price of each option is the average market value of the share during the twenty-day period ending the day before the date the option is allocated.

On June 26, 2014, the Board of Directors allocated:

- 1,135,843 stock options to certain employees. Their exercise price is €10.29. The options vest in three batches, in June 2016 (for 50% of the options allocated), June 2017 (for 25% of the options allocated) and June 2018 (for 25% of the options allocated). The options have an eight-year duration.
- 200,000 stock options to the Chief Executive Officer and 100,000 to each of the Corporate Officers. Their exercise price is €10.29. The options vest in three batches, in June 2016 (for 50% of the options allocated), June 2017 (for 25% of the options allocated) and June 2018 (for 25% of the options allocated). The options have an eight-year duration. Such vesting is subject to performance conditions based on the fulfillment of the following objectives:
  - A share price performance objective relative to the share price considering the SBF 120 index;
  - A share price performance objective relative to the ADS price considering the PHLX Oil Service Sector℠ (OSX℠) index;
  - A financial indicator in the form of an EBITDAS objective expressed in US dollars and related to the target for the annual variable part of compensation of the Chief Executive Officer and Corporate Officers;
  - A share price performance objective relative to the share price increase over the vesting period.
- 120,000 stock options to the other Corporate Committee members. Their exercise price is €10.29. The options vest in three batches, in June 2016 (for 50% of the options allocated), June 2017 (for 25% of the options allocated) and June 2018 (for 25% of the options allocated). The options have an eight-year duration. Such vesting is subject to performance conditions based on the fulfillment of the following objectives:
  - A share price performance objective relative to the share price considering the SBF 120 index;
  - A share price performance objective relative to the ADS price considering the PHLX Oil Service Sector℠ (OSX℠) index;
  - A financial indicator in the form of an EBITDAS objective expressed in US dollars and related to the target for the annual variable part of compensation of the Corporate Committee members;
  - A share price performance objective relative to the share price increase over the vesting period.

The exercise price of each option is the average market value of the share during the 20-day period ending the day before the date the option is allocated.

On June 25, 2015, the Board of Directors allocated:

- 1,168,290 options to certain employees. Their exercise price is €6.01. The options vest in three batches, in June 2017 (for 50% of the options allocated), June 2018 (for 25% of the options allocated) and June 2019 (for 25% of the options allocated). The options have an eight-year duration.
- 220,600 options to the Chief Executive Officer and 111,000 to each of the Corporate Officers. Their exercise price is €6.01. The options vest in three batches, in

June 2017 (for 50% of the options allocated), June 2018 (for 25% of the options allocated) and June 2019 (for 25% of the options allocated). The options have an eight-year duration. Such vesting is subject to performance conditions based on the fulfillment of the following objectives:

  - A share price performance objective relative to the share price considering the SBF 120 index;
  - A share price performance objective relative to the ADS price considering the PHLX Oil Service Sector(SM) (OSX(SM)) index;
  - A financial indicator in the form of an EBITDAS objective expressed in US dollars and related to the target for the annual variable part of compensation of the Chief Executive Officer and Corporate Officers;
  - A share price performance objective relative to the share price increase over the vesting period.

- 159,000 options to the other Corporate Committee members. Their exercise price is €6.01. The options vest in three batches, in June 2017 (for 50% of the options allocated), June 2018 (for 25% of the options allocated) and June 2019 (for 25% of the options allocated). Such vesting is subject to performance conditions. The options have an eight-year duration. Such vesting is subject to performance conditions based on the fulfillment of the following objectives:

  - A share price performance objective relative to the share price considering the SBF 120 index;
  - A share price performance objective relative to the ADS price considering the PHLX Oil Service Sector(SM) (OSX(SM)) index;
  - A financial indicator in the form of an EBITDAS objective expressed in US dollars and related to the target for the annual variable part of compensation of the Corporate Committee members;
  - A share price performance objective relative to the share price increase over the vesting period.

The exercise price of each option is the average market value of the share during the twenty-day period ending the day before the date the option is allocated.

On June 23, 2016, the Board of Directors allocated:

- 4,126,368 options to certain employees. Their exercise price is €0.68. The options vest in three batches, in June 2018 (for 50% of the options allocated), June 2019 (for 25% of the options allocated) and June 2020 (for 25% of the options allocated). The options have an eight-year duration.
- 882,400 options to the Chief Executive Officer and 444,000 to each of the Corporate Officers. Their exercise price is €0.68. The options vest in three batches, in June 2018 (for 50% of the options allocated), June 2019 (for 25% of the options allocated) and June 2020 (for 25% of the options allocated). The options have an eight-year duration. Such vesting is subject to performance conditions based on the fulfillment of the following objectives:

  - A share price performance objective relative to the share price considering the SBF 120 index;
  - A share price performance objective relative to the ADS price considering the PHLX Oil Service Sector(SM) (OSX(SM)) index;
  - A financial indicator in the form of an EBITDAS objective expressed in US dollars and related to the target for the annual variable part of compensation of the Chief Executive Officer and Corporate Officers;
  - A share price performance objective relative to the share price increase over the vesting period.

- 318,080 options to the other Corporate Committee members. Their exercise price is €0.68. The options vest in three batches, in June 2018 (for 50% of the options allocated), June 2019 (for 25% of the options allocated) and June 2020 (for 25% of the options allocated). The options have an eight-year duration. Such vesting is subject to performance conditions based on the fulfillment of the following objectives:

  - A share price performance objective relative to the share price considering the SBF 120 index;
  - A share price performance objective relative to the ADS price considering the PHLX Oil Service Sector(SM) (OSX(SM)) index;
  - A financial indicator in the form of an EBITDAS objective expressed in US dollars and related to the target for the annual variable part of compensation of the Corporate Committee members;
  - A share price performance objective relative to the share price increase over the vesting period.

The exercise price of each option is the average market value of the share during the twenty-day period ending the day before the date the option is allocated.

On June 27, 2018, the Board of Directors allocated:

- 732,558 options to the Chief Executive Officer. Their exercise price is €2.15. The options vest in four batches, in June 2019 (for 25% of the options allocated), June 2020 (for 25% of the options allocated), June 2021 (for 25% of the options allocated) and June 2022 (for 25% of the options allocated). Such vesting is subject to performance condition related to CGG share price. The options have an eight-year duration.
- 1,141,088 options to the Executive Leadership members. Their exercise price is €2.15. The options vest in four batches, in June 2019 (for 25% of the options allocated), June 2020 (for 25% of the options allocated), June 2021 (for 25% of the options allocated) and June 2022 (for 25% of the options allocated). Such vesting is subject to performance conditions related to CGG share price. The options have an eight-year duration.

- 4,670,743 options to certain employees. Their exercise price is €2.15. The options vest in four batches, in June 2019 (for 25% of the options allocated), June 2020 (for 25% of the options allocated), June 2021 (for 25% of the options allocated) and June 2022 (for 25% of the options allocated). The options have an eight-year duration.

The exercise price of each option is the average market value of the share during the twenty-day period ending the day before the date the option is allocated.

On December 11, 2018, the Board of Directors allocated:

- 671,171 options to the Executive Leadership members. Their exercise price is €1.39. The options vest in four batches, in June 2019 (for 25% of the options allocated), June 2020 (for 25% of the options allocated), June 2021 (for 25% of the options allocated) and June 2022 (for 25% of the options allocated). Such vesting is subject to performance conditions related to CGG share price. The options have a seven-year and 7 months duration.

Information related to options outstanding at December 31, 2018 is summarized below:

Date of Board of Directors' Resolution	**Options granted**	**Options granted after capital operations**[a]	**Options outstanding at Dec. 31, 2018** [b] [c] [d] [e]	**Exercise price per share (€)** [b] [c] [d] [e]	**Expiration date**	**Remaining duration**
March 24, 2011	1,164,363	117,094	96,216	253.30	March 24, 2019	2.7 months
June 26, 2012	1,410,625	141,860	48,554	186.62	June 26, 2020	17.9 months
June 24, 2013	1,642,574	156,871	70,870	193.27	June 24, 2021	29.8 months
June 26, 2014	1,655,843	158,139	79,755	107.66	June 26, 2022	41.9 months
June 25, 2015	1,769,890	169,031	95,908	62.92	June 25, 2023	53.8 months
June 23, 2016	6,658,848	531,281	326,266	8.52	June 23, 2024	65.8 months
June 28, 2018	6,544,389	6,544,389	6,071,936	2.15	June 28, 2026	90 months
Dec 11, 2018	671,171	671,171	671,171	1.39	June 28, 2026	90 months
Total	**21,517,703**	**8,489,836**	**7,460,676**			

(a) Options granted adjusted following 2012, 2016 and 2018 capital increases and 2016 reverse split

(b) Following the capital increase in October 2012, the stock options were adjusted as follows:

Date of stock options	**Adjustment of number of options as of October 23, 2012**	**Exercise price before adjustment per share (€)**	**Adjusted exercise price per share (€)**
March 24, 2011	1,150,636	25.48	24.21
June 26, 2012	1,483,424	18.77	17.84

(c) Following the capital increase in February 2016, the stock options were adjusted as follows:

Date of stock options	**Adjustment of number of options as of February 29, 2016**	**Exercise price before adjustment per share (€)**	**Adjusted exercise price per share (€)**
March 24, 2011	1,287,848	24.21	20.21
June 26, 2012	1,061,569	17.84	14.89
June 24, 2013	1,495,770	18.47	15.42
June 26, 2014	1,782,127	10.29	8.59
June 25, 2015	1,998,861	6.01	5.02

(d) Following the reverse split in July 2016, the stock options were adjusted as follows:

Date of stock options	**Adjustment of number of options as of July 20, 2016**	**Exercise price before adjustment per share (€)**	**Adjusted exercise price per share (€)**
March 24, 2011	40,167	20.21	646.72
June 26, 2012	20,766	14.89	476.48
June 24, 2013	43,238	15.42	493.44
June 26, 2014	49,660	8.59	274.88
June 25, 2015	63,013	5.02	160.64
June 23, 2016	208,089	0.68	21.76

(e) Following the capital increase in February 2018, the stock options were adjusted as follows:

Date of stock options	**Adjustment of number of options as of February 21, 2018**	**Exercise price before adjustment per share (€)**	**Adjusted exercise price per share (€)**
March 24, 2011	98,064	646.72	253.30
June 26, 2012	50,436	476.48	186.62
June 24, 2013	78,892	493.44	193.27
June 26, 2014	105,711	274.88	107.66
June 25, 2015	122,189	160.64	62.92
June 23, 2016	471,856	21.76	8.52

A summary of the Company's stock option activity, and related information for the years ended December 31, 2018 follows:

	2018		**2017**		**2016**	
(weighted average exercise price in €)	**Number of options**	**Weighted average exercise price**	**Number of options**	**Weighted average exercise price**	**Number of options**	**Weighted average exercise price**
Outstanding-beginning of year	**424,383**	**239.72**	**510,837**	**235.86**	**10,043,037**	**16.14**
Granted	7,215,560	2.08	—	—	6,658,848	0.68
Adjustments followings the reverse split	—	—	—	—	(16,004,834)	235.79
Adjustments followings the capital increase	567,078	199.14	—	—	1,976,021	13.48
Exercised	—	—	—	—	—	—
Forfeited	(746,345)	30.73	(86,454)	216.91	(2,162,235)	274.26
Outstanding-end of year	**7,460,676**	**10.52**	**424,383**	**239.72**	**510,837**	**235.86**
Exercisable-end of year	530,459	116.19	205,418	443.16	209,618	450.25

The average price of CGG share was €1.94 in 2018, €2.76 in 2017, and €9.77 in 2016 after adjustment following the reverse stock split and the capital increase in 2018.

Performance units

Allocation plan dated June 23, 2016

On June 23, 2016, the Board of Directors implemented a performance units plan for a maximum amount of 2,566,880 performance units out of which 108,960 were allocated to the Chief Executive Officer, 49,600 were allocated to each of the Corporate Officers, 39,680 were allocated to the other Corporate Committee members and 2,269,440 were allocated to certain employees.

The performance units vest upon the expiry of a three-year period from the vesting date subject to a presence condition in the Group at the time of vesting and achievement of certain performance conditions. These performance conditions are

based on the achievement of Group objectives related to the return on capital employed and statement of financial position structure along with achievement of the segments' financial objectives aligned with the Group strategic orientations over a three-year period.

The number of vested 2016 performance units is determined upon achievement of the Group objectives up to 60% of the global allocation. The balance will be acquired based on the achievement of the segments' objectives.

The valuation of each vested 2016 performance unit shall be equal to the average closing prices of the CGG share on Euronext over the five trading days prior to the vesting date. The vested performance units will be paid half in cash and half in existing CGG shares.

Allocation plan dated June 27, 2018

On June 27, 2018, the Board of Directors allocated 157,500 performance shares to the Chief Executive Officer, 242,841 performance shares to the Executive Leadership members, and 2,708,180 performance shares to certain employees.

The performance shares vest in two batches, in June 2020 (for 50% of the shares allocated) and June 2021 (for 50% of the shares allocated). The end of the acquisition period for the first batch of these performance shares is set at the latest of the two following dates: June 27, 2020 or the date of the Annual Shareholders' Meeting convened to approve the financial statements for fiscal year 2019, provided that the Board of Directors decides that the performance conditions set forth in the plan regulation have been fulfilled. The end of the acquisition period for the second batch of these performance shares is set at the latest of the two following dates: June 27, 2021 or the date of the Annual Shareholders' Meeting convened to approve the financial statements for fiscal year 2020, provided that the Board of Directors decides that the performance conditions set forth in the plan regulation have been fulfilled.

Allocation plan dated December 11, 2018

On December 11, 2018, the Board of Directors allocated 132,821 performance shares to the Executive Leadership members.

The performance shares vest in two batches, in June 2020 (for 50% of the shares allocated) and June 2021 (for 50% of the shares allocated). The end of the acquisition period for the first batch of these performance shares is set at the latest of the two following dates: June 27, 2020 or the date of the Annual Shareholders' Meeting convened to approve the financial statements for fiscal year 2019, provided that the Board of Directors decides that the performance conditions set forth in the plan regulation have been fulfilled. The end of the acquisition period for the second batch of these performance shares is set at the latest of the two following dates: June 27, 2021 or the date of the Annual Shareholders' Meeting convened to approve the financial statements for fiscal year 2020, provided that the Board of Directors decides that the performance conditions set forth in the plan regulation have been fulfilled.

Compensation cost on stock options, performance shares and units

The following table lists the assumptions used to value the 2016 and 2018 options plans, the 2016 and 2018 performance units allocation plan according to IFRS 2. The Group uses the Black & Scholes model.

	Options granted	Volatility (1)	Risk-free rate	Exercise price per share (€)	Estimated Maturity (years)	Fair value per share at the grant date (€)	Dividends yields
2016 stock options plan	6,658,848	47%	-0.31%	0.68	4	0.23	0.0%
June 2018 stock options plan	6,544,389	56%	0 %	2.15	2.5	0.63	0.0%
December 2018 stock options plan	671,171	56%	0 %	1.39	2.5	0.57	0.0%

	Performance shares granted	Achievement of performance Conditions (2)	Fair value per share at the grant date (€) (3)	Dividends yields
2016 performance units allocation plan	2,566,880	0%	0.67	0.0%
June 2018 performance units allocation plan	3,108,521	100%	2.15	0.0%
December 2018 performance units allocation plan	132,821	100%	1.39	0.0%

(1) Corresponds to the average of restated historical volatility and implied volatility.
(2) Estimated.
(3) Corresponds to CGG share price at the date of allocation

According to IFRS 2, fair value of stock options and performance shares and units granted since November 7, 2002 must be recognized as an expense over the life of the plan. Detail of this expense is as follows:

	Year					
	IFRS 2 total expense			Of which for the executive managers of the Group		
(In millions of US$)	2018	2017 (restated)	2016 (restated)	2018	2017 (restated)	2016 (restated)
2012 stock options plan	—	—	0.2	—	—	0.1
2013 stock options plan	—	0.1	0.2	—	—	—
2014 stock options plan	0.1	0.2	0.9	—	—	0.1
2015 stock options plan	0.1	0.3	0.8	—	0.1	0.2
2016 stock options plan	0.2	0.3	0.2	0.1	0.1	—
2018 stock options plans	0.9	—	—	0.3	—	—
2014 performance units plan — paid in shares	—	—	(0.4)	—	—	(0.1)
2015 performance units plan — paid in shares	—	(0.3)	0.1	—	(0.1)	—
2016 performance units plan — paid in shares	(0.2)	—	0.1	—	—	—
2018 performance units plans — paid in shares	1.4	—	—	0.2	—	—
Recognized expense from equity-settled share based payment transactions	**2.5**	**0.6**	**2.1**	**0.6**	**0.1**	**0.3**

NOTE 16 PROVISIONS

	December 31, 2018						
(In millions of US$)	Balance at beginning of year	Additions	Deductions (used)	Deductions (unused)	Unwinding of the discount	Others [(a)]	Balance at end of period
Provisions for restructuring costs	32.6	138.7	(44.6)	(2.0)	—	(0.8)	123.9
Provisions for onerous contracts	16.2	25.1	(16.6)	(0.5)	0.1	6.8	31.1
Provisions for litigations	0.9	0.1	(0.1)	—	—	—	0.9
Provisions for tax contingencies	—	3.5	—	—	—	—	3.5
Other provisions related to contracts	8.2	6.7	(1.1)	(0.5)	—	(0.3)	13.0
Provisions for demobilization costs	0.4	—	(0.4)	—	—	—	—
Total current provisions	**58.3**	**174.1**	**(62.8)**	**(3.0)**	**0.1**	**5.7**	**172.4**
Provisions for cash-settled share-based payment arrangements (see note 15)	0.1	0.2	—	—	—	—	0.3
Retirement indemnity provisions	62.7	4.5	(11.8)	(8.0)	—	(11.2)	36.2
Provisions for tax contingencies	8.3	1.8	(0.7)	—	—	(0.2)	9.2
Provisions for onerous contracts	18.2	2.4	—	(0.5)	0.1	(7.5)	12.7
Customers Guarantee provisions	1.8	2.6	(1.7)	—	—	(0.2)	2.5
Provisions for customs and other contingencies	30.5	13.2	(3.7)	—	—	(5.0)	35.0
Total non-current provisions	**121.6**	**24.7**	**(17.9)**	**(8.5)**	**0.1**	**(24.1)**	**95.9**
Total provisions	**179.9**	**198.8**	**(80.7)**	**(11.5)**	**0.2**	**(18.4)**	**268.3**

(a) Includes the effects of exchange rates changes, variations in scope (see note 2), reclassification, and gain (loss) on actuarial changes.

Provision for restructuring costs

In 2018, we recognized provisions for restructuring costs as part of our Group transformation plan. They mainly included redundancy costs and facilities exit costs (see note 5 and note 22).

In 2017, the provisions for restructuring costs mainly included professional fees linked to the US Chapter 11 and French Safeguard procedures (see note 22).

Provision for onerous contract (short term and long term)

In 2018, we recognized additional provisions for onerous contracts following Group decision to redeliver Champion vessel. A specific provision of US$(126.3) million linked to the reduction of our operating fleet from 5 to 3 vessels is booked in "Liabilities directly associated with the assets classified as held for sale" (see note 5).

In 2017, we used and recognized additional provisions for onerous contracts (see note 22).

Retirement indemnity provisions

The Group main defined benefit pension plans are in France and in the UK.

In addition, a supplemental pension and retirement plan was implemented in December 2004 for the members of the Group's Management Committee and members of the Management Board of Sercel Holding. A contribution amounting to US$5.7 million was paid in 2018. No contribution was paid in 2016 and 2017.

The Group records retirement indemnity provisions based on the following actuarial assumptions:

- historical staff turnover and standard mortality schedule;
- age of retirement between 60 and 66 years old in France;
- actuarial rate and average rate of increase in future compensation;
- taxes on supplemental pension and retirement plan;

As of December 31, 2018, the net liability for these plans amounted to US$36.2 million.

The status of the retirement indemnity plans is as follows:

	December 31,		
(In millions of US$)	**2018**	**2017**	**2016**
Amount recognized in the statement of financial position			
Present value of the obligation [a]	109.2	152.4	138.9
Fair value of plan assets	(73.0)	(89.7)	(79.4)
Deficit (surplus) of funded plans	**36.2**	**62.7**	**59.5**
Net liability (asset) recognized in the statement of financial position	**36.2**	**62.7**	**59.5**
Amounts recognized in the income statement			
Service cost	3.0	3.1	4.4
Interest cost (income)	1.7	1.1	1.3
Effects of curtailments/settlements	(11.1)	—	(5.7)
Payroll tax	—	—	—
Net periodic expense (profit)	**(6.4)**	**4.2**	**—**
Movements in the net liability recognized in the statement of financial position			
Net liability at January 1	62.7	59.5	57.9
Expense as above	(6.4)	4.2	—
Actuarial (gains)/losses recognized in other comprehensive income [b]	(8.8)	(6.0)	9.2
Contributions paid	(7.8)	(0.3)	(1.4)
Benefits paid by the Company	(1.1)	(1.8)	(1.5)
Consolidation scope entries and changes in exchange rates	(2.4)	7.1	(4.7)
Other	—	—	—
Net liability at December 31	**36.2**	**62.7**	**59.5**
Change in benefit obligation			
Benefit obligation at January 1	**152.4**	**138.9**	**139.1**
Payroll tax adjustment	—	—	—
Current service cost	3.0	3.1	4.4
Contributions paid	—	—	0.3
Interest cost	3.6	3.3	4.0
Past service cost	—	—	—
Benefits paid from plan	(11.4)	(5.7)	(2.8)
Actuarial (gains)/losses recognized in other comprehensive income	(11.8)	(2.2)	19.2
Effects of curtailments/settlements	(11.1)	—	(5.7)
Consolidation scope entries and changes in exchange rates	(15.5)	15.0	(19.6)
Other	—	—	—
Benefit obligation at December 31	**109.2**	**152.4**	**138.9**
Change in plan assets			
Fair value of plan assets at January 1	**89.7**	**79.4**	**81.2**
Interest income	1.9	2.2	2.7
Contributions paid	7.8	0.3	1.7
Benefits paid from plan	(10.3)	(3.9)	(1.3)
Actuarial gains/(losses) recognized in other comprehensive income	(3.0)	3.8	10.0
Effects of curtailments/settlements	—	—	—
Consolidation scope entries and changes in exchange rate	(13.1)	7.9	(14.9)
Other	—	—	—

	December 31,		
(In millions of US$)	2018	2017	2016
Fair value of plan assets at December 31 [(c)]	**73.0**	**89.7**	**79.4**
Key assumptions used in estimating the Group's retirement obligations are:			
Discount rate [(d)]	1.75%	1.50%	1.50%
Average rate of increase in future compensation [(e)]	2.49%	2.42%	2.41%

(a) In 2018 the obligation amounts to US$109.3 million of which US$23.1 million for defined benefit plans not covered (US$33.2 million in 2017 and US$29.3 million in 2016). The average duration of the defined benefit plan obligation at the end of the reporting period is 16.8 in 2018, 17.6 years in 2017 and 19.0 years in 2016.

(b) Other comprehensive income

Cumulative actuarial losses recognized in other comprehensive income amount to US$15.1 million as of December 31, 2018.

Changes in the defined benefit obligation and fair value of plan assets are, as follows:

	December 31,		
(In millions of US$)	2018	2017	2016
Amount recognized in the other comprehensive income			
Experience adjustment	(4.5)	3.2	(2.4)
Actuarial changes arising from changes in demographic assumptions	(0.4)	(2.2)	0.8
Actuarial changes arising from changes in financial assumptions	(6.9)	(3.2)	20.8
Return on plan assets (excluding amounts included in net interest expense)	3.0	(3.8)	(10.0)
Sub-total included in the other comprehensive income	**(8.8)**	**(6.0)**	**9.2**

(c) Plan assets

The major categories of plan assets as a percentage of the fair value of total plan assets are as follows:

	December 31,		
	2018	2017	2016
Equity securities	42%	51%	49%
Debt securities	23%	18%	18%
Real estate	8%	7%	7%
Other	27%	24%	26%

(d) Discount rate

The discount rate for entities belonging to the "euro zone" is 1.75%. The discount rate is determined by reference to the yield on private investment grade bonds (AA), using the Iboxx index.

The discount rate used for the United Kingdom is 3.30%.

An increase of 0.25bps of the discount rate would decrease the defined benefit plan ("DBO") by US$3.9 million, and a decrease of the discount rate of 0.25bps would increase the DBO by US$4.3 million.

A variation of 0.25bps of the discount rate would have no significant impacts on Service Cost and on Interest Cost (calculated impact is within US$0.1 million).

(e) Increase in future compensation

An increase of 0.25bps of the average rate would increase the future compensation by US$0.8 million, and a decrease of the average rate of 0.25bps would decrease the future compensation by US$0.8 million.

A variation of 0.25bps of the average rate would have no significant impacts on Service Cost and on Interest Cost (calculated impact is within US$0.1 million).

NOTE 17 OTHER NON-CURRENT LIABILITIES

Detail of other non-current liabilities is as follows:

(In millions of US$)	December 31, 2018	2017	2016
Research and development subsidies	0.3	0.6	0.9
Profit sharing scheme	4.7	8.7	12.7
Other non-current liabilities	8.1	8.6	7.8
Other non-current liabilities	**13.1**	**17.9**	**21.4**

NOTE 18 CONTRACTUAL OBLIGATIONS, COMMITMENTS AND CONTINGENCIES

Status on contractual obligations

(In millions of US$)	December 31, 2018	2017	2016
Long-term debt obligations [1]	1,799.3	2,953.1	3,284.8
Finance lease obligations	26,1	35.6	39.4
Bareboat agreements [2]	365.4	460.2	533.9
Operating leases obligations	172.7	190.9	234.7
Total obligations	**2,363.5**	**3,639.8**	**4,092.8**

(1) Refer to note 2 — "Significant events" for information on the impact on financial debt of the financial restructuring completed on February 21, 2018.

(2) As of December 31, 2018, the aggregate amount of our off balance sheet commitment for bareboat charters for our fleet is US$365.4 million, out of which US$358.4 million corresponded to the vessels operated through our Global Seismic Shipping AS JV, and US$7.0 million corresponded to vessels that we have already coldstacked.
These amounts are disclosed without considering provisions for onerous contracts or reclassification in assets held for sale and discontinued operations.

The following table presents payments in future periods relating to contractual obligations as of December 31, 2018:

(In millions of US$)	Payments due by period: Less than 1 year	2-3 years	4-5 years	After 5 years	Total
Long-term debt obligations:					
— Repayments: fixed rates	0.4	0.6	621.2	4.7	626.9
— Repayments: variables rates [a]	—	—	—	740.9	740.9
— Bonds and facilities interests	83.3	175.2	161.5	11.5	431.5
Total Long-term debt obligations	**83.7**	**175.8**	**782.7**	**757.1**	**1,799.3**
Finance leases:					
— Finance lease Obligations: fixed rates	7.4	14.9	3.8	—	26.1
— Finance lease Obligations: variables rates [a]	—	—	—	—	—
Total Finance lease obligations	**7.4**	**14.9**	**3.8**	**—**	**26.1**
Bareboat agreements	**40.7**	**85.1**	**91.3**	**148.3**	**365.4**
Other operating lease agreements	**43.4**	**53.9**	**43.7**	**31.7**	**172.7**
Total Contractual Obligations [b]	**175.2**	**329.7**	**921.5**	**937.1**	**2,363.5**

(a) Payments are based on the variable rates applicable as of December 31, 2018.

(b) Payments in foreign currencies are converted in US$ at December 31, 2018 exchange rates.

Contractual obligations — finance leases

The Group leases a building under a finance lease agreement that expires in 2022.

The following table presents reconciliation between finance lease obligations and finance lease debts as of December 31, 2018:

(In millions of US$)	Less than 1 year	1-5 years	After 5 years	Total
Finance lease Obligations	**7.4**	**18.7**	**—**	**26.1**
Discounting	(2.0)	(4.2)	—	(6.2)
Headquarters purchase option	—	30.1	—	30.1
Finance lease debt (see note 13)	**5.4**	**44.6**	**—**	**50.0**

Contractual obligations — operating leases

Operating lease agreements relate primarily to bareboat charter agreements for seismic vessels, offices and computer equipment.

Guarantees

	December 31,		
(In millions of US$)	2018	2017	2016
Operations			
Guarantees issued in favor of clients (guarantees issued by the Company to mainly support bids made at the subsidiaries level)	352.6	403.1	534.4
Other guarantees and commitments issued (guarantees issued by the Company on behalf of subsidiaries and affiliated companies in favor of customs or other governmental administrations)	13.2	111.8	203.1
Financing			
Guarantees issued in favor of banks (mainly to support credit facilities)	29.5	22.3	—
Total	**395.3**	**537.2**	**737.5**

The maturity of the guarantees and commitments is as follows:

	Due date				
(In millions of US$)	Less than 1 year	2-3 years	4-5 years	After 5 years	Total
Operations					
Guarantees issued in favor of clients	224.7	71.1	51.6	5.2	352.6
Other guarantees and commitments issued	8.8	1.4	0.6	2.4	13.2
Financing					
Guarantees issued in favor of banks	20.0	—	—	9.5	29.5
Total	**253.5**	**72.5**	**52.2**	**17.1**	**395.3**

Others

The Group has no off-balance sheet obligations under IFRS that are not described above.

Legal proceedings, claims and other contingencies

From time to time we are involved in legal proceedings arising in the normal course of our business. We do not expect that any of these proceedings, either individually or in the aggregate, will result in a material adverse effect on our consolidated financial statements.

NOTE 19 REVENUE

Disaggregation of revenues

The following table disaggregates our operating revenues by major sources for the period ended December 31, 2018:

In millions of US$	December 31, 2018		
	GGR	**Equipment**	**Consolidated Total**
Multi-client prefunding	*215.6*	—	*215.6*
Multi-client after sales	*301.8*	—	*301.8*
Total Multi-client	517.4	—	517.4
Geoscience	396.0	—	396.0
Equipment, Land equipment	—	*214.6*	*214.6*
Equipment, Marine equipment	—	*91.6*	*91.6*
Equipment, Downhole Gauges	—	*35.1*	*35.1*
Equipment, Non-Oilfield related	—	*9.5*	*9.5*
Total equipment	—	350.8	350.8
Internal revenues [1]	—	(36.8)	(36.8)
Total operating revenues before IFRS 15 impact	**913.4**	**314.0**	**1,227.4**
IFRS 15 impact on prefunding	(33.9)	—	(33.9)
Total Group operating revenues as reported	**879.5**	**314.0**	**1,193.5**

(1) Sale of equipment to the Contractual Data Acquisition segment which is classified as discontinued operations

Analysis by geographic area — *Analysis of operating revenues by location of customers*

(In millions of US$)	**2018**		**2017 (restated)**		**2016 (restated)**	
North America	244.2	20.5%	311.9	30.1%	302.6	31.4%
Central and South Americas	267.7	22.4%	215.1	20.8%	135.0	14.0%
Europe, Africa and Middle East	446.5	37.4%	362.2	35.0%	386.2	40.1%
Asia Pacific	235.1	19.7%	145.9	14.1%	139.5	14.5%
Total operating revenues	**1,193.5**	**100%**	**1,035.1**	**100%**	**963.3**	**100%**

Analysis of operating revenues by category

(In millions of US$)	**2018**		**2017 (restated)**		**2016 (restated)**	
Services rendered and royalties	587.5	49.2%	623.4	60.2%	672.3	69.8%
Sales of goods	292.7	24.5%	201.7	19.5%	171.5	17.8%
After-sales on multi-client surveys	301.8	25.3%	200.3	19.4%	111.1	11.5%
Leases	11.5	1.0%	9.7	0.9%	8.4	0.9%
Total operating revenues	**1,193.5**	**100%**	**1,035.1**	**100%**	**963.3**	**100%**

In 2018, the Group's two most significant customers accounted for 7.1% and 6.3% of the Group consolidated revenues compared with 11.0% and 8.3% in 2017 and 8.4% and 7.3% in 2016.

Contracts balances

The contracts balances, including the impact of IFRS 15 are presented below:

In millions of US$	Balance as of December 31, 2018	Balance as of January 1, 2018
Receivables	**392.1**	**361.9**
Unbilled revenues	128.1	147.3
Total contracts assets	**128.1**	**147.3**
Advance billing	(14.1)	(7.4)
Deferred revenues	(194.8)	(178.5)
Contracts liabilities	**(208.9)**	**(185.9)**

The level of deferred revenues is a direct consequence of the impact of IFRS 15 as described in note 1.3. Compared to the view excluding IFRS 15 (see below), the prefunding revenues not recognized before delivery of the final data increase the deferred revenues balance (and decrease the unbilled revenues to a lesser extent).

Excluding IFRS 15 impact, the contracts balances would have been the following:

In millions of US$	Balance as of December 31, 2018	Balance as of December 31, 2017
Receivables	**392.1**	**361.9**
Unbilled revenues	156.3	160.7
Total contracts assets	**156.3**	**160.7**
Advance billing	(14.1)	(7.4)
Deferred revenues	(56.4)	(49.7)
Contracts liabilities	**(70.5)**	**(57.1)**

The revenues generated during the period ended December 31, 2018 from contract liabilities balances as of January 1, 2018 amount to US$140.7 million.

The revenues generated during the period ended December 31, 2018 from performance obligations satisfied (or partially satisfied) prior to January 1, 2018 amount to US$81.1 million.

Backlog — Transaction price allocated to remaining performance obligations

The aggregate amount of the transaction price allocated to the performance obligations that are unsatisfied or partially unsatisfied (i.e. the contractual backlog) as of December 31, 2018 equaled US$575.5 million for continuing operations. Out of this amount, the Group expects to recognize US$491.8 million in 2019 and US$83.7 million in 2020 and beyond for continuing operations. These amounts include multi-client prefunding revenues recognized at delivery. If the revenues from prefunding were recognized over time according to the historical method (excluding IFRS 15 adjustments), the aggregate amount would have been US$408.8 million, out of which US$325.6 million would have been expected in 2019 and US$83.2 million would have been expected in 2020 for continuing operations.

Assets recognized from costs to obtain or fulfill a contract

In millions of US$	Balance as of December 31, 2018	Balance as of December 31, 2017
Assets from costs to obtain a contract	—	—
Assets from costs to fulfill a contract	—	0.9
Total	**—**	**0.9**

The Group has no cost falling into the definition of a cost to obtain a contract.

The costs to fulfill a contract can be the costs of a seismic vessel transit towards a survey area or the mobilization costs of a land crew, provided these costs are expected to be recovered (i.e. contracts with positive margin).

NOTE 20 ANALYSIS BY OPERATING SEGMENT

Group organization

Strategic Plan, changed segment presentation and discontinued operations

Until the last quarter of 2018, we organized our activities in four segments for financial reporting: (i) Contractual Data Acquisition, (ii) Geology, Geophysics & Reservoir ("GGR"), (iii) Equipment and (iv) Non-Operated Resources.

In November 2018, we announced a new strategy for our group that includes the transition to an asset-light model by reducing CGG's exposure to the data acquisition business, which has been impacted over the years by structural industry overcapacity, lack of differentiation, commodity pricing and a heavy fixed cost base. We plan to carry out the following strategic changes in compliance with the undertakings and requirements in the CGG safeguard plan and other applicable local requirements:

- In Marine:
  - Adjust to a three-vessel fleet in 2019; and
  - Find in 2019 a strategic partnership to cost efficiently operate the vessels.
- In Land: exit the market in 2019.
- In Multi-Physics: activity for sale and monetize in 2019.
- Monetize equity stakes in Argas and SBGS joint ventures in 2019.
- Implement the appropriate adjustments to general & administrative expenses and support costs to adapt to our new size and footprint. We will seek to focus on cash generation, optimize our capital structure and reduce our cost of capital.

As a result of these strategic announcements and actions undertaken afterwards, our Contractual Data Acquisition segment and part of our Non-Operated Resources segment are now presented as discontinued operations and assets held for sale in accordance with IFRS 5. This presentation applies for the first time as of and for the year ended December 31, 2018, and we have applied it retroactively as of and for the years ended December 31, 2016 and 2017. The discussion in this section is based on the new presentation, as applied retroactively to prior periods.

The costs of implementation of the progressive exit of Acquisition businesses in 2019 as described above, referred to as the "CGG 2021 Plan" are reported in the related Contractual Data Acquisition business lines.

Description of our segments

Financial information by segment is reported in accordance with our internal reporting system and provides internal segment information that is used by the chief operating decision maker to manage and measure performance. A summary of our segments is set out below.

CONTINUING OPERATIONS:

- GGR

This operating segment comprises the Geoscience business lines (processing and imaging of geophysical data, reservoir characterization, geophysical consulting and software services, geological data library and data management solutions) and the multi-client business line (development and management of seismic surveys that we undertake and license to a number of clients on a non-exclusive basis. Both activities regularly combine their offerings, generating overall synergies between their respective activities. The GGR segment includes the costs, industrial capital expenditures and capital employed related to the vessels dedicated to multi-client surveys.

- Equipment

This operating segment comprises our manufacturing and sales activities for seismic equipment used for data acquisition, both on land and marine. The Equipment segment carries out its activities through our subsidiary Sercel.

DISCONTINUED OPERATIONS:

- Contractual Data Acquisition. This operating segment comprises the following business lines:
  - Marine: offshore seismic data acquisition undertaken by us on behalf of a specific client; and
  - Land and Multi-Physics: other seismic data acquisition undertaken by us on behalf of a specific client.
- NOR: As discussed further in the chapter 5.1 under the heading "Factors affecting our results of operations — Fixed costs, fleet reduction and Transformation Plan", we started implementing our Transformation Plan in the first quarter of 2014 to address the cyclical trough in the seismic market, and as market conditions deteriorated further we implemented additional steps, ultimately downsizing our marine fleet to five vessels. As a result, part of our owned vessels was not operated for a certain period of time. In April 2017, with the new ownership set up of our fleet, the non-operated vessels and their related costs (cold-stacking costs notably) were transferred to Global Seismic Shipping AS ("GSS"), in which we own a 50% stakes but which we do not consolidate. The costs of the non-operated Acquisition resources as well as the costs of the Transformation Plan linked to the downsizing of our Contractual Data Acquisition businesses are reported in the Discontinued Operations portion of this segment. The capital employed includes mainly the 50% share of CGG in Global Seismic Shipping (GSS) moved to Assets held for Sale, and the provisions related to the Transformation Plan.

As a complement to Operating Income, EBIT may be used by management as a performance indicator for segments because it captures the contribution to our results of the significant businesses that are managed through our joint ventures. We define EBIT as Operating Income plus our share of income in companies accounted for under the equity method.

We define EBITDAs as earnings before interest, tax, income from equity affiliates, depreciation, amortization net of amortization expense capitalized to multi-client, and share-based compensation cost. Share-based compensation includes both stock options and shares issued under our share allocation plans. EBITDAs is presented as additional information because we understand that it is one measure used by certain investors to determine our operating cash flow and historical ability to meet debt service and capital expenditure requirements.

Inter-segment transactions are made at arm's length prices. They relate primarily to geophysical equipment sales made by the Equipment segment. These inter-segment revenues and the related earnings are eliminated in consolidation in the tables that follow under the column "Eliminations and other".

Operating Income and EBIT may include non-recurring items, which are disclosed in the reportable segment if material. General corporate expenses, which include Group management, financing, and legal activities, have been included in the column "Eliminations and other" in the tables that follow. The Group does not disclose financial expenses or financial revenues by segment because they are managed at the Group level.

Identifiable assets are those used in the operations of each segment. Unallocated and corporate assets consist of "investments and other financial assets" and "cash and cash equivalents" of our consolidated statement of financial position. The group does not track its assets based on country of origin.

Capital employed is defined as "total assets" excluding "cash and cash equivalents" less (i) "current liabilities" excluding "bank overdrafts" and "current portion of financial debt" and (ii) "non-current liabilities" excluding "financial debt".

The following tables also present operating revenues, Operating Income and EBIT by segment, and operating revenues by geographic area (by location of customers).

Analysis by segment

	2018						
In millions of US$, except for assets and capital employed in billions of US$	**GGR**	**Equipment**	**Eliminations and other**	**Segment figures**	**IFRS 15 adjustments**	**Non-recurring charges**	**Consolidated Total / IFRS figures**
Revenues from unaffiliated customers	913.4	314.0	—	1,227.4	(33.9)	—	1,193.5
Inter-segment revenues [(1)]	—	36.8	(36.8)	—	—	—	—
Operating revenues	**913.4**	**350.8**	**(36.8)**	**1,227.4**	**(33.9)**	**—**	**1,193.5**
Depreciation and amortization (excluding multi-client surveys)	(73.6)	(30.1)	(0.3)	(104.0)	—	(13.9)	(117.9)
Depreciation and amortization of multi-client surveys	(326.0)	—	—	(326.0)	(0.3)	(226.0)	(552.3)
Operating income [(2)]	**175.8**	**11.7**	**(45.2)**	**142.3**	**(34.2)**	**(287.8)**	**(179.7)**
EBITDAS	**557.8**	**42.1**	**(43.9)**	**556.0**	**(33.9)**	**(47.9)**	**474.2**
Share of income in companies accounted for under equity method	(1.2)	—	—	(1.2)		—	(1.2)
Earnings Before Interest and Tax [(2)]	**174.6**	**11.7**	**(45.2)**	**141.1**	**(34.2)**	**(287.8)**	**(180.9)**
Capital expenditures (excluding multi-client surveys) [(3)]	54.4	24.8	(1.2)	78.0	—	—	78.0
Investments in multi-client surveys, net cash	222.8	—	—	222.8	—	—	222.8
Capital employed [(4)]	**2.0**	**0.5**	**(0.1)**	**2.4**	**—**	**—**	**2.4**
Total identifiable assets [(4)]	**2.3**	**0.6**	**0.5**	**3.4**	**—**	**—**	**3.4**

(1) Sale of equipment to the Contractual Data Acquisition segment which is classified as discontinued operations

(2) For the year ended December 31, 2018, "non-recurring charges" included US$(226.0) million impairment of multi-client surveys (of which US$ 197 million on StagSeis survey), US$(30.1) million inventory write-off in Equipment division, and US$(13.9) million relating to other tangible and intangible assets impairment

For the year ended December 31, 2018, "eliminations and other" included US$(39.1) million of general corporate expenses and US$(5.0) million of intra-group margin.

(3) Capital expenditures included capitalized development costs of US$(33.1) million for the year ended December 31, 2018. "Eliminations and other" corresponded to the variance of suppliers of assets for the year ended December 31, 2018.

(4) Capital employed and identifiable assets related to discontinued operations are included under the column "Eliminations and other".

In millions of US$, except for assets and capital employed in billions of US$	2017 (Restated)						
	GGR	Equipment	Eliminations and other	Segment figures	IFRS 15 adjustments	Non-recurring charges	Consolidated Total / IFRS figures
Revenues from unaffiliated customers	819.6	215.5	—	1,035.1	—	—	1,035.1
Inter-segment revenues [(1)]	—	25.7	(25.7)	—	—	—	—
Operating revenues	**819.6**	**241.2**	**(25.7)**	**1,035.1**	**—**	**—**	**1,035.1**
Depreciation and amortization (excluding multi-client surveys)	(87.5)	(29.8)	(0.2)	(117.5)	—	—	(117.5)
Depreciation and amortization of multi-client surveys	(297.7)	—	—	(297.7)	—	—	(297.7)
Operating income [(2)]	**130.7**	**(35.9)**	**(46.5)**	**48.3**	**—**	**(106.2)**	**(57.9)**
EBITDAS	**486.0**	**(6.1)**	**(45.9)**	**434.0**	**—**	**(106.2)**	**327.8**
Share of income in companies accounted for under equity method	(0.4)	—	—	(0.4)	—	—	(0.4)
Earnings Before Interest and Tax [(2)]	**130.3**	**(35.9)**	**(46.5)**	**47.9**	**—**	**(106.2)**	**(58.3)**
Capital expenditures (excluding multi-client surveys) [(3)]	45.0	22.2	—	67.2	—	—	67.2
Investments in multi-client surveys, net cash	251.0	—	—	251.0	—	—	251.0
Capital employed [(4)]	**2.2**	**0.6**	**0.4**	**3.2**	**—**	**—**	**3.2**
Total identifiable assets [(4)]	**2.6**	**0.7**	**0.6**	**3.9**	**—**	**—**	**3.9**

(1) Sale of equipment to the Contractual Data Acquisition segment which is classified as discontinued operations and to the GGR segment

(2) For the year ended December 31, 2017, "non-recurring charges" included US$(93.7) million of professional fees mainly linked to the US Chapter 11 and French Safeguard procedures (see note 2 — Financial restructuring process); and US$(12.5) million of other costs related to our Transformation Plan.

For the year ended December 31, 2017, "eliminations and other" included US$(37.8) million of general corporate expenses and US$(8.7) million of intra-group margin.

(3) Capital expenditures included capitalized development costs of US$(31.8) million for the year ended December 31, 2017. "Eliminations and other" corresponded to the variance of suppliers of assets for the year ended December 31, 2017.

(4) Capital employed and identifiable assets related to discontinued operations are included under the column "Eliminations and other".

In millions of US$, except for assets and capital employed in billions of US$	2016 (Restated)						
	GGR	Equipment	Eliminations and other	Segment figures	IFRS 15 adjustments	Non-recurring charges	Consolidated Total / IFRS figures
Revenues from unaffiliated customers	784.0	179.3	—	963.3	—	—	963.3
Inter-segment revenues [1]	—	75.7	(75.7)	—	—	—	—
Operating revenues	**784.0**	**255.0**	**(75.7)**	**963.3**	**—**	**—**	**963.3**
Depreciation and amortization (excluding multi-client surveys)	(100.6)	(35.5)	(0.4)	(136.5)	—	(0.5)	(137.0)
Depreciation and amortization of multi-client surveys	(320.4)	—	—	(320.4)	—	(96.8)	(417.2)
Operating income [2]	**81.4**	**(41.9)**	**(69.8)**	**(30.3)**	**—**	**(116.3)**	**(146.6)**
EBITDAS	**460.4**	**(6.4)**	**(68.0)**	**386.0**	**—**	**(19.0)**	**367.0**
Share of income in companies accounted for under equity method	(2.2)	—	—	(2.2)	—	—	(2.2)
Earnings Before Interest and Tax [2]	**79.2**	**(41.9)**	**(69.8)**	**(32.5)**	**—**	**(116.3)**	**(148.8)**
Capital expenditures (excluding multi-client surveys) [3]	60.1	12.4	1.3	73.8	—	—	73.8
Investments in multi-client surveys, net cash	295.1	—	—	295.1	—	—	295.1
Capital employed [4]	**2.3**	**0.6**	**0.6**	**3.5**	**—**	**—**	**3.5**
Total identifiable assets [4]	**2.5**	**0.7**	**1.1**	**4.3**	**—**	**—**	**4.3**

(1) Sale of equipment to the Contractual Data Acquisition segment which is classified as discontinued operations and to the GGR segment

(2) For the year ended December 31, 2016, the "non-recurring charges" included US$(96.8) million impairment of multi-client surveys and US$(0.5) million relating to tangible assets impairment, and US$(19.0) million of other costs related to our Transformation Plan.
For the year ended December 31, 2016, "eliminations and other" included US$(33.2) million of general corporate expenses and US$(36.6) million of intra-group margin.

(3) Capital expenditures included capitalized development costs of US$(34.0) million for the year ended December 31, 2016. "Eliminations and other" corresponded to the variance of suppliers of assets for the year ended December 31, 2016.

(4) Capital employed and identifiable assets related to discontinued operations are included under the column "Eliminations and other".

NOTE 21 RESEARCH AND DEVELOPMENT EXPENSES

Analysis of research and development expenses is as follows:

(In millions of US$)	December 31, 2018	2017 (restated)	2016 (restated)
Research and development costs	(71.3)	(69.2)	(80.8)
Development costs capitalized	33.1	31.8	34.0
Research and development expensed	**(38.2)**	**(37.4)**	**(46.8)**
Government grants recognized in income	7.7	19.5	30.1
Research and development costs — net	**(30.5)**	**(17.9)**	**(16.7)**

Research and development expenditures related primarily to:

- for the GGR segment, projects concerning data processing services and;
- for the Equipment segment, projects concerning seismic data recording equipment.

The decrease in Government grants recognized in income in 2018 compared to 2017 is mainly due to a US R&D tax credit reversal in 2018.

NOTE 22 OTHER REVENUES AND EXPENSES

(In millions of US$)	December 31, 2018	2017 (restated)	2016 (restated)
Impairment of assets	(239.9)	—	(97.3)
Restructuring costs	(79.4)	(195.1)	(132.0)
Change in restructuring reserves	61.6	88.9	113.0
Other restructuring expenses	(30.1)	—	—
Impairment and restructuring expenses — net	**(287.8)**	**(106.2)**	**(116.3)**
Other revenues (expenses)	1.0	(3.5)	0.5
Exchange gains (losses) on hedging contracts	(0.8)	—	0.2
Gains (losses) on sales of assets	1.5	4.2	4.9
Other revenues (expenses) — net	**(286.1)**	**(105.5)**	**(110.7)**

Year ended December 31, 2018

Impairment of assets

In 2018, we recognized a US$(226.0) million impairment of multi-client surveys (of which US$ 197 million on StagSeis survey) due to specific market conditions.

Restructuring costs and change in restructuring reserves

As part of the Group Transformation Plan, we recognized US$(17.8) million of restructuring costs. These restructuring costs include:

(vii) US$15.1 million of professional fees mainly linked to the US Chapter 11 and French Safeguard procedures (see note 2 — "Financial restructuring process"),

(viii) US$2.7 million of other costs related to our Transformation Plan.

Other restructuring expenses

In 2018, we recognized a US$(30.1) million of inventory valuation allowance at Sercel.

Year ended December 31, 2017

Restructuring costs and change in restructuring reserves

As part of the Group Transformation Plan, we recognized US$(106.2) million of restructuring costs. These restructuring costs include:

(i) US$93.7 million of professional fees mainly linked to the US Chapter 11 and French Safeguard procedures (see note 2 — Financial restructuring process); and

(ii) US$12.5 million of other costs related to our Transformation Plan.

Year ended December 31, 2016

Restructuring costs and change in restructuring reserves

As part of the Group Transformation Plan, we expensed US$132.0 million in 2016, partially offset by the use of the corresponding provisions.

Impairment of assets

In 2016, we recognized a US$(96.8) million impairment of multi-client surveys due to specific market conditions.

NOTE 23 COST OF FINANCIAL DEBT

(In millions of US$)	December 31, 2018	2017	2016
Current interest expenses related to financial debt	(129.7)	(181.0)	(168.6)
Amortization of deferred expenditures on financial debts	—	(33.0)	(8.3)
Income provided by cash and cash equivalents	2.3	3.0	2.7
Cost of financial debt, net	**(127.4)**	**(211.0)**	**(174.2)**

Following the approval of the draft safeguard plan by creditors' committees in France on July 28, 2017 and the approval of Chapter 11 plan by creditors entitled to vote in the US late September, 2017, most of our current debt was settled on February 21, 2018 through conversion into equity or new debt instruments under our financial restructuring plan. As a result, we have accelerated the amortization of the debt issuing fees in 2017.

NOTE 24 OTHER FINANCIAL INCOME (LOSS)

	December 31,		
(In millions of US$)	**2018**	**2017 (restated)**	**2016 (restated)**
Exchange gains (losses) net	32.0	28.1	12.6
Other financial income (expenses)	787.9	(6.6)	(6.6)
Other financial income (loss)	**819.9**	**21.5**	**6.0**

In 2018, the Other Financial Income mainly comes (i) for US$771 million from the strong positive impact of our financial restructuring (ii) for US$74 million in one-off income mainly linked to the positive foreign exchange effect, associated with the shift of Euro/US$ balance sheet exposure following the financial restructuring and the subsequent first lien refinancing (our Euro/US$ balance sheet position is now balanced), partly offset by (iii) the first lien refinancing costs for US$21 million

NOTE 25 INCOME TAXES

Income tax benefit (expense)

The Company and its subsidiaries compute income taxes in accordance with the applicable tax rules and regulations of the numerous tax authorities where the Group operates. The tax regimes and income tax rates legislated by these taxing authorities vary substantially. In foreign countries, income taxes are often accrued based on deemed profits calculated as a percentage of sales as defined by local government tax authorities.

	December 31,		
(In millions of US$)	**2018**	**2017 (restated)**	**2016 (restated)**
France			
Current income tax expense	—	—	—
Adjustments on income tax recognized in the period for prior periods	0.0	0.1	0.2
Deferred taxes on temporary differences for the period	3.3	(0.2)	(5.5)
Deferred taxes recognized in the period for prior periods	0.5	(3.4)	0.1
Total France	**3.8**	**(3.5)**	**(5.2)**
Foreign countries			
Current income tax expense, including withholding taxes	(19.0)	(19.7)	(16.3)
Adjustments on income tax recognized in the period for prior periods [3]	1.4	1.4	9.9
Deferred taxes on temporary differences for the period	14.0	49.5	43.0
Deferred taxes recognized in the period for prior periods [1] [2]	(7.6)	(46.4)	(12.7)
Total Foreign countries	**(11.2)**	**(15.2)**	**23.9**
Total income tax benefit (expense)	**(7.4)**	**(18.7)**	**18.7**

(1) In 2018, included valuation allowances on deferred tax assets of US$8.3 million in Mexico.
(2) In 2017, included valuation allowances on deferred tax assets of US$45.5 million in several countries, notably in US (US$32.0 million) based on their probable recovery regarding existing taxable items. In 2016, included valuation allowances on deferred tax assets amounting to US$7.5 million.
(3) In 2016, was mainly impacted by changes in estimates, use of tax credits and carry-back in North America.

Income tax reconciliation

The reconciliation between income tax expense in the income statement and the theoretical tax expense is detailed below:

(In millions of US$)	2018	2017 (restated)	2016 (restated)
Net income from continuing operations (loss)	**504.2**	**(266.5)**	**(298.3)**
Income taxes	**(7.4)**	**(18.7)**	**18.7**
Net Income from continuing operations (loss) before taxes	**511.6**	**(247.8)**	**(317.0)**
Equity investment companies income	(1.2)	(0.4)	(2.2)
Theoretical tax basis	**512.8**	**(247.4)**	**(314.8)**
Enacted tax rate in France	34.43%	34.43%	34.43%
Theoretical taxes	**(176.6)**	**85.2**	**108.4**
Differences on tax:			
Differences in tax rates between France and foreign countries [6]	(44.5)	0.3	23.9
Change in local tax rates enacted by US and French tax laws [4]	—	43.3	—
Non-deductible part of dividends	—	(0.6)	(1.8)
Adjustments on the tax expense recognized in the period for prior periods [2]	1.4	1.6	10.1
Adjustments on the deferred tax expense recognized in the period for prior periods	1.2	(4.3)	(5.1)
Valuation allowance on deferred tax assets previously recognized on losses on foreign entities [1]	(8.3)	(45.5)	(7.5)
Other permanent differences (including withholding taxes) [5]	239.5	(17.0)	(2.0)
Deferred tax unrecognized on losses of the period [3]	(30.0)	(84.5)	(109.9)
Unrecognized deferred tax on losses of prior periods	9.9	2.8	2.6
Income taxes	**(7.4)**	**(18.7)**	**18.7**

(1) (2) See comments on income tax benefit (expense) above.
(3) Corresponds notably to the French, and US tax groups according to short and medium term uncertainties and revised tax planning.
(4) The US corporate income tax rate used for tax calculations decreased from 35% in 2016 to 21% in 2017, which had a favorable tax impact of US$37 million in 2017. In France, the corporate income tax rate will reduce over a five-year period from 34.43% to 25%, which had a favorable impact on deferred taxes calculation in 2017 of US$6.3 million.
(5) Correspond notably, in 2018, to the permanent differences relatives to the debt equitization (see note 2)
(6) Correspond notably, in 2018, to the difference in tax rates between France and US for US$37 million

Deferred tax assets and liabilities

	December 31,		
(In millions of US$)	2018	2017	2016
Total deferred tax assets	**22.6**	**21.9**	**26.0**
Total deferred tax liabilities	**(44.4)**	**(62.0)**	**(67.6)**
Total deferred taxes, net	**(21.8)**	**(40.1)**	**(41.6)**

Net deferred tax assets (liabilities) per nature

	December 31,		
(In millions of US$)	2018	2017	2016
Non-deductible provisions (including pensions and profit sharing)	33.3	24.4	28.9
Tangible assets	19.5	28.4	46.9
Effect of currency translation adjustment not recognized in income statement	(10.5)	(2.5)	(42.5)
Multi-client surveys (including deferred revenues)	(57.1)	(147.6)	(152.8)
Assets reassessed in purchase accounting of acquisitions	(29.5)	(32.4)	(49.0)
Development costs capitalized	(18.8)	(23.6)	(26.9)
Other deferred revenues	(1.6)	(19.4)	2.0
Convertible bonds and other financial instruments	—	(12.3)	1.6
R&D credits	32.0	44.2	39.4
Other	(30.6)	10.5	4.5
Total deferred tax assets net of deferred tax (liabilities) related to timing differences	**(63.3)**	**(130.3)**	**(147.9)**
Tax losses carried forward	41.5	90.2	106.3
Total deferred tax assets net of deferred tax (liabilities)	**(21.8)**	**(40.1)**	**(41.6)**

Deferred tax assets (liabilities) per tax group as of December 31, 2018

(In millions of US$)	France	Foreign countries	Total
Net deferred tax assets (liabilities) related to timing differences	(32.8)	(30.5)	(63.3)
Deferred tax assets on losses carried forward [(2)]	5.7	35.8	41.5
Total	**(27.1)**	**5.3**	**(21.8)**

(1) The deferred taxes recognized on losses carried forward are recoverable without expiration date
(2) See note 1.6-6 to the consolidated statements for rules of recognition of deferred tax assets

Net operating loss carried forward not recognized as of December 31, 2018

(In millions of US$)	France	Foreign countries	Total
Losses scheduled to expire in 2019	—	1.3	1.3
Losses scheduled to expire in 2020 and thereafter	—	195.3	195.3
Losses available indefinitely	1,893.0	242.3	2,135.3
Total	**1,893.0**	**438.9**	**2,331.9**

Tax audit and litigation

US

The tax audit regarding CGG Holding (U.S.) Inc. for the 2007 fiscal year and extended to 2016 is still ongoing at December 31, 2018 due to the Governmental shutdown.

Brazil

Municipality of Rio de Janeiro has claimed to Veritas do Brazil Ltda that services taxes (ISS) are payable for 2001 to 2008 which has been duly disputed.

Further to the favorable decision of the judicial court received by Veritas do Brasil Ltda in 2014, the administrative procedure covering 2001 to May 2003 has been officially terminated in March 2015 and the tax assessment cancelled in January 2016. In March 2016, the Municipality filed a Rescission Action in order to have the favorable decision cancelled; the Group filed the response to the action in June 2016. In December 2016, Public attorney's office agreed that there are no grounds to re-discuss the merit of the case, but understood that the action shall be ruled. In February 2017, CGG filed a petition to object the ruling. CGG is waiting for Municipality and public attorney's office response. The Group considers that there is no proper ground for this action.

For years September 2003-2008 (taxes at stake: US$11 million), the administrative procedure is still ongoing and should result in the same cancellation considering that the reassessment is based on the same arguments than those cancelled by the judicial court.

No provision is recognized as the Group considers that these contingencies should resolve in its favor.

Following a 2012 audit on year 2009, CGG do Brazil Participacoes Ltda was reassessed US$6.1 million of withholding tax and US$4 million of CIDE (Contribution for Intervening in Economic Domain) on charter contracts. The reassessment was disputed. In 2014, the company received and appealed against an unfavorable decision from the Administrative Court. In July 2017, CIDE case was ruled against CGG and the company decided to enter into an amnesty program (PERT). The litigation has been dropped and parties agreed on a final settlement of approximately US$2.7 million fully settled in January 2018. In August 2018, the decision from the Administrative Court on WHT reassessment has been confirmed. In October 2018, CGG filed a motion to clarify the decision. No provision is recognized.

In 2016, a new audit was conducted for fiscal year 2013. CGG do Brazil Participacoes Ltda received tax reassessments on December 20, 2017 for amounts of US$15 million for withholding tax and US$10 million for CIDE. The company appealed in January 2018 against the reassessments. In August 2018, both WHT and CIDE on charter were ruled favorably to CGG. Tax authorities appealed against the decision. No provision is recognized.

Peru

The Peru tax authorities were claiming additional withholding taxes on technical services for 2012 and 2013 for CGG Land (U.S.) Inc Sucursal del Peru for an amount of US$15 million. The company disputed the reassessment and the litigation was at the Fiscal Tribunal stage. A final resolution in favor of CGG was notified in May 2017. A nullity action has been launched against this resolution by the Tax Authorities. In February 2019, the nullity action has been denied by the judge. No provision is recognized for this litigation.

NOTE 26 PERSONNEL

The analysis of personnel (including discontinued operations) is as follows:

	Year ended December 31,		
	2018	**2017**	**2016**
Personnel employed under French contracts	1,253	1,306	1,393
Personnel employed under local contracts	3,846	3,960	4,373
Total	**5,099**	**5,266**	**5,766**
Including field staff of:	*418*	*498*	*547*

The total cost of personnel employed was US$559 million in 2018 (or US$452 million excluding acquisition), US$561 million in 2017 (or US$446 million excluding acquisition), and US$654 million in 2016(or US$495 million excluding acquisition),

NOTE 27 KEY MANAGEMENT PERSONNEL COMPENSATION

Until June 2017, the Corporate Committee (C-Com) was chaired by the Chief Executive Officer and was composed of the CEO, three Senior Executive Vice Presidents — the Chief Financial Officer and the two Group Chief Operating Officers — and the Human Resources Executive Vice President.

The table below present

- for 2017 and 2016, the Director fees and C-Com members' remuneration:
- for 2018, the Director fees and the CEO remuneration

	Year ended December 31,		
(in US$)	**2018**	**2017**	**2016**
Short-term employee benefit paid [(a)]	4,490,770	3,622,362	3,923,272
Directors' fees	763,753	692,714	646,042
Long-term employee benefit — pension [(b)]	—	26,641	28,444
Long-term employee benefit — supplemental pension [(c)]	429,986	828,603	778,027
Share-based payments [(d)]	279,920	129,918	443,575

(a) Excludes social contributions.
(b) Cost of services rendered and interest cost.
(c) Cost of services rendered and interest cost on the supplemental pension implemented by the end of 2004.
(d) Expense in the income statement related to the stock options and performance shares plans.

Special Severance Payment — Chief Executive Officer

The Board of Directors, on April 26, 2018, in its meeting appointing Ms. Sophie ZURQUIYAH as Chief Executive Officer for a three-year period, also approved, for the duration of her term in office, the terms and conditions of the advantages granted to Ms. Sophie ZURQUIYAH in case of termination of her term of office. These advantages will be submitted to the General Meeting convened on May 15, 2019 for ratification.

These advantages are the following:

- Ms. Sophie ZURQUIYAH will benefit from a contractual indemnity in case of termination under the following conditions:
  - a) Dismissal, non-renewal of the term of office or in the event of a forced departure (involving a resignation), related to a change of control that has occurred in the absence of any failure situation characterized by the non-fulfilment of all the performance conditions below. It is specified that a departure occurring within the twelve months following the occurrence of change of control shall be considered as a forced departure;
  - b) Dismissal in the absence of serious or gross misconduct occurring in the absence of any situation of failure characterized for the purposes of this paragraph by failure to meet the performance conditions as defined hereafter.
- In the event that these provisions where to apply during the first three years of the term of office of the Chief Executive Officer, the assessment of the achievement of the performance conditions would be made in the following manner;
  - a) In case of departure from the Group during 2018 and 2019 fiscal years, the Board of Directors will determine the rate of achievement of the objectives during the period since the appointment of the Chief Executive Officer ; the rate as determined by the Board of Directors will constitute the achievement rate which will be taken into account to apply the rule described below;
  - b) The payment of this Special Severance Payment would depend on the level of the average rate of achievement of the objectives relating to Ms. Sophie ZURQUIYAH's variable annual compensation calculated over the financial years 2018, 2019, 2020, as follows:
    - a. (a) If the average rate is below 60%, no Special Severance Payment will be paid;
    - b. (b) If the average rate is 60%, the Special Severance Payment will be equal to 60% of its amount;
    - c. (c) If the average rate is higher than 60%, the Special Severance Payment will be paid on a straight-line basis from 60% to 100% of its amount.
- This Special Severance Payment will be equal to the difference between (i) a gross amount capped at 200% of the reference annual compensation including all sums irrespective of type or basis to which Ms. Sophie ZURQUIYAH may be entitled as a consequence of the severance, and (ii) any sums to which she may be entitled further to the application of the non-competition commitment.

According to Article L. 225-42-1 of the French Commercial Code, the Board of Directors, prior to the payment of the Special Severance Payment, shall assess that, (i) the aforementioned performance conditions have been met and that (ii) the Special Severance Payment complies with the AFEP-MEDEF Code in force at the date of the concerned person's departure.

NOTE 28 RELATED PARTY TRANSACTIONS

The following table presents the transactions with our joint-ventures and associates. The vast majority of them belong to the acquisition segment which is classified as discontinued operation in our consolidated statements of operations.

	December 31,						
	2018			2017			2016
(In millions of US$)	Joint Ventures [a]	Associates [b]	Total	Joint Ventures [a]	Associates [b]	Total	Total
Sales of geophysical equipment	—	14.5	14.5	2.6	31.0	33.6	5.2
Equipment rentals and services rendered	4.5	10.9	15.4	13.0	8.4	21.4	28.0
Operating Revenue	**4.5**	**25.4**	**29.9**	**15.6**	**39.4**	**55.0**	**33.2**
Charter expenses	(31.7)	—	(31.7)	(23.6)	—	(23.6)	(28.3)
Ship management expenses	(32.4)	—	(32.4)	(24.4)	—	(24.4)	(36.2)
Costs of services rendered	(6.1)	(0.5)	(6.6)	(2.5)	(1.5)	(4.0)	(7.7)
Cost of operations	**(70.2)**	**(0.5)**	**(70.7)**	**(50.5)**	**(1.5)**	**(52.0)**	**(72.2)**
Other financial income (loss)	**(35.0)**	—	**(35.0)**	**0.1**	—	**0.1**	**0.2**
Trade accounts and notes receivable, including agency arrangements	15.9	14.9	30.8	18.1	18.7	36.8	36.3
Financial assets (see note 7)	2.9	—	2.9	32.9	—	32.9	14.9
Receivables	**18.8**	**14.9**	**33.7**	**51.0**	**18.7**	**69.7**	**51.2**
Trade accounts and notes payable, including agency arrangements	6.0	3.9	9.9	13.1	5.5	18.6	59.5
Financial liabilities — Finance lease debt	—	—	—	—	—	—	15.0
Payables	**6.0**	**3.9**	**9.9**	**13.1**	**5.5**	**18.6**	**74.5**
Future leases commitments	358.2	—	358.2	397.0	—	397.0	203.5
Future ship management costs	94.6	—	94.6	169.3	—	169.3	66.7
Contractual Obligations	**452.8**	—	**452.8**	**566.3**	—	**566.3**	**270.2**

(a) Mainly correspond to investments in companies accounted for using the equity method in our Marine acquisition Segment (see note 8);
(b) Mainly correspond to investments in companies accounted for using the equity method in our Land and Multi-Physics acquisition Segment (see note 8);

No credit facility or loan was granted to the Company by shareholders during the last three years.

NOTE 29 SUPPLEMENTARY CASH FLOW INFORMATION

Operating activities

In 2018 and 2016, depreciation and amortization, together with multi-client surveys depreciation, included respectively US$239.9 million, US$97.3 million of assets impairment as described in note 22.

In 2018, other non-cash items are mainly related to the financial restructuring plan as described in note 2.

In 2017, the income tax paid was an income of US$43.5 million mainly resulting from the French R&D tax credit refund.

Investing activities

In 2018, 2017 and 2016, proceeds from disposals of tangible and intangible assets related to the sales of some of our assets.

In 2017, proceeds from disposal of financial assets related to the sale of our remaining 9.17% financial stake in Tronic's microsystems SA.

In 2018, 2017 and 2016, variation in other financial assets mainly related to long term deposits made to fulfil some collateral.

Financing activities

In 2018, total issuance of long-term debts related to the second lien senior secured notes due 2024 issued in by CGG SA for US$355.1 million and €80.4 million in principal amount. This issuance comprises US$275 million and €80.4 million as new money and US$80.2 million in exchange for part of the accrued interest claims under the Senior Notes (with the US$ new money notes and accrued interest notes being fungible) (see note 13).

In 2018, CGG Holding (U.S.) Inc. issued US$663.6 million in principal amount of first lien senior secured notes due 2023, in exchange for the balance of the Secured Loans taking into account an upfront paydown of US$150 million.

In 2016, we received net proceeds €337 million from our capital increase (or US$367.5 million).

Cash and cash equivalents

(In millions of US$)	Year ended December 31,		
	2018	**2017 (restated)**	**2016 (restated)**
Cash	353.2	229.6	415.1
Cash equivalents (mainly short-term deposits)	80.9	85.8	123.7
Total cash and cash equivalents	**434.1**	**315.4**	**538.8**

In 2018, Cash and Cash equivalents included trapped cash amounting to US$93 million. Trapped cash means any cash and cash equivalent held by a subsidiary that operates in a country where exchange controls or other legal restrictions apply when the balances are not available for general use by the Group (cash in subsidiaries not available at Group level).

The cash equivalents do not include in 2018 US$30.5 million of cash pledged to fulfill some collateral requirements. The cash pledged for more than one year is recorded for US$18.1 million in other financial assets (see note 7) and the cash pledged for less than one year is recorded for US$12.4 million in restricted cash (see note 4).

NOTE 30 EARNINGS PER SHARE

(In millions of US$, excepted per share data)	Year		
	2018	**2017**	**2016**
Net income attributable to shareholders (a)	(101.6)	(514.9)	(573.4)
Effect of dilution			
Ordinary shares outstanding at the beginning of the year (b) [(1)]	46,038,287	46,038,287	12,647,881
Weighted average number of ordinary shares outstanding during the year [(c)]	562,399,954	—	30,607,872
Weighted average number of ordinary shares outstanding ((d) =(b) +(c))	**608,438,241**	**46,038,287**	**43,255,753**
Total dilutive potential shares from stock options	—	—	—
Total dilutive potential shares from performance shares allocation	—	—	—
Total dilutive potential shares from Convertible bonds	—	—	—
Total dilutive potential shares from warrants	9,155,112	—	—
Dilutive weighted average number of shares outstanding adjusted when dilutive (e)	**617,593,353**	**46,038,287**	**43,255,753**
Earnings per share			
Basic (a) / (d)	**(0.17)**	**(11.18)**	**(13.26)**
Diluted (a) / (e) [(2)]	**(0.17)**	**(11.18)**	**(13.26)**
Net income attributable to shareholders from continuing operations (a2)	498.4	(267.3)	(295.1)
Earnings per share Basic	0.82	(5.81)	(6.82)
Earnings per share Diluted [(2)]	0.81	(5.81)	(6.82)
Net income attributable to shareholders from discontinued operations (a3)	(600.0)	(247.6)	(278.3)
Earnings per share Basic	(0.99)	(5.38)	(6.43)
Earnings per share Diluted [(2)]	(0.99)	(5.38)	(6.43)

(1) As a result of the February 21, 2018 CGG S.A. capital increase via an offering of preferential subscription rights to existing shareholders, the calculation of basic and diluted earnings per share for 2017 and 2016 has been adjusted retrospectively. Number of ordinary shares outstanding has been adjusted to reflect the proportionate change in the number of shares.

(2) When our net result is a loss, stock options, performance shares plans and warrants had an anti-dilutive effect and shouldn't be taken into account in the calculation of diluted loss per share. As a result the formula for the diluted loss per share is (a) / (d) [or (a2) / (d) for continuing operations and (a3) / (d) for discontinued operations].

NOTE 31 SUBSEQUENT EVENTS

None

NOTE 32 LIST OF PRINCIPAL CONSOLIDATED SUBSIDIARIES AS OF DECEMBER 31, 2018

Subsidiaries are fully consolidated from the date of their acquisition, being the date on which the Group obtains the control.

Dormant subsidiaries of the Group have not been included in the list below.

Percentage of interest generally corresponds to percentage of control in the company.

Siren Number [a]	Companies Names	Country of incorporation	% of interest
403 256 944	CGG Services SAS	France	100.0
410 072 110	CGG Explo SARL	France	100.0
413 926 320	Geomar SAS	France	100.0
	CGG Holding BV	Netherlands	100.0
	CGG Marine BV	Netherlands	100.0
	CGG Services (NL) BV	Netherlands	100.0
	CGG International SA	Switzerland	100.0
	CGG Data Services SA	Switzerland	100.0
	CGG Services (Norway) AS	Norway	100.0
	CGG Services (UK) Limited	United Kingdom	100.0
	CGG do Brasil Participaçoes Ltda	Brazil	100.0
	Veritas do Brasil Ltda	Brazil	100.0
	LASA Prospeccoes SA	Brazil	100.0
	CGG Mexico, SA de CV	Mexico	100.0
	Geoinnovation Corporativa S. de RL de CV	Mexico	100.0
	Vitzel SA de CV	Mexico	100.0
	CGG Holding (U.S.) Inc.	Delaware, United States of America	100.0
	CGG Services (U.S.) Inc.	Delaware, United States of America	100.0
	CGG Land (U.S.) Inc.	Delaware, United States of America	100.0
	CGG Canada Services Ltd	Canada	100.0
	CGG Services (Canada) Inc.	Canada	100.0
	CGG Services (Australia) Pty Ltd	Australia	100.0
	CGG Aviation (Australia) Pty Ltd	Australia	100.0
	CGGVeritas Services (B) Sdn Bhd	Brunei	100.0
	PT CGG Services Indonesia [1]	Indonesia	95.0
	CGG Services India Private Ltd	India	100.0
	CGG Technology Services (Beijing) Co. Ltd	China	100.0
	CGG Services (Singapore) Pte Ltd	Singapore	100.0
	CGG Services (Malaysia) Sdn Bhd	Malaysia	100.0
	CGG Vostok	Russia	100.0

Siren Number [(a)]	Companies Names	Country of incorporation	% of interest
866 800 154	Sercel Holding SAS	France	100.0
378 040 497	Sercel SAS	France	100.0
	Sercel-GRC	Oklahoma, United States of America	100.0
	Sercel Inc.	Oklahoma, United States of America	100.0
	Hebei Sercel-Junfeng Geophysical Prospecting Equipment Co. Ltd [(1)]	China	51.0
	Sercel Singapore Pte Ltd	Singapore	100.0
	De Regt Marine Cables BV	Netherlands	100.0

(a) Siren number is an individual identification number for company registration purposes under French law.
(1) % of control for these subsidiaries amount to 100%.

Non-controlling interests

The Group does not fully consolidate any significant entity in which it holds less than a majority of voting rights.

Subsidiaries with non-controlling interests do not contribute materially to the activities of the Group, the consolidated net income, cash flows, liabilities or assets as of December 31, 2018. Hebei Sercel-Junfeng Geophysical Prospecting Equipment Co. Ltd, a subsidiary of Sercel SAS based in China, is the major entity with non-controlling interests.

NOTE 33 Audit Fees

Annual audit fees for 2018, 2017, and 2016 are as follows:

	December 31,					
	2018		2017		2016	
(in thousands of US$)	EY	Mazars	EY	Mazars	EY	Mazars
Audit Fees	3,236	1,165	3,095	1,196	2,642	1,170
Audit-Related Fees	33	—	492	241	252	51
Tax Fees	106	—	94	—	23	14
All Other Fees	—	—	—	—	25	—
Total	**3,375**	**1,165**	**3,681**	**1,437**	**2,942**	**1,235**

Audit related fees are linked to sustainability audits.

REPORT OF THE STATUTORY AUDITORS ON THE 2018 CONSOLIDATED FINANCIAL STATEMENTS

This is a translation into English of the statutory auditors' report on the consolidated financial statements of the Company issued in French and it is provided solely for the convenience of English speaking users.

This statutory auditors' report includes information required by European regulation and French law, such as information about the appointment of the statutory auditors or verification of the management report and other documents provided to shareholders.

This report should be read in conjunction with, and construed in accordance with, French law and professional auditing standards applicable in France.

To the shareholders of CGG,

Opinion

In compliance with the engagement entrusted to us by your annual general meeting, we have audited the accompanying consolidated financial statements of CGG for the year ended December 31, 2018.

In our opinion, the consolidated financial statements give a true and fair view of the assets and liabilities and of the financial position of the Group as of December 31, 2018 and of the results of its operations for the year then ended in accordance with International Financial Reporting Standards as adopted by the European Union.

The audit opinion expressed above is consistent with our report to the Audit Committee.

Basis for opinion

Audit framework

We conducted our audit in accordance with professional standards applicable in France. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Our responsibilities under those standards are further described in the *Statutory auditors' responsibilities for the audit of the consolidated financial statements* section of our report.

Independence

We conducted our audit engagement in compliance with the independence rules applicable to us for the period from January 1, 2018 to the date of our report and specifically we did not provide any prohibited non-audit services referred to in article 5, paragraph 1 of Regulation (EU) No 537/2014 or in the French code of ethics (*code de déontologie*) for statutory auditors.

Emphasis of matter

Without qualifying our opinion expressed above, we draw your attention to the effects of the changes in accounting policies arising by application of IFRS 15, *Revenue from Contracts with Customers*, set out in note 1.3 to the consolidated financial statements.

Justification of assessments - key audit matters

In accordance with the requirements of Articles L823-9 and R823-7 of the French code of commercial law relating to the justification of our assessments, we inform you of the key audit matters relating to risks of material misstatement that, in our professional judgment, were of most significance in our audit of the consolidated financial statements of the current period, as well as to how we addressed those risks.

These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on specific items of the consolidated financial statements.

Financial restructuring

Key audit point

On February 21, 2018 CGG finalized the implementation of its financial restructuring plan.

As presented in note 2 to the consolidated financial statements, the financial restructuring has involved: (i) converting almost all the Company's unsecured debt (an amount of USD 1,992.7 million) into share capital, (ii) extending the repayment maturities for the Group's secured debt and (iii) injecting additional cash. Details of the financial instruments issued are provided in note 2. The impacts of the financial restructuring on the consolidated financial statements are summarized in note 1.2 and detailed in note 2.

The various components of the financial restructuring involved the recognition of complex transactions requiring the exercise of significant judgment on the part of management with particular regard to determining the fair value of the Company's shares at the date of the financial restructuring and to the treatment in the consolidated statement of income of the expenses associated with the second tier secured bonds maturing in 2024. We therefore considered the financial restructuring as a key audit point.

Our response

We included professionals with particular competency in the recording of transactions involving financial instruments in our audit team in order in particular to assess the compliance with IFRSs, and in particular with IFRS 9, of the bases of recognition of all the capital transactions and transactions relating to the subscription of new borrowings engaged in during the period. In particular, our work included:

- Examination of the consistency of the fair value measurement of the shares issued in exchange for debt surrendered with regard to the listed share price at the time of performance of the transactions;
- Assessment of the coherency of the accounting treatment designed to capture the full amount of the costs associated with the issue of second rank secured bonds maturing in 2024 in the consolidated income statement, with particular regard for the overall structure of the restructuring plan.

We also assessed the appropriateness of the additional disclosures on the financial restructuring presented in the consolidated financial statements.

2021 strategic plan

Key audit point

As presented in note 2 to the consolidated financial statements, CGG announced its 2021 strategic plan on November 7, 2018. The plan involves the Group in evolving towards a business model with limited capital requirements by reducing its exposure to acquisitions. The strategic adjustments included in the 2021 strategic plan are detailed in note 2 and consist notably in disengaging CGG from various acquisition components and in adjusting its support functions in consequence.

The direct and indirect consequences of the 2021 strategic plan for the consolidated financial statements as of December 31, 2018 are summarized in note 1.2. In terms of presentation:

- Assets held for sale and the associated liabilities are presented as two distinct line items in the consolidated statement of financial position as of December 31, 2018;
- The result for discontinued operations is presented as a distinct line item in the consolidated statement of income for all the periods presented;
- The net cash flow for discontinued operations is presented as a distinct line item in the consolidated statement of cash flows for all the periods presented.

In addition to the presentation impact just described, the 2021 strategic plan has involved the recognition in 2018 of a consolidated loss of USD 422.8 million for discontinued operations and of a consolidated loss of USD 30 million for continuing operations. The consolidated loss of USD 422.8 million notably includes:

- USD 139.1 million of net impairment less revaluation of groups of assets at fair value less costs to sell;
- USD 126.3 million of provisions for loss-making leases associated with the reduction of the Group's fleet;
- USD 113.9 million of provisions reflecting the suppression of 712 jobs within the Group.

The assessment of the applicability of the criteria for classification as assets held for sale or discontinued operations requires the exercise of management judgment with regard in particular to the scope of the applicable assets and associated liabilities and to the probability of sale within twelve months. Estimation of the fair value less costs to sell of the applicable non-current assets and groups of assets held for sale, and associated liabilities, equally requires the exercise of management judgment with regard to the choice of elements to be considered and assumptions to be retained. In addition, both the satisfaction of the applicable classification criteria and the estimated fair values for the purposes of the consolidated financial statements as of December 31, 2018 reflect the assumption that the ultimate terms and conditions of sale will equate with those currently envisaged.

Finally, the determination of the provisions associated with the Group's restructuring plan equally requires the exercise of management judgment and involves a significant degree of estimation.
We therefore considered the accounting implications of the 2021 strategic plan as a key audit point.

Our response

We examined the application of IFRS 5 based on the information available as of December 31, 2018 with particular regard to:

- Examination of the scope of inclusion of assets and associated liabilities as assets or groups of assets held for sale and associated liabilities;
- Examination of the criteria applied by management for justifying the classification of assets and liabilities as assets held for sale and associated liabilities, and for recognizing discontinued operations;
- Examination of the income and expenses included in the net result for discontinued operations;
- Examination of the assumptions and overall approach retained by management for the purposes of estimating the fair value less costs to sell of each group of assets held for sale.

We assessed the existence, completeness and measurement of the provisions recognized as of December 31, 2018 for the 2021 strategic plan, including in particular the provisions for employee benefits accounted for in accordance with IAS 19 and for loss-making contracts for fleet vessels accounted for in accordance with IAS 37.

We examined the presentation in the consolidated financial statements (in accordance with the requirements of IFRS 5) of the groups of assets held for sale, the net result for discontinued operations and the net cash flow generated by discontinued operations.

Measurement of consolidated goodwill

Key audit point

As of December 31, 2018 consolidated goodwill amounted to USD 1,229 million or 32% of the consolidated statement of financial position, breaking down as follows by cash-generating unit (or group of cash-generating units):

- Imaging and Reservoir: USD 771 million,
- Multi-customers: USD 284 million,
- Equipment: USD 174 million.

Management verifies, at least annually at the year-end, that the carrying amount of goodwill is not higher than its recoverable amount and presents no risk of impairment. The bases of the impairment testing performed and the applicable assumptions are described in note 11.

The determination of the recoverable amount of goodwill is very largely based on management judgment with particular regard to:

- The future cash flows expected from the cash-generating units assessed;
- The discount rates applied to the future cash flows;
- The long-term growth rate retained for the cash flow projection.

We therefore considered the measurement of consolidated goodwill as a key audit point.

Our response

We assessed the compliance of the methodology applied by Group management with the applicable accounting standards, concentrating our procedures on those assumptions for which the sensitivity for recoverable value might have a material impact on the result of the impairment testing performed. Our procedures thus mainly consisted in:

- Assessing the consistency of the estimated future cash flows with the main underlying operating assumptions;
- Assessing the existence of any external information liable to contradict management's assumptions;
- Examining the assumptions retained for the purpose of estimating normative cash flows beyond the third year;
- Performing retrospective analysis of the cash flow estimates.

Our audit team included valuation specialists for the purpose in particular of assessing the discount rates and long-term growth rate retained by management.

Library valuation and multi-customer revenue recognition

Key audit point

The Group's multi-customer library includes seismic surveys for which non-exclusive licenses for use are granted to customers. All the costs of acquisition, processing and finalization of the surveys are recognized as intangible assets. The accounting treatment of the intangible assets, and of the associated revenue, changed considerably in 2018 by reason of the application of IFRS 15 and of changes in estimation affecting the amortization of the surveys.

As described in note 1.3, CGG has applied IFRS 15 since January 1, 2018 using the limited retrospective method. With effect from that date, revenue for pre-financing is recognized on delivery of the final data processed and no longer on a percentage of completion basis. The adoption of IFRS 15 has generated a negative net equity impact of USD 11.6 million as of January 1, 2018, and an additional negative net impact of USD 38.3 million in the consolidated income statement for 2018, in comparison with the application of the historical method.

As of December 31, 2018 the carrying amount of the multi-customer library amounts to USD 633 million, or 16% of consolidated assets, compared with USD 831 million as of December 31, 2017.

Until September 30, 2018 an 80% amortization charge, equating with the ratio of costs capitalized in comparison with the total sales expected during the accounting life of the survey, was applied to any habitual sale of a survey in the absence of specific factors leading to use of a different rate. With effect from October 1, 2018 the Group has adopted straight-line amortization over 4 years following delivery. Additionally, since October 1, 2018 the cost of sales associated with any pre-financing is calculated on the basis of the difference between the capitalized cost of the survey on delivery and its fair value based on the discounted amount of expected future sales. Before October 1, the cost of sales for pre-financing equated with 80% of the amount of the pre-financing. The prospective impacts of the changes in estimation of the amortization of multi-customer surveys, taking effect on October 1, 2018, are described in note 1.4.

In addition to the issue of amortization, management verifies, at least annually and more frequently in the event of any indication of impairment, that the carrying amount of multi-customer surveys does not exceed their recoverable amount. The assessment of the recoverable amount of multi-customer surveys is very largely based on management judgment with particular regard to the forecasting of future sales.

In that respect, and as indicated in note 10, USD 226 million of impairment losses were recognized at the end of 2018, including USD 197 of integral impairment of the StagSeis survey.

Given the elements described above, we considered measurement of the multi-customer library and multi-customer revenue recognition as a key audit point.

Our response

We examined the calculation of the impact of first-time application of IFRS 15 on consolidated equity as of January 1, 2018. In particular, we assessed the completeness of the surveys taken into account (i.e. those in progress at January 1, 2018) and the completeness of the associated revenue and cumulative amortization recognized. We also examined the impact of IFRS 15 on the consolidated statement of income for 2018. In particular, we tested a sample of the pre-financing contracts signed in 2018 and, for pre-financing revenue for 2018, we tested on a sample basis for the effective delivery of data in 2018.

We assessed the coherency of management's justification for the changes in estimation relating to the amortization of multi-customer surveys, and recalculated the prospective impact of the changes.

We assessed forecasted future sales by comparison with management's revenue forecasts for the purpose of impairment testing of the previous year, with the revenue effectively generated and with surveys' attractiveness for potential customers. In particular, we assessed the

consistency of the revenue forecasts with the dynamics applicable to each oilfield. When management judged that impairment should be recognized, in particular for the StagSeis survey, we questioned management as to the reasons for the impairment loss and assessed its consistency with our understanding of the market.

Finally we assessed the appropriateness of the information provided as to the impacts of the first-time application of IFRS 15 to multi-customer revenue recognition and the impacts of the changes in estimation of survey amortization.

Specific Verifications

We have also performed, in accordance with professional standards applicable in France, the specific verifications required by laws and regulations of the Group information given in the management report of the Board of Directors.

We have no matters to report as to its fair presentation and consistency with the consolidated financial statements.

We attest that the consolidated declaration of extra-financial performance required by Article L225-102-1 of the French code of commercial law is included in the Group's management report, it being specified that, in accordance with article L823-10 of the Code, we have verified neither the fair presentation nor the consistency with the consolidated financial statements of the information contained therein. This information should be reported on by an independent third party.

Report on other legal and regulatory requirements

Appointment of the statutory auditors

We were appointed as statutory auditors of CGG by the annual general meeting held on May 15, 2003 for Mazars and on June 29, 1977 for ERNST & YOUNG et Autres.

As of December 31, 2018 Mazars was in the 16th year of total uninterrupted engagement, and ERNST & YOUNG et Autres in the 42nd year of total uninterrupted engagement, which are the 16th year and 38th year respectively since securities of the Company were admitted to trading on a regulated market.

Responsibilities of management and those charged with governance for the consolidated financial statements

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with International Financial Reporting Standards as adopted by the European Union and for such internal control as management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, management is responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless it is intended to liquidate the Company or to cease operations.

The Audit Committee is responsible for monitoring the financial reporting process and the effectiveness of internal control and risk management systems and where applicable, internal audit, regarding the accounting and financial reporting procedures.

The consolidated financial statements were approved by the Board of Directors.

Statutory auditors' responsibilities for the audit of the consolidated financial statements

Objective and audit approach

Our role is to issue a report on the consolidated financial statements. Our objective is to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with professional standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of the consolidated financial statements.

As specified in Article L823-10-1 of the French code of commercial law, our statutory audit does not include assurance on the viability of the Company or the quality of management of the affairs of the Company.

As part of an audit conducted in accordance with professional standards applicable in France, the statutory auditor exercises professional judgment throughout the audit and furthermore:

- Identifies and assesses the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, designs and performs audit procedures responsive to those risks, and obtains audit evidence considered to be sufficient and appropriate to provide a basis for the audit opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations or the override of internal control;
- Obtains an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the internal control;
- Evaluates the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management in the consolidated financial statements;
- Assesses the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether any material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. This assessment is based on the audit evidence obtained up to the date of the audit report. However, future events or conditions may cause the Company to cease to continue as a going concern. If the statutory auditor concludes that a material uncertainty exists, there is a requirement to draw attention in the audit report to the related disclosures in the consolidated financial statements or, if such disclosures are not provided or are inadequate, to modify the opinion expressed therein;
- Evaluates the overall presentation of the consolidated financial statements and assesses whether they represent the underlying transactions and events in a manner that achieves fair presentation;
- Obtains sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. The statutory auditor is responsible for the direction, supervision and performance of the audit of the consolidated financial statements and for the opinion expressed on the consolidated financial statements.

Report to the Audit Committee

We submit a report to the Audit Committee which includes in particular a description of the scope of the audit and the audit program implemented, as well as the results of our audit. We also report, if any, significant deficiencies in internal control regarding the accounting and financial reporting procedures that we have identified.

Our report to the Audit Committee includes the risks of material misstatement that, in our professional judgment, were of most significance in the audit of the consolidated financial statements of the current period and which are therefore the key audit matters that we are required to describe in this report.

We also provide the Audit Committee with the declaration provided for in article 6 of Regulation (EU) N° 537/2014, confirming our independence within the meaning of the rules applicable in France such as they are set in particular by articles L822-10 to L822-14 of the French code of commercial law and in the French code of ethics (*code de déontologie*) for statutory auditors. Where appropriate, we discuss with the Audit Committee the risks that may reasonably be thought to bear on our independence, and the related safeguards.

Paris-La Défense and Courbevoie, April 5, 2019

The Statutory Auditors

ERNST & YOUNG et Autres	MAZARS
Nicolas PFEUTY	Jean-Luc BARLET

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