UNIVERSAL REGISTRATION DOCUMENT 2020

Including the annual financial report

CONTENT

This Universal Registration Document can be consulted and downloaded from the website **www.cgg.com** website

UNIVERSAL REGISTRATION DOCUMENT 2020

Including the annual financial report

A unique range of geoscience technologies and solutions

This Universal Registration Document was filed on March 5, 2021 with the *Autorité des Marchés Financiers* (AMF), as competent authority under Regulation (EU) 2017/1129, without prior approval pursuant to article 9 of said regulation. The Universal Registration Document may be used for the purposes of an offer to the public of financial securities or admission of financial securities to trading on a regulated market if completed by a securities note and, if applicable, a summary and any amendments made to the Universal Registration Document. The complete package of documents is approved by the AMF in accordance with Regulation (EU) 2017/1129.

This Universal Registration Document is available at no charge upon request to the Company's registered address, as well as on the website of the AMF (www.amf-france.org) and on CGG's website (www.cgg.com).

Pursuant to Article 19 of Regulation (EU) 2017/1129, the following information:

- for fiscal year 2019: Group consolidated financial statements and Statutory Auditors' report on the consolidated financial statements for the year ended December 31, 2019, Company statutory financial statements and Statutory Auditors' report on the Company statutory financial statements for the year ended December 31, 2019, as well as the financial information included in management report, as presented in the Universal Registration Document filed with the AMF (French financial markets authority) on April 14, 2020, under number D.20-0293; and
- for fiscal year 2018: Group consolidated financial statements and Statutory Auditors' report on the consolidated financial statements for the year ended December 31, 2018, Company statutory financial statements and Statutory Auditors' report on the Company statutory financial statements for the year ended December 31, 2018, as well as the financial information included in management report, as presented in the Reference Document filed with the AMF (French financial markets authority) on April 5, 2019, under number D.19-0279,

is incorporated by reference into this Universal Registration Document.

This is a translation into English of the (universal) registration document of the Company issued in French and it is available on the website of the Issuer.

In all matters of interpretation of information, views or opinions expressed therein, the original French language version takes precedence over this English one.

FORWARD-LOOKING STATEMENTS

This Universal Registration Document (the "Document") includes "forward-looking statements", which involve risks and uncertainties, including, without limitation, certain statements made in the sections entitled 1.1 "Objectives and strategy", 1.2 "Business description", and 5 "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 Universal Registration Document.

Important factors that could cause actual results to differ materially from our expectations ("cautionary statements") are disclosed under section 2.2 "Main Risk Factors and Control Measures" and elsewhere in this Universal Registration Document, including, without limitation, in conjunction with the forward-looking statements included in this Universal Registration Document.

We undertake no obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise. In addition, in light of these risks, uncertainties and assumptions, the forward-looking events discussed in this Universal Registration Document might not occur. When considering forward-looking statements, you should keep in mind the risk factors and other cautionary statements included in this Universal Registration Document, including those described in section 2.2 "Main Risk Factors and Control Measures" of this Universal Registration Document.

MESSAGE FROM CEO

SOPHIE ZURQUIYAH

WE COMBINE HUMAN INGENUITY, DATA AND NEW TECHNOLOGY TO UNDERSTAND AND SOLVE THE WORLD'S NATURAL RESOURCE, ENVIRONMENTAL AND INFRASTRUCTURE CHALLENGES FOR A MORE SUSTAINABLE FUTURE

How did CGG navigate through 2020?

2020 was a challenging year, and certainly not expected. Following our CGG 2021 strategy to transition to an asset light people, data and technology company, which was ahead of schedule with most achieved by early 2020, we were shaping the new CGG for another year of growth, supported by solid backlog across our businesses.

Then the global COVID-19 pandemic and subsequent rapid drop of oil price significantly impacted the oil & gas industry, severely degrading our business environment. E&P Capex was reduced by an overall 25-30%, as many E&P companies paused activity in all but their core producing areas as they developed plans to address the situation.

We took rapid action as early as April to align to the new environment, reducing our spending and making adjustments as required. With COVID-19, our priority during the year was on the health and safety of our employees and all stakeholders. We had a very limited number of confirmed COVID-19 cases and no clusters in our offices, data centers and manufacturing plants, and we had no fatalities.

Business continuity was our second priority, and with our global CGG Cloud and High Performance Computing network, our teams worldwide were able to effectively switch, almost overnight, to working remotely where possible. With our focus on core basins globally and the technology required to support development and production, we saw minimal postponement of current projects and were able to deliver our Geoscience projects on time with the highest quality standards, despite adverse conditions. All our multi-client programs including in Brazil, North Sea, US and Australia maintained client interest, were well executed and did not experience any significant interruptions. Our manufacturing sites were able to maintain production, with minimum down time, and met client demand.

What are the lessons learnt from 2020?

The resilience and ingenuity of our people, and their ability to maintain business continuity through the challenges was impressive, our business continuity was ensured thanks to our leading IT infrastructure and organization.

From a business perspective, the year confirmed our CGG 2021 strategic principle of the essential importance of preserving flexibility in our businesses and preparing for unknown disruptive events, as frequently experienced in the oil & gas industry. A key part of our CGG 2021 strategy focused on resilience through the cycles with our exit of the acquisition business, along with increased focus on the leadership of our three differentiated businesses of Geoscience, Multi-Client and Equipment. COVID-19 was an extreme test on the new profile of CGG and highlighted the value of the strategic principal. We were not able to normalize our capital structure and refinance our debt before the impact of COVID-19, and this will be a priority in 2021.

In hindsight, our CGG 2021 strategy and decision to focus our businesses on development and production in core areas, appears timely. We have been careful as we implement cost reductions to preserve our differentiation, technology and ability to capture future market improvements. In 2020, we maintained or increased our market share across our core businesses.

How do you see the market evolution?

In general, our clients, as they clearly expressed, are retrenching into their core areas, and prioritizing capex towards their lowest risk and highest return projects. Progressing into 2021, we expect exploration in frontier areas to remain significantly reduced, as our clients maintain focus on their most important producing areas.

The digital transformation of the industry will also remain an area of focus for our clients, as they are looking to leverage new technologies to reduce their fixed costs – this includes simplified data storage and access, usage of the cloud and new techniques such as machine learning to extract new insights from data.

We have also seen an acceleration of energy transition initiatives with our clients, especially the larger European IOCs, as social global interest for low carbon energy solutions continues to increase.

What are the priorities for CGG in the next two years?

We will continue to focus on the three key aspects of our CGG 2021 strategy, as they are very well suited to the current market environment.

Ensuring our business is structured to be profitable through the cycles. In such turbulent and uncertain times, preservation of liquidity remains a priority. More generally, we will continue to align with industry spending, and aim to refinance our debt to a cheaper and simpler instrument, as well as re-establish credit facilities as soon as markets allow.

Secondly, we will continue to strengthen our core profitable businesses and increase the value-add product and service differentiation that we have in these areas. Specifically, we will continue to invest in the further development of our high-end geoscience technologies, in the expansion of our multi-client library in core basins, and in the design and engineering of next generation best-in class equipment. Our three differentiated businesses are well positioned and are increasingly working together to best serve our clients and develop unique solutions.

Third, we continue to develop new areas of profitable growth, extending our businesses, leveraging our strengths into other markets and supporting our clients' energy transition agendas. We are progressing well in establishing new businesses in adjacent fields, including our digital capabilities, structural health monitoring (SHM), support for carbon capture, utilization and storage (CCUS), geothermal energy and environmental geosciences.

Finally, underneath all of these efforts, the foundation of our future success is our unique workforce and we will continue recruiting, motivating and developing our employees worldwide.

How is 2021 shaping?

Overall, while visibility remains low, looking at the business activity and outlook for 2021, at current, we expect the market environment to remain in a similar pattern to 2020, post initial COVID-19 impacts. For Geoscience, this would suggest a continued slow decline early in the year as backlog progressively stabilizes in H1. Multi-Client will reduce investments to align with our client priorities, which will reduce prefunding revenue while maintaining prefunding ratios above 75%. After-sales should stabilize around new industry activity levels until the market picks up. Finally, Equipment will benefit from the large land orders secured at the end of 2020, while the marine market is expected to remain muted.

Our technology remains fundamental to our clients' success, as we play a significant part in the efficiency and effectiveness of their business. They continue to explore, develop and produce those hard to image hydrocarbons and our technology, which is essential for near step-out exploration, development and production, combined with our focus on core and mature basins, provides CGG with a unique value proposition for our clients.

Sophie Zurquiyah
CEO

CGG AT A GLANCE

KEY 2020 OPERATIONAL EVENTS

FEBRUARY 18

CGG completed exit from Land Data Acquisition after completing its last land seismic acquisition contract in Tunisia

AUGUST 6

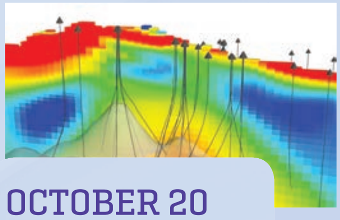
CGG entered into a Sale and Purchase Agreement (SPA) with Xcalibur Group for the sale of CGG's Multi-Physics business

SEPTEMBER 3

Sercel delivered first WiNG Nodal acquisition system in Turkey

DECEMBER 14

Sercel has won a second major contract to supply land seismic equipment to a leading seismic acquisition contractor for a 3D mega-crew survey in Saudi Arabia



OCTOBER 20

CGG delivered a global geothermal resource study to a major energy company to support client's energy transitions strategy

OCTOBER 27

CGG completed Nebula Offshore Brazil multi-client 3D Phase I and acquisition will commence on Phase II

NOVEMBER 30

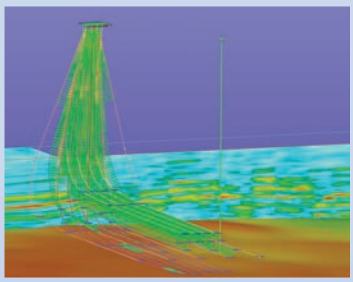
CGG won three-year contract extension for Oman processing center to continue providing advanced land seismic imaging services for PDO from January 2022 until December 2024

NOVEMBER 25

The commercial court of Paris acknowledged completion of CGG's safeguard plan, following the early settlement in full of all its creditors and puts a definitive end to the financial restructuring process successfully run by the CGG Group since 2017

NOVEMBER 24

Sercel was awarded seismic equipment contract for Saudi mega-crew to supply 508XT seismic acquisition system of over 60,000 channels and a fleet of over 30 Nomad 65 Neo vibrator trucks



ACTIVITIES

CGG (www.cgg.com) is a global geoscience technology leader. Employing around 3,900 people worldwide, CGG provides a comprehensive range of data, products, services and equipment that supports the discovery and responsible management of the Earth's natural resources.

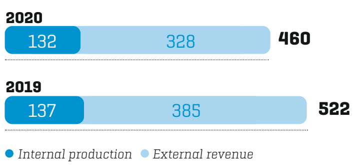
GEOSCIENCE

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.

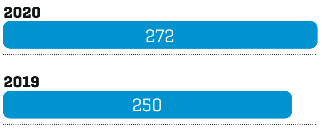
We provide integrated reservoir characterization services and innovative solutions for complex E&P challenges. Our comprehensive portfolio of geoscience services brings valuable insight to all aspects of natural resource exploration and development, helping to reduce drilling risk and build better reservoir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

We develop sophisticated algorithms and intuitive interfaces to deliver powerful reservoir answers from geophysical data at every stage from exploration to production. We typically invest 10% in R&D. We have a high market share and are highly differentiated.

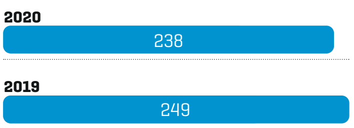
TOTAL PRODUCTION *($m)*



COMPUTING POWER *(Pflops)*



TOTAL PRODUCTION/HEADCOUNT *($k)*

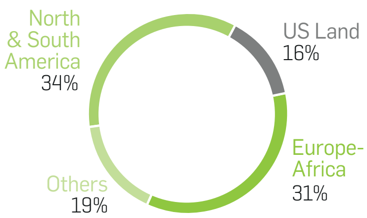


MULTI-CLIENT

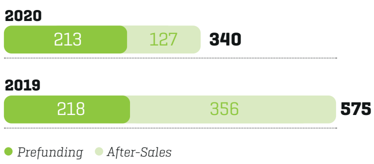
We invest in a portfolio of geographical opportunities to build a geoscience database and thrive to achieve a high prefunding for our new projects.

We typically invest in the range of $200 million in our surveys. At the end of 2020, we had over 1.1 million square kilometers of high-end offshore, over 100.000 square kilometers of high-end onshore unconventional seismic data in the most prolific basins around the world. We own marketing rights to the data for a period of time and sell licenses to use this data to named clients who generally use it for reservoir exploration and development.

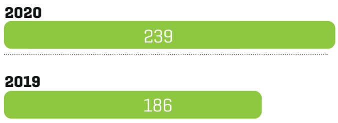
DATA LIBRARY NBV REGIONAL SPLIT AS OF 31/12/2020



MULTI-CLIENT SEGMENT REVENUE *($m)*



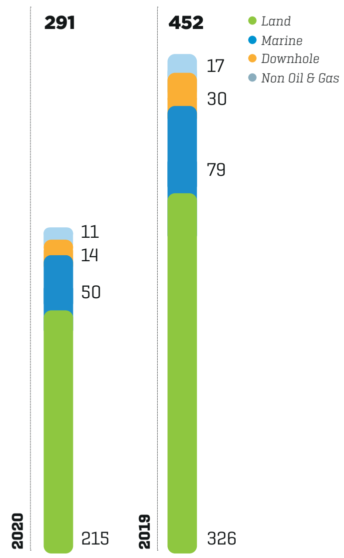
MULTI-CLIENT CAPEX *($m)*



EQUIPMENT

Through its subsidiary Sercel, CGG offers 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. Sercel is the market leader in seismic equipment design, engineering, manufacturing and support.

SEGMENT REVENUE *($m)*



KEY FINANCIAL AND NON-FINANCIAL INDICATORS

KEY FINANCIAL INDICATORS

SEGMENT REVENUE
(million dollars)

955
2020

1,400
2019

NET DEBT /
SEGMENT EBITDAs

2.8
2020

0.9
2019

SEGMENT EBITDAs
(million dollars)

361
2020

721
2019

SEGMENT OPERATING INCOME
(million dollars)

247
2019

-164
2020

NET CASH FLOW
(million dollars)

186
2019

-247
2020

NON-FINANCIAL INDICATORS

GROUP HEADCOUNT

3,890 — 2020

4,564 — 2019

COMPUTING POWER *[Pflops]*

272 — 2020

250 — 2019

ENERGY EFFICIENCY

1.32 — 2020

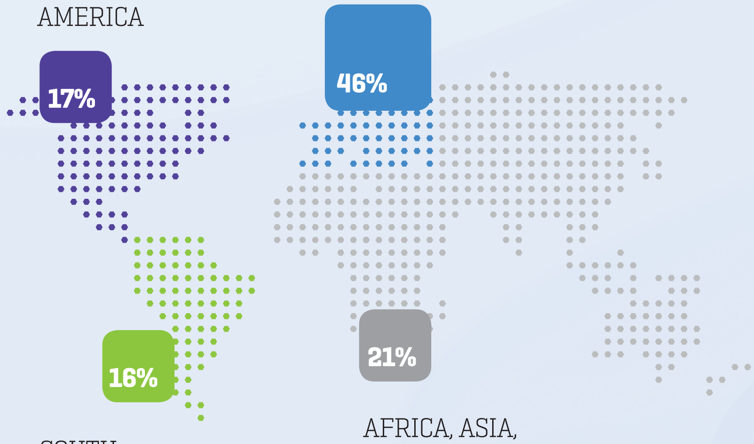
1.33 — 2019

DIRECT AND INDIRECT GREENHOUSE GAS EMISSIONS *[ktCO$_2$eq]*

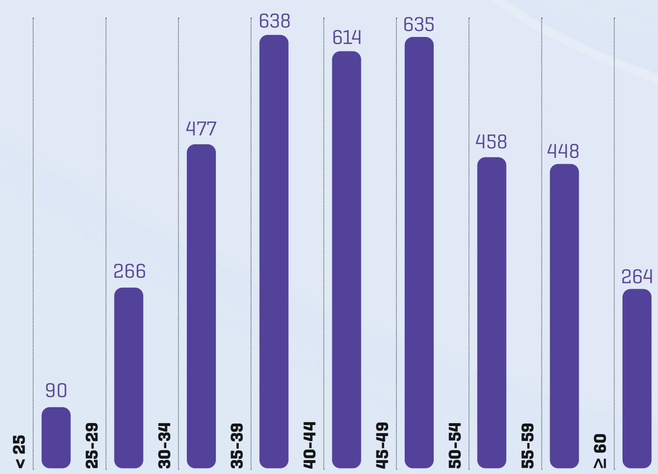
54 — 2020

57 — 2019

REVENUE BREAKDOWN PER REGION



AGE AND SENIORITY STRUCTURE



ESG RATING

AA by MSCI

OUR STRATEGY

Our strategy is to deliver the leading technology, data, equipment and services that help our industry to discover and responsibly manage the Earth's natural resources. We provide the best understanding of the subsurface – always increasing the precision and the value that we bring to the Exploration, Development and Production value chain

We are the People, Data and Technology Company with established and strong leadership positions in our three core businesses of Geoscience, Multi-Client and Equipment, and will actively preserve and work to expand our leadership. This requires focus on our clients and constant willingness and aspiration to exceed their expectations. **CGG's strategy has four clear objectives:**

1.

Ensuring profitability through the cycles

First and foremost, we need to ensure that our Group generates positive net cash-flow throughout industry cycles. The most significant decision we have taken in our new strategy is to transition to an "asset-light" business model, which is why CGG has exited its marine, land and multi-physics acquisition business.

2.

Strengthening our core value-add profitable businesses

We must reinforce our businesses that are already performing well and capitalize on our capabilities and expertise so that CGG can grow in an improving market. CGG will continue to invest in human capital and R&D, specifically in development of algorithms, software and high-power computing and data management infrastructure, to further strengthen our Geoscience activities that continue to maintain leading market share and margins during this downturn as a result of their technology differentiation that clients recognize and value. We will also continue to pursue our investment strategy of the Multi-Client business, which has also always performed well. In Equipment, we continue to lead the market as a result of our continuing investments in R&D.

3.

Growing the business, profitably and organically

Thirdly, we need to build on these core businesses to deliver profitable organic growth, either from our existing capabilities or in the new markets adjacent to the ones we operate today, such as digital technologies, application of data analytics, machine learning and artificial intelligence, and structural health monitoring.

4.

Leveraging our expertise and core technologies into other domains

Last but not least, we want to diversify our core expertise and leading capabilities outside the traditional oil & gas business. We are considering extending from our cores businesses, leveraging our core capabilities and extending in the areas where our clients are growing.

To conclude, we want to ensure that CGG has a sustainable and promising future for all its stakeholders.

Our Environment and Climate **STRATEGY**

The health of the environment and climate is critical to the well-being of people and communities globally.

Achieving
NET ZERO CARBON
dioxyde emission by 2050

To best protect the environment, climate and the communities where we operate, we:

- **Always act responsibly** and abide by all applicable environmental laws
- **Continue to advance our technology and services** to enable our clients to sustainably and responsibly discover, develop and manage the Earth's natural resources
- **Continue to advance our data collection capabilities** to best measure, monitor and continuously reduce our impact
- **Commit to improving our power usage efficiency**, increasing the low-carbon content of our energy supply, and reducing our GHG emissions
- **Encourage and support our businesses**, all employees and locations globally to find and take specific actions that support the health of the environment, climate and the communities where we operate
- **We pledge to carbon neutrality by 2050 by lowering our direct emissions** (scope 1&2) to the lowest practical level and by bridging the gap to zero emission by way of carbon credits only if they are originating from our own activity. To reach this target, CGG has also set itself an intermediary milestone to reduce its direct emissions by 50% in scopes 1&2 by 2030.

BUSINESS MODEL

CGG: People, data and technology – delivering geoscience leadership

Providing a comprehensive range of data, technology, products and solutions that supports the discovery and responsible management of the Earth's natural ressources.

CAPITAL

Financial
— Equity: **$1.165 bn**
— Net Debt: **$1.004 bn**
— Liquidity: **$385m**
— Capital employed: **$2.168 bn**

Industrial
— Manufacturing sites: **6**
— Imaging centers: **23**
— Datacenters: **3**

Human
— Permanent employees: **3,890**
— Diversity:
  — Nationalities: **78**
  — Gender equality index W-M: **88/100**

Intellectual
— R&D Investment: **$78 m**
— Employees in R&D: **486**

Social
— Code of Business Conduct: **Yes**
— Independent Board members: **88%**

Natural
— Energy consumption
  — Sercel : **25.3 GWh**
  — Datacenters: **77.8 GWh**

OUR VALUES

HSE

PEOPLE

INNOVATION

GEOSCIENCE

- Developing high-end geoscience expertise and technology for advancing understandings of the earth's subsurface
- Imaging & Services
- Excellence in technology, HPC IT, quality and service

EQUIPMENT

- Hi-tech equipment for collecting information about the earth's subsurface
- Products & Solutions
- Excellence in technology, reliability, manufacturing and service

MARKET EXPECTATIONS

INPUTS

QUALITY

SOCIAL RESPONSABILITY

IMPACTS

VALUE CREATION

Financial

- % of Segment Revenue growth: **-32%**
- % of Segment Ebitdas margin: **38%**
- Net cash flow: **-$247 m**

Industrial

- Production/head: **$238 K**
- Numbers of k. channels delivered: **323**
- Number of sections delivered: **292**

Human

- Employees with more than 5 years of seniority: **78%**

Intellectual

- Patents: **958**
- Kimberlite ranking: **CGG #1**

Social

- Partnership with universities: **123**
- ESG Rating by MSCI: **AA**

Natural

- Direct & Indirect GHG emissions (excluding Scope 3):
  - Scope 1: **2 kt eq. CO_2**
  - Scope 2: **51 kt eq. CO_2**
- Power efficiency (PUE): **1.32**

DATA LIBRARY

- Building and offering a global high quality library of geologic and geophysical data in mature and producing sedimentary basins
- Data & Studies
- Excellence in global coverage, technology and quality

To efficiently and responsibly solve complex natural resource, environmental and infrastructure challenges.

GOVERNANCE

BOARD OF DIRECTORS

Chaired by Philippe SALLE, the Board of Directors determines the Company's and the Group's objectives and supervises their implementation. The operating procedure of the Board is governed by the Internal Rules and Regulations of the Board of Directors, which is available on the Company's website.

Sophie ZURQUIYAH
CEO and Director
End of term of office: GM 2022

Philippe SALLE*
Chairman of the Board
End of term of office: GM 2021

Michael DALY
Director
End of term of office: GM 2021

9
DIRECTORS

8
MEETINGS IN 2020
(vs. 7 in 2019)

100%
ATTENDANCE RATE
(vs. 97% in 2019)

Heidi PETERSEN*
Director
End of term of office: GM 2024

Patrice GUILLAUME
Director representing the employees
End of term of office: GM 2021

Colette LEWINER*
Director
End of term of office: GM 2023

Anne-France LACLIDE-DROUIN
Director
End of term of office: GM 2021

Mario RUSCEV*
Director
End of term of office: GM 2023

Helen LEE BOUYGUES*
Director
End of term of office: GM 2024

* *Initially appointed by cooptation ratified by the General Meeting.*
● *Independant Director.*

● *Audit and Risk management Committee.*
● *Appointment, Remuneration and Governance Committee.*
● *Investment Committee.*
● *HSE/Sustainable Development Committee.*
✪ *Chair of the Committee.*

BOARD COMMITTEES TO RESPOND TO THE GROUP'S STRATEGIC CHALLENGES

To ensure the proper professional conduct of the Company, the Board relies on the work of specialized Committees. The Committees oversee the Group's activities in their area of competencies, guarantee that high level risks are identified and managed, and work closely with the Group's General Management.

The Board of Directors' Internal Rules and Regulations define the composition, duties and operating procedures of the Committees with the exception of the Audit Committee and the Appointment & Remuneration Committee that have each had their own operating charter since March 8, 2005 and July 30, 2008 respectively.

AUDIT AND RISK MANAGEMENT COMMITTEE

8 meetings

100% attendance rate

100% of independence

3 members

APPOINTMENT, REMUNERATION AND GOVERNANCE COMMITTEE

7 meetings

100% attendance rate

100% of independence [1]

4 members

HSE/ SUSTAINABLE DEVELOPMENT COMMITTEE

3 meetings

100% attendance rate

100% of independence [2]

3 members

INVESTMENT COMMITTEE

4 meetings

93.75% attendance rate

100% of independence

4 members

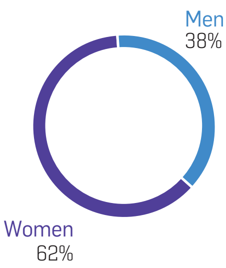
(1) (75% if the Director representing the employees is included in the calculation).
(2) (66.67% if the Director representing the employees is included in the calculation).

A DIVERSITY OF PROFILES, SKILLS AND EXPERTISE WITHIN THE BOARD OF DIRECTORS

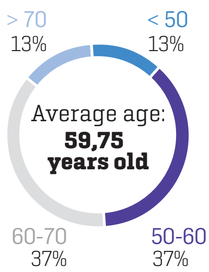
The Board of Directors considers that diversity of its membership is key to ensure a good performance. Diversity is applied to gender, age, independence, nationalities and skills.

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.

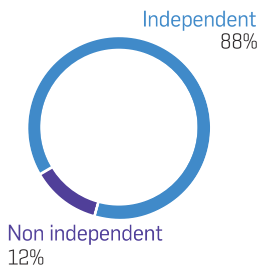
GENDER BALANCE



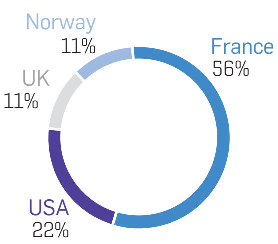
AGE



INDEPENDENCE

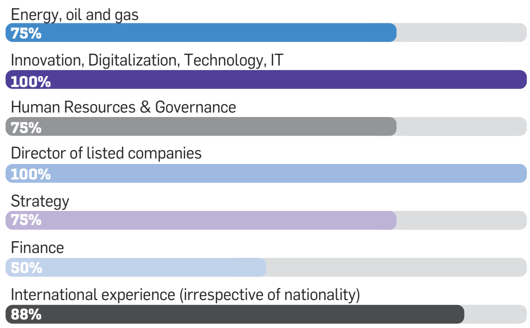


NATIONALITIES



***Note**: for the purpose of this chart, S. ZURQUIYAH has been accounted for in both "French" and "US" as she has both nationalities.*

SKILLS



PRESENTATION OF THE CGG GROUP AND ITS ACTIVITIES

1

1.1 OBJECTIVES AND STRATEGY

CGG Overview

CGG (www.cgg.com) is a global geoscience technology leader. Employing around 3,900 people worldwide, CGG provides a comprehensive range of data, products, services and equipment that support the discovery and responsible management of the Earth's natural resources.

CGG SA (referred to hereafter as the "Company"), the parent company of the CGG group (the "Group", which collectively refers to the Company and its subsidiaries), was founded in 1931 to market geophysical techniques that could be deployed to detect the presence of natural resources in the Earth's subsurface. Since then, the Company gradually specialized, becoming a provider of seismic techniques applied to the exploration and production of oil and gas, while continuing to remain active in other geophysical disciplines.

Its Sercel subsidiary was founded in 1960 to meet the Group's requirements for seismic recording equipment. Most notably, Sercel launched the SN 348 digital recording system, which became the industry's system of choice in the 1980s.

The Company has been listed on Euronext Paris since 1981. The Company's American Depositary Shares were listed on the New York Stock Exchange from 1997 until 2018 and now trade over the counter (see section 7.2.1 of this Document for additional information relating to our American Depositary Shares).

In the 1980s and 1990s, Marine Seismic activity expanded significantly. This growth in the marine seismic market, combined with the arrival of new competitors offering geophysical services and equipment had a significant impact on the Group, which only had a small fleet of seismic vessels at that time. In 2007, when CGG acquired the Veritas group, it joined the ranks of the world's leading seismic companies. At that point, it took the name CGGVeritas before reverting back to "CGG" when it acquired Fugro's Geoscience division in 2013.

Beginning in late 2013, the industry has experienced one of the deepest and longest downturns in its history .Against the backdrop of a major and unprecedented crisis, the Group's headcount has fallen sharply from 9,700 people at the end of 2013 to around 3,900 at the end of 2020. CGG experienced serious financial difficulties between 2014 and 2018, entering into French safeguard proceedings on June 14, 2017, which resulted in a comprehensive financial restructuring that was completed on February 21, 2018. Following its emergence from these proceedings, CGG changed its governance team in the first half of 2018 and embarked on a new strategy announced during the *Capital Market Day* in November 2018, exiting its historical Contractual Data Acquisition segment and growing and reinforcing its Geology, Geophysics and Reservoir ("GGR") and Equipment segments.

After a successful year in 2019, with CGG's financial results above market expectations and a strengthening of demand for geoscience services and solutions, the Covid-19 crisis, together with an increase in oil supply and the subsequent fall in oil price, dramatically affected our market in 2020. Globally, our clients reduced their exploration and production ("E&P") spending in the range of 30%, requiring a re-evaluation and readjustment of our organization to account for the reduced level of activity.

Since December 31, 2018, CGG has been organized in two segments:

- Geology, Geophysics & Reservoir ("GGR"), including Geoscience (Subsurface Imaging, Geology, Reservoir, GeoSoftware and Smart Data Solutions, as well as Technology Function), and Multi-Client ("MC", including our seismic and geologic data library); and
- Equipment, which includes the following business equipment activities: Land, Marine, Ocean Bottom, Borehole and Non-Oil and Gas Equipment, and trademarks, such as Sercel, Metrolog, GRC and DeRegt.

As a result of the announcement of our CGG 2021 Plan to exit the Contractual Data Acquisition segment, which was announced in November 2018, these activities have been presented as discontinued operations and assets held for sale in accordance with IFRS 5 as of and for the years ended December 31, 2018, 2019 and 2020. For additional information regarding our exit from the Contractual Data Acquisition segment, see 1.1.3.1 "Exit of Contractual Data Acquisition business".

Five corporate functions, at the Group level, ensure a globally coordinated approach and provide support across all activities: (i) the Finance, Information Systems and Risk Management Function, (ii) the Human Resources Function, (iii) the Legal, Compliance and Trade Compliance Function, (iv) the Health, Safety and Environment & Sustainable Development Function, and (v) the Marketing, Sales and Communication Function.

CGG SA is the parent holding company of the CGG group, which is comprised of 67 consolidated subsidiaries as of December 31, 2020 (62 abroad and 5 in France).

REVENUES BY ACTIVITY

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

REVENUES BY REGION – BY LOCATION OF CUSTOMERS

	2020		2019	
In millions of US$, except percentages	MUS$	%	MUS$	%
North America	153	17%	376	28%
Latin America	141	16%	180	13%
Europe, Africa and Middle East	410	46%	489	36%
Asia Pacific	182	21%	311	23%
TOTAL	**886**	**100%**	**1,356**	**100%**

1.1.1 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 is different. Moreover, since the outbreak of the Covid-19 crisis, we noticed significant changes in the approach of oil and gas companies towards a faster and more radical energy transition.

Several recent events highlight this trend towards an accelerated energy transition: in December 2019, the Spanish company Repsol announced a carbon neutrality target for its activities by 2050. In February 2020, BP also set a carbon neutrality target for 2050. In April 2020, Shell pledged to reduce greenhouse gas (GHG) emissions from energy products it sells by 50% by 2050, with an intermediate step of -20% by 2035.

These examples are indicative of a global transition toward carbon neutral energy sources, that even the the oil industry, itself will be required to participate in. Oil fueled the 20th century – its transportation infrastructure, economy and geopolitics. Today, the world is in the midst of an energy shock that is accelerating the transition to a new energy order. 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 by 45% in 2020. Governments' and investors' policies also increasingly support green infrastructure plans.

In 2020, we have seen some major strategic shifts from the integrated oil companies, especially in Europe, reinventing their businesses 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. Oil and gas companies have communicated varying levels of emissions reduction targets and have begun acting on them, implementing de-carbonization roadmaps and redeploying capital away from traditional upstream to low carbon businesses, setting energy transition targets in line with the Paris Agreement and committing to renewable energy investments. The energy transition era is emerging. Renewable energy generation will increase and could account for 65% of power supply by 2050 - according to some experts - a clear shift from historical fossil fuels based power generation.

We believe that the development of renewable energy will be expensive and long and that oil and gas 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 that 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 (from 2019 baseline) out to 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 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 reprocessing. 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.

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.

1.1.2 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 oil price. 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.

1.1.2.1 The 2014-2018 oil market downturn

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 overhead costs, and (v) the reduction of our annual investments by close to 60%. This operational restructuring plan was financed in part by the €350 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 the Company's 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 the Chapter 15 proceeding 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 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 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 settlement in full of all its creditors. Notwithstanding this successful outcome, on December 22, 2020, three third-party appeals were filed against the decision approving the completion of CGG's Safeguard Plan. For further information, see Section 2.4 "Litigation" of this Document.

For further information regarding discussions with the stakeholders resulting in the draft Safeguard Plan, a description of the Safeguard Plan, and details about the undertakings of CGG and certain CGG creditors in the context of the safeguard proceedings, please see 1.2 "History and Significant Events in the Development of the Company's Activities – Financial Restructuring Process" in our 2018 Reference Document and note 2 to our consolidated financial statements as of and for the year ended December 31, 2018.

1.1.2.2 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, CGG entered the year 2020 with a much leaner organization better positioned to navigate global economic and industry cycles.

Unfortunately, since the beginning of March 2020, two compounding crises dramatically affected global economies 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, on the one hand, the significant decline in oil demand caused by the Covid-19 pandemic and, on the other hand, the shift in oil supply from certain oil-producing countries (particularly Saudi Arabia and Russia), which increased their oil supply to gain market share. Therefore, in just a few weeks starting in March 2020, our business environment dramatically changed 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 part 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 capex and cost structure, reducing staff in various locations worldwide, administrative and support costs, as well as the number of contractors in the 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 1 million barrels a day might be over.

1.1.3 Significant events in the course of 2019 and 2020

1.1.3.1 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:
  - reduce the number of seismic vessels in operation in 2019,
  - search for a strategic partner 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.

Marine Exit and Streamer NewCo

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 Eidesvik Offshore ASA and CGG. 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 CGG, which were associated with GSS's five high-end seismic vessels;

(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 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 CGG's majority ownership to which the parties would contribute their respective towed Marine Streamer Equipment businesses. The company 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 and the entry into force of the Capacity Agreement, took place on January 8, 2020 (the "Marine Closing"). Due to the latest downturn in the oil and gas industry triggered by the Covid-19 pandemic, it was announced on November 5, 2020 that CGG and Shearwater jointly agreed to suspend negotiations around the creation of the Streamer Newco joint-venture. Both Shearwater and CGG continue to benefit from the marine acquisition partnership and remain committed to the establishment of its technology component to further their mutually beneficial cooperation.

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:

- CGG acquired the 50% interest held by Eidesvik in GSS and indemnified Eidesvik for the end of the relationship in exchange for Shearwater shares. CGG also granted Eidesvik a put option on the Shearwater shares (the "Eidesvik Put Option");
- Shearwater 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 were terminated along with the guarantee granted by CGG;
- 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 the 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 the 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 GSS subsidiaries' five high end seismic vessels (equipped with streamers).

Shearwater Vendor Notes

On December 29, 2020, CGG converted the Shearwater Vendor Notes into shares in Shearwater at the price of US$25.2262 per share, as had previously been agreed, corresponding to 3.30% of the total outstanding shares and 3.34% of the shares having voting rights in Shearwater at such time.

Capacity Agreement

The main terms of the Capacity Agreement require CGG to:

- 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 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.

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.

Eidesvik Put Option & Sale of Shearwater shares to Rasmussengruppen

See section 1.8 "Recent events" of this Document, as these transactions occurred in early 2021.

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. Under the Step-In Agreements, CGG shall 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 (a "Step-In Event"). Given that CGG is 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 CGG non-payment under the Payment Instructions Agreement, or by Shearwater's insolvency.

If a Step-in Event were to occur:

- 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 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 the vessels.

The Step-In Agreements will not impact CGG's financial statement of 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, CGG's statement of financial position will include 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$(127.2 million) at December 31, 2020; and
- US$(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.

Divestment from Seabed Geosolutions BV

On December 30, 2019 CGG agreed, in a share purchase and exit agreement, to transfer the shares of the Seabed Geosolutions BV joint venture ("Seabed") to its partner Fugro NV ("Fugro").

Land exit

CGG 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 CGG entered into a sale and purchase agreement with Xcalibur Group for the sale of CGG's Multi-Physics business.

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

1.1.3.2 Cost base reduction

With segment revenues from activities down by 32% in 2020 compared to 2019, the Group launched quickly adaptation measures to reduce its 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 30, 2020. We expect these measures to generate gross reduction in personnel fixed costs of around US$90 million on an annualized basis.

1.1.3.3 Safeguard Plan

In a decision issued on November 24, 2020, the commercial court of Paris acknowledged completion of CGG's Safeguard Plan, following the early settlement in full of all its creditors. Notwithstanding this successful outcome, on December 22, 2020, three third-party appeals were filed against the decision approving the completion of CGG's Safeguard Plan. For more information, see section 2.4 "Litigation" of this Document.

1.1.3.4 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, the Group 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. It is implemented in compliance with applicable laws and regulations in France.

1.1.4 A strategy based on cash generating businesses and technology differentiation

The CGG 2021 Plan was designed to position CGG to better manage its performance through the cycles, ensure a strong platform for future growth, best meet the exploration, development and production needs of our clients, position the Company to bring significant value to our shareholders and create a sustainable workplace for employees.

Following an initial market recovery in 2019, the industry is now experiencing a new period of depressed activity. However, we believe that our strategy based on providing high-end technology, services and data that support our clients' reservoir development and production optimization efforts remains the right one.

We are well positioned with our three differentiated businesses that are increasingly working together to best serve our clients and to develop unique solutions. We continue to invest in the development of key high-end geoscience technologies, in the expansion of our multi-client library and in the design and engineering of new best-in-class equipment. As our clients continue to prioritize their investments around "advantaged barrels", they require better understanding of the subsurface through sharper images so that they can optimize well placement and field development plans and mitigate drilling risks in geologically complex areas. We provide unique technologies through our high-performance computing cloud, imaging services and multi-client data. These help our customers make better and faster decisions.

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. GGR benefits from this trend with solid 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, oil companies are increasingly asking for 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.

Our geoscience business is also impacted by the trend of reduced exploration and production spending by clients, despite processing and imaging being a small part of their budgets. Overall, the Geoscience activity saw its segment external revenue decrease by 15% in 2020, outperforming the market on the back of its strong backlog at the beginning of the year.

In the last few years, we have made a conscious effort to increase our Multi-Client business' participation in development and production, and have avoided frontier exploration areas that we believed were less robust. Multi-Client segment revenues decreased by 41% in 2020, mainly as a result of decreased spending by clients on aftersales. However, all active multi-client projects in 2020 continued with strong client support.

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 them to capitalize on their existing infrastructure while increasing and accelerating their returns.

Advancing our Digital Capabilities

Anticipating and supporting the exponential increase in the volume of acquired data (Big Data), has required and will continue to require, considerable research and development related to 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.

The Group believes that by continually improving its seismic data processing algorithms and software along with its high performance computing ("HPC") technology, it will remain a leading supplier of high-end geoscience services. Its 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.

CGG also believes that oil and gas companies are increasingly considering their geoscience data as one of their major assets. In this context, CGG is concentrating its 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

Our Equipment business benefits from a strong reputation as a producer of high-end solutions, with a large installed base. We will continue to bring to the market our best-in-class equipment while expanding beyond oil and gas markets.

In our Equipment segment, we believe that Sercel is maintaining a solid level of research and development driven by high technological seismic equipment, which includes numerous cutting-edge 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 for measuring structural vibration.

Overall, the geophysics market is characterized by ever 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 implement new technologies and data driven services in its full product range. In 2020, Sercel's external segment 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 believe 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).

Expanding into adjacent areas

We are also pursuing efforts to further develop the Company's business outside its core areas in a capital efficient way. We are developing new areas of profitable growth around near-to-core step out diversification and establishing new businesses to address the growing demand for green energy and transition to a low carbon world.

We are looking at three business development dimensions:

- **adjacent areas where we could extend from our current core business:** We believe 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;
- **leveraging existing core capabilities by extending into other domains**: In our Equipment business, we believe Sercel has the industry leading sensor technologies and is expanding their application through structural health monitoring ("SHM") solutions. Infrastructure SHM spending is increasing at a high CAGR rate of 15% to 17% per year. Technological advances in both sensor technologies and computing capabilities enable permanent and remote monitoring to transform reactive maintenance of aging infrastructure into a preemptive solution, thus reducing risks and maintenance costs while extending their effective life. Satellite mapping technologies can be applied to a range of problems including infrastructure, facilities, subsidence and geo-hazards monitoring;
- **following our clients and expanding into the areas where our clients are growing**: Our clients are increasingly focused on energy transition, reduction of their environmental footprint and decarbonization. We believe that one of the key enablers for achieving these ambitious objectives is carbon capture, utilization and storage (CCUS). Many of our clients are starting to incorporate application of CCUS technologies into their field development plans. This requires a detailed understanding of the subsurface, which is where 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 CO_2 storage projects.

1.1.5 Financial and non-financial 2021 outlook and objectives

CGG is in a leading position to benefit from progressive market recovery

With continuing acceleration of Covid-19 vaccinations world economies should continue to progressively recover from pandemic in 2021. Recent OPEC+ agreements support the rebalancing of supply and demand and Brent oil price has gradually recovered and stabilized above the US$50/bbl threshold.

CGG will continue to invest in geoscience technologies that support clients' prioritization towards reservoir development and production optimization. After a low Q1, our Geoscience activity will start recovering during the second half of the year on the back of solid demand for best-in-class subsurface imaging technologies and sustained activity with large NOCs.

Our Multi-Client business will reduce capex keeping its focus on expanding our unique footprint offshore Brazil and in the North Sea while reprocessing existing data libraries with our latest imaging technologies.

Our Equipment business should benefit from solid deliveries for land mega crews in Saudi Arabia in H1 and improved demand for its large portfolio of WING nodes onshore and GPR nodes offshore.

CGG continues to progressively develop its existing energy transition businesses, leveraging its core capabilities into other domains (Geothermal, Mining and SHM), expanding into areas where clients are growing (Carbon capture, utilization and storage) and hiring new talents.

Financial objectives: positive net cash flow in 2021

Given the context outlined above and assuming there will be no deterioration in Covid-19 pandemic and market conditions, CGG segment revenue is expected to increase by low single digits year-on-year with growth in Equipment, gradual recovery in Geoscience from H2 and reduced Multi-Client prefunding revenue.

Segment EBITDAs is expected to remain stable with a less favorable business mix.

Net cash flow is anticipated to be positive. The Group will continue to focus on capital discipline and cash generation. Multi-client cash capex is expected to be reduced to around US$165 million with prefunding above 75% and industrial capex is expected to be stable at around US$70 million. Non-recurring cash costs are expected to come down to around US$(60) million.

We have included above and elsewhere in this Document certain targets and projections (Segment EBITDAs 2021 and net cash-flow 2021) regarding our financial outlook. We cannot guarantee that they can or will be met and investors are advised not to place undue reliance on these targets and projections. These targets and projections are based on assumptions and are subject to known and unknown risks, uncertainties and other factors that could cause our actual results to materially differ from those expressed in, or suggested by, these targets and projections.

We built our financial objectives in accordance with our accounting principles, on a comparable basis to past forecasts and, in particular, based on the following elements and assumptions:

- yearly budgets of oil companies;
- various analyses of exploration and production spending provided by sell side analysts of brokerage companies and investment banks;
- an expected average oil price above US$50/bbl in 2021;
- internal assumptions of commercial penetration of new equipment, products and technologies developed by CGG;
- internal assumptions of changes in competition.

Our commitment to environment and climate

The health of the environment and climate is critical to the well-being of people and communities globally.

Consistent with its longstanding commitment to act responsibly and minimize the impact of its activities on the environment, in every sector of its business, CGG has announced its pledge to become carbon neutral by 2050 in scopes 1 and 2 of the GHG Protocol.

CGG intends to achieve this target by working to reduce its direct emissions (scope 1) and its indirect emissions (scope 2) to the lowest level practicable. Company-wide efforts are focused on continuing to improve the power usage efficiency of its data centers, offices and factories, along with increasing the share of sustainable energy in its energy supply mix purchased from utility providers. Any resulting shortfall in achieving net-zero emissions will be offset with carbon credits generated by the Company's own activities. To reach this long-term target, CGG has also set itself an intermediary milestone to halve its current levels of scope 1 and 2 emissions by 2030.

To best protect the environment, climate and the communities where we operate, CGG seeks to always act responsibly and abide by all applicable environmental laws.

CGG continues to advance its technology and services to enable its clients to sustainably and responsibly discover, develop and manage the earth's natural resources. CGG continues to advance its data collection capabilities to best measure, monitor and continuously reduce its impact. CGG is committed to improving its power usage efficiency, increasing the low-carbon content of its energy supply, and reducing its greenhouse gas emissions. CGG encourages and supports its businesses, all employees and locations globally to find and take specific actions that support the environment, climate and the communities where we operate.

1.2 BUSINESS DESCRIPTION

1.2.1 Geology, Geophysics & Reservoir ("GGR")

Overview

The GGR segment engages in many activities assisting 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

a) 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 to improve the quality of seismic images.

We conduct our seismic imaging operations out of:

- 5 large open CGG High Performance Computing ("HPC") cloud centers: 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
- 7 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.

b) Multi-Client (“MC”)

The Multi-Client ("MC") business line utilizes the resources of our other business lines as well as those of sub-contractors 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, the maximum allowable under local law, typically ranging from 5 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 the 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 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 a little 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 consolidated financial statements included in this Document.

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 includes companies such as TGS, PGS, DUG and a host of other small local players. Competition in the high end of seismic imaging, where Geoscience focuses its business, tends to be based on technology and service level, 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 activity is one of the market leaders in applying the most advanced processing techniques.

We believe CGG’s Geoscience business line occupies a strong position in the relatively narrow market of seismic reservoir characterization software (Hampson-Russell, Jason and Insight Earth). 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, including those of the Group, 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. The four main companies generally compete in all areas of the world where the Multi-Client business model is practical.

2020 segment figures

GGR segment 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. MC segment revenues represented US$340 million of this revenue (a 41% decrease compared to 2019) and Geoscience generated US$328 million segment 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.

1.2.2 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, 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 or marine seismic data acquisition, including seismic recording equipment, software and seismic sources for land (vibrators) or marine (marine sources).

With respect to land seismic equipment, Sercel launched, in the fall of 2013, the latest generation of its recording system, the 508^{XT} 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. Nomad 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, 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 proven high performance of Sercel's QuietSeis broadband digital sensor technology to collect higher quality data than data collected by conventional sensors for 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 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 any type 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 external segment revenue amounted to US$287 million, a decrease of 35% compared to 2019, and representing 30% of our consolidated revenue in 2020.

1.2.3 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 the Multi-Physics activity and the ARGAS joint-venture). See 1.1.3.1 "Exit of Contractual Data Acquisition business" for additional details.

Total revenues of the Contractual Data Acquisition segment amounted to US39.2 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 CGG's announced intention to exit the Contractual Data Acquisition segment during its Capital Markets Day on November 7, 2018. During the transition year in 2020, CGG continued to provide a limited range of marine seismic services.

I) Marine Data Acquisition business line

Activity description

CGG's 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 contract basis with the client where the client is the owner of the acquired data and pays for the acquisition service.

Overview and 2020 activity

In the fourth quarter of 2019, CGG progressively stopped its marine activities and in the first quarter of 2020, one vessel remained in operation to complete an exclusive contract for a major oil company offshore Mauritania. Our total revenue from the Marine Data Acquisition business accounted for US$8 million in 2020.

II) Land Data Acquisition and Multi-physics business lines

a) 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 between CGG, holding a 49% stake, and the Saudi company TAQA, holding the other 51%.

Seabed acquisitions were operated through the Seabed Geosolutions joint venture, which was owned 60% by Fugro and 40% by CGG until December 30, 2019 when the joint-venture agreement with Fugro was terminated by mutual agreement.

b) Multi-Physics

Multi-Physics encompasses various segments of activity and provides services worldwide:

- 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;
- 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 the client. The 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;
- the second business model consists of operating under a multi-client model, with multiple clients prefunding the acquisition. We remain the owner of the data thus acquired and gain the benefit of subsequent data licensing aftersales.

Overview and 2020 operations

CGG wound down its Land Data Acquisition activity in 2019 and fully exited this segment of activity in early 2020, while the sale of the Group's 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 during the first quarter 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.

1.3 RESEARCH AND DEVELOPMENT

1.3.1 Technology strategy

We believe that CGG's 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, CGG has committed on average over 5% of revenues per year to R&D. The trend in gross R&D expenditure over the past two years, including capitalized development costs, is shown below:

	2020		2019	
	In MUSD	As % of net revenue	In MUSD (restated)	As % of net revenue (restated)
Gross research and development expenditure	78.1	8.8%	75.9	5.6%

We believe that this amount of expenditure, utilized by our skilled research and development teams, has been sufficient to keep CGG as one of the technology and market leaders of seismic imaging technology, geophysical acquisition equipment, and seismic reservoir characterization software.

1.3.2 2020 innovation highlights

Some key examples of CGG's 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 CGG at the forefront of seismic imaging in recent years, especially in processing technology and has been employed to great advantage in upgrading CGG's 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;
- explored and integrated the concepts of "Digital Transformation", "Cloud", "Big Data", "Machine-Learning" and "Analytics" into our workflows whenever applicable.

1.4 INVESTING ACTIVITIES

In 2019, our total capital expenditures – industrial, capitalized development costs and multi-client cash capital expenditures amounted to US$261 million (US$260 million excluding asset suppliers' variance). In 2020, our total capital expenditures increased to US$303 million (US$303 million excluding asset suppliers' variance).

In 2019 and 2020, our industrial capital expenditures amounted to US$43 million (US$42 million excluding asset suppliers' variance) and US$23 million (US$23 million excluding asset suppliers' variance), respectively.

Our capitalized development costs amounted to US$32 million in 2019 and US$41 million in 2020.

In 2019 and 2020, our multi-client cash capital expenditures amounted to US$186 million and US$239 million, respectively.

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.

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 of 89% in 2020 to be compared to 118% in 2019.

1.5 SELECTED FINANCIAL DATA

The tables below describe the main consolidated financial information in accordance with IFRS for each of the years in the two-year period ended December 31, 2020. These tables should be read in conjunction with, and are qualified in their entirety by reference to, our consolidated financial statements included elsewhere in our 2019 annual report.

In millions of US$, except per share data	2020	2019
Statement of operations data:		
Operating revenues	886.0	1,355.9
Other revenues from ordinary activities	0.7	0.7
Cost of operations	(725.9)	(967.0)
Gross profit	160.8	389.6
Research and development expenses, net	(18.6)	(23.6)
Marketing and selling expenses	(32.5)	(47.0)
General and administrative expenses	(67.9)	(66.2)
Other revenues (expenses)	(214.5)	(9.3)
Operating income	(172.7)	243.5
Cost of financial debt, net	(134.1)	(131.7)
Other financial income (loss)	(39.4)	5.6
Income taxes	(29.5)	8.9
Equity in income of affiliates	0.1	(0.1)
Net income (loss) from continuing operations	(375.6)	126.2
Net income (loss) from discontinued operations	(62.5)	(187.7)
Net income (loss)	(438.1)	(61.5)
Attributable to owners of CGG SA	(441.8)	(69.1)
Attributable to non-controlling interests	3.7	7.6
Net income (loss) per share – attributable to shareholders:		
Basic [a]	(0.62)	(0.10)
Diluted [a]	(0.62)	(0.10)
Net income (loss) from continuing operations per share – attributable to shareholders:		
Basic [a]	(0.53)	0.17
Diluted [a]	(0.53)	0.17

(a) Basic and diluted per share amounts have been calculated on the basis of 711,392,383 and 709,950,455 weighted average outstanding shares in 2020 and 2019, respectively.

In millions of US$	2020	2019
Balance sheet data:		
Cash and cash equivalents	385.4	610.5
Working capital [a]	212.5	147.6
Property. plant & equipment, net	268.1	300.0
Multi-client surveys	492.4	531.0
Goodwill	1,186.5	1,206.9
Total assets	3,377.5	4,012.6
Gross financial debt [b]	1,389.1	1,326.0
Equity attributable to owners of CGG SA	1,119.7	1,561.7

(a) "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.
(b) "Gross financial debt" is defined as financial debt (leases included), including current maturities and bank overdrafts.

In millions of US$ except per ratios	2020	2019
Other financial data and other ratios:		
Segment [g] EBIT [b]	(164.2)	247.2
IFRS [a] EBIT [b]	(172.7)	243.4
Segment [g] EBITDAs [c]	360.7	720.8
IFRS [a] EBITDAs [c]	291.5	676.2
Segment [g] Operating income	(164.3)	247.3
IFRS [a] Operating income	(172.7)	243.5
Segment Free-cash flow [h]	(38.6)	490.6
Capital expenditures [d]	64.1	75.3
Investments in multi-client surveys, net cash	239.0	185.7
Net financial debt [e]	1,003.7	715.5
Gross financial debt [f]/ Segment [g] EBITDAs [c]	3.9x	1.8x
Net financial debt [e]/ Segment [g] EBITDAs [c]	2.8x	1.0x
Segment [g] EBITDAs [c]/Cost of financial debt, net	2.7x	5.5x
Gross financial debt [f]/ IFRS [a] EBITDAs [c]	4.8x	1.9x
Net financial debt [e]/ IFRS [a] EBITDAs [c]	3.4x	1.1x
IFRS [a] EBITDAs [c]/Cost of financial debt, net	2.2x	5.1x

(a) IFRS: In accordance with IFRS, as indicated in our consolidated financial statements.

(b) 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.

(c) "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.

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

(e) "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.

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

(g) The "Segment" figures are figures prepared before IFRS 15, for internal management reporting purposes, in accordance with the Group's previous method for recognizing Multi-Client prefunding revenues based on percentage of completion. 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 any measures of performance derived in accordance with IFRS.

(h) "Segment 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". Segment Free-cash flow is presented as additional information, however, other companies may present Free-cash flow differently than we do. Segment Free-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.

1.6 CGG MAIN LOCATIONS

The following table sets forth certain information relating to the principal properties of the Group as of December 31, 2020:

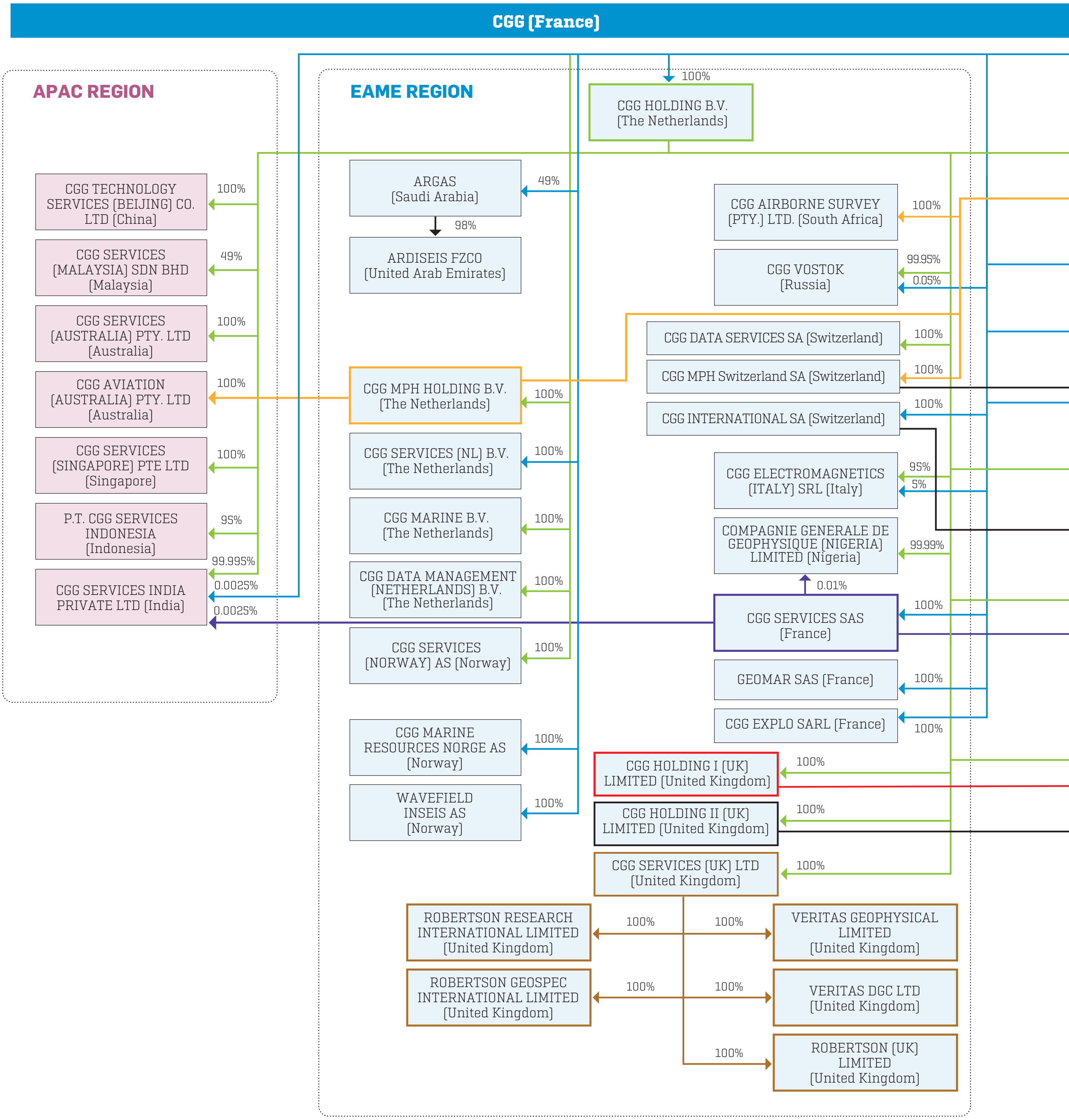
Location	Type of facilities	Headcount	Owned/ Leased	Lease expiration date
Australia, Perth	Registered office of CGG Services (Australia) Pty Ltd and Data processing center	30	Leased	2024
Australia, Perth	Warehouse	45	Leased	2021
Brazil, Rio de Janeiro	Registered office of CGG do Brasil Participaçoes 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 SA, 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

Location	Type of facilities	Headcount	Owned/ Leased	Lease expiration date
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
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.

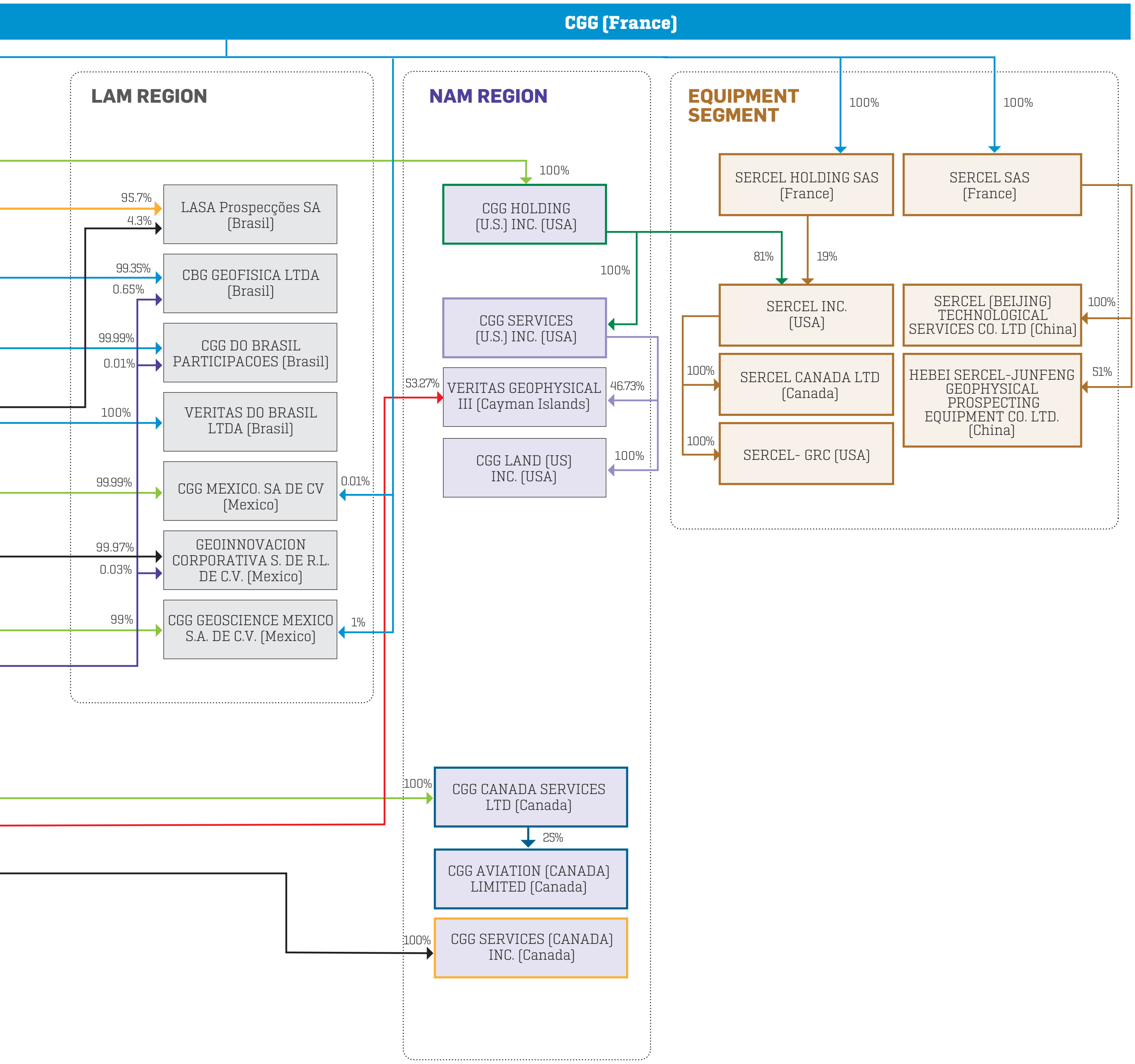
1.7 CGG ORGANIZATION

1.7.1 Organization chart

CGG SA is the parent holding company of the CGG group. The Group's subsidiaries are directly or indirectly owned by CGG SA. The simplified organization chart (showing the percentage of share capital owned) as of March 1, 2021 is presented below.



CGG SA also has registered branches in Yemen, Pakistan, Bolivia and Peru, most of which are in the process of liquidation.



1.7.2 Intra-group transactions

The Group carries 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 transaction 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 plus 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, the payment of 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:

In millions of US$	2020	2019
Services provided	19.2	29.6
Expense rebilling	7.5	14.9

1.8 RECENT EVENTS

Shearwater shares and Eidesvik Put option

On December 29, 2020, CGG converted the Shearwater Vendor Notes issued by Shearwater on January 8, 2020 into a US$49.39 million stake in Shearwater. Through this transaction, CGG 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 CGG all of its 1,987,284 Class A shares in Shearwater at a strike price of US$30 million, thus increasing CGG's stake in Shearwater to 6.72% of the total outstanding shares with voting rights.

Sale of Shearwater shares to Rasmussengruppen

On January 12, 2021, CGG accepted the binding offer from Rasmussengruppen to acquire all Shearwater's shares held by CGG, 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 the payment was received.

Third-party opposition to the decision issued by the Commercial Court of Paris on November 24, 2020

See section 2.4 "Litigation" of this Document for additional information.

RISK FACTORS AND INTERNAL CONTROL

2

2.1 INTERNAL CONTROL COMPONENTS LEADING TO AN INTEGRATED APPROACH TO RISK MANAGEMENT

The Company is listed in France and is therefore subject to the French *Loi de Sécurité Financière*. The Company complies with the 2013 COSO internal control integrated framework, established by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO 2013"). The *Autorité des Marchés Financiers* (AMF) has subsequently integrated the principal elements of COSO in its frame of reference.

Pursuant to the provisions of Articles L. 225-100-1 and L. 22-10-35 of the French Commercial Code, this section includes a presentation of the main characteristics of internal control and risk management processes implemented by the Company and cascaded down within its affiliates (the Company and its affiliates hereinafter being collectively referred to as the "Group") with respect to the development and processing of accounting and financial information.

The Group's internal control and risk management, conducted by the Board of Directors of the Company, by the management and by other personnel is designed to provide reasonable assurance regarding the achievement of objectives in the following areas:

- completion and optimization of operations, including the safeguarding of resources;
- reliability and accuracy of financial information; and
- compliance with applicable laws and regulations.

The principal objective of our internal control and risk management systems is to identify and control risks related to the activities of the Group, as well as the risks related to errors and omissions in accounting and financial reporting.

2.1.1 Control environment

The control environment is the foundation of all the components that carry out internal control across the Group, providing discipline and structure. The discussion below describes the Group's Policies and Codes setting its expectations in integrity and ethics. It describes how the Group is organized and structured and how authority and responsibilities are delegated in the Group in order to assure efficient internal control environment, in particular with respect to the development and processing of accounting and financial information.

Integrity and Ethics

CGG has at its heart a commitment to act with integrity and professionalism across all its segments, Business Lines and corporate functions.

The Group's standards and expectations as regards to Integrity and Ethics are stated in our Ethics Policy and in the Code of Business Conduct, which apply to all Group's employees.

CGG's Business Ethics Policy document is an important statement of the commitments all employees are expected to undertake regarding business ethics.

Our Code of Business Conduct provides a comprehensive framework defining CGG's standards for employees' conduct and is a reference to important information all employees need to know. This Code describes CGG's business principles when dealing with all stakeholders with a global commitment to do the right thing.

The Business Ethics Policy and the Code of Business Conduct are available on CGG's website and distributed to all employees.

CGG's Ethics Committee monitors the distribution and understanding of the Ethics Policy, the Code of Business Conduct and related guidelines within the Group and provides recommendations concerning ethics issues.

Organization of the Group with respect to internal control

The Group's organizational structure provides the framework within which its activities for achieving its strategic objectives are planned, executed and controlled. Within this framework, key areas of authority and responsibility, as well as appropriate lines of reporting, are established. The organizational structure related to internal control and risk management is described below.

The organizational structure of the Group has three main objectives:

- align the management structure with the Group's business profile and development strategy, taking into account the current business environment;
- better address the new technological and commercial challenges of our markets; and
- be more agile and more effective and efficient, allowing the Group to better face the current market conditions and be prepared for the future.

The Chief Executive Officer

The Chief Executive Officer is given wide authority to manage the Group by the Board of Directors of the Company.

The Chief Executive Officer has ultimate ownership and responsibility for the internal control and risk management system. She ensures the existence and operation of an efficient control environment and is responsible for overseeing that all components of internal control and risk management system are in place.

The Chief Executive Officer's responsibilities are sub-delegated to the Heads of business lines and functions who have responsibility for internal control and risk management related to their organizational unit's objectives. They are responsible for the development and implementation of internal control rules and procedures that address their unit's objectives and ensure that these are consistent with the Group's objectives.

To achieve the goals set by the Board of Directors, the Chief Executive Officer manages the organization through the Executive Leadership team.

The Executive Leadership team

The Executive Leadership Team is directly responsible for internal control and risk management in the Group. It defines the directions for internal control and oversees their implementation. These obligations are cascaded through the organization in each business line and function.

The Executive Leadership Team is chaired by the Chief Executive Officer and brings together the Heads of business lines and functions (see composition in section 4.1.2.3 of this Document). It is a decision-making body that meets once a month or more often, if necessary, for the review and general conduct of the business of the Group. The Executive Leadership Team monitors and controls performance of individual business lines, as well as the implementation of the Group strategy and carrying out of its projects through the business lines and functions. The Team members interact regularly with the Board of Directors and the investors and participate in the financial and business roadshows.

The Executive Leadership Team shapes the values, principles and major operating policies that form the foundation of the Group's internal control system. It takes actions concerning the Group's organizational structure, content and communications of key policies and planning and reporting systems the Group uses.

Internal Control Function

The Group also has an **Internal Control Department** whose role is to support the organization in implementing and maintaining effective processes, and to ensure that control procedures mitigate effectively the identified risks. It also maintains our internal control framework and coordinates the evaluation system of internal control over financial reporting.

The Group has an Internal Control guide based on the COSO 2013 internal control framework, which provides Group staff with a single source of internal control guidance. This guide was rolled out across all locations, business lines and support functions and aims at improving the Group's risks management and oversight.

Finance Function

The **Finance Function** is notably composed of the following departments, each playing critical roles in internal control and risk management:

- Group Financial Controlling and Financial Planning & Analysis (FP&A): headed by the Group Controller and Chief Accounting Officer, this department oversees the budgeting process as well as the monthly, quarterly and annual financial reporting. It prepares Group financial synthesis in close coordination with business lines' financial controllers and is very closely involved in the preparation of the Board Committees' (Audit and Risk Management Committee, Investment Committee, Appointment, Remuneration and Governance Committee) and Board of Directors meetings. Along with the business lines' financial controllers, it ensures, on a regular basis, oversight of the Group's operations and follow-up of the action plans initiated at the Group level. Finally, on a case-by-case basis, it also provides financial support for any significant investments. It is also in direct contact with the rating agencies.
- Accounting and Consolidation: headed by the Group Controller and Chief Accounting Officer, this department is in charge of producing and supervising financial accounts within the Group, on a statutory basis, for each of the Group legal entities and on a consolidated basis as part of the annual and quarterly reports. From this perspective, it defines the organization's accounting procedures in accordance with legal and regulatory reporting requirements applicable to financial information of the publicly listed companies and ensures they are enforced and up to date. This department also has oversight of Internal Controls of the Group and supervises the implementation of processes and good practices to assure the effectiveness of Internal Control environment across the Group. This supervision is carried out under the Group's Internal Control coordinator.
- Treasury and Corporate Finance: this department ensures management of the Group's liquidity and its investment as well as the Group's long-term financial resources (bonds and credit lines) and the relationships with the banking community. It oversees and manages risks associated with currency fluctuations, credit and counterparty risks. Treasury also prepares and presents to the CEO and CFO of the Group cash flow reporting on a monthly basis.
- Tax: this department is in charge of managing the Group's tax compliance and obligations and managing the associated risks. From this perspective, it oversees that all tax returns are prepared and filed in a timely manner across all legal entities of the Group. On a case-by-case basis, it assists the business lines' teams with tax structuring of investment projects in order to optimize tax flows.

Internal Audit

The Internal Audit Department is an independent body that has direct access to the Executive Leadership Team and reports to the Chief Executive Officer and to the Audit and Risk Management Committee. It assists the Executive Leadership Team and the Audit and Risk Management Committee in carrying out their oversight responsibilities for the effectiveness of the Group's risk management, internal control and governance.

The Internal Audit Department evaluates internal controls on the basis of the COSO 2013 framework and tools and in compliance with the Code of Conduct of the Institute of Internal Auditors ("IIA"). Internal Audit Department has a charter, which governs its operating procedures, approved by the Audit and Risk Management Committee and been continuously certified by IFACI/IIA since June 2013.

Internal Audit priorities are defined based on current operations, the assumed level of risk and Group risk analysis performed by Risk Management. The annual Internal Audit plan is defined by the Internal Audit Department and is approved by the Executive Leadership Team and the Audit and Risk Management Committee. The Group's significant entities are reviewed every year.

The Internal Audit Department conducts general reviews of entities, operational and compliance audits, integrated audits and in-house consulting missions. Recommendations resulting from these audits and their associated action plans are executed by line management and monitored by the Internal Audit Department until full implementation.

Over the past three years, the audited units covered approximately 72% of the average headcount and 84% of the average revenues of the Group. In 2020, the internal audit activities were mostly dedicated to the major scope of businesses of the Group, in particular Geoscience and Equipment legal entities, and processes considered as being a priority based on the assessments of risks exposure especially for the support functions. The annual budget of the Internal Audit Department is slightly less than 0.1% of the Group revenues, which is consistent with the standards existing for companies in the same industrial sector.

2.1.2 Risk Management

Risk Management System

The Group has put in place organization, processes, and working practices to manage risks across the organization. The management of risks is fully integrated in the Group decision-making process. The main financial and non-financial risks with potential impact on the Group's operational and financial objectives, its reputation or its compliance with laws and regulations have been duly identified and evaluated. The Group has is in place a robust risk management system implemented by business lines and functions

The Group has implemented risk management system throughout the organization to identify, assess and control risks:

- The identification of events that can have an impact on the Group comprises a combination of techniques and supporting tools including event inventories, internal analyses, risk interviews, process flow analysis, leading event indicators and loss event data methodologies.
- All identified risks are assessed and prioritized in six levels with reference to their impact (critical/major/significant/ low) and likelihood (almost certain/possible/rare/unlikely). In assessing risks, managers consider their potential impact on people, health and safety, environment, finance, compliance with laws and regulations and on the Group's reputation. Mitigation plans are required to be in place to manage these risks and progress against those plans is monitored on a regular basis.
- Risks are controlled through robust processes allowing their avoidance, reduction, sharing or acceptance. The Group employs comprehensive processes to reduce risk probability, risk severity or both. Control activities are followed from policies and procedures established to manage risks.

The principles of the comprehensive risk management policy and framework are consistent with the recommendations issued by the professional standards (COSO ERM, ISO 31 000, AMF)

The Group has an integrated approach to risk management at all levels, across all functions and through all the business lines.

The Group Risk Management System is managed by the Risk Management Department, which is part of the Finance organization.

Risk Mapping

One of the standardized tools of the Group's risk management program is the Risk Map, which provides a shared view of the risks that have the potential of having a material impact on the Group. Risk registers are used to classify the risks by their nature: Business and Strategy risks, Operational risks, IT/InfoSec/IP risks, People risks, Finance Risks and Legal and Regulatory risks. The risk registers are reviewed by the Executive Leadership Team on an annual basis as per the Group's strategy or more frequently as appropriate. The Risk Map is presented to the Audit and Risk Management Committee on an annual basis.

For more details, please refer to Chapter 2.2 of this Document.

2.1.3 Control activities

Processes implemented by the Group to identify necessary control procedures are based on risk assessments and on the processes required to fulfill the Group's objectives.

Internal control procedures

Control procedures of the Group are implemented according to the responsibility levels of personnel involved and the principles of materiality and the segregation of functions. Control procedures are implemented in light of the identification of risks.

System of evaluation of internal control

Internal Control in the Group is evaluated through self-assessment tools and internal audits.

Objectives for Control over financial reporting are set annually and require self-assessments of all active Company entities using the *Internal Control Assessment Form (ICAF)*. This questionnaire includes approximately 60 items defined for operating Business Lines and support Functions. On an annual basis, the results of these reviews are consolidated, assessed and distributed to relevant managers, and Internal Control improvement areas are identified through these assessments.,

Effectiveness of Internal Control is continuously evaluated through the program of internal audits.

Financial and accounting controls

Internal control procedures of the Group are designed to ensure that accounting, financial and management information communicated to corporate bodies of the Group provide a fair presentation of the activities and position of the Group:

- the financial statements of all the Group's subsidiaries are reviewed by the Finance Function;
- access to the accounting information systems is formally restricted in accordance with the functions and responsibilities of each user;
- current management information systems make it possible to record transactions in a complete and exact manner, to trace them and regularly back them up;
- all Intercompany transactions are documented and reconciled on given dates according to the transactions;
- the Company monitors its off-balance sheet commitments;
- comparisons and reconciliations are performed at various levels, particularly between FP&A and consolidation. The consolidated financial statements are reviewed by the Chief Financial Officer at the corporate level and the business lines' controllers.

The Executive Leadership team fully supports this internal control environment to ensure proper business controls in line with the Group's values and the application of the control over financial reporting by our personnel.

Control of financial reporting

Specific processes and controls have been put in place by the Group to assure that financial reporting is reliable and pertinent.

Financial information

Key processes such as the preparation of consolidated financial statements, documents for the Board of Directors and the Audit and Risk Management Committee, preparation of budgets, etc., are formally documented.

The Executive Leadership Team regularly renews principles and objectives related to the Control of Financial Reporting (CFR) to ensure that all financial and operational managers of each unit understand the importance of internal controls and continuous monitoring of their effectiveness, based on annual objectives and relevant training.

The Group's Accounting Manual sets forth its accounting policies, practices, instructions and reporting rules. The accounting manual applies to all Group entities and is designed to ensure that the accounting rules are applied across the Group in a reliable and homogeneous way. It details procedures for closing the books, preparation of the financial statements as well as the process for consolidation of accounts. Additionally, it outlines the principles for producing the notes to the consolidated financial statements.

To limit the risks of fraud, the segregation of duties for processes are in place, from approval of the orders to payment to the vendors and suppliers.

All Group entities prepare consolidated accounts in the format chosen by the Group using a standardized package. All reclassifications from the corporate accounts to the consolidated accounts are documented using a specific standard format.

Intercompany transactions are carried out in various areas, such as various services, sales of geophysical equipment and software licensing. The corresponding fees vary according to the nature of the transaction and in compliance with market conditions and transfer pricing policy.

The Management software packages implemented within the Group in the finance, logistics and procurement departments are set up with the detailed description of process to follow in each of these areas. In that regard, they represent the backbone of our internal control system.

Information technology ("IT") infrastructure and information systems security ("InfoSec")

Information about technology infrastructure and information systems security is described in section 3.4.4 of this Document.

Control of the disclosure of information externally

- The Group has a procedure which outlines rules for preparing, validating and approving press releases;
- the Group follows a pre-determined process for the preparation and distribution of its regulatory documents.

2.1.4 Information and Disclosure

The Group's ability to meet its objectives depends on effective dissemination of information at all levels of the Group.

Quality standards, security requirements or legal and professional obligations demand that the procedures are documented and accessible. The Group encourages sharing of knowledge and best practices. An intranet site provides all personnel with access to Group codes, policies, annual objectives, general instructions, procedures, standards and other documents, which represent the Group's Management System. Generally, the intranet site of the Group enables better communication and cooperation between the Group business lines, entities and support functions.

The Group organizes, generally on an annual basis, seminars for the Executive Leadership Team and for Group senior managers from all key locations worldwide.

The Group has implemented a weekly, monthly and quarterly reporting system by responsibility levels and relevance to obtain and share information necessary to carry out, manage and control operations. The scope of reporting covers operational, financial, legal and regulatory compliance information, internal or external to the Group.

Senior management evaluates the performance of the Group on the basis of both internal and external information.

2.1.5 Monitoring activities

Risk Monitoring and Coordination Committee

The Group has set up a Risk Monitoring and Coordination Committee in charge of monitoring the efficiency of the internal control and risk management systems. Its members are the Internal Audit Director, Group Controller and Chief Accounting Officer, Risk Management and Insurance Director and the Internal Control & Quality Coordinator who acts as secretary of the Committee. The Committee meets on a quarterly basis. The main objectives of this Committee are:

- information sharing of Group Internal Audit observations, events and facts relating to the quality of risk management and internal controls;
- follow-up on the reported risks and internal control incidents, which are classified by the Committee;
- recommendations for and coordination of the mitigation or process improvement actions taken in these areas; and
- ensuring consistency between our financial risk assessment and the assessment made by the external auditors.

Disclosure Committee

A Disclosure Committee was put in place in order to:

- share information, analyze its importance and determine the appropriateness of disclosures, and their timing with the objective of:
  - conduct semi-annual reviews of information and disclosure to be published and their content, and

- overseeing disclosure procedures and coordinating disclosures to external parties (shareholders, market authorities, investors, the press etc.);

— provide guidelines for internal control procedures to ensure the reporting of material information to be disclosed within the framework of semi-annual or annual communication to market authorities or destined for financial markets;

— inform the Chief Executive Officer and the Group Chief Financial Officer of any changes, deficiencies or material weaknesses identified by the Committee in the process of reporting of information.

In 2020, the Committee was chaired by the SVP Group Controller and Chief Accounting Officer and included the following members:

— VP Geoscience;

— EVP Multi-Client;

— EVP Equipment;

— EVP Group General Counsel;

— VP Controller Geoscience;

— SVP Finance Strategy Risk Multi-Client;

— VP Finance Equipment;

— Group Internal Audit Director;

— SVP Group Treasurer, Risk Management and Insurance

— SVP Group Tax; and

— SVP Group Communications and Investor Relations.

The Disclosure Committee meets three times a year: once after closing of each semester and once a year for review of the Universal Registration Document prior to its publication.

Monitoring and Management Review

The Group's business environment is continuously changing and evolving by its nature. As a result, the internal control system is continuously adapted taking into account the environmental conditions and past experience.

Operations are managed and evaluated against their performance criteria on a day-to-day basis and are monitored by relevant layers of management across the organization, culminating with the Executive Leadership Team. Management carries out periodic evaluations, taking into account the nature and importance of any changes, which may have occurred.

Key indicators that signal risk environment changes and adverse trends have been defined and are reviewed in management meetings at each level. Transverse functions assist the business lines in monitoring these indicators and, when necessary, focusing attention on specific Group risks.

The Group has implemented a global incident monitoring system for the 24/7 alerts. Actual incidents and High Potential Incidents (HPIs) anywhere in our operations must be reported within 24 hours to the relevant management level.

The Board of Directors through its Committees, regularly reviews key risks faced by the Group. The Board receives annually mapping of the key risks the Group faces and monitors implementation of agreed actions plans and key controls put in place. The Audit and Risk Management Committee, the HSE and Sustainable Development Committee, the Appointment, Remuneration and Governance Committee and the Investment Committee each regularly review the risk management in their specific domains of responsibility.

Reasonable Assurance

Every system of internal control, however well-designed and effective, has inherent limitations. Notably, there are residual risks that may be circumvent or bypassed. This means that the internal control system can offer only a reasonable assurance as to the reliability and completeness of financial statements. Furthermore, the effectiveness of internal control procedures may vary over time, in response to new circumstances.

In order to evaluate the effectiveness of internal control procedures on a regular and formal basis and beyond the related actions undertaken by the internal audit management, the Group has put in place a tool for internal control self-evaluation for all units of the Group. At the Corporate level, a Compliance Officer has been appointed thus showing the Group's commitment to good corporate governance.

2.2 MAIN RISK FACTORS AND CONTROL MEASURES

This Chapter includes the main risks identified during the year ended December 31, 2020 to which CGG is exposed, at the date of this Universal Registration Document, and whose occurrence could negatively impact our business activities, financial results, outlook, reputation and market share.

The risks identified by CGG as specific and material are grouped into a limited number of categories based on their nature. The categories themselves are not ranked by importance. However, the risks within each category are ranked by their degree of criticality in terms of likelihood of occurrence and potential impact, starting with those management believes to be the most material.

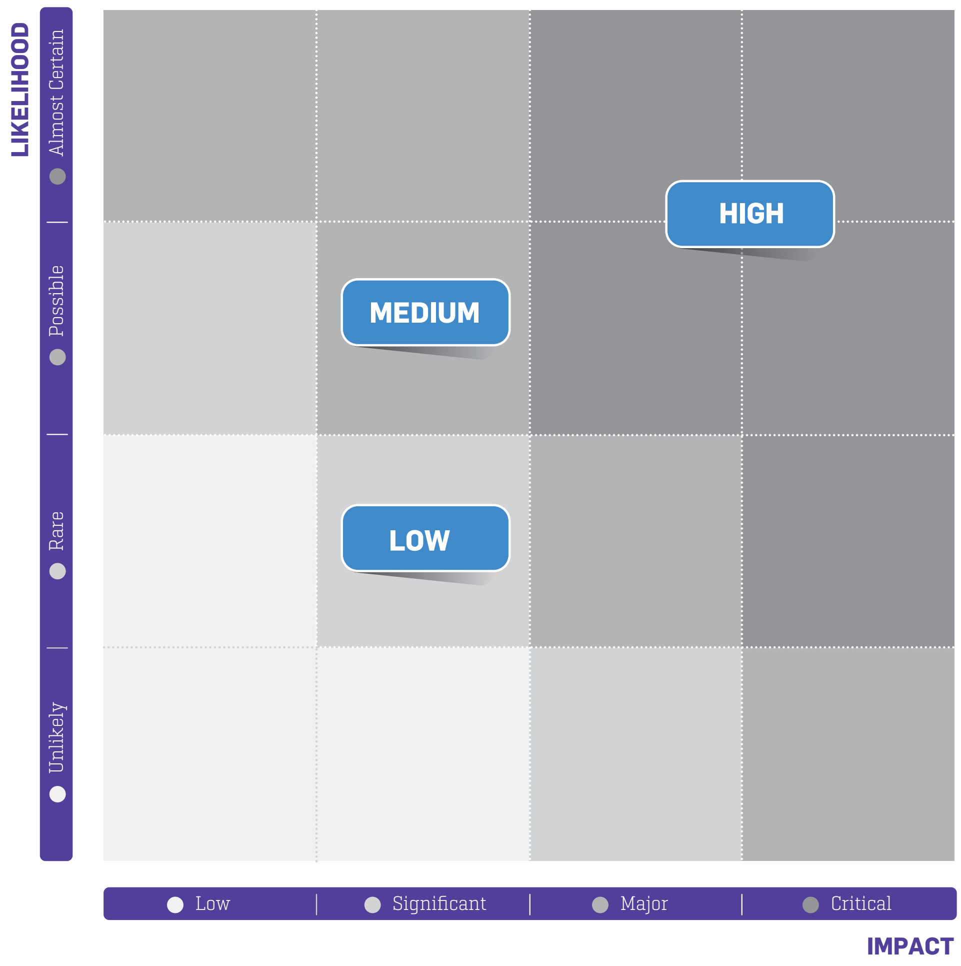
As detailed in Chapter 2 "Risk Management" of this Universal Registration Document, the main risks described below (as per the Risk Map revised annually) are residual risks, after implementation of mitigation measures to prevent and control them.

The risk factors also include some of the non-financial risks reported as critical in Chapter 3 "Statement on non-financial performance" of this Universal Registration Document.

As CGG operates in a constantly changing economic and regulatory context with highly volatile market cycles, our assessments and forward-looking statements are subject to uncertainties and risks that the Group is not aware of or does not consider significant as of the date of this Universal Registration Document but could affect our business activities and performance.

For more details about the Risk Management system, please refer to 2.1.2 "Risk Management" of this Universal Registration Document.

RISK SIGNIFICANCE



The main Group risk factors and uncertainties identified and assessed in the year ended December 31, 2020 are ranked into the following six categories:

Category	Risk Factors	Net Significance Level
Risks relating to our Business and Strategy		
2.2.1.1	Highly Competitive Environment ESG	High
2.2.1.2	Geopolitical Risks	High
2.2.1.3	Strategic Partner Risks	High
2.2.1.4	Adapting to Energy Transition ESG	High
Operational Risks		
2.2.2.1	Loss of Key Asset and Value Impairment	High
2.2.2.2	Supplier failure/Supply Chain Interruption ESG	Medium
2.2.2.3	Key Client Project Risk ESG	Low
2.2.2.4	Product Defects (after delivery) ESG	Low
Information Technology, Information Security, Intellectual Property Risks		
2.2.3.1	Critical Business Information Technology Failure and Cyber Security ESG	High
2.2.3.2	Intellectual Property Mismanagement/Failure to protect Intellectual Property ESG	Medium
2.2.3.3	Data Governance Risks ESG	Low
People Risks		
2.2.4.1	Difficulties to Attract and Develop Adequate Expertise — Loss of Key People / Key Expertise ESG	High
2.2.4.2	Occupational Health & Safety ESG	Low
Economy and Finance Risks		
2.2.5.1	Cash/Liquidity Risk	High
2.2.5.2	Unfavorable Currency/Exchange Rate	Medium
Legal and Regulatory Risks		
2.2.6.1	Adverse Regulatory Change	High
2.2.6.2	Non-Compliance ESG	High
2.2.6.3	Fraud – Internal & External	Medium

The following paragraphs describe the main risks identified in the year ended December 31, 2020, their potential impact and their treatment plan.

Other risks besides those listed may affect the Group's performance. Some risks may be unknown at present. Other risks, currently regarded as less material, could become material in the future.

The treatment plan includes, but is not limited to, examples of controls and mitigating actions as listed below. This is not a comprehensive list.

The year 2020 was marked by the Covid-19 pandemic and its impact around the world and in all economic sectors. The oil and gas industry was particularly affected by reduced demand, as industrial production contracted, and the transportation sector declined. Oil prices fell significantly, reaching a low of US$22.81 per barrel on March 31, 2020 before recovering somewhat to US$51.04 per barrel on December 31, 2020 on expectations of a recovery. However, the outlook for 2021 remains highly uncertain for the global economy as a whole and for the oil and gas industry, in particular. We cannot predict the course of the Covid-19 pandemic or the impact it or similar events could have on industry supply/demand dynamics. Nevertheless, we know that the evolution of the pandemic and developments in our industry environment are likely to have a significant impact on demand for our products and services. Because these factors have so broad an effect on our business, we have detailed their possible impact in many of the risk factors below, rather than devoting specific risk factors to Covid-19 and industry trends. We believe our current strategy is the right one to take us through a lengthy period of depressed activity should that occur, but current uncertainties are too great to assess how long the period might be and what actions CGG might take during that timeframe.

2.2.1 Risks related to our Business and Strategy

2.2.1.1 Highly Competitive Environment

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

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 hydrocarbon 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 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 the deferral of projects 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 targets of demand reduction. It is therefore difficult to predict commodity prices and forecasted trends in oil and gas exploration, 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 in 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 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;
- the 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 for 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, 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 affected.

Examples of mitigating activities

The following measures have been put in place to mitigate the risks related to lower capital expenditures by the oil and gas industry:

- following the outbreak of the Covid-19 pandemic, we immediately reduced our capex, in respect of both our multi-client and equipment, segments, and commenced a review of our worldwide footprint, aimed at reducing our presence in or exiting certain countries in order to focus our activities on the main basins for oil and gas exploration;
- we also reviewed our cost base, identified areas where we could reduce costs without jeopardizing the quality and safety of our products and operations and began implementing such reductions; and
- where possible, we took advantage of State aid schemes in relation to salary costs (including France's partial unemployment scheme) and have initiated an employment protection plan in France including a plan for voluntary departures.

For more details, please refer to Chapter 1, paragraph 1.1.3.2 and 1.1.3.4 of this Document.

We operate in a highly competitive environment and unanticipated changes relating to 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.

Examples of mitigating activities

The following measures have been put in place to mitigate the risks related to loss of clients due to their acceptance of lower cost solutions:

- we have systems in place to monitor our competition's technological and service offerings and the level of acceptance of lesser technologies by our customers;
- we seek to maintain premium positioning by differentiating ourselves through technological advances, data quality, equipment quality, reliability and customer service;
- we continue to advance imaging technology to ensure that we remain at the forefront of the market;
- we use our in-house multi-client data across the globe to develop our technology so that the results of the new techniques can be freely shown to customers;
- we continue to invest via capital expenditures and R&D, including ensuring that the computer resources necessary to produce "next-generation" imaging are available when needed;
- we focus on recruitment to ensure we employ the right people in all relevant areas (researchers, developers, imagers, programmers and IT specialists);
- we focus on communicating the advantages of superior imaging quality to our clients; and
- we have commercial discussion and maintain relations at all levels with customers to ensure price is not the overriding consideration when projects are awarded.

For *more details, please refer to Chapter 3, paragraph 3.4.1 and 3.4.2 of this Document.*

2.2.1.2 Geopolitical Risks

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 introduction of new production capacities has increased supply. This dynamic has resulted in lower prices and a reduction in the levels of exploration, development and production for 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 US$110.80/bbl as of December 31, 2013 to US$51.04/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 US$66.11/bbl as of December 31, 2019 to US$22.81/bbl as of March 31, 2020, before rebounding to US$41.22/bbl as of June 30, 2020 and further to US$51.04/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 a low level, 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.

Examples of mitigating activities

The following measures have been put in place to mitigate geopolitical risks and risks related to the volatility of the global economy:

- we provide appropriate resources and expertise to monitor geopolitical changes and legislative and regulatory requirements, design risk mitigation measures, and communicate and implement appropriate measures;
- we deliver general awareness and targeted training to key stakeholders to ensure understanding of the risks and risk mitigation responsibilities;
- we implement and maintain policies and procedures formalising risk control processes and responsibilities; periodically audited to ensure applicability, compliance, efficiency and to identify opportunities for improvement;
- we provide a secure and confidential reporting process to assist stakeholders raising questions or concerns;
- we monitor and analyse questions, concerns and potential incidents to determine remedial actions and opportunities for improvement;
- we apply general third party and transaction due diligence screening processes at all steps of the project lifecycle;
- we apply specific due diligence processes related to exposed/high risk transactions and third parties; and
- we conduct legal monitoring in each country.

2.2.1.3 Strategic Partner Risk

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 a 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, the Group completed the sale of its interest in Global Seismic Shipping AS ("GSS"), an entity indirectly owning several seismic vessels and which subsequently acquired all of CGG's streamers to Shearwater. The Group contracted with Shearwater for guaranteed access to a portion of their global fleet (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. CGG has agreed to substitute itself 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 (the "Step-In Agreements"). Because CGG is 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 a CGG 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).

Examples of mitigating activities

The following measures have been put in place to mitigate the impact of risks related to our strategic partnerships:

- we include contractual provisions in the agreements governing our joint-ventures and strategic partnerships to, among other things, address non-compliance by our counterparties with these agreements and establish specific standards for services or products to be provided by them;
- we try to maintain good communications with joint-venture parties to ensure early notice of any issues.

2.2.1.4 Adapting to Energy Transition

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-Clients 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.

Examples of mitigating activities

The following measures have been put in place to mitigate the risks related to energy transition:

- implementation of an energy transition strategy and roadmap to ensure preparedness and anticipate and respond to shifts in demand for our products and services, as well as continue to develop our products and services offerings in markets associated with energy transition, such as geothermal, carbon capture, utilization and storage (CCUS) and environmental geoscience;
- we regularly monitor changes to regulations and governmental policies related to energy transition; and
- we have performed risk modelling to assess potential business impacts under different scenarios.

For more details, please refer to Chapter 3, paragraph 3.5.1 and 3.5.2 of this Document.

2.2.2 Risks related to our Operations

2.2.2.1 Loss of Key Asset and Value Impairment

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.

Examples of mitigating activities

The following measures have been put in place to mitigate the risk of loss of physical assets:

- HSE management with regular site management visits and risk assessments;
- implementation of a crisis management plan at the Group level and emergency response plans specific to each of our sites to account for the risks linked to the activities of the site and to the site's location;
- implementation of a business continuity plans for each site;
- risk of loss at our data centers is also mitigated by use of dual independent network supplies at certain of our sites, use of generators and uninterrupted power supply (UPS) units to protect critical systems, data protection mechanisms (including regular back-up of critical information) and fire protection; and
- risk of loss at our factories is also mitigated by regular insurance audits (which focus on, among other aspects, measures in place to prevent fire and explosion), regular risk assessments and key product business impact analyses that enable us to determine key products for which further mitigation measures such as safety stocks, duplicate production lines (i.e. production at multiple Sercel sites or subcontracted sites) and split inventory (products stored at multiple sites) are necessary.

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-Clients 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.

2.2.2.2 Supplier Failure/Supply Chain Interruption

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.

Examples of mitigating activities

The following measures have been put in place to mitigate the risk of supplier failure and supply chain interruption:

- outsourced operations are distributed among several subcontractors, each having a small proportion of aggregate outsourced activity in order to limit risk related to the failure of any one of our subcontractors;
- our risk management process enables analysis of which products may be supplied by a single source (including analysis of other risk factors related to relevant supplier) and of key product business impact analyses that enable us to determine products for which further mitigation measures such as safety stocks of key components and other measures to guarantee adequate supply are necessary, such as duplicate production lines (i.e. production at multiple Sercel sites or subcontracted sites) and split inventory (products stored at multiple sites); and
- regular review of suppliers' corporate and social responsibility records, including approval of our "Supplier Code of Conduct" as part of the supplier registration process, review of a business partner anti-corruption due diligence questionnaire that is answered by all suppliers and regular screening of suppliers via trade compliance databases.

For *more details, please refer to Chapter 3, paragraph 3.3.2 of this Document.*

2.2.2.3 Key Client Project Risks

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 preform 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.

Examples of mitigating activities

The following measures have been put in place to mitigate the risk of key client project failures:

- in the case of Sercel, having offices and service centers close to key markets, allowing us to provide efficient commercial and technical support to customers. Repair centers are located close to clients to ensure a high level of customer service;
- maintaining frequent communications with clients so that we can understand their precise data delivery requirements, prioritize survey areas to get the necessary data and address upfront certain areas that may prove difficult to obtain;
- implementation of data quality control procedures onboard vessels and in the office to avoid reshooting and, where possible, transferring contractual liability to the data acquisition provider;
- ensuring that new data collection methods are only implemented following incremental tests with synthetic or real-world data analysis, thereby reducing the risk that we employ a method that is not fit for its purpose;
- monitoring regulatory changes, including through membership in the IAGC, which monitors these changes in key areas and can provide us an early warning of possible changes; and
- non-data failures that could be caused by third parties are mitigated by group processes to verify that suppliers meet expectations.

2.2.2.4 Product Defects (after delivery)

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.

Examples of mitigating activities

The following measures have been put in place to mitigate the risk of product defects:

- implementation of quality control testing procedures prior to product release;
- availability of customer support department with a 24/7 hotline and field service engineers to support Sercel customers in the field and repair centers serving all major Sercel sites; and
- other Sercel quality assurance measures include ISO certification of all sites, internal audits, availability of technical experts at all production sites and other production supervision measures, including tracking the quality of suppliers.

For more details, please refer to Chapter 3, paragraph 3.4.2 of this Document.

2.2.3 Risks related to Information Technology, Information Security and Intellectual Property

2.2.3.1 Critical Business Information Technology Failure and Cyber Security

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.

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 cyberattacks or information security breaches that could result in the unauthorized release, gathering, monitoring, misuse, loss or destruction of proprietary and other information, or other disruption of business operations. In addition, certain cyber incidents, such as surveillance, may remain undetected for an extended period. As cybersecurity 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 system 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.

Examples of mitigating activities

The following measures have been put in place to mitigate cyber security risks:

- we have a Group policy signed by the CEO, have a dedicated information security team at the Group level supported by a network of teams at the regional and business line level and provide regular training to our employees;
- we have implemented a number of processes aimed at cyber security, including a dedicated information security management system aligned with international recognized standards (NIST, ISO), an information security incident response plan, training and drills, penetration testing and cyber security exposure assessments conducted by external partners;
- we have a mandatory information security e-learning for all employees, in addition to more job-specific training and drills to test our processes. The general awareness program is reinforced by our phishing simulation program aimed to increase the skills and awareness of our employees in regard to malicious e-mails;
- we also have partnerships with a well-recognized security service providers and with industry groups for sharing information and intelligence; and
- we utilize the latest 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 (CASB), security and compliance security console, and secured internet gateways, among others.

Examples of mitigating activities

The following measures have been put in place to mitigate risks related to business IT systems failures:

- data Recovery Plan in case of critical outages tested regularly;
- implementation of Group policy and regular training of relevant employees;
- maintenance of back-ups for critical business processes; and
- data managed by hosting partners on two separate sites, providing data redundancy

For *more details, please refer to Chapter 3, paragraph 3.4.4 of this Document.*

2.2.3.2 Intellectual Property Mismanagement/Failure to Protect Intellectual Property

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 party's 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.

Examples of mitigating activities

The following measures have been put in place to mitigate IP risks:

- we maintain an intellectual property portfolio consisting of a combination of patents, trademarks and trade secrets to establish and protect our proprietary technology;
- we have a dedicated IP department that closely collaborates with our innovation teams, and rely on both internal legal and specialized outside counsel to assist with IP related matters;
- we have a global policy addressing IP protection, regularly conduct assessments and provide training to relevant employees;

- we enter into confidentiality and license agreements with our employees, customers, potential customers and partners to limit access to and distribution of our technology. Our customer data license and acquisition agreements also identify our proprietary, confidential information and require that such proprietary information be kept confidential. In addition, our collaboration agreements provide requirements as to the confidentiality and ownership of commonly developed proprietary technology and information; and
- we do actively monitor our technological developments to guard against inadvertent use to a third-party/competitor's IP rights

For *more details, please refer to Chapter 3, paragraph 3.4.3 of this Document.*

2.2.3.3 Data Governance Risks

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.

Examples of mitigating activities

The following measures have been put in place to mitigate the risks related to data governance failures:

- deployment of tools to improve our visibility and alignment with internal and external data compliance obligations and to leverage the data classification processes;
- monitoring through our Information Security systems of potential/actual incidents;
- we provide both mandatory training to all employees and specific training to relevant business functions; and
- we have implemented processes, including involvement of key stakeholders in the decision-making process regarding contractual engagements with clients, suppliers and subcontractors related to data privacy, maintaining a data privacy working group with members from our legal and information security functions, maintaining an IT governance committee, regularly reviewing our compliance with internal and external obligations and assessing cyber exposure to identify potential internal/sensitive CGG data available in the public domain.

For *more details, please refer to Chapter 3, paragraph 3.4.4 of this Document.*

2.2.4 Risks related to our People

2.2.4.1 Difficulties to Attract and Develop Adequate Expertise – Loss of Key People/Key Expertise

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.

Examples of mitigating activities

The following measures have been put in place to drive retention and mitigate the impact of loss of key employees:

- identification of key employees during yearly people review process;
- succession planning initiatives, including attempts to duplicate certain expertise and to avoid customer relationships relying only on one individual;
- annual review of compensation, long-term incentive plans and performance reward frameworks; and
- talent review, management and development programs to drive career progression and satisfaction.

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.

Following the outbreak of the Covid-19 pandemic, we implemented cost reduction initiatives to align our cost structure and protect cash flows. These initiatives provide for, among other things, the redundancy of approximately 950 employees (600 of which had left the Company as of the end of 2020). *For more details, please refer to Chapter 1, paragraph 1.1.3.4* of *this Document*. 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

Examples of mitigating activities

The following measures have been put in place to drive recruitment and retention:

- rebranding our external stakeholders' perception of the Group to improve our applicants' knowledge of our activities and career opportunities and ultimately improve our attractiveness, as CGG shifts towards more technology and digital oriented services activities, requiring increased digital profiles like data scientists;
- increased use of digital recruitment processes and software;
- development of candidate sourcing through various channels including social media, university relationships, worldwide recruitment and programs for new graduates;
- adjusting work environments and implementing flexible working arrangements that are adapted to the region and business line; and
- working with a top industry benchmark providers to ensure compensation and benefits are competitive.

For *more details, please refer to Chapter 3, paragraph 3.2.1 of this Document.*

2.2.4.2 Occupational Health & Safety

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.

Examples of mitigating activities

The following measures have been put in place to mitigate the risk of physical and mental health risks:

- implementation of a workspace / task specific ergonomics program, including provision of appropriate ergonomic equipment and training in its correct use;
- regular reviews of conditions and risks at various sites and implementation of action plans to address issues;
- delivery of health and wellness training to increase awareness of the risk and what people can do on an individual basis to manage fatigue and stress;
- provision of recreational and welfare facilities and implementation of tailored arrangements such as flex-time or working from home;
- HSE induction training, on-going HSE training for general staff (e.g. fire awareness) and specific advanced training for HSE specialists and HSE critical positions (Emergency Response Team, first aid, firefighting, risk analysis, defensive driving, etc.).

The following measures have been put in place to mitigate the risk of infection caused by exposure to biological agents, and were implemented to combat risks resulting from the Covid-19 pandemic:

- we implemented Covid-19 specific response plans in all of our locations following overall Group and country specific guidelines and regulations. These plans provide for, among others:
  - restricted site access and front of house controls, such as temperature monitoring and COVID-19 questionnaire;
  - specific arrangements related to site occupancy (i.e. physical barriers) to ensure a safety distance;
  - cleaning and disinfection protocols;
  - personal protective equipment (i.e. masks) and sanitizing materials to protect against contagion, and education on how to prevent the spread of infections; and
  - management of Covid-19 contact and positive cases.
- we deployed employee communication and awareness campaigns through multiple channels (including, e-learning, on our internal corporate website, via e-mail and through virtual sessions); and
- we implemented programs to combat risks related to home-working, with a focus on preventing musculoskeletal disorders and impact on mental health. These programs provide for:
  - working from home ergonomics assessments and awareness campaigns,
  - providing employees with relevant equipment, devices (including webcams) and furniture to improve their work-environment,
  - virtual stretching and fitness sessions to reduce the risk of musculoskeletal disorders,
  - initiatives to maintain the social links between and among our teams using our collaborative tools, and
  - an employee assistance program to address various difficulties faced by our employees on of topics (legal, financial, health etc.),
  - educating managers and supervisors regarding how best to support a home workforce, and
  - access to webinars and external links supporting wellbeing and developing resilience.

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.

Examples of mitigating activities

The following measures have been put in place to mitigate security risks:

- use of security guards for surveillance of premises and implementation of passive protection measures (strengthening doors, locking windows, securing vulnerable openings, and installing securitysurveillance cameras, security alarms (with appropriate notifications to the public), access control systems, intruder detection, automatic gates and barriers);
- reducing exposure to high risk areas by, among others, use of country risk and other security assessments and policies to limit or prohibit travel to certain locations;
- use of heightened security tactics for risky locations such as guards, watchmen, fences, berms, hardening, army protection and partnerships with local security agencies;
- providing crisis management and personal security training for relevant personnel, including all staff who travel on business or work in high risk locations;
- use of services such as ISOS for security information and updates;
- implementation of a security intelligence and monitoring system to identify and assess threats in areas prone to security risks.

For *more details, please refer to Chapter 3, paragraph 3.2.2 of this Document.*

2.2.5 Risks related to Economy and Finance

2.2.5.1 Cash/Liquidity Risk

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 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 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.

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 the Group's 2018 and 2019 Consolidated Financial Statements, available respectively in the 2018 Reference Document and the 2019 Universal Registration Document.

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 depend on many factors, including conditions in credit markets, perceptions of our business and the corporate ratings attributed to us by rating agencies (which are today B- for Standard & Poors and B3 for Moody's).

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.

Examples of mitigating activities

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 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 were 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); and
- we aim to maintain access to guarantee lines by seeking good relations with bank partners.

2.2.5.2 Unfavorable Currency/Exchange Rate

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 reals, 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.

Examples of mitigating activities

The following measures have been put in place to manage our balance sheet exposure (including debt exposure):

- maintaining our monetary assets and liabilities in the same currency to the extent practicable;
- rebalancing through spot and forward currency sales.

2.2.6 Legal & Regulatory Risks

2.2.6.1 Adverse Regulatory Changes

We are subject to the risk of regulatory changes in the countries in which we operate, including changes as a result 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 Section 2.2.1.4 above "Adapting to Energy Transition—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 service".*

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 adverse effect on our reputation, business, financial condition and results of operations.

Examples of mitigating activities

The following measures have been put in place to manage the risk of regulatory changes and the impact of Brexit:

- we have set up a regulatory watch per country for different business teams/services (including, legal, tax, finance, compliance and trade compliance);
- training is provided to key stakeholders to ensure understanding of the risks and risk mitigation responsibilities;
- we set up UK 'Brexit' preparations task force to monitor all relevant national legislative and regulatory policy developments related to Brexit and to mitigate compliance risks;
- we have implemented safeguards against disruption to critical supplies and customer deliveries, in part through expansion of delivery by wire capabilities to mitigate against border crossing delays; and
- we have spare capacity and can defer replacing equipment for most of 2021 if needed due to disruption. Access to CGG's global computer resources provides further confidence in maintaining 'business as usual' services to our customers.

2.2.6.2 Non-Compliance

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.

Examples of mitigating activities

The following measures have been put in place to manage legal and regulatory risks:

- delivery of general awareness and targeted training (including e-learning) to key stakeholders (employees and third parties (business partners such as commercial consultants)), including related to trade compliance, sanctions, anti-bribery and corruption risks, as well as data privacy;
- implementation and maintenance of policies (as Ethics Policy) and procedures formalising risk control processes and responsibilities;
- ethics Committee and Business Code of Conduct covering the Group's fundamental principles;
- provision of a secure and confidential reporting process to assist stakeholders raising questions or concerns (as e.g. Ethics online administrated by an independent third party supporting any anonymous reporting to enable employees to report any suspected behaviour conflicting with the Business Code of Conduct);
- monitoring and analysing questions, concerns and potential incidents to determine remedial actions and opportunities for improvement;

- securing general due diligence screening processes for third parties and transactions at all steps in a project lifecycle;
- applying specific due diligence processes related to high risk transactions and third parties;
- legal monitoring in each country;
- periodic audits of policies, procedures and processes to ensure applicability, compliance and efficiency and to identify opportunities for improvement; and
- compliance with all measures of the Sapin II law (such as preparing a corruption risk matrix, Business Code of Conduct , compliance officer position, internal controls and reporting tools for non-compliance with the Business Code of Conduct).

For *more details, please refer to Chapter 3, paragraph 3.3.1 of this Document.*

Our failure to comply with the restrictions and covenants in our current and future debt agreements may trigger cross-acceleration or cross-default provisions; our assets might not be sufficient to repay in full all of our outstanding indebtedness and we may be unable to find alternative financing

The indentures governing our outstanding debt securities contain, and other current and future debt agreements will contain, restrictive covenants that limit our ability to, among other things:

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

The requirement to comply with these provisions may adversely affect our ability to react to changes in market conditions, take advantage of business opportunities we believe to be desirable, obtain future financing, sell assets, fund capital expenditures, or withstand a continuing or future downturn in our business.

Moreover, if we are unable to comply with the restrictions and covenants in the indentures governing our debt securities or in other current or future debt agreements, there could be a default under the terms of these indentures and agreements.

Our ability to comply with these restrictions and covenants may be affected by events beyond our control. As a result, we cannot assure you that we will be able to comply with these restrictions and covenants. In certain cases, lenders could terminate their commitments to lend or accelerate loans or bonds and declare all amounts outstanding due and payable. Borrowings under other current or future debt instruments that contain cross-acceleration or cross-default provisions may also be accelerated and become due and payable. If any of these events occur, our assets might not be sufficient to repay in full all of our outstanding indebtedness, and we may be unable to find alternative financing (or, even if we were able to obtain alternative financing, it might not be on terms that are favorable or acceptable to us), which could have a material adverse effect on our reputation, business, financial condition and results of operations.

Examples of mitigating activities

The following measures have been put in place to manage our compliance with the covenants in the agreements governing our debt:

- regular meetings and communications of our finance, legal and FP&A functions; and
- systematic pre-transaction assessment of covenants compliance.

2.2.6.3 Fraud – internal & external

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.

Examples of mitigating activities

The following measures have been put in place to manage the risk of fraud

- implementation of internal controls, which are regularly revised and improved to adapt to changing tactics, including preventive controls (e.g. contracts reviews, segregation of duties, delegation of authority) and detection controls (e.g. bank reconciliations and physical inventory checks);

- our tools are secured by various passwords and via encryption. Bank powers or access to Treasury tools given to CGG employees are regularly reviewed and audited. Treasury and IT monitor fraud attempts via an alert system;
- we have also put in place a centralized ERP, extended cash pooling, an Internal Control department, an Information Security department, a Disclosure Committee and a Risk Monitoring and Coordination Committee;
- we have implemented fraud reporting tools such as an Ethics hotline and an Internal Control Incident Form;
- we provide regular training and provide employees with a fraud risk management guide, Code of Business Conduct, internal controls guide and local guide to business functional SOD (segregation of duties) application; and
- we have implanted specific procedures on Petty cash; Business Partner due diligence; Facilitation payments, gifts and entertainment; Management of the Commercial Consultants Network; Identification and Management of Internal Control HPI procedure.

2.3 INSURANCE

The Risk Management Department determines whether the assessed residual risks to which the Group entities and businesses are exposed can be transferred through insurance policies

A robust Insurance program has been implemented at the Group level. The key risks are covered by Master insurance policies, negotiated with leading reputable insurance companies.

Local insurance programs are subscribed worldwide either to cover specific risks or in response to local legal or regulatory insurance requirements.

We have put in place insurance coverage against certain operating hazards, including but not limited to product liability claims, personal injury claims, Business interruption, in amounts we consider appropriate in accordance with industry practice. Our risk coverage policy reflects our objective of covering major claims that could affect the Group. We review the adequacy of insurance coverage for risks we face periodically.

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

However, our insurance coverage may not be sufficient to fully indemnify us against liabilities arising from pending and future claims or our insurance coverage may not be adequate in all circumstances or against all hazards

For the last two years and much more intensely this past year, we are facing a more challenging insurance market on a worldwide basis. This is characterized by risk aversion, higher premium and self-retention, lower capacity and, covers and new exclusions restrictions.

As a consequence, we have had to resize our insurance programs due to lower capacity's availability at the international insurance market and for some insurance lines we have accepted more restrictive terms and conditions.

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2.4 LITIGATION

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 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. ONGC submitted an appeal 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 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 amount of the receivables that are recorded on our balance sheet as unpaid receivables as of December 31, 2020.

As of the date of this Document, legal proceedings are still ongoing.

Decision from the French Supreme Court relating to the challenge of the Safeguard Plan by certain holders of convertible bonds

On February 26, 2020, the French Supreme Court dismissed the appeal filed by certain holders of convertible bonds, challenging the Safeguard Plan, putting a definitive end to this litigation.

Third 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 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. 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 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 authorise him to lodge the aforementioned third-party appeals (which had already been lodged before the Commercial Court of Paris).

Furthermore, on February 2, 2021, CGG was informed that JG Capital Management also filed a criminal complaint regarding the terms of the CGG's financial restructuring approved in 2017. In this complaint, Mr. Gatty seeks to call into question the restructuring transactions effected in 2017/2018 under CGG's Safeguard Plan, which resulted in the differential treatment of creditors holding high yield bonds and Oceanes. CGG considers 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 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.

2.5 REGULATORY ENVIRONMENT

Some of the Group's activities may be subject to specific regulations as described below.

Equipment business line

Our Equipment business line (Sercel), due to its activities in the development and manufacture of electronic equipment, must comply with a number of specific regulations, such as the so-called "RoHS" and "REACh" EU Directives.

The RoHS (Restriction of Hazardous Substances) Directive prohibits the use of certain hazardous substances in electrical and electronic equipment.

The "REACh" Regulation (Registration Evaluation and Authorization of Chemicals) relates to the registration, evaluation and authorization of chemical substances as well as the restrictions applicable to these substances.

This complex regulatory context potentially leads to risks of compliance, obsolescence, competitiveness or distortion of competition.

Sercel integrates these European regulations into its processes in order to meet its obligations but also with a view to anticipating changes in these regulations. In particular, we carry out a regulatory watch to identify or anticipate the requirements applicable to our activities and to carry out compliance actions when necessary.

Multi-Client business line

The CGG Multi-Client business line offers license access to geophysical data for exploration operators on a global scale. The division invests in regional surveys building international contacts with governments and governmental agencies balancing factors of currency, political and regulatory dynamics without compromise.

We seek to perform all surveys in compliance with known permits and regulatory procedures, host nation directives and domestic laws. CGG places the utmost importance on land and marine stewardship, promoting the paramount management of environmental and cultural resources using best available science to reduce any potential effect of industry operations.

Compliance/Trade compliance

Due to its business, CGG may import/export products, services and/or knowledge which is subject to specific trade controls, and CGG may undertake business with trade sensitive countries and/or clients and must therefore maintain appropriate regulatory authorizations or licenses.

CGG maintains legal monitoring in each country with provision of appropriate resources and expertise to ensure regulatory requirements are monitored, risk mitigation measures designed and specific due diligence processes related to exposed transactions and third parties applied when necessary.

STATEMENT ON NON-FINANCIAL PERFORMANCE

3

3.1 CGG'S NON-FINANCIAL RISKS AND OPPORTUNITIES

CGG is a global geoscience technology company which provides a comprehensive range of data, products and equipment that supports the discovery and responsible management of the Earth's natural resources. Our business model is described in the introductory book of this Document, on page 12.

To ensure that CGG's strategy addresses the areas that matter the most to our business and our stakeholders, every 3 years since 2013 CGG conducts a Materiality analysis. The analysis covers the main non-financial aspects liable to affect our strategy, business model and performance or which could significantly influence our stakeholders as well as their view of the Company. It covers social, societal, environmental, governance and innovation aspects.

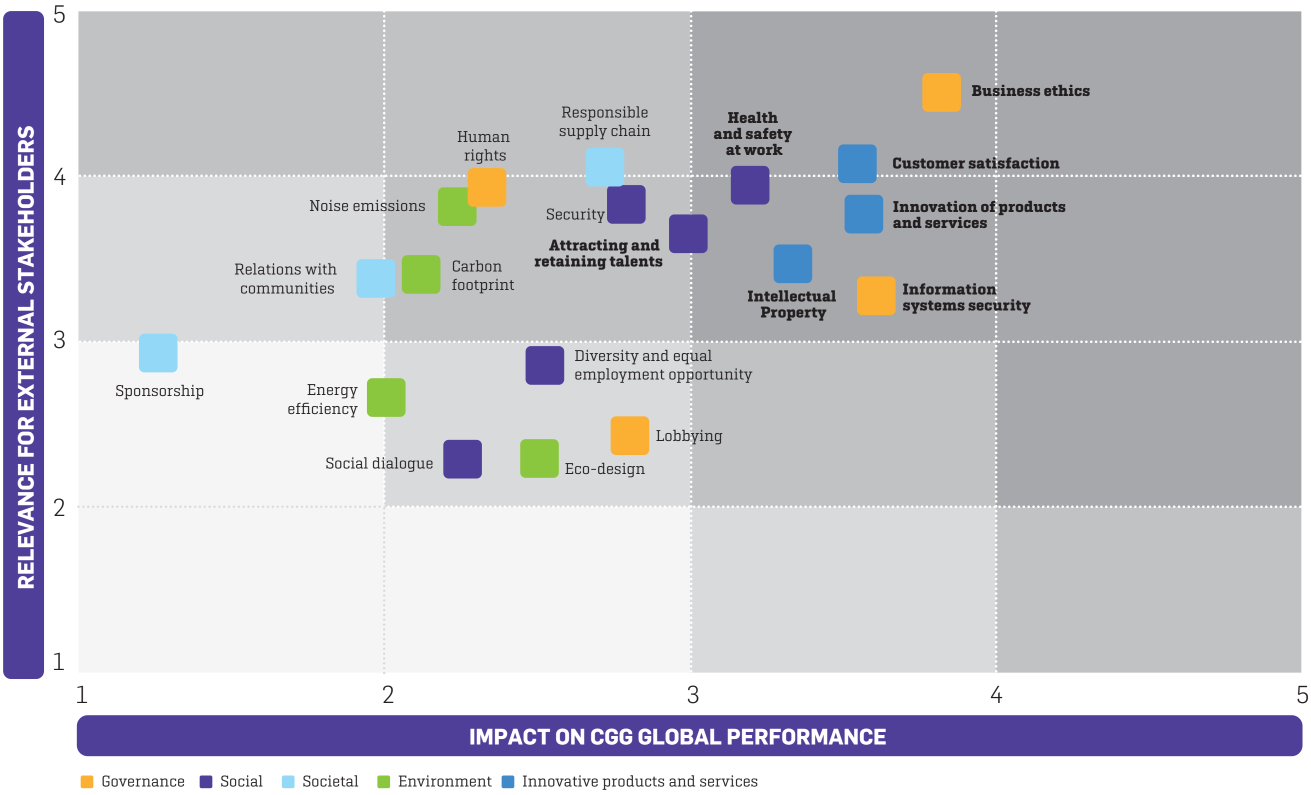
Materiality methodology

We conduct a benchmark of sectoral documents, peers and internal documentation to identify the main concerns of our sector. We then perform interviews of CGG employees as well as external stakeholders (including customers, sectoral and non-governmental organizations) during which participants rate each issue according to the financial, license to operate, reputation and compliance risks posed on a scale of 1 to 5. All evaluations, weighted by type of risk, are consolidated into a matrix.

CGG responses are plotted on the X axis, our external stakeholders are on the Y axis. Ratings are as follow: 1) very low 2) low 3) medium 4) high 5) major.

Our last materiality analysis was conducted in 2019.

CGG materiality matrix results



Our key issues according to our materiality analysis are:

- **Governance**: Business ethics, Information systems security;
- **Innovative products and services**: Customer satisfaction, Innovation of products and services, Intellectual property;
- **Social issues**: Health and safety at work, Attracting and retaining talents.

3.2 HUMAN RESOURCES

Key Performance Indicators

KPIs (excluding acquisition)	2019	2020
Voluntary turnover	5.9%	5.2%
Seniority of employees	13.4 years	14.3 years
Share of employees with a seniority over 5 years	80%	78%
Equality Index (for men & women) (calculation method by index)	88	88
Gender split at CGG (M/F)	69%/31%	70%/30%
Gender split in the recruitments (M/F)	73%/27%	76%/24%
Gender diversity in the top 10% of positions of responsibility	n.a	20%

3.2.1 Talent attraction and retention

CGG operates on a competitive market in terms of talent acquisition and retention. By exiting the Data Acquisition business, the Company has made a shift in terms of main expected key competencies for our employees. To attract key talents in this new context, we have to demonstrate we are an attractive place to work on all our existing and prospective markets and offer exciting career paths to all talents.

Retention of our talents is also a top priority. Satisfying our customers with high quality products and services is obviously linked to developing the skills of our employees, offering them a clear career path and making sure that they have the best work environment. It is an essential factor to exceed our customers' expectations.

Attracting talents

We have developed a global recruitment process to manage all available job postings and applications. Our applicant tracking system (ATS) is a standard tool that aims to publish the job postings where they can have the most impact, such as message boards, professional groups and social media. This proactive approach means that those who are not actively seeking a job at CGG will be made aware of the jobs and careers that we offer. This approach was launched in 2018 and is still active to this day.

We are also rebranding our external stakeholders' perception of the Group to improve our applicants' knowledge of our activities and career opportunities and ultimately improve our attractiveness. This rebranding started in 2019, was pursued in 2020 and will be finalized in 2021 as CGG shifts towards more technology and digital oriented activities, requiring increased technical profiles like data scientists.

CGG has a long and proud history of working with universities around the world to raise awareness, help nurture students and develop the field of geoscience.

Retaining talents

CGG is a multicultural group with multiple locations throughout the world. Our talent management system is structured so that it can be adapted to each country need in order to maximize their relevance to the local job market.

Benchmarks are used to help position ourselves in comparison to our peers for each market and offer an attractive package for all our employees. For example, CGG USA employees' benefits range from pensions to medical coverage. Trainings and career development is also adapted locally in order to maximize the relevance of our actions to the local context and needs.

Individual career management

CGG is strongly attached to the development of its employees throughout their careers. We perform annual performance reviews, people review and prepare succession plans. However, we believe that career management is not something that can be addressed just once a year. We have developed a performance management procedure that focuses on the development of each person's performance throughout the year and on their development as an individual. This encompasses continuous improvement and feedback.

We have developed an Employee Assistance Program (EAP), which helps the employees in case they are facing difficulties on a variety of topics such as legal assistance, financial planning and health issues.

Equal opportunities at CGG

CGG absolutely believes that offering equal opportunities to all candidates and employees is an important part of attracting and retaining talents. We are committed to both equal opportunity and equal pay to all our employees regardless of gender, race or any other potentially discriminating factor.

We believe that the high gender equality index published by CGG SA and CGG Services SAS for 2020 is an excellent example of that commitment. The index, calculated on the French scope and mandatory in France, analyses the gap between women and men in terms of pay; pay raises; promotions; pay raises after maternity leaves; parity between the top ten highest salaries.

Gender diversity within CGG

Although the oil and gas sector is traditionally male-dominated, CGG strongly encourages all candidates to join the Group and hopes to actively participate in the momentum and efforts that are underway to increase the diversity of our industry. Sophie ZURQUIYAH, our Chief Executive Officer, reaffirmed CGG's commitment to equal opportunities.

For the year 2020, the proportion of women in the Group amounted to 30% of the workforce while it was 31% in 2019.

Feminization of Governing Bodies

The Group is committed to taking effective measures to promote gender balance at all levels and in particular at the highest levels within the Company.

The Group's commitment to promoting gender equality is already reflected in the composition of the Board of Directors of CGG (parent Company) and its Committees. Indeed, out of the eight members of the Board of Directors (the Director representing employees not being included in this calculation), five Directors are women. In addition, out of the four Committees of the Board of Directors, three are headed by women: the Audit and Risk Management Committee, Appointment, Remuneration and Governance Committee and the Investment Committee.

This feminization objective also materialized in the last two appointments to the Executive Leadership team, with Sophie ZURQUIYAH as Chief Executive Officer in 2018, and Emmanuelle DUBU as Executive Vice President Equipment in 2020. In 2020, the gender balance in the Executive Leadership team, headed by a woman, thus stands at 25% while it stood at 11% in 2019.

Although the rate is higher than the average of 19% observed among the SBF 120 companies (2020 report of the French *Haut Comité de Gouvernement d'Entreprise*), the Group intends to pursue its long-term policy aiming at promoting women's access to the highest levels of governance, including within the Group's senior management. In this perspective, the Group operates in compliance with the terms and objectives set out in its gender diversity strategy (see below).

In terms of gender diversity in the 10% of positions with the highest responsibilities (as defined in Article L. L. 22-10-10 of the French Commercial Code), the proportion of women stands at 20% in 2020.

Being aware that this rate remains relatively low in relation to the proportion of women in the Group, the company has set itself the objective of reaching 25% of women in the 10% of positions with the highest responsibilities in 5 years

Group strategy for diversity

Recruitment

As people recruited by the Group are mainly Engineers, the Group is confronted with the reflection of the percentages of graduates from Engineering schools in the various sectors of activity applying for jobs in the Group, which have a low proportion of women in most countries. Thus, in certain countries, the Group is implementing actions to promote applications from women.

These actions may include partnerships with schools by participating in actions to discover and promote training in industrial, but scientific and technical professions, with the ambition to fight against stereotypes and misconceptions about the representation of women in certain occupations.

Identification of Talents

Talents are identified during our annual people review exercise. To be considered, a collaborator needs to demonstrate managerial and/or technical competencies in our core professions, a behavior in line with CGG values and the ability to deliver a constant solid performance as observed at least in two consecutive annual performance reviews. Once these prerequisites are established, a talent will emerge with specific attributes: the will and the potential to develop, the capacity for wider responsibilities, leadership and agility.

As the identification of talents can be one of the obstacles to the promotion of women, a special attention is already paid to women.

CGG's objective here is to reinforce its focus on the highest levels of management representing the 10% of positions with the highest responsibilities within the Group. The identification of talents internally will also be strengthened, in order to be able to implement as soon as possible the necessary support to the path leading to these positions with high responsibilities.

Promotion

With equal skills, men and women must be able to benefit from the same opportunities for development, including in positions with high responsibilities.

The call for internal promotion is strongly developed within the Group. The Group seeks to promote the appointment of women to senior positions despite a current workforce mainly composed of men.

The objective of CGG is to continue to pay particular attention to the monitoring of women's internal promotions and career development, and to ensure that the most senior positions in the organization are open to them. The Group is committed to continuing to encourage applications from women for promotion opportunities, in particular for positions with a strong technical and/or managerial footprint.

The Group also guarantees equal treatment in the appointment of Managers.

Remuneration

Equity in remuneration is an essential foundation of professional equality.

The Group undertakes not to discriminate on remuneration between men and women. A quantitative analysis is carried out during the cycles of salary increase, supplemented by a qualitative and individual approach.

The Group's objective is to continue its action in this regard, in order to ensure that equity in remuneration is complied with at all levels of the organization.

Retention

In order to retain women in the Group to enable them to evolve internally, CGG ensures that men and women are treated fairly throughout their careers: remuneration, promotion, training, etc.

Specific actions are carried out locally to improve the retention rate of women in these various fields (training, promotion, equal treatment, etc.).

In order to enable employees to reconcile their professional and private lives, the Group encourages the establishment of flexible working conditions (adapted according to the countries). The Group is also working on the development of the work from home to be deployed according to each local context, making it possible to promote this balance and contribute to the retention of employees and women in particular.

3.2.2 Health, safety and security of our employees and subcontractors

Key Performance Indicators

KPIs (excluding acquisition)	2019	2020
Total Recordable Cases Frequency rate (TRCF)	1.62	0.87
Lost Time Injury Frequency rate (LTIF)	0.99	0.35
Severity rate	0.020	0.009
Recordable occupational illness cases frequency rate	0.00	0.00
Exposure hours *(in million)*	11.1	11.5

HSE at CGG

CGG has developed a mature HSE (Health & Safety and the Environment – with Security as an added element) policy whose priority is to prevent all workplace accidents or occupational diseases of employees and contractors. Our underlying leitmotiv is that each of our employees and contractors should be able to return home unharmed.

We recognize the international ILO conventions and laws and comply with all applicable national and industry HSE regulations. We also contribute actively to advancing industry standards and best practices. CGG continues to play an active role in the HSE Committee of the International Association of Geophysical Contractors (IAGC) and participates in workgroups organized by the International Oil and Gas Producers (IOGP).

Our HSE Policy

A new HSE policy was published in April 2018 with the change in Governance.

Our HSE principles are as follow:

- CGG provides a healthy, safe and environmentally friendly workplace and promotes the awareness of workplace hazards;
- we protect our employees, contractors and assets against criminal, hostile or malicious acts;
- we regularly monitor our employees' health program and promote wellness;
- we are committed to promoting a working environment that is free from illicit substances and tobacco use;
- we apply eco-design principles and mitigation to prevent and remediate harmful effects on the environment;
- we respect and promote human rights, maintain mutually beneficial relationships with local communities and develop local content where practicable.

Its principles are integrated in our risk management, business planning and processes.

We integrate our contractors in our HSE reports and hold them to the same high expectations as our own employees. Good HSE management requires transparent reporting and fast and efficient communication. Strict reporting of all events, near-misses and hazards is critical for obtaining the best results.

CGG has developed an internal tool called PRISM for this purpose. PRISM is an application that allows for information reporting and sharing on HSE, Quality and Social Responsibility and InfoSec. The application is deployed on all CGG sites and operational units. It also allows us to produce analyses and monitor performance – including risk assessment and management – and to manage action points. All CGG employees have access to it. Incidents are assessed based on their real and potential risk. A subscription system allows for immediate notification to the appropriate level of management, including to the highest level for high potential incidents.

CGG maintains a solid and mature HSE operating management system (HSE-OMS) that focuses on deploying the policy and the framework to all the Group operations.

Risk management is at the core of our HSE-OMS. The Group has a structured approach aimed at identifying, evaluating and controlling risks, based on a common Group-wide international methodology and model for risk management. Risk assessments are performed on each project or permanent installation. They incorporate the history of incidents recorded in the Group database as well as those in the database shared with the International Association of Geophysical Contractors (IAGC), which now covers several decades of incidents.

Our HSE program is animated by an HSE team in each business line and on each of our sites. The Senior Vice President in charge of HSE and Sustainable Development (SVP HSE SD) reports directly to the CEO and is an active member of the Executive Leadership team.

A Board Committee made of three administrators, the CEO and SVP HSE-SD meets three times per year with a systematic review of the global HSE-SD performance, including near incidents, and a focus on specific risks to present the measures which were implemented to mitigate the exposure of the employees and contractors.

Deployment of Care & Protect

In 2019, we deployed the 2019-2021 goals of our "Care & Protect" brand. Set by our CEO, they present our Group HSE goals and highlight both the fact that all accidents can be prevented and the importance of proactivity in HSE. The business lines define every year a set of specific objectives aligned with the Group's 3-year goals. To further their implementation, executive staff and line managers have personal objectives on the matter.

We also reward projects at our "Care & Protect" awards, a yearly event that looks at the best practices among the Group for HSE and sustainable development. In 2020, 29 projects were submitted for evaluation. Four of them were awarded with a price in the following categories:

- Health, Safety and Security Excellence Category:

  Our team in DeRegt identified important improvements to the layout of a workshop following an HSE observation report from an operator. This was a powerful example of the importance of employee HSE observation and reporting being responded to with innovative preventative solutions.

  A Special Jury Award in this category went to our Satellite Mapping team. The team launched the MineScope service in response to the growing demand for mining companies to disclose details of their tailings storage facilities. MineScope's life-of-mine geospatial intelligence enables mine operators and consultants to make more informed geological, geotechnical and safety-related decisions throughout the mining lifecycle, including the optimization of the siting of in-situ monitoring sensors and helping to reduce 'boots on the ground' HSE exposure by minimising the need for site-based surveys ;

- Sustainable Development Excellence Category:

  Robertson UK: Managing Sustainability Through a Reduced Environmental Footprint. Our team at Robertson are passionate about working within the earth system science sector and recognise that the Energy Industry does not have to be synonymous with unsustainable practices. Their employees are passionate about minimising Robertson's footprint by pioneering new strategies within CGG to tackle impact on the environment. The Robertson Care+Protect submission highlighted multiple projects that Robertson (management and employees) have implemented to achieve these goals.

Security of employees and contractors

CGG has implemented a security intelligence and monitoring system to identify and assess threats in areas prone to security risks. The projects in the areas at risk are reviewed at the highest level. Their assessment is supported by security experts. Local security plans, tied to the Site or project, are put in place. In addition, all personnel receive regular security information on their country of operations.

CGG subscribes to the International Code of Conduct for Private Security Service Providers. CGG further recognizes the importance of the Voluntary Principles on Security and Human Rights (VOLPRIN) and supports its clients in implementing these.

All travel request to high-risk security areas goes to a review and validation process at the Group level.

Covid-19 pandemic

Even before the WHO's declaration of the COVID-19 pandemic CGG had taken a risk based approach to prevent exposure and transmission of the virus within its sites and operations.

The situation escalated very rapidly globally, with CGG continuing in its proactive approach whereby its HSE community deployed and managed controls and mitigations, minimising the impact on the health and safety of our employees and operations.

CGG quickly extended its emergency response from the obvious health risk of contracting COVID-19 to a business continuity approach. By doing this very early on home working related hazards such as musculoskeletal disorders and poor mental health could be addressed and supported promptly.

For this reason, CGG has focused its efforts on three main areas:

- the prevention of COVID-19 transmission;
- working from home ergonomics;
- mental health.

Section 2.2.4.2 "Occupational Health & Safety" of this Document details some examples of the control measures that have been used. All control measures taken by CGG have been aligned with local legislation and are under continual review in order to maintain compliance and best support the employees and operational needs of the company.

To date the limited number of COVID-19 cases have all made a full recovery and there have been no work related clusters.

3.3 SOCIAL MATTERS

3.3.1 Business Ethics

Key Performance Indicators

KPIs (excluding acquisition)	2019	2020
Percentage of employees that followed the Ethics e-learning course	85%	82%
Number of alerts received by the Ethics Committee	8	4

CGG and its stakeholders expect our employees to hold an irreproachable attitude in both our processes and our business conduct. Business Ethics at CGG focuses on creating value by complying with existing laws and rules and acting in an ethical manner. Compliance relates to the procedures which CGG will use to operate while ethics covers the individual actions of CGG employees.

A Compliance Department and an Ethics Committee

We have traditionally managed Ethics through the dedicated Ethics Committee. Since 2015, it is also managed by the Compliance Department. The Ethics Committee is constituted of five members (with representatives of the Human Resources, the Multi-Client, and Geoscience and Equipment business lines, as well as the Group compliance officer), based in different locations, to ensure both a diverse geographical and professional background and diversity. It meets every 5 to 6 weeks and presents yearly reports to both the Executive Leadership team and the Audit and Risk Management Committee. Annually, it also defines the priorities in terms of ethics and compliance, which are discussed and presented to the Audit and Risk Management Committee and validated by the CEO.

We have identified our key corruption risks and developed corresponding procedures to mitigate them and continued to reinforce our anti-corruption approach at Group level to compliance with Sapin II law. The Compliance Department, with the BLs and Finance teams, Enterprise Risk Management (ERM) have worked very closely to review, update and release our anti-corruption risk matrix validated by the Executive Leadership team and the Audit and Risk Management Committee. This matrix has been communicated to all relevant employees in 2020 for update and trainings/workshops have been organized with employees most exposed to corruption risks to confirm their awareness. We have also reviewed and initiated the review of our procedures to adapt them to the new size and organization of the Group.

The Group developed an internal e-learning on anti-corruption for its employees that was launched at the end of 2018. As of 2020, 82% of CGG employees had followed it. Several discussions and workshops were also organized with the employees most exposed to the risk of corruption.

Fight against tax evasion

For this fiscal year, no consequences in relation to the Group's activities were identified regarding this issue during the implementation of the appropriate internal control measures. In 2020 the Group published for its internal use a general instruction on anti-facilitation of tax evasion.

Communicating on Business Ethics

There was much communication in 2020 to improve the visibility of the Ethics Committee and awareness of employees as regards to the role of the Committee as well as its goals/objectives are. The Ethics Policy replaced the Code of Ethics and was released in September 2020 through many communication means to ensure the best visibility. Workshops and presentations on the new Code of Business Conduct, Ethics and Compliance have been organized throughout 2020 for the business lines, the support functions and the country managers.

Code of Conduct

CGG finalized a new Code of Business Conduct (CBC) which was released in January 2020. The CBC covers the Group's fundamental principles, and is structured around 3 major sections: (i) Protecting People and Environment, (ii) Protecting Business and Brand and (ii) Protecting Assets and Information. The CBC is voluntarily concise to maximize its impact.

The new version of the CBC includes seven new topics:

- fraud;
- data privacy;
- trade compliance;
- fiscal evasion;
- money laundering;
- social media;
- information systems security.

E-learnings

Several e-learnings are mandatory at Group level for all employees regarding different topics falling under the CBC (trade compliance, harassment, anti-corruption, information security, etc.). The intention is to update the existing e-learnings and develop new ones in addition to other communication tools on every topic covered by the CBC (such as one page of "DOs and DON'Ts" for topics such as Facilitation payments, Gifts& Entertainment, Donations and Charities).

The specific ethics e-learning course is under review and will be launched in 2021.

While each department manages the e-learnings that are under their scope, the goal is to coordinate those e-learnings with the objectives of the Ethics Committee to ensure a harmonized communication between channels.

Identifying and reporting on Business Ethics

CGG updated and released its alert system on a web base solution in 2019, administered by an independent third party, supporting anonymous reporting to enable employees to report any suspected behavior conflicting with the CBC. Several other channels exist to complement this web alert. Any person can address their concern to their line manager, HR representative, in-house legal counsel, country manager, VP Group compliance officer or contact any members of the Ethics Committee directly. If needed, they can also send an email directly to the Ethics Committee. In 2020, 4 cases, all relating to the same subject, were reported to the ethics committee which investigated them and drafted an official report and recommendations.

2021 goals

In 2021, CGG wishes to:

- keep deploying the new CBC and communicating on Ethics to reinforce awareness;
- review and simplify the Compliance policies instructions and controls to for better legibility and maximize the impact; and
- make sure that the action plans identified in the anti-corruption risks matrices are implemented.

3.3.2 Responsible Supply Chain

Key Performance Indicators

KPIs (excluding acquisition)	2019	2020
Percentage of sourcing and supply chain employees that followed the anti-corruption e-learning course	92%	93%
Percentage of suppliers having signed the Supplier Code of Conduct *or* with a purchasing order mentioning the Supplier Code of Conduct*	100%**	100%**

* *Equipment division not included.*

** *The Supplier Code of Conduct is in CGG Terms and Conditions automatically attached to all PO's. The traceability of the signature of the Code of Conduct by the supplier for transactions without purchasing order is still under implementation in 2020.*

The global performance of CGG depends partly on our suppliers' own performance in terms of delivering products and services. The Sourcing & Supply Chain Function in the organization is responsible for ensuring that the performance of CGG' suppliers is properly assessed. To this effect, CGG has written a Supplier Assessment Procedure which governs the assessment of our suppliers. Sustainability is one of its components as any fault in our suppliers' corporate responsibility could negatively impact the reputation of CGG.

Supplier assessment procedure

Main suppliers

For our main suppliers, we assess their financial situation and market position, their dependency on CGG as well as the risks related to their HSE & Sustainable Development, information security, trade compliance, legal & regulation performances.

Selecting new suppliers

All new suppliers which may pose an HSE risk are subject to a compliance audit with an audit report. They may also be assessed on the same metrics as for our main suppliers and at a minimum, must receive our Suppliers Code of Conduct.

When our supplier provides critical products or services, an onsite audit is conducted which covers quality, HSE and Sustainable Development metrics. Conclusions are also traced in an audit report.

Code of Business Conduct (CBC)

Our Group Code of Business Conduct ("CBC"), which covers protection of people and the environment, protection of activities and the brand, protection of assets and information, explicitly mentions that each subcontractor working for the Group must comply with the CBC.

Suppliers Code of Conduct (SCC)

We are committed to doing business with suppliers who conduct business in a safe, legal and ethical manner with respect for employees, local communities and the environment. Consequently, we ask of our suppliers to ensure their operations are undertaken in accordance with the commitments listed and that they sign our Supplier Code of Conduct.

It covers Business Ethics, Compliance, Local Communities, Human and Labor Rights as well as Health, Safety, Security & the Environment. This Code of Conduct is dated and signed (if applicable) by our suppliers.

If this is not possible (our suppliers may follow their own internal code and/or be so large that it would be impossible to follow all of their customers' codes), we may add terms in our purchasing orders mentioning that they should conform themselves to our Supplier Code of Conduct.

2020 events

In 2020, 93% of our sourcing and supply chain employees (IT sourcing managers, supply chain global managers and purchasers) followed an e-learning course on anti-corruption.

2021 goals

In 2021 we intend to implement with the help of a sustainability rating agency, a system to monitor the ESG performance across our supply chain, covering our top suppliers (i.e. those representing 80% of our annual spend). That would establish a base line in view of setting ourselves quantitative objectives in 2022.

3.3.3 Relations with local communities

Key Performance Indicators

KPIs (excluding acquisition)	2019	2020
Total Number of Social Development initiatives	**89**	**37**
Community service	*27*	*17*
Education	*18*	*8*
Environment	*27*	*5*
Health & Safety	*17*	*7*
Number of employees involved in volunteering	**2,903**	**205**
Number of volunteering hours	**872**	**1,390**
Cash granted by CGG & employees (excluding Babyloan)	**US$74,458**	**US$58,099**

Before the divestment of our data acquisition activities, local communities were a very important stakeholder as they were directly impacted by our acquisition activities. We would communicate regularly and develop programs to minimize our negative impacts on the ground and maximize the positive outcomes. The Group's new scope will be much more office-based, with a reduced impact on local communities. However, we wish to be an actor of each of our offices' local communities, with each office acting at their individual scale on the local environment.

The larger CGG sites (usually above 50 people) have sustainable development committees. Those are local initiatives that are not managed at Group level, so each Committee decides of its actions.

Around forty local social development initiatives took place during the year. Those were related to community services, charities, environmental preservation, education and health and safety. Unfortunately, due to the Covid-19 pandemic in 2020, our activity with local communities has been greatly reduced.

Micro-loans with Babyloan

Since 2012 CGG has developed a partnership program with Babyloan a micro finance organization. Through several initiatives in 2012, 2013 and 2014 employees were able to choose a project from a catalogue and invest a certain amount in that project. These small-scale loans enable our employees to choose projects which speak to them and help entrepreneurs on the ground who would not normally have access to financial services. The sum pledged by our employees was matched by CGG and over the years CGG has invested €40,774 that were re-invested 16.3 times supporting 1040 projects to date resulting in a total amount loaned of €663,518. In 2020 we intended to revitalise the partnership with Babyloan by introducing a more participative approach to the allocations of funds to projects, this project was unfortunately delayed by the Covid-19 pandemic and will be rescheduled on our agenda in 2021.

Sponsoring startups

In collaboration with EFI Automotive, an independent international company, which develops innovative sensors, actuators and technological products for the automobile industry, a team of our Equipment division engineers participates actively in AXANDUS, a group of seasoned experts in the field of product design, industrialization and international business development. Axandus accelerates the growth of innovative companies in the field of mechatronics and connected objects, helping them scale up quickly for mass production and international markets. Among other startups, Axandus has been working in 2020 with AMBPR, an innovative company developing autonomous blasting and painting robots for shipyards. The fit with the know-hows required by AMBPR have led the Equipment division to acquire stakes in the company, in order become its sole industrial partner and to accompany its development on the long term.

3.4 INNOVATION AND CUSTOMER SATISFACTION

3.4.1 Innovation of products and services

Key Performance Indicators

KPIs (excluding acquisition)	2019	2020
Total capital expenditure (mUS$)	76	78
Share of Group revenues invested in research and development	6%	9%
Share of Equipment revenues invested in research and development	9%	14%
Share of CGG (excluding Equipment) revenues invested in research and development	4%	6%

CGG is recognized as the technology leader in the seismic sector and provides the best high-quality products and services to its customers. In order to maintain its leadership and drive the future business, we believe we have set up a strong long-term research and development ("R&D") strategy and commitment.

Geoscience strategy

CGG's innovation objectives for its Geosciences services is to aim for:

- obtain the highest quality of seismic images in complex geology;
- integration of all available geoscience data to extract maximum subsurface information;
- providing our clients with higher quality data helps them to identify more clearly where the potential prospect are, what are their properties, how to develop them effectively, and the associated risk and cost management for various well planning scenarios. Drilling holes with a better precision can help avoid geohazards and reduce the number of dry holes, reducing safety risk and costs, as well as our clients' overall environmental impact while maximizing their profitability.

The R&D strategy is to develop high-end differentiating technology that uniquely position CGG in the market. Our investments are therefore geared further away from the low-end commodity market which is filled with vendors offering cheap or sub-standard products and services. We believe by having technology producing the best data, thus best information to our clients, it enable them to operate in a safe and sustainable environment in the long run.

How the strategy is implemented

To succeed at competing in high-end business market, it requires agility, flexibility and scalability on R&D activities. This is achieved by having a large distributed global geoscience R&D team, with more than 300+ researchers and developers around the world, focus on developing technology addressing their regional problem swiftly while maintain strong global consistency.

We also collaborate with more than a hundred universities and geoscience research consortia throughout the world. Our sponsorship to university Ph.D students enable us to participate in future R&D topics and engage immediately should any near-term opportunities be identified.

Internally, a strategic technology steering group is set up to monitor and evaluate various potential disruptive R&D that could be applicable for CGG (such as ocean bottom node, full waveform inversion, cloud computing and machine learning). Since most technology deployment requires strong understanding on the data and its associated complex geology and reservoir setting, it turns out that most of our successful technology in last decades were all developed by our in-house R&D team across the globe. Meanwhile, our R&D personnel also participate in patent filing to protect CGG's intellectual properties (IP), after their invention disclosure are reviewed carefully by our internal technical experts and IP team. For more details regarding our Intellectual Property, refer to section 3.4.3 "Intellectual Property".

CGG also has a competitive edge as all its new algorithms are tested using our powerful computing facilities, and on our massive in-house multi-client data across the globe, which means we are able to rapidly overcome the steep learning curve of new technology development in a relative short timeframe and be the first to bring it to our clients. We believe that this gives us a strong premium in our pricing in the high-end market.

2020 Key events

Full Waveform Inversion and Imaging

Time-lag FWI (TLFWI) is a specialized CGG in-house FWI algorithm that provides a robust, automated model building approach which overcomes the classic FWI cycle-skipping issues related to inaccurate starting models, amplitude mismatches and poor signal-to-noise ratio. Combing TLFWI algorithm with ocean bottom node survey have been proven to be a very powerful technology for building subsurface model in complex salt province such as deep-water Gulf of Mexico, and offshore Brazil. it brought significantly improved image quality that enable our client to see structures that were never be seen before.

In 2020, we made TLFWI became more efficient in and be able to extend it to other geology and data types across the global. This improvement enables us to produce very accurate high-resolution velocity model and images that helps to reveal those subtle detail for preventing drilling hazard or better characterize reservoir properties. The deployment of high resolution TLFWI on CGG's multi-client Barents Sea TopSeis survey help delineate complex gas pockets system beneath water bottom that we believe have never been seen as clearly on any other data.

Interactive 3D well path visualization and planning solution

CGG GeoSoftware has launched WellPath, a new interactive 3D well path planning solution for optimal well planning in unconventional and fractured reservoirs and offshore development platforms.

A significant feature of WellPath is the ability to integrate all available geological and geophysical data and interpretations, locations and paths of planned and existing wells, and cultural data to visualize the complexity of the subsurface drilling environment in 3D. This integration provides the drillers with extremely valuable data to quickly plan and QC horizontal wells on high-density, multi-lateral pads or large offshore platforms for achieving the optimal well planning solution, while adhering to the constraints of geological targets and engineering design.

Planners can also use the functionality within the new technology to perform accurate anti-collision calculations and generate reports for all wells/scenarios. This capability can dramatically reduce planning cycle time from several weeks to a single morning, enabling drillers to meet demanding rig schedules.

Innovation at our Equipment division

The seismic industry constantly seeks more efficient, reliable products which provide better data. As a supplier of such products, innovating is crucial for our brand Sercel if we wish to remain a leader in the sector. Innovation must come from our products, services and the way in which we conduct business. We must also innovate to offer new solutions in a context of global pressure on prices.

Developing new products

Sercel teams conduct regular technological watches to stay aware of the market's evolution and identify new opportunities. An innovation cell was created in 2019 to focus on technologies, business and markets. We also dialogue with our customers regularly which creates innovation opportunities by identifying their requirements for products functionalities.

The decision to develop and launch a product that meets those needs is taken by the Product Strategy Committee, which includes the executive team. Before taking a decision, we will estimate the market potential, project and product costs and anticipated return on investment. We are supported in those decisions by our Product Champions, a team of experts which focus on a product or range of products and which intervene to train and support our customers when the needs arise. They may also be proactive to propose new product developments.

Where applicable, we try to mutualize innovation for both Land & Marine activities. This increases the chances of developing innovative products or solutions that apply to both activities and avoids parallel research of the same concepts.

2020 innovation highlights

Sercel deployed first WiNG (wireless next-generation) operations in 2020 with clients in Europe and in the USA. It is a fully integrated wireless nodal acquisition system that combines optimum field operational efficiency with the highest level of data quality available to support the most precise imaging needs of the land seismic industry.

Sercel also launched the SMA (source manager) software, allowing high-productivity methods by managing the seismic vibrators fleets in the most effective manner. This product brings same vibroseis productivity level for wireless operations as it exists for cabled operations.

Innovation also implies developing new products for other fields of expertise, using our technology. AP'Structure, a unique real-time structural monitoring and predictive maintenance solution for the European market has been launched by Apave and Sercel in 2020. The Structural Health Monitoring (SHM) node houses sensors initially developed for seismic data acquisition, which have all the required specifications for structural monitoring: low energy consumption, efficient radio communications and ability to transfer data to a central station. The system integrates pre-processing algorithms, preparing the data for interpretation by structure specialists.

Updating our existing range of products

In addition to our new products, we regularly update our range of existing products with new functionalities which, once deployed, will enable new operations methods and reduce operational costs for our customers in comparison to the older models.

Associated services

We believe that we can also innovate in our business conduct by offering technical products and associating them with our experts' services. This can help our clients understand the new products that have been launched and their potential on the field. In turn, this could enable them to fully exploit the capabilities of our products and maximize their return on investment.

3.4.2 Customer satisfaction

Key Performance Indicators

KPIs (excluding acquisition)	2019	2020
CGG position in the Kimberlite review	#1 on all counts	#1 on all counts
Sercel position in the *Voix du Client* review	#1 on all counts	#1 on all counts
Completion rate of Equipment division internal quality objectives	85%	78%

As a high-end player in the market, CGG competes for high quality to offer the best products, data and services possible. Our customers' satisfaction is only achieved by providing them with reliable products and data as well as an overall positive experience of their interaction with CGG. Satisfaction in the quality of the products and services marketed by CGG is therefore key to the Group's position in the market.

As such, customer satisfaction is at the core of CGG's raison d'être and the Group has developed a strong quality policy to this effect.

CGG quality & customer satisfaction policy

CGG's quality policy, signed by the Chief Executive Officer ("CEO") in 2020, aims to:

- create value by optimizing the discovery and development of natural resources; and
- achieve our vision of being the geoscience partner of choice.

For this, we commit to:

- listen to our customers and exceed their expectations; and
- continually improve our products and services leveraging our talents and technological developments.

It is supported in its application by quality and performance objective set at Group level and which are also signed by our CEO. Those are implemented in two-year cycles, in this case 2020-2021.

Two of those objectives were specifically set to address customer satisfaction, namely:

- monitor customer satisfaction: record customer feedback and follow-up on any concern raised and take corrective actions;
- align talent, organization and personnel engagement so that each business line is recognized as a leader in its area.

Our business lines then adopt those objectives and tailor them if need be to their context. For example, our Geoscience business line's KPIs analyze technical and service feedback, project turnaround results and Net Promoter Scores.

Monitoring customer satisfaction

Customer satisfaction is monitored through CGG customer surveys and external third-party reviews.

CGG customer surveys

CGG key accounts managers follow their projects' development and are the client's first contact in case of issues or opportunities. They are responsible for their customers globally.

Our projects usually include informal satisfaction reviews while they are active, used to proactively improve our service and overall results and satisfaction for our customers as the projects develop. Some best practices in the Group have formalized the customer satisfaction surveys during the project.

At the end of each project, two types of evaluations are launched:

- the first is sent to our clients' teams working directly with us to measure the successes and improvement areas of our experts and project management. This helps us identify any lessons that need to be learned;
- the second is end user evaluations. Sent several months after the project completion, they target the assets or interpretation teams of our clients and aim to better our understanding of the real-world application and technical success of our products and services.

Business lines review the customers' satisfaction periodically, including monthly management reports which review the actions currently being undertaken. Quarterly feedback reports then update staff on the current customer satisfaction results, and an annual customer satisfaction report is sent each year to all staff to present a global view of the year's performance.

External third-party reviews

Kimberlite is a third-party market research company which provides CGG with an external point of view of both the market's view of CGG and of its recent customers' satisfaction for our products and services (it surveys only customers which worked with CGG within the last two years).

We use this third-party survey and report to position ourselves on the market and identify our strengths and potential improvement areas. A summary of the report is sent and reviewed by the CEO.

2020 actions and events

In respect of customer satisfaction the following measures were implemented during 2020:

- improvement and alignment of customer satisfaction methods and systems across Geoscience;
- improved customer satisfaction reporting and metrics for our client dedicated processing centers.

Our yearly goals were updated and include for 2020:

- listening to and understanding our customers better;
- better integrating teamwork with sales and key account managers to provide a better client relationship analytics; and
- integrated project case studies, to share lessons learned.

We believe that these goals will help us achieve our goal of being the geoscience partner of choice measured through our Net Promoter Score.

For our Equipment division, customer satisfaction is also synonym with quality. We are committed to meeting our customers' expectations in terms of the reliability, quality and delivery of the products we provide. Our customers expect an equally high quality of service: expert support teams, up-to-date trainings and fast reactions. We must do our utmost to be the most dependable supplier to all our customers to maintain our leadership position.

To pilot and monitor quality levels at Equipment level, we have set annual objectives. These objectives are set and are then adapted with each of the Sercel site Directors.

The Equipment division has set three key objectives in terms of quality:

1. cost of non-quality;
2. customer satisfaction;
3. operational and system continuous improvement.

Those objectives are monitored to analyze processes, product quality, financial efficiency and customer satisfaction. Monthly reviews are conducted to evaluate the progress on each of the objectives set. Some of our employees also have individual incentives linked to quality.

To monitor our customer satisfaction externally, the Equipment Marketing and Sales Department conducts a survey every three years which identifies our strong points and improvement areas. This study was commissioned in 2018 and is separate from the Kimberlite review, also published in 2018.

The Voice of the Client *(La Voix du Client)* review, commissioned by the Equipment division, asked 98 of our customers to review us and others on a wide range of criteria (including on-time delivery, reparability, quality of products, ease of use and customer support). The Sercel brand ranked highest, including on quality and reliability of its products.

We are recognized internationally as a leader in our field. The Equipment division also prides itself in the fact that all our sites have been certified ISO 9001 (v2015) and that during the last two years, there has been no major operational disturbance caused by its products on the field while recording data.

We firmly believe that the quality of our Sercel products is matched by the quality of our services and that both together contribute to our customers' satisfaction. Our experts train our customers onsite, get out on the field for the launch of our machines, and will only leave once the customer is satisfied. In addition to our field experts, we have a 24/7 hotline which will assist our customers. If the hotline cannot find a solution to our customers' solution, an expert will be sent to assist in person.

In 2020, out of the 209 objectives identified for our Equipment sites in terms of quality, more than 78% of those goals had been reached.

This high level of quality is also confirmed by the excellent results at the Kimberlite review, which places CGG as the number one company in our field. This extremely positive result demonstrates our leadership and our recognized capability to respond to our customers' needs.

3.4.3 Intellectual property

Key Performance Indicators

	2019		2020	
KPIs (excluding acquisition)	Titles	Patents	Titles	Patents
Number of CGG Geoscience patents	505	**295**	441	**275**
Number of Equipment patents	950	**675**	874	**683**

CGG invests heavily in R&D and relies on new innovation to offer differentiating products and services to its 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 ensuring that CGG respects IP rights belonging to other parties.

Our IP rights are managed through a dedicated department that works closely with the various innovation departments of CGG 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 level for covering internal technology developments and issues, and we also compile and update competitive IP landscape on key technology few times a year.

Our Human Resources department ensures 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 the Group's innovative algorithms and data processing. As a result, the Group works closely with its 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, CGG had several policies documents addressing individual sections of IP. They were reviewed in 2019 and are now grouped under one unique document General Instruction called "Protecting and Managing Intellectual Property" which complements the previous policies where necessary, and will be deployed shortly. We continue to update our documentation and procedure to guide our employees to understand the procedures 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 many 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).

2020

Actions initiated in 2019 were pursued, with organization of training sessions for employees, and solutions for retention of know-how and related IP (see the relevant chapter for employee retention).

As result of the actions implemented by the Group , no IP right infringements litigations were brought against CGG in 2020.

3.4.4 Information security

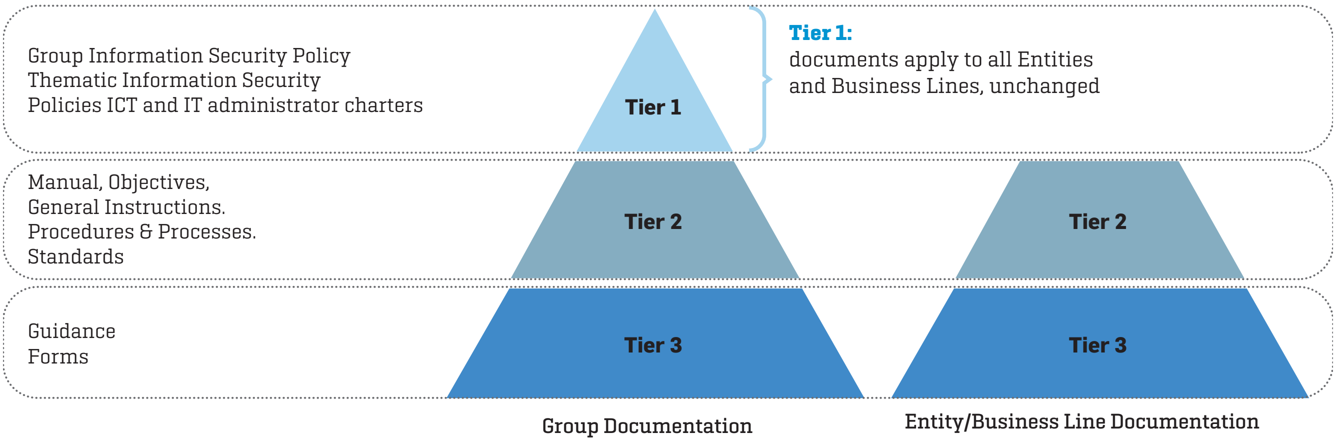
Key Performance Indicators

KPIs (excluding acquisition)	2019	2020
Number of InfoSec incidents with a significant impact	0	0
Participation rate of the InfoSec e-learning	81%	78%
Number of people trained directly onsite by the InfoSec team	228	0

As the Group creates value by processing data, data management and protection are a crucial component of our business conduct. CGG makes every effort to protect the information of its clients, staff and partners.

We have a three-tiered Information security management system (ISMS). Its goal is to prevent breaches that could impact the confidentiality, availability and/or the integrity of CGG information assets.

Policies are defined at Group level (Tier 1) and apply to all entities and business lines. Those policies remain unchanged for all but can be adapted at business line level through manuals and procedures, processes and standards with more specific objectives (Tier 2). The Tier 3 covers guidelines and forms. The 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 the 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 concerns all entities including our Equipment division.

The CISO reports to the Group Steering Committee (which includes the Chief Executive Officer) and to the Group Internal Audit Committee of the Board.

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.

In Q4'2019-Q1'2020, to evaluate its exposure and identify areas for improvement, CGG conducted cyber-security exposure threat assessments, vulnerabilities scanning, phishing tests on all employees, as well as external penetration testing on critical systems.

CGG considers its employees as the strongest line of defense. To this effect, Information Security e-learning is mandatory. In addition, the Group deploys an in-class Information Security Awareness training to reinforce the message, unfortunately these trainings 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, and continue in 2020 to align it more closely to the National Institute of Standards and Technology (NIST) Cyber Security Framework.

THE FRAMEWORK WILL BE BASED ON FIVE KEY ITEMS: IDENTIFY – PROTECT – DETECT – RESPOND – RECOVER

IDENTIFY
- Asset Management
- Business Environment
- Governance
- Risk Assessment
- Risk Management Strategy
- Supply Chain Risk Management

PROTECT
- Identity Management and Access Control
- Awareness and Training
- Data Security
- Information Protection Processes and Procedures
- Maintenance
- Protective Technology

DETECT
- Anomalies and Events
- Security Continuous Monitoring
- Detection Processes

RESPOND
- Response Planning
- Communications
- Analysis
- Mitigation
- Improvements

RECOVER
- Recovery Planning
- Improvements
- Communications

3.5 ENVIRONMENTAL PERFORMANCE

3.5.1 Energy efficiency and carbon footprint

Key Performance Indicators

KPIs (excluding acquisition)	2019	2020
CGG Power Usage Effectiveness (PUE)	1.33	1.32
Carbon Footprint Scope 1 ($ktCO_2eq$)	3	2
Carbon Footprint Scope 2 ($ktCO_2eq$)	55	51
Carbon neutral energy mix (% of Scope 1 & 2)	n.a	30%
Green Company cars (hybrid/electric) (%)	n.a	11%

Given climate change and the growing expectations of stakeholders, CGG considers CO_2 emissions and energy efficiency to be a real opportunity for its activities.

Environmental and climate policy

We are committed to mitigating our impact on the environment. To this effect, we developed our internal policy – signed by our Chief Executive Officer in January 2020 – to best protect the environment, the climate and the communities where we operate.

The policy identifies the five key elements on which we wish to act in our activities:

1. to always act responsibly and abide by all applicable environmental laws;
2. to continue to advance our data collection capabilities to best measure, monitor and continuously reduce our impact;
3. to commit to improving our power-usage efficiency, increasing the low-carbon content of our energy supply, and reducing our greenhouse gas (GHG) emissions;
4. to continue to advance our technology and services to enable our clients to best reduce the impact of their activity;
5. to encourage and support our businesses, all employees and locations globally to find and take specific actions that support the health of the environment, climate and the communities where we operate.

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CGG commits to carbon neutrality by 2050

Aligned with the company's longstanding commitment to act responsibly and minimize the impact of its activities on the environment, in every sector of its business, CGG has announced its pledge to become carbon neutral by 2050 in scopes 1 & 2 of the Greenhouse Gas (GHG) Protocol.

Company-wide efforts are focused on continuing to improve the power usage efficiency of its data centers, offices and factories, along with increasing the share of sustainable energy in its energy supply mix, mainly through the energy purchased from utility providers.

To reach this long-term target, CGG has also set itself an intermediary milestone to reduce by half its 2019 levels of scope 1 & 2 GHG emissions by 2030 (in relative values compared to emissions per unit of turnover for the Equipment division and per unit of computing power for our data centers).

After exiting the geophysical data acquisition services business in 2020 and becoming an asset-light people, data and technology company, CGG has already considerably reduced its carbon footprint. Our pledge to become carbon neutral by 2050 also aligns well with our commercial strategy of continuously advancing our technologies to best support our clients in achieving both their business and transition goals.

Datacenters & other energy consumption improvement initiatives

As a high-performance computing (HPC) company, we require a very large data processing capacity and own our own internal servers and facilities. Our data processing capacity is split into three major sites at three different locations: Houston (USA), Redhill (UK) and Singapore. Each site acts as a regional hub, and while we have several other computer rooms throughout the world, they represent a small share in computing power and energy consumption.

To monitor our three hubs' energy consumption and efficiency, CGG analyses its energy bills and follows their power usage effectiveness (PUE). Where applicable and economically sound, we also implement measures to reduce our energy consumption.

For example, in Houston (USA) some of our computers are cooled by immersing them in mineral oil. As the oil is effective at higher temperatures than air, it is more efficient and uses less energy.

Redhill (UK) uses free cooling to cool its servers. CGG has extended its commitment to power all its operating sites in the UK with green energy. As an early adopter of renewable energy sources for its UK operations eight years ago, CGG has evaluated the green credentials of its suppliers and recommitted to a REGO (Renewable Energy Guarantees Origin) backed contract to ensure that all electricity used is generated from renewable wind sources.

CGG's clean energy contract now includes all of its Geoscience sites in the UK, including Redhill, Crawley, Llandudno, Conwy and Edenbridge. We also use this sustainable energy supply to power the CGG Cloud which provides compute resources for its Geoscience activity throughout the wider EAME region, as well as its dedicated computing resources for a number of its European clients.

Our energy efficiency targets:

- the Power Usage Efficiency of our 3 main data centers (Houston, UK and Singapore) will go below 1.2 by 2030;
- the carbon neutral energy mix in our total scope 1 & 2 consumption will reach 50% by 2030 and 90% in 2050. From 2021, all new energy supply contracts will be switched to carbon neutral energy supply providing they remain within competitive prices;
- our fleet of Company cars will be 100% electric by 2050.

3.5.2 New business initiatives

In 2020, CGG has launched a few business initiatives in the domain of Environmental Monitoring and Low Carbon Transition solutions. These activities are still in their very early stages and will require commitment and continuity in 2021 to emerge as a sound diversification potential.

3.5.2.1 CO_2 storage & monitoring

Carbon Capture Usage and Storage is one of the big hopes for de-carbonising our atmosphere and heading-off climate change. It is potentially a very big business. CGG's core skills of subsurface reservoir expertise, including imaging, modelling and geological and petrochemical analysis fit well in the scope of CO_2 storage planning and ongoing monitoring of the stored carbon.

3.5.2.2 Geothermal Science

Geothermal energy has traditionally been exploited in tectonically active areas, and CGG has consistently played a role in this market through its Multi-Physics Imaging team and occasionally via its seismic imaging team. Today, there is a new push to exploit geothermal energy through sedimentary aquifers and this bring new opportunities for CGG. Expertise in subsurface geoscience, including seismic imaging, reservoir modelling and geological analysis are highly sought after skills in the emerging geothermal energy sector.

3.5.2.3 Environmental Geoscience

Observation of the Earth via satellite, drones, etc., combined with surface measurements (geological, atmospheric, etc.) lead to a multitude of data relevant to assisting people solve many of the environmental issues facing the world today. Accurate data, along with suitable processing, interpretation, machine-learning and artificial intelligence will underpin successful environmental plans for the future. CGG's skills with data science and high-performance computing are very relevant in this growing market sector.

3.5.2.4 Satellite Enabled Solutions

CGG has a long history of processing and interpreting satellite data, especially the difficult to handle Synthetic Aperture Radar (SAR) data. As more and more SAR satellites are launched into orbit, the possibility of realistically doing real-time monitoring of a large range of surface facilities is now upon us. This, combined with the growing ability to measure environmental data from satellites, makes for a rich domain in which CGG can find substantial business.

3.5.3 Sound emissions

Key Performance Indicators

KPIs (excluding acquisition)	2019	2020
Number of species identified by QuietSea™	8	9
Number of vessels equipped with QuietSea™	4	4

Seismic Data acquisition relies on signal emissions technologies being emitted by seismic sources. Those can, in certain operating conditions, disturb fauna, particularly marine mammals whose hearing is the most developed sense. Terrestrial sound emissions are not as high a risk for Sercel products – and answer to the required certifications imposed by each country.

During 2020, Sercel customers continued to apply prevention measures on board vessels to mitigate the risk of impact from sound emissions in its surroundings. The enforced safety area around the seismic source and the monitoring methods used vary according to the risk assessment and depends on the ecological sensitivity of the area of acquisition. Seismic sources are systematically activated in a gradual manner while ensuring that no sea mammal is within a radius of at least 500 meters around these sources.

The implementation of these verification measures reduces the risk of inflicting hearing damage to mammals. For this, Sercel customers monitor the presence of animals through visual monitoring (with one person on board looking out for signs of mammal presence) or through acoustic monitoring.

Visual monitoring requires one person on board the ships to be on the constant lookout for mammals, which can be difficult by night or in cases of low visibility. To mitigate the risk of animals not being spotted, we have developed a Sercel QuietSea Passive Acoustic Monitoring (PAM).

QuietSea is a fully integrated PAM system that overcomes many of the limitations of its present-day competitors. The sensors are designed to fully integrate with seismic acquisition or navigation systems and are incorporated in the Sentinel streamer. By eliminating the need for deployment of separate PAM antennas at sea, QuietSea reduces the risk of accidents during deployment, retrieval and operation, thus significantly reducing operational downtime and possible equipment replacement costs. It also reduces the number of people on each ship and increases reliability in identifying marine animals.

As of the end of 2020, the QuietSea system can identify whales (blue, fin and humpback) and toothed whales (including but not limited to dolphins, sperm whales, porpoises and beaked – all except pygmy sperm whale). As for beaked whales in 2020, we will strive to continue adding new species to increase the range of species that can be identified and better protected as a result.

QuietSea has been validated for use in the USA (BSEE/BOEM), the UK (BEIS/JNCC), in Mexico (ASEA) and is currently under review to be certified in Australia (NOPSEMA) and is also used by Total, Chevron, Pemex, Shell, Statoil, Repsol.

3.6 REPORTING SCOPE AND METHOD

The indicators were selected following a risk analysis (see chapter presenting our materiality matrix). They represent the performance of CGG and of the commitments and policies in place.

The indicators in the text exclude data acquisition. We present the consolidated indicators including data acquisition below.

The indicators were collected between January and February 2021 and cover the year 2020. They were reported and consolidated through various CGG' data bases, such as PRISM (for HSE-SD data), HRMS (HR), EPIC (Supplies), etc.

The report aims to conform to the French regulatory obligations (Statement on Non-Financial Performance, outcome of the transposal of the European directive on non-financial reporting).

The following issues were not deemed as material according to our materiality analysis and will not be discussed in this report:

- food waste;
- the fight against food insecurity;
- animal well-being (except in terms of noise emissions, which is addressed in this report);
- responsible, equitable and sustainable eating;
- eco-design;
- circular economy;
- effects of climate change on our activities.

The topics mentioned by the decree have been treated in the most transparent manner possible. The analysis of materiality did not consider eco-design and the circular economy as a material topic. Information regarding the eco-design of Sercel equipment is nevertheless available on our internet site.

3.7 INDICATORS

In this section the indicators are consolidated at Group level, which includes Data Acquisition.

TALENT ATTRACTION AND RETENTION

	2018	2019	2020
Voluntary turnover	5.5%	5.5%	4.9%
Seniority of employees	14.2 years	13.5 years	14.3 years
Share of employees with a seniority over 5 years	83%	81%	78%
Equality Index (for men & women) – France	n.a.	88	88
Gender split at CGG (M/F)	72%/28%	71%/29%	70%/30%
Gender split in the recruitments (M/F)	74%/26%	73%/27%	76%/24%

HEALTH, SAFETY AND SECURITY OF OUR EMPLOYEES AND SUBCONTRACTORS

	2018	2019	2020
Total Recordable Cases Frequency rate (TRCF)	1.77	1.60	0.84
Lost Time Injury Frequency rate (LTIF)	0.65	0.51	0.34
Severity rate	0.010	0.009	0.009
Recordable Occupational illness cases frequency rate	0.38	0.17	0.00
Exposure hours *(in million)*	27.6	29.2	11.8

BUSINESS ETHICS

	2018	2019	2020
Percentage of employees that followed the Ethics e-learning course	96%	85%	82%
Number of alerts received by the Ethics Committee	n.a.	8	4

RESPONSIBLE SUPPLY CHAIN

	2018	2019	2020
Percentage of sourcing and supply chain employees that followed the anti-corruption e-learning course	100%	92%	93%
Percentage of suppliers having signed the Supplier Code of Conduct *or* with a purchasing order mentioning the Supplier Code of Conduct	n.a.	100% [a]	100%[a]

(a) The Supplier Code of Conduct is in CGG Terms and Conditions automatically attached to all PO's. The traceability of the signature of the Code of Conduct by the supplier for transactions without purchasing order is still under implementation in 2020.

RELATIONS WITH LOCAL COMMUNITIES

	2018	2019	2020
Total number of social development initiatives	**79**	**89**	**37**
Community service	*29*	*27*	*17*
Education	*16*	*18*	*8*
Environment	*16*	*27*	*5*
Health & Safety	*18*	*17*	*7*
Number of employees involved in volunteering	n.a.	**2,903**	**205**
Number of volunteering hours	n.a.	**872**	**1,390**
Cash granted by CGG & employees (excluding Babyloan)	n.a.	**US$74,458**	**US$58,099**

INNOVATION OF PRODUCTS AND SERVICES

	2018	2019	2020
Total capital expenditure *(in million of US$)*	84	81	79
Share of Group revenues invested in R&D	6%	5%	9%
Share of Equipment revenues invested in R&D	11%	9%	14%
Share of CGG (excl. Equipment) revenues invested in R&D	4%	4%	6%

CUSTOMER SATISFACTION

	2018	2019	2020
CGG position in the Kimberlite review	#1 on all counts	#1 on all counts	#1 on all counts
Sercel position in the *Voix du Client* review	n.a.	#1 on all counts	#1 on all counts
Completion rate of Equipment division internal quality objectives	84%	85%	78%

INTELLECTUAL PROPERTY

	2018	2019	2020 Titles	2020 Patents
Number of CGG Geoscience patents	440/**190**	425/**250**	441	**275**
Number of Equipment patents	1,330/**830**	1,030/**720**	874	**683**
NUmber of Acquisition patents (discontinued activity)			84	**53**

INFORMATION SECURITY

	2018	2019	2020
Number of incidents with an important InfoSec impact	n.a.	0	0
Participation rate of the InfoSec e-learning	n.a.	81%	78%
Number of people trained directly onsite by the InfoSec team	n.a.	251	0

ENERGY EFFICIENCY AND CARBON FOOTPRINT

	2018	2019	2020
CGG Power Usage Effectiveness	1.33	1.33	1.32
Carbon Footprint Scope 1 (ktCO_2eq)	354	337	2
Carbon Footprint Scope 2 (ktCO_2eq)	70	55	51
Carbon Footprint Scope 3 (ktCO_2eq)	386	278	342

SOUND EMISSIONS

	2018	2019	2020
Number of species identified by QuietSea™	4	8	9
Number of vessels equipped with QuietSea™	8	4	4

3.8 INDEPENDENT THIRD PARTY'S REPORT ON CONSOLIDATED NON-FINANCIAL STATEMENT PRESENTED IN THE MANAGEMENT REPORT

This is a free translation into English of the original report issued in the French language and it is provided solely for the convenience of English speaking users. This report should be read in conjunction with, and construed in accordance with, French law and professional standards applicable in France.

To the General Assembly,

In our quality as an independent verifier, accredited by the COFRAC under the number n° 3-1681 (scope of accreditation available on the website www.cofrac.fr), and as a member of the network of one of the statutory auditors of your entity (hereafter "entity"), we present our report on the consolidated non-financial statement established for the year ended on the 31st of December 2020 (hereafter referred to as the "Statement"), included in the management report pursuant to the requirements of articles L. 225 102-1, R. 225-105 and R. 225-105-1 of the French Commercial Code (*Code de commerce*).

The entity's responsibility

The Board of Directors is responsible for preparing the Statement, including a presentation of the business model, a description of the principal non-financial risks, a presentation of the policies implemented considering those risks and the outcomes of said policies, including key performance indicators.

The Statement has been prepared in accordance with the entity's procedures (hereinafter the "Guidelines"), the main elements of which are presented in the Statement (or which are available online)

Independence and quality control

Our independence is defined by the requirements of article L. 822-11-3 of the French Commercial Code and the French Code of Ethics (*Code de déontologie*) of our profession. In addition, we have implemented a system of quality control including documented policies and procedures regarding compliance with applicable legal and regulatory requirements, the ethical requirements and French professional guidance.

Responsibility of the independent third party

On the basis of our work, our responsibility is to provide a report expressing a limited assurance conclusion on:

- the compliance of the Statement with the requirements of article R. 225-105 of the French Commercial Code;
- the fairness of the information provided in accordance with article R. 225 105 I, 3° and II of the French Commercial Code, i.e., the outcomes, including key performance indicators, and the measures implemented considering the principal risks (hereinafter the "Information").

However, it is not our responsibility to comment on the entity's compliance with other applicable legal and regulatory requirements, in particular the French duty of care law and anti-corruption and tax avoidance legislation nor on the compliance of products and services with the applicable regulations.

Nature and scope of the work

The work described below was performed in accordance with the provisions of articles A. 225-1 et seq. of the French Commercial Code, as well as with the professional guidance of the French Institute of Statutory Auditors ("CNCC") applicable to such engagements and with ISAE 3000[1].

- we obtained an understanding of all the consolidated entities' activities and the description of the principal risks associated;
- we assessed the suitability of the criteria of the Guidelines with respect to their relevance, completeness, reliability, neutrality and understandability, with due consideration of industry best practices, where appropriate;
- we verified that the Statement includes each category of social and environmental information set out in article L. 225 102 1 III of the French Commercial Code as well as information set out in the second paragraph of article L. 22-10-36 regarding compliance with human rights and anti corruption and tax avoidance legislation;
- we verified that the Statement provides the information required under article R. 225-105 II of the French Commercial Code, where relevant with respect to the principal risks, and includes, where applicable, an explanation for the absence of the information required under article L. 225-102-1 III, paragraph 2 of the French Commercial Code;
- we verified that the Statement presents the business model and a description of principal risks associated with all the consolidated entities' activities, including where relevant and proportionate, the risks associated with their business relationships, their products or services, as well as its their policies, measures and the outcomes thereof, including key performance indicators associated to the principal risks;
- we referred to documentary sources and conducted interviews to:
  - assess the process used to identify and confirm the principal risks as well as the consistency of the outcomes, including the key performance indicators used, with respect to the principal risks and the policies presented, and
  - corroborate the qualitative information (measures and outcomes) that we considered to be the most important presented in Appendix 1; concerning certain risks (business ethics, tax evasion, information systems

(1) *ISAE 3000 - Assurance engagements other than audits or reviews of historical financial information.*

security, innovation of products and services, intellectual property, responsible supply chain, customer satisfaction], our work was carried out on the consolidating entity, for the others risks, our work was carried out on the consolidating entity and on a selection of entities : Sercel – Nantes and Houston Town Park;

- we verified that the Statement covers the scope of consolidation, i.e. all the consolidated entities in accordance with article L. 233-16 of the French Commercial Code;
- we obtained an understanding of internal control and risk management procedures the entity has put in place and assessed the data collection process to ensure the completeness and fairness of the Information;
- for the key performance indicators and other quantitative outcomes that we considered to be the most important presented in Appendix 1 , we implemented:
  - analytical procedures to verify the proper consolidation of the data collected and the consistency of any changes in those data,
  - tests of details, using sampling techniques, in order to verify the proper application of the definitions and procedures and reconcile the data with the supporting documents. This work was carried out on a selection of contributing entities and covers 32% of the consolidated data relating to the key performance indicators and outcomes selected for these tests (32% of Headcount);
- we assessed the overall consistency of the Statement based on our knowledge of all the consolidated entities.

We believe that the work carried out, based on our professional judgement, is sufficient to provide a basis for our limited assurance conclusion; a higher level of assurance would have required us to carry out more extensive procedures.

Means and resources

Our verification work mobilized the skills of four people and took place between November 2020 and February 2021 on a total duration of intervention of about fourteen weeks.

We conducted around ten interviews with the persons responsible for the preparation of the Statement including in particular Human Resources, Health and Safety, environment, Human rights and business ethics.

Conclusion

Based on the procedures performed, nothing has come to our attention that causes us to believe that the consolidated non-financial statement is not presented in accordance with the applicable regulatory requirements and that the Information, taken as a whole, is not presented fairly in accordance with the Guidelines, in all material respects.

Paris-La Défense, the 5th of March 2021

French original signed by: Independent third Party

EY & Associés

Jean-François Bélorgey

Partner

Christophe Schmeitzky

Partner, Sustainable Development

APPENDIX 1: THE MOST IMPORTANT INFORMATION

SOCIAL INFORMATION	
Quantitative Information (including key performance indicators)	*Qualitative Information (actions or results)*
- Voluntary turnover (%) - Gender split at CGG (%) - Gender split in the recruitments (%) - TRCF: Total Recordable Cases Frequency rateL - TIF: Lost Time Injury Frequency rate - Severity rate - Exposure hours	- The results of the Human Resources policy - The results of the Health and Safety policy

ENVIRONMENTAL INFORMATION	
Quantitative Information (including key performance indicators)	*Qualitative Information (actions or results)*
- Power Usage Effectiveness (PUE) - Carbon Footprint Scope 1 ($ktCO_2eq$) - Carbon Footprint Scope 2 ($ktCO_2eq$) - Number of vessels equipped with QuietSea™	- Climate change (material emission posts) - The result of the Environmental policy

SOCIETAL INFORMATION	
Quantitative Information (including key performance indicators)	*Qualitative Information (actions or results)*
- Percentage of employees that followed the Ethics e-learning course (%) - Percentage of sourcing and supply chain employees that followed the anti-corruption e-learning course (%) - Total Number of Social Development initiatives - Number of employees involved in volunteering - Number of volunteering hours - Number of people trained directly onsite by the Infosec team	- Engaged actions to prevent bribery and tax evasion - Investment in research and development - Actions in favor of information security - Actions in favor of subcontractors and suppliers management (on environmental and social matters) - Actions in favor of human rights - Taken actions in favor of intellectual property - The result of the quality policy

CORPORATE GOVERNANCE

4

4.1 GOVERNANCE

4.1.1 Governance Structure

a) Code of Corporate Governance applied by the Company

The Company 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 AFEP (www.afep.com) and of the MEDEF (www.medef.com).

However, the Company does not apply the following provisions of the AFEP-MEDEF Code:

AFEP-MEDEF Code	CGG's practice/Justification
In a March 2020 press release, the Board of Directors of the AFEP asked corporate officers of companies referring to the AFEP-MEDEF Code to reduce their total remuneration by one quarter for the period in which employees in their company were on short-time working.	It has to be reminded that during the Covid-19 crisis, the CGG Group implemented actions enabling almost all of its employees to work remotely. Only a small number of the Group's employees were affected by the short-time working scheme (4%), and this for a very limited period of time, with net pay being maintained; In that framework, the Board of Directors of CGG SA made the decision that: — the financial targets applicable to the variable remuneration set before the Covid-19 crisis will not be adjusted. Therefore, the Board of Directors has anticipated a significant reduction in the variable remuneration of the Chief Executive Officer (CEO) for 2020; — as a result, for the 2020 financial year, CEO's short-term remuneration (fixed and annual variable remuneration) was down 47% compared to last year, with a reduction of 78% of the annual variable remuneration; — considering this situation, no further adjustment was made with respect to the CEO's remuneration.

b) Split of the Chairman and Chief Executive Officer positions

Since June 30, 2010, the positions of Chairman of the Board and Chief Executive Officer have been split. The split of these two positions aims at ensuring a better balance of powers between, on the one hand, the Board of Directors composed for the most important part of members elected by the shareholders, with a Chairman responsible for a control on the day-to-day management of the Company, and, on the other hand, the Chief Executive Officer, acting as a real head of the Company, and handling the day-to-day management of the Company.

c) Role of the Chairman of the Board of Directors

The Chairman represents the Board of Directors and, except in exceptional circumstances, is the only one with the capacity to act and speak on behalf of the Board. He organizes and oversees the activities of the Board of Directors and ensures that the corporate bodies operate in an efficient manner, in compliance with good governance principles. He ensures, in particular, that Directors are in a position to fulfill their duties and are provided with sufficient information in this respect. The Chairman is regularly kept informed by the Chief Executive Officer of the significant events relating to the Group business and may request from her any information that may be necessary for the Board and its Committees. He may meet with the external auditors of the Company in order to prepare the meetings of the Board. Upon request of the General Management, he may represent the Company vis à vis top level representatives of governmental authorities and major partners of the Group, whether in France or abroad. He may communicate directly with shareholders, particularly with regard to corporate governance matters.

d) Role of the Chief Executive Officer

The Chief Executive Officer is in charge of the General Management of the Company. She is granted the broadest powers to act on behalf of the Company in any circumstances in compliance with the corporate governance principles applied by the Company and except for those powers vested in the Company's General Meeting or Board of Directors by applicable laws. She represents the Company vis-à-vis third parties. She is responsible for the financial information released by the Company and presents, on a regular basis, the Group's results and prospects to the shareholders and the financial market. She reports on significant events for the Group business to the Board and its Chairman.

e) Limitations of authority of the Chief Executive Officer

In accordance with the law and Article 10 of the Company's articles of association, the Chief Executive Officer is vested with the broadest powers to act in all circumstances in the name of the Company, except in cases specifically provided by the law. In addition, the Board of Directors decided to limit the powers of the Chief Executive Officer for investments projects over US$100 million and all merger and acquisitions projects over US$10 million. Such expenditures shall first be submitted to the Investment Committee.

4.1.2 Board of Directors and Management

4.1.2.1 Board of Directors

a) Overview of the composition of the Board of Directors and its Committees as of December 31, 2020 and as of the date of this Document

									Committees			
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	Audit & Risk Management	Appointment Remuneration & Gouvernance	Investment	HSE – Sustainable development
Mr. Philippe SALLE *Chairman of the Board*	French	X	M	55	2018	N.A.	GM 2021	3				
Mrs. Sophie ZURQUIYAH *CEO*	French/US		F	54	2018	N.A.	GM 2022	3				
Mr. Michael DALY	English	X	M	67	2015	2017	GM 2021	6			X	X / O
Mr. Patrice GUILLAUME [(a)]	French		M	62	2017	N.A.	GM 2021	4		X		X
Mrs. Anne-France LACLIDE-DROUIN	French	X	F	52	2017	N.A.	GM 2021	4	X / O		X	
Mrs. Helen LEE BOUYGUES	US	X	F	48	2018	2020	GM 2024	3	X		X / O	
Mrs. Colette LEWINER	French	X	F	75	2018	2019	GM 2023	3	X	X / O		
Mrs Heidi PETERSEN	Norwegian	X	F	63	2018	2020	GM 2024	3		X		X
Mr. Mario RUSCEV	French	X	M	64	2018	2019	GM 2023	3		X	X	

(a) Mr. Patrice GUILLAUME is a director representing the employees, appointed by the Group Committee, in accordance with Article 8 of the Company's Articles of Association. As his term of office will expire at the end of the 2021 Annual General Meeting, the Group Committee is currently in the process of appointing his successor.

O Chairman/Chairwoman

X Member

b) Individual information about the Directors

Mr. Philippe SALLE
CHAIRMAN – INDEPENDENT DIRECTOR

Age: 55

Nationality: French

First appointment as: 2018 (by cooptation)

Expiry of the current term of office: 2021 (renewal will be proposed to the 2021 Annual General Meeting)

Number of CGG shares held on December 31, 2020: 288,711 shares

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).

Mr. Philippe SALLE 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.

Current positions

Within the Group:
None

Outside of the Group:

French companies:
- Chairman of Foncia Management SAS (as permanent representative of Finellas)
- Chairman of Foncia group SAS (as permanent representative of Foncia Holding)
- Chairman of Foncia Holding SAS (as permanent representative of Foncia Management)
- Member of the Supervisory Board of Foncia Saturne SAS
- Chairman of the Supervisory Board of Leemo SAS
- Chairman of the Supervisory Board of Tech-Way SAS
- Director of Banque Transatlantique
- Director of Siaci Saint-Honoré

Foreign companies:
- Permanent representative of Foncia Holding, as Director of Trevi Group SA (Belgium)
- Vice-Chairman of the Board of Directors of Foncia Suisse (Switzerland)

Positions which expired over the last five years

Within the Group:
None

Outside of the Group:
- Director of Bourbon (France, a company listed on Euronext Paris)
- CEO of Altran (France, a company listed on Euronext Paris)
- CEO of Elior (France, a company listed on Euronext Paris)
- Director of GTT – Gaztransport and Technigaz (France, a company listed on Euronext Paris)

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Mrs. Sophie ZURQUIYAH

DIRECTOR AND CHIEF EXECUTIVE OFFICER

Age: 54

Nationality: American and French

First appointment: 2018

Expiry of the current term of office: 2022

Number of CGG shares held on December 31, 2020: 169,750 shares

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.

Mrs. Sophie ZURQUIYAH 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 SA 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.

Current positions

Within the Group:

- Chief Executive Officer of CGG SA

Outside of the Group:

French companies:

- Director and Member of the Audit and Risk Management Committee of Safran (a company listed on Euronext Paris)

Foreign companies:

- Director of Bazean Corp. (USA)

Positions which expired over the last five years

Within the Group:

- Senior Executive Vice President of CGG Services (US) Inc. (USA)
- Director of Petroleum Edge Ltd (UK), a company 50% held by the Group at that time

Dr. Michael DALY
INDEPENDENT DIRECTOR

Age: 67

Nationality: British

First appointment: 2015 (by cooptation)

Last renewal: 2017

Expiry of the current term of office: 2021 (renewal will be proposed to the 2021 Annual General Meeting)

Number of CGG shares held on December 31, 2020: 20,663 shares

Role in Board Committees:
- Chairman of the HSE-Sustainable Development Committee
- Member of Investment Committee

Dr. Michael DALY is a graduate of The University College of Wales, Leeds University (Ph.D.) and Harvard Business School (PMD).

Dr. DALY 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.

Current positions

Within the Group:
None

Outside of the Group:

Foreign companies and institutionand institutions:
- Director of Tullow Oil (United Kingdom) (a company listed on the London Stock Exchange)
- Visiting Professor in Earth Sciences at the University of Oxford (United Kingdom)
- Director of Daly Advisory and Research Ltd. (United Kingdom)
- President of the Geological Society of London (United Kingdom)

Positions which expired over the last five years

Outside of the Group:
- Director of Macro Advisory Partners (MAP) (United Kingdom)

Mr. Patrice GUILLAUME

DIRECTOR REPRESENTING THE EMPLOYEES

Age: 62

Nationality: French
First appointment: 2017

Expiry of the current term of office: 2021 (the Group Committee is currently in the process of appointing his successor)

Number of CGG shares held on December 31, 2020: 10,028 shares

Role in Board Committees:

- Member of the HSE-Sustainable Development Committee
- Member of the Appointment Remuneration and Governance Committee

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.

Current positions

None

Positions which expired over the last five years

None

Mrs. Anne-France LACLIDE-DROUIN
INDEPENDENT DIRECTOR

Age: 52

Nationality: French

First appointment: 2017

Expiry of the current term of office: 2021 (renewal will be proposed to the 2021 Annual General Meeting)

Number of CGG shares held on December 31, 2020: 20,000 shares

Role in Board Committees:
- Chairwoman of the Audit and Risk Management Committee
- Member of the Investment Committee

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).

Current positions

Within the Group:
None

Outside of the Group:

French companies:
- Director and Chairwoman of the Audit Committee of Solocal (a company listed on Euronext Paris)
- Chief Financial Officer and Compliance Director of RATP Dev (an affiliate of the RATP Group)

Positions which expired over the last five years

Within the Group:
None

Outside of the Group:
- Member of the Executive Committee of Consolis Group SAS (France)
- Director of Consolis Oy AB (Finland)
- Director of Parma Oy (Finland)
- Member of the Supervisory Board and Chairwoman of WPS Ujski (Poland)
- Director of Philbert Tunisie SA (Tunisia)
- Member of the Supervisory Board of ASA Epitoipari Kft (Hungary)
- General Manager of Compact (BC) SARL (Luxembourg)
- Director of Spaencom AS (Denmark)
- General Manager of Compact (BC) Lux II S.C.A. (Luxembourg)
- Director of Spenncom AS (Norway)
- Director of Bonna Sabla SA (France)
- Director and Chairperson of the Audit Committee of SFR (France, a company listed on Euronext Paris)
- Director of Oberthur Technologies Group SAS (France)
- Director of Mali Solutions Numériques SA (France)
- Director of OT Pakistan (Private) Ltd (Pakistan)
- Director of Oberthur Technologies of America Corporation (USA)
- General Manager of Oberthur Technologies Hong Kong Limited (Hong Kong)

Mrs. Helen LEE BOUYGUES

INDEPENDENT DIRECTOR

Age: 48

Nationality: American

First appointment: 2018 (by cooptation)

Last renewal: 2020

Expiry of the current term of office: 2024

Number of CGG shares held on December 31, 2020: 20,000 shares

Role in Board Committees:

- Chairwoman of the Investment Committee
- Member of the Audit and Risk Management Committee

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.

Mrs. Helen LEE BOUYGUES 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.

Current positions

Within the Group:
None

Outside of the Group:

French companies and institutions:

- President of LB Partners
- Director and member of the Audit and Remuneration Committee of Burelle SA (a company listed on Euronext Paris)
- Lead Director and member of the Audit and Remunerations Committees of NEOEN SA (a company listed on Euronext Paris)
- Director and member of Audit Committee of Fives SAS
- Director, Chairwoman of Remuneration Committee and member of Audit Committee of Latecoere SA (a company listed on Euronext Paris)
- Chairwoman of Board of Conforama SA
- Director and member of the Audit Committee and Chairwoman of the Remuneration Committee of Novartex SAS
- Governor and member of Finance and Strategy Committees of the American Hospital of Paris (non-profit)

Positions which expired over the last five years

Within the Group:
None

Outside of the Group:

- Founder and General Manager of LEE BOUYGUES Partners (France)
- Partner of McKinsey RTS France (France)

Mrs. Colette LEWINER
INDEPENDENT DIRECTOR

Age: 75

Nationality: French

First appointment: 2018 (by cooptation)

Last renewal: 2019

Expiry of the current term of office: 2023

Number of CGG shares held on December 31, 2020: 50,000 shares

Role in Board Committees:
- Chairwoman of the Appointment, Remuneration and Governance Committee
- Member of the Audit and Risk Management Committee

Mrs. Colette LEWINER has graduated from École Normale Supérieure (a leading French higher education University) and has a Ph.D. in physics.

Mrs. LEWINER 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.

Current positions

Within the Group:
None

Outside of the Group:

French companies:
- Director, Chairwoman of the Selection and Compensation Committee of Bouygues (a company listed on Euronext Paris)
- Director, member of the Accounts Committee, member of the Ethics Committee and Chairwoman of the Selection and Compensation Committee of Colas (a company listed on Euronext Paris and at 96.6% controlled by Bouygues)
- Director, Chairwoman of the Audit Committee, member of the Governance Committee of Getlink (formerly Eurotunnel, a company listed on Euronext Paris)
- Director, member of the Audit Committee, Chairwoman of the Governance Appointment and Remuneration Committee, and member of the Nuclear Commitments Monitoring Committee of EDF (a company listed on Euronext Paris)

Positions which expired over the last five years

Within the Group:
None

Outside of the Group:
- Director, member of the Strategy and Sustainable Development Committee and member of the Selection and Compensation Committee of Nexans (France, a company listed on Euronext Paris)
- Director, member of the Strategy Committee, member of the Audit Committee of Ingenico (France, a company listed on Euronext Paris)
- Director, Chairwoman of the Selection and Compensation Committee of Cromton Greaves (India)

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Mrs. Heidi PETERSEN
INDEPENDENT DIRECTOR

Age: 63

Nationality:
Norwegian

First appointment:
2018 (by cooptation)
Last renewal: 2020

Expiry of the current term of office: 2024

Number of CGG shares held on December 31, 2020:
20,000 shares

Role in Board Committees:
- Member of the Appointment, Remuneration and Governance Committee
- Member of the HSE-Sustainable Development Committee

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.

Mrs. PETERSEN 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.

Current positions

Within the Group:
None

Outside of the Group:

Foreign companies:
- Chairwoman of Future Technology AS (Norway)
- Director of Arendal Fossekompani ASA (a company listed on the Oslo Stock Exchange)

Positions which expired over the last five years

Within the Group:
None

Outside of the Group:
- Director of HIP (Herøya Industripark) AS (Norway)
- Director of Eitzen Chemical ASA (Norway, a company listed on the Oslo Stock Exchange)
- Director of Glamox ASA (Norway, a company listed on the Oslo Stock Exchange)
- Director of North Energy ASA (Norway, a company listed on the Oslo Stock Exchange)
- Chairwoman of de SIV (Sykehuset i VestFold) (Norway)
- Director of NIVA AS (Norway)

Mr. Mario RUSCEV

INDEPENDENT DIRECTOR

Age: 64

Nationality: French

First appointment: 2018 (by cooptation)

Last renewal: 2019

Expiry of the current term of office: 2023

Number of CGG shares held on December 31, 2020: 20,156 ADRs

Role in Board Committees:
- Member of the Investment Committee
- Member of the Appointment, Remuneration and Governance Committee

Mr. Mario RUSCEV is a Nuclear Physicist by training holding a Ph.D. from Pierre and Marie Curie University and from Yale University.

Mr. RUSCEV 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. Mr. Ruscev 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 Middle East;
- simulators allowing to understand the formation and propagations of fractures during Frac 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.

Current positions

Within the Group:
None

Outside of the Group:

Foreign Companies:
- CEO of Noven, Inc. (USA)
- Director of Asco Group Ltd (United Kingdom)

Positions which expired over the last five years

Within the Group:
None

Outside of the Group:
- Director of Expro Group Holdings International Ltd., incorporated (Cayman Islands)
- Director of Global Carbon Capture and Sequestration Institute (Australia)

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c) Changes having occurred in the composition of the Board of Directors and its Committees in 2020

The changes in the composition of the Board of Directors and its Committees occurred in 2020 are presented in the following table:

	Departure	Appointment	Renewal
Board of Directors			**Helen LEE BOUYGUES** 06.16.2020 **Heidi PETERSEN** 06.16.2020
Audit and Risk Management Committee			
Appointment, Remuneration and Governance Committee		**Mario RUSCEV** 06.16.2020	
Investment Committee			
HSE/Sustainable Development Committee	**Mario RUSCEV** 06.16.2020		

4.1.2.2 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 in section 4.1.2.1.b) of this Document.

4.1.2.3 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 Document:

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 is the only corporate officer *(mandataire social)* of the Company's Executive Leadership team.

4.1.3 General rules, structure and operation of the Board of Directors and its Committees

a) Role of the Board of Directors

Pursuant to Article L. 225-35 of the French Commercial Code, the Board lays down the guidelines governing the Company'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 Company and it settles the matters concerning it.

b) 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 Company's articles of association). The Board of Directors of the Company 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 Company'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 Company.

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 Company, 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 as the Company'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 in section 4.1.2.1.b) of this Document.

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 Company's Economic and Social Committee also attends the meetings of the Board of Directors.

Observers (Censeurs)

According to Article 13 of the Company'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 Document, the Company has not appointed any observer *(Censeur)*.

c) Duration of the office as Director

The term of office of each Director is four years.

d) Independent Directors

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 Company, 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 Company 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 Company 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 Company, 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 [1]): 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).

e) 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.

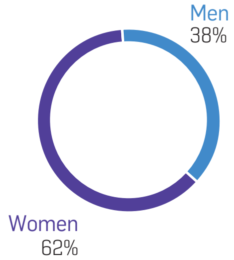
(1) The AFEP-MEDEF Code recommends that Independent Directors should account for half the members of the Board in widely held corporations without controlling shareholders.

GENDER BALANCE

Objective | **2020 Results**

Reach a balanced representation between male and female in the composition of the Board, in compliance with the applicable regulations, i.e. either:

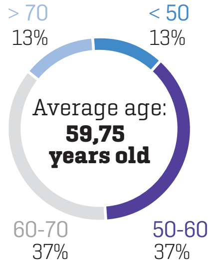
- have at least 40% of each gender for Boards composed of more than 8 members; or
- maintain a maximum gap of two between members of each gender for Boards composed of up to 8 members.



AGE

Objective | **2020 Results**

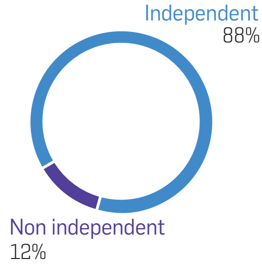
Reach a variety of ages among the Directors, and comply with the applicable regulations, i.e. no more than one third of the Directors shall be older than 70 years old.



INDEPENDENCE

Objective | **2020 Results**

Reach a significant portion of Independent Directors on the Board of Directors, and comply with the applicable AFEP-MEDEF recommendations, i.e. the Independent Directors should account for half the members of the Board in widely held corporations without controlling shareholders.

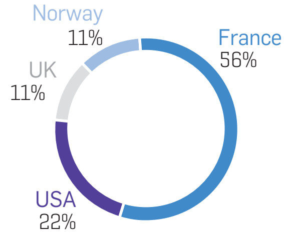


The only Director elected by the shareholders who is not qualified as independent is the Chief Executive Officer.

NATIONALITIES

Objective | **2020 Results**

Have a balanced composition in terms of nationalities in order to reflect as much as possible the geographical mix of the Company's activities



For the purpose of this chart, S. ZURQUIYAH has been accounted for in both "French" and "US" as she has both nationalities.

SKILLS

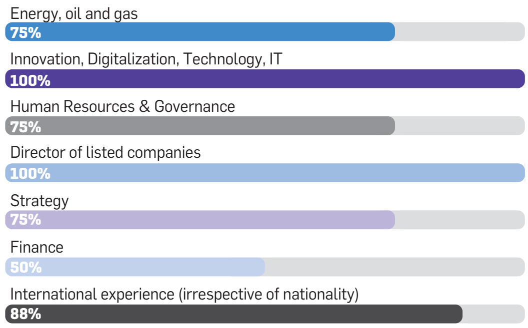
Objective

Have a wide variety of skills and a deep expertise in key areas for the Company's current and future activities, such as:

- energy, oil and gas;
- international experience;
- innovation, digitalization, technology, IT;
- strategy;
- directorship in listed companies;
- finance;
- human resources and governance.

2020 Results

The Board of Directors is of the opinion that with the expertise of its current members, the Company is well equipped to deal with the challenges linked to its new profile, as announced by the Company during the Capital Markets Day on November 7, 2018.



These criteria are reviewed each time a new candidate is proposed to be elected as a Board member.

As of the date of this Document, the composition of the Board is mostly based on the various appointments and cooptations occurred since completion of the Company's financial restructuring in 2018. Therefore, it is not expected to proceed with significant changes in this composition on the short term.

Details on education, directorships, professional experiences, as well as information about age and nationality of each Director are presented in section 4.1.2.1.b) of this Document.

The gender diversity policy adopted by the Board of Directors for the Group, applicable in particular (i) to the management bodies in accordance with the recommendation of Article 7.1 of the AFEP-MEDEF Code and (ii) to the 10% of positions with greater responsibility in accordance with Article L. 22-10-10 of the French Commercial Code, is set out in paragraph 3.2.1 of this Document.

f) Professional address of the Directors

The professional address of the Directors is the registered office of the Company:

CGG SA
27 avenue Carnot
91300 Massy France

g) Share ownership

As of the date of this Document, and in accordance with Article 8.5 of the Company's articles of association, each Director shall own at least 1 share. However, the Board's Internal Regulations provide that each Director be required to own at least 20,000 shares.

An amendment to Article 8.5 of the articles of incorporation will be proposed to the 2021 General Meeting in order to provide in the articles of incorporation that the minimum number of shares to be held by the Directors will be defined in the Internal Rules and Regulations of the Board of Directors, in order to ensure consistency between the various documents applicable to the Company. The Internal Rules and Regulations of the Board of Directors are available on the Company's website (www.cgg.com).

h) Operating rules for Board of Directors meetings

The operating procedure of the Board is governed by internal rules and regulations (hereafter the "internal rules and regulations of the Board of Directors") which are available on the Company's website (www.cgg.com). Their main provisions are summarized below.

Information to be provided to Directors

In preparation of every Board meeting, the Board's Secretary sends documentation to the Directors containing all useful information on each of the points appearing on the meeting agenda. This documentation is generally uploaded on the secured website of the Board of Directors and its Committees to enable the Directors to review it before the meeting.

Furthermore, Directors are kept informed and consulted by the Chief Executive Officer between Board meetings about all events or operations of importance to the Company.

A draft version of press releases related to quarterly, semi-annual and annual financial statements and all events or operations of importance for the Company are sent to Directors sufficiently in advance of their publication so they can transmit their comments to the General Management. Other press releases are systematically sent to them at the same time they are published by the Company.

In general, the Chairman of the Board ensures that Directors are able to fulfill their duties. For this purpose, he assures that each of them receives the documents and information necessary to perform their duties.

Board meetings

At every meeting, the Board is informed of the evolution of the operating and financial performance of the main segments of the Group since the last meeting.

This information per segment is supplemented by a particular review of the consolidated financial situation of the Group in terms of debt, cash flow and financial resources available on a short-term basis and in the light of forecasts.

All transactions with a material impact on the strategy of the Group such as acquisitions, partnerships, disposals or strategic investments are subject to the prior authorization of the Board after the Investment Committee has issued its recommendation. The Board is regularly informed on the progress of the transaction in question.

The Board of Directors meets at least four times per year in the presence of the Statutory Auditors and whenever circumstances so require.

Pursuant to the internal rules and regulations of the Board of Directors, Directors may participate in Board proceedings through videoconferences or telephone conferencing provided such telecommunication means permit the identification of participants and allow them to effectively participate to the meeting in the conditions set forth in Article L. 225-37 of the French Commercial Code.

They are in such cases counted as present for the calculation of the quorum and majority in accordance with the rules of the Board of Directors. However, pursuant to law the said procedure may not be used in connection with the following decisions:

- establishment of the annual financial statements and of the management report; and
- establishment of the consolidated financial statements and of the report on the management of the Group, if that is not included in the annual management report.

It is specified that the Board meets at least once a year without the presence of the executive corporate officers.

Rules applicable to Directors

i. Duty of expression

Each Director has a duty to clearly express his or her opinions and shall endeavor to convince the Board of the relevance of his or her position.

ii. Diligence

Each Director must devote the necessary time, care and attention to his or her duties. Before accepting any new position or office, he or she must consider whether he or she will still be able to fulfil this obligation. Unless he or she is genuinely unable to do so, he or she must attend all meetings of the Board of Directors and of any Committees of which he or she is a member, and all General Meetings of shareholders.

iii. Conflicts of interest

Each Director must inform the Board about any conflict of interest situation, even potential, that may directly or indirectly involve him/her because of the duties he/she may hold in other companies or because of personal interest.

In such a case, the Director shall abstain from attending the debate and taking part in voting on the related resolution.

iv. Principles to be followed in transactions carried by Directors on Company's shares

Directors may hold information relative to the Company that has come to their attention because of their position as Director and which, if made public, might have an appreciable effect on the Company's share price. The significant character of a piece of information is normally related to the influence it may have on the financial results of the listed Company. A significant piece of information can relate to operating revenues, financial or budgetary estimates, investments, acquisitions or divestments, main discoveries, stops of important manufacturing units, launching or withdrawal of products, significant changes in shareholding or management, transactions affecting the capital, the dividend, the appearance or the settlement of a dispute, etc.

In such a case, the Internal Regulations provide that Directors must refrain:

- from exploiting such information in their own behalf or in behalf of others, directly or through an intermediary, by purchasing or selling the Company's securities or financial products connected with the said issue;
- from communicating the said information for purposes other than and for an activity other than the one in connection with which it is held.

In addition to the above, Directors must abstain from carrying-out any transaction on the Company's shares, of whatever nature, during the 30-calendar days preceding the publication of semi-annual or annual results and 15-calendar days preceding the quarterly results, and until the day after the publication date. Such publications generally occur the last week of February, mid-May, the last week of July and mid-November.

In case of doubt, Directors are invited to contact the Group Chief Financial Officer.

Directors must notify to the *Autorité des marchés financiers* the transactions that they may carry out on the Company's shares, pursuant to the provisions of Regulation (EU) no. 596/2014 of the European Parliament and of the Council of April 16, 2014. These provisions are described in the internal rules and regulations of the Board of Directors.

i) Appraisal of the operations of the Board of Directors and its Committees

The Board of Directors conducts an annual evaluation of its operations and that of its Committees. Every three years, this evaluation is conducted with the assistance of an external consultant.

Procedure of evaluation of the Board of Directors and its Committees

The procedures for each type of evaluation (internal or external) are defined in the table below and have been incorporated into the Board of Directors' Internal Rules and Regulations.

	INTERNAL EVALUATION	**EXTERNAL** EVALUATION
LAUNCH OF THE EVALUATION PROCESS	Preparation of the evaluation by the Appointment, Remuneration and Governance Committee ("ARGC") based upon a proposal from the EVP Group General Counsel	Selection of the external consultant by the ARGC on the basis of a proposal by the EVP Group General Counsel / Definition of the process by the Chair of the ARGC and the external consultant
WRITTEN QUESTIONNAIRE	Written questionnaire sent by the Chair of the ARGC to all Directors, relating to the global performance of the Board and of its Committees	Written questionnaire sent by the external consultant to all Directors, relating to the global performance of the Board and of its Committees and to individual contribution of each Director
INDIVIDUAL MEETINGS	Individual meetings held with the Chair of the ARGC on a voluntary basis, relating to any topic requested by the Director having requested the meeting, included but not limited to the individual contribution of each Director	Individual meetings held (Directors, EVP group General Counsel, EVP Group CFO, EVP Group Human Resources) with the external consultant on a mandatory basis, and relating to the various topics listed by the Chair of the ARGC and the external consultant, included but not limited to the individual contribution of each Director
COMPILATION OF RESULTS	Compilation of the results received by the EVP Group General Counsel and review by the Chair of the ARGC	Compilation of the results received by the external consultant and review by the Chair of the ARGC, the EVP Group General Counsel and the Chair of the Board of Directors
RESTITUTION OF THE RESULTS	Global reporting of the results of the evaluation by the Chair of the ARGC to the ARGC and then to the Board of Directors Discussion of the results at the Board of Directors' meeting Individual restitution by the President of the ARGC to each director, if necessary	Global reporting of the results of the evaluation by the external consultant to the ARGC, and then to the Board Discussion of the results at the Board of Directors' meeting Individual restitution by the external consultant to each director

Results of the internal evaluation performed in 2020

As the last external evaluation was carried out in 2019 by a specialized firm of reputation, in 2020 the Board of Directors carried out an internal evaluation under the direction of the Chairman of the Appointment, Remuneration and Governance Committee. The summary of the conclusions of this internal evaluation is shown in the following table.

2020 INTERNAL EVALUATION

SATISFACTORY ITEMS	ITEMS TO BE IMPROVED – ACTION PLAN
Excellent quality of Committee reports, presentations to the Board, internal rules and regulations	Add meetings focused on the Group's strategy to the calendar. Schedule visits to CGG sites by the Directors as soon as the current health restrictions are lifted by the authorities
High level of transparency and very good quality of relations with the Chairman and Executive Management	Further develop discussions on succession plans and renewal of terms of office of Directors during Board meetings
Very high attendance rate of Directors	Increase the level of information provided to the Board of Directors on the risk assessment performed by Executive Management and reviewed by the Audit and Risk Management Committee
Significant diversity of profiles on the Board of Directors	Analyze and discuss in more detail analysts' and investors' expectations at Board meetings

j) Process for appointment of new Directors

The process to appoint new Directors (with the exception of the Director(s) representing the employees, being appointed by the Group Committee pursuant to the provisions of Article 8 of the articles of association), is described below and has been incorporated into the Board of Directors' Internal Rules and Regulations.

Step 1 **REVIEW OF NEEDS**	Review of the needs by the Appointment, Remuneration and Governance Committee ("ARGC") considering the terms of office coming to their end and the requirements to comply with the law or the Corporate Governance Code
Step 2 **LAUNCH OF THE SELECTION PROCESS**	Definition of the competencies sought by the ARGC in consideration of the diversity policy of the Board of Directors and the objectives to be achieved / Selection of a recruitment firm if necessary / Establishment of a list of potential candidates identified by the ARGC, including, if applicable, the proposals of the recruitment firm, the proposals of the Executive Management and unsolicited applications
Step 3 **RECRUITMENT PROCESS**	Constitution of files on the basis of public information on the candidates / Review of the files by the ARGC and selection by the ARGC of the candidates satisfying the needs defined in step 2 / Conduct of interviews by the Chair of the ARGC with the selected candidates
Step 4 **SELECTION PROCESS**	Recommendations made by the ARGC to the Board of Directors Selection by the Board of Directors
Step 5 **APPROVAL**	In case of a replacement of a Director in the course of his/her term of office: Cooptation approved by the Board, then submitted to the next General Meeting for ratification. In other cases : Proposal of appointment submitted to the approval of the General Meeting

4.1.4 Missions of the Board of Directors and its Committees/ Activities in 2020

4.1.4.1 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 [a]
Percentage of Independent Directors:	
- *Including the Director representing the employees*	*78%*
- *Excluding the Director representing the employees*	*88%*

(a) Including the Director representing the employees.

MAIN MISSIONS AND WORKS 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 Company's activity and to monitor their application; - to consider any question affecting the proper operation of the Company and to settle the matters in regards to it; - to promote long-term value creation by the Company 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 in particular the completion of external growth operations, partnerships, disposals or strategic investments and to monitor their implementation; - to review the Company'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, 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 Company; - to define the remuneration policy applicable to the Top Management of the Company 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 Company; - 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 to 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 an 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 (see section 4.1.3.i) of this Document);
- discussion on the succession plan of the Chief Executive Officer and members of the Executive Leadership team, on the basis of the works 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 where 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 envelop 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, 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 to the benefit of Mrs Sophie ZURQUIYAH in order to align it with the rules recently issued and the provisions of the AFEP-MEDEF code (see section 4.2.1.2.b)b.xi. of this Document).

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, 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 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 Company 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.

4.1.4.2 Missions of the Board Committees and Works over 2020

The internal rules and regulations of the Board of Directors also define the composition, duties and operating procedures of the Committees established by the Board, excluding the Audit and Risk Management Committee and the Appointment, Remuneration and Governance Committee which have their own charter of functioning since March 8, 2005 and July 30, 2008 respectively. These charters are attached to the internal rules and regulations of the Board of Directors and available on the Company's website (www.cgg.com).

a) Appointment, Remuneration and Governance 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 [a]
Percentage of Independent Directors:	
- *Including the Director representing the employees*	*75%*
- *Excluding the Director representing the employees*	*100%*

(a) Including the Director representing the employees.

MAIN MISSIONS AND WORKS 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 Company and a corporate officer *(mandataire social);*
	- to review the gender equality and equality of chances 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 an external consultant in case of an external evaluation (every three years) and to monitor this pursuant to the process described in section 4.1.3.i) of 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 part and the long-term part (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 Company's financial statements of all remuneration elements for corporate officers *(mandataires sociaux)*,
	  - the contracts between the Company 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 Company 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 renewals 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 renewals 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 in the perspective 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 envelope to be submitted to the 2020 General Meeting for 2020 and until 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, throughout 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.

Individual attendance rates are provided for in section 4.1.4.3 of this Document.

b) Investment 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 WORKS 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 expenditure 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.

Individual attendance rates are provided for in section 4.1.4.3 of this Document.

c) 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 [a]
Percentage of Independent Directors:	
- *Including the Director representing the employees*	*66.67%*
- *Excluding the Director representing the employees*	*100%*

(a) Including the Director representing the employees.

MAIN MISSIONS AND WORKS 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 mid-term and long-term direction of CGG efforts in this area; and to ensure the Group is aware of the changing external social and investor attitudes to sustainability, decarbonization and the sector;
- 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 perormance of the 2019 Universal Registration Document, and review with the independent third-party auditor of their findings and recommendations on CGG consolidated non-financial statement presented in the Universal Registration Document;
- Review of the impact of the United Nations SDG's and the Paris Agreement on climate change on CGG and its future direction;
- Follow up of the Group's Care & 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 Company's Leadership to prevent exposure and transmission of the virus within the Company. As a result of these efforts there were few cases, and no work-related clustered outbreaks. This discipline 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 Company'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 KPI's 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.

Individual attendance rates are provided for in section 4.1.4.3 of this Document.

d) 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 it is the case for CGG.

Their credentials are set out in section 4.1.2.1.b) of this Document.

The Company 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, 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 WORKS 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 Company'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 sincerity 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 Company's policy on risk management,
  - the analysis made by the Company of its major risks (risk mapping),
  - the programs put in place to monitor them,
  - the role and responsibilities with respect to internal control,
  - the principles and rules of internal control defined by the Company on 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 Company,
  - significant deficiencies, if any, identified by the Company 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 Company and its executive officers; - To handle, anonymously, any feedback relating to possible internal control problem or any problems of an accounting or financial nature.

(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 business divested; - Follow up of the financial costs related to the implementation of the restructuring plans borne by the Company; - 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 approved their fee estimates for this work with special focus to 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 Company 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. 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.

Individual attendance rates are provided for in section 4.1.4.3 of this Document.

4.1.4.3 Attendance during Board and Committee meetings in 2020

The table below summarizes detailed information concerning the attendance of Directors at meetings of the Board of Directors and its Committees during fiscal year 2020:

	Attendance at Board meetings		Attendance at Audit & Risk Management Committee meetings		Attendance at Appointment, Remuneration & Governance Committee meetings		Attendance at Investment Committee meetings		Attendance at HSE-Sustainable Development Committee meetings	
Total number of meetings in 2020		**8**		**8**		**7**		**4**		**3**
Philippe SALLE	8/8	100%								
Sophie ZURQUIYAH	8/8	100%								
Michael DALY	8/8	100%					4/4	100%	3/3	100%
Patrice GUILLAUME	8/8	100%			7/7	100%			3/3	100%
Anne-France LACLIDE-DROUIN	8/8	100%	8/8	100%			3/4	75%		
Helen LEE BOUYGUES	8/8	100%	8/8	100%			4/4	100%		
Colette LEWINER	8/8	100%	8/8	100%	7/7	100%				
Heidi PETERSEN	8/8	100%			7/7	100%			3/3	100%
Mario RUSCEV [a]	8/8	100%			3/3	100%	4/4	100%	1/1	100%
TOTAL ATTENDANCE RATE OF DIRECTORS IN 2020		**100%**		**100%**		**100%**		**93.75%**		**100%**

(a) On June 16, 2020, Mr. Mario RUSCEV resigned from his position as a member of the HSE/Sustainable Development Committee and became a member of the Appointment, Remuneration and Governance Committee.

4.1.4.4 Succession plan

The Company has set up a succession plan for its Chief Executive Officer and the members of its Executive Leadership team.

The succession plan is drawn up by the management and reviewed by the Executive Leadership team before being submitted to the Appointment, remuneration and Governance Committee. It is then presented to and discussed by the Board of Directors. This review is made on an annual basis.

The last review of the succession plan by the Board of Directors took place in November 2020.

4.1.5 Review of the agreements which may be entered into between the Directors or the corporate officers *(mandataires sociaux)* and the Company

In accordance with Article L. 225-38 of the French Commercial Code, any agreement between a company and its Chief Executive Officer, one of its deputy Chief Executive Officers, one of its Directors, one of its shareholders having a proportion of the voting rights exceeding 10% or, in the case of a shareholder company, the company controlling it within the meaning of Article L. 233-3 of the French Commercial Code, must be subject to the prior approval of the Board of Directors.

However, Article L. 225-39 of the same Code provides that the provisions of Article L. 225-38 of the Code shall not apply to such agreements if they relate to usual operations and if they are entered into under normal conditions, with respect to the activity carried out by the Company or its Group.

Article L. 22-10-12 (formerly L. 225-39) of the French Commercial Code also requires, for companies whose share are admitted on a regulated market, the Board of Directors to establish a procedure for regularly assessing whether the agreements relating to usual operations and entered into under normal conditions, still fulfill these conditions and for analyzing their classification.

The Board of Directors' meeting held on March 5, 2020 adopted an Internal Charter applicable to the Group in that respect.

In addition to describing the regulatory framework applicable to the agreements entered into in the ordinary course of business, the Internal Charter provides for an annual assessment of the conditions under which agreements are entered into in the ordinary course of business to be carried out by the Legal Department.

Any parties that have a direct or indirect interest in an agreement are prohibited from taking part in the corresponding assessment.

This Internal Charter is available on the Company's website (www.cgg.com/investors/corporate-governance) and included in an appendix to this Document.

The latest annual assessment was reviewed by the Board of Directors on March 4, 2021.

4.1.6 Declaration from the Company's Directors and corporate officers *(mandataires sociaux)*

In the knowledge of the Company, as of the date of this Document:

- there is no family link between the members of the Board of Directors and the other main corporate officers of the Company;
- none of the members of the Board of Directors or of the corporate officers *(mandataires sociaux)* has been sentenced for fraud during the past five years;
- none of them has been associated, as corporate officer, to bankruptcy, sequestration or liquidation process during the last five years nor had they received any offense and/or official public penalty from statutory or regulatory authorities;
- none of them has been prevented to act as member of a Board or Supervisory Board of an issuer or to participate in the management of the conduct of business of an issuer during the last five years at least;
- there are no potential conflicts of interests between the duties of the Directors, the Chairman of the Board and the Chief Executive Officer towards the Company and their respective private interests or their other duties;
- there is no service agreement entered into between the Directors and corporate officers, and the Company or any of its subsidiaries, providing for specific benefits under this agreement.

4.1.7 Transactions entered into between the Company and its corporate officers and/or shareholder holding more than 10% of the voting rights in the course of 2020

The list of transactions entered into in the course of 2020 between the Company and companies or subsidiaries having common Directors or common corporate officers is reflected in the Statutory Auditors' special report on related party agreements in section 4.1.8 of this Document.

4.1.8 Statutory Auditors' special report on regulated agreements

This is a translation into English of the statutory auditors' report on related party agreement and commitments 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. 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,

In our capacity as statutory auditors of your Company, we hereby report on certain regulated agreements.

We are required to inform you, on the basis of the information provided to us, of the terms and conditions and interest for the company of the agreements indicated to us, or that we may have identified in the performance of our engagement. We are not required to comment as to whether they are beneficial or appropriate or to ascertain if any other agreements and commitments exist. It is your responsibility, in accordance with article R225-31 of the French Commercial Code, to evaluate the benefits resulting from those agreements prior to their approval.

In addition we are required, where applicable, to inform you, in accordance with article R225-31 of the French Commercial Code, of any agreements previously approved by shareholders which were executed during the year.

We performed the procedures which we considered necessary to comply with the professional guidance applicable in France to this type of engagement. The procedures consisted of verifying that the information provided to us was consistent with the documentation from which it was extracted.

Agreements subject to the approval of the general meeting of shareholders

Agreements authorized and signed in 2020

We hereby inform you that we have not been advised of any agreements authorized and signed during year that should be submitted for approval to the shareholders' meeting in accordance with article L. 225-38 of the French Commercial Code.

Agreements already approved by the general meeting of shareholders

Agreements approved during previous years which continued to be executed during the latest year

In accordance with Article R225-30 of the French code of commercial law, we were informed that the following agreements, previously approved by general meetings of shareholders of previous fiscal years, continued to be executed during the year.

Extension of the benefit of the Group's general benefits and health plan to Mr. Philippe Salle, Chairman of the Board of Directors and Ms. Sophie Zurquiyah, Chief Executive Officer

Terms and conditions:

At its meeting of April 26, 2018, the Company's Board of Directors authorized the extension of the application to Mr. Philippe Salle and Ms. Sophie Zurquiyah of the Group's general benefits and health plan applicable to all Group employees. This commitment has been approved by the general meeting held on May 15, 2019.

Amount paid during the period:

The subscriptions paid by the company for 2020 amounted to €4,050 for Mr. Philippe Salle and €4,502 for Ms. Sophie Zurquiyah.

International individual health insurance to the benefit of Ms.Sophie Zurquiyah, Chief Executive Officer and Director

Terms and conditions:

At its meeting of April 26, 2018 the Company's Board of Directors authorized the conclusion of an international individual health insurance benefiting to the Chief Executive Officer with effect from her date of appointment. The applicable contract was entered into by CGG Services (U.S.) Inc., a subsidiary indirectly fully controlled by CGG SA. This commitment has been approved by the general meeting held on May 15, 2019.

Amount paid during the period:

The subscription paid by CGG Services (U.S.) Inc. for 2020 amounted to USD 25,651.

Individual insurance covering loss of employment to the benefit of Ms. Sophie Zurquiyah, Chief Executive Officer and Director

Terms and conditions:

At its meeting of April 26, 2018 the Company's Board of Directors authorized the conclusion with GSC GAN of an individual insurance covering loss of employment, with effect from May 1, 2018. This guarantee provides a maximum amount payable of 14.36% of 2020 target compensation of Ms. Sophie Zurquiyah (€180,998) over a twelve months period. This commitment has been approved by the general meeting held on May 15, 2019.

Amount paid during the period:

The subscription paid for 2020 amounted to €11,261.

Collective defined contribution scheme applicable to to Ms. Sophie Zurquiyah, Chief Executive Officer and Director (article 83)

Terms and conditions:

At its meeting of April 26, 2018 the Company's Board of Directors authorized the application to Ms. Sophie Zurquiyah of the Group's article 83 collective defined contribution scheme implemented since January 1, 2005 to the benefit of members of the Group's executive bodies in France. This commitment has been approved by the general meeting held on May 15, 2019.

This supplementary benefit plan supplement the level of pension paid by the mandatory French pension plans. It is subject to the following subscription limits:

- Social security Tranche A: 0.5% of employee contribution and 1.0% of employer's contribution;
- Social security Tranche B: 2.0% of employee contribution and 3.0% of employer's contribution;
- Social security Tranche C: 3.5% of employee contribution and 5.0% of employer's contribution.

The subscription is based on gross annual compensation limited to basic salary, annual variable compensation and benefit in kind concerning a vehicle, to the exclusion therefore of any other element of remuneration.

Amount paid during the period:

The subscription paid for 2020 amounted to €12,341.

Agreements approved in previous years that did not remain in force during the year

In addition, we have been informed of the continuation of the following agreements, already approved by the General Meeting in prior years, which were not implemented during the year.

Amendments of the non-compete commitment between the Company and Ms Sophie Zurquiyah, Chief Executive Officer and Director

Terms and conditions:

At its meeting of April 26, 2018, and following proposal by the Appointment and Remuneration Committee, now named "Appointment, Remuneration and Governance Committee", the Company's Board of Directors authorized the conclusion of a non-compete undertaking between the Company and Ms. Sophie Zurquiyah.

This undertaking covers a period of eighteen months and applies to services involving the acquisition, processing or interpretation of geophysical data, or the supply of equipment or other products designed for the acquisition, processing or interpretation of geophysical data, and implying Sophie Zurquiyah's contribution to projects or other activities in the same domain as for Ms. Sophie Zurquiyah's activity within CGG.

As consideration for her undertaking, Ms. Sophie Zurquiyah would receive remuneration corresponding to 100% of her annual reference compensation as defined by her contractual termination indemnity.

This commitment had been approved by the general meeting held on May 15, 2019.

On the proposal of the Appointment and Remuneration Committee, now named "Appointment, Remuneration and Governance Committee", the Board of Directors authorized on December 11, 2019, the amendment to the non-compete commitment. The amendments relate to the following two elements:

- First, the indemnity will not be paid if Ms. Sophie Zurquiyah claims her pension rights and, in any event, beyond the age of 65; and
- Second, the non-compete indemnity will now be paid in instalments.

The amendment to this commitment has been approved by the general meeting held on June 16, 2020.

Agreements approved during the year ended December 31, 2020 without execution during the past year

In addition, we have been informed of the continuation, during the past year, of the following agreement, already approved by the general meeting held on June 16, 2020 on the basis of the special report of the statutory auditors of April 14, 2020 and which has not been executed during the past year.

Contractual termination indemnity (protection letter) benefiting to Ms Sophie Zurquiyah, Chief Executive Officer and Director

Terms and conditions:

The Board of Directors' meeting of April 26, 2018 authorized the implementation of a contractual termination indemnity to the benefit of Ms. Sophie Zurquiyah.

As originally drafted, this contractual termination indemnity might be paid to Ms. Sophie Zurquiyah in the following cases:

- In case of revocation, non-renewal or any other instance of forced departure (leading to resignation) linked to a change of control and not reflecting any situation of failure to achieve the performance criteria mentioned below. Any departure within twelve months of a change of control would be deemed to constitute a forced departure;
- In case of revocation in the absence of any gross or serious misconduct and not reflecting any situation of failure to achieve the performance criteria mentioned below.

This commitment had been approved by the general meeting held on May 15, 2019.

At its meeting of March 5, 2020, and following proposal by the Appointment and Remuneration Committee, now named "Appointment, Remuneration and Governance Committee", the Company's Board of Directors authorized the amendment to the signed agreement between the Company and Ms. Sophie Zurquiyah defining the terms of a possible contractual termination indemnity in order that no compensation would be paid if Ms. Sophie Zurquiyah resigned of her position of Chief Executive Officer or is able to exercise her retirement rights at the time of her departure.

The contractual termination indemnity would be equal to the difference between (i) a gross amount of 200% of the applicable annual reference compensation, including any and all amounts to which Ms. Sophie Zurquiyah may be entitled to as a result of said termination, and (ii) any sums to be paid further to the application of her non-compete undertaking.

The applicable annual reference compensation is defined as the fixed compensation received during the twelve-month period preceding the departure date, to which is added the yearly average of the variable compensation received over the thirty-six months preceding the departure date. In the event of departure within less than twelve months, the fixed compensation would be reconstituted on an annual basis. The applicable variable compensation would be calculated taking into account the annual levels of achievement determined by the Board of Directors since the start of the appointment.

On March 5, 2020, the Board of Directors also reviewed the scale used to assess performance conditions to which the payment of the special termination indemnity is subject. This payment is namely correlated to the average achievement of the objectives underpinning the variable annual compensation of the last three fiscal years, according to the following rule:

- If the average achievement rate is inferior to 80% (versus 60% before), no special termination indemnity will be paid;
- If the average achievement rate is equal or superior to 80% and inferior to 90% (versus an average rate of 60% before), the contractual termination indemnity will be due at 50% of its amount (versus 60% before);
- If the average achievement rate is equal or superior to 90% (versus 60% before), the contractual termination indemnity will be due on a straight-line basis between 90% and 100% of its amount (versus 60% and 100% before).

Should those provisions require application during the first three years of the Chief Executive Officer's appointment, the assessment of the achievement of the applicable performance conditions would be performed as follows: In the event of departure in 2020, the Board of Directors would exceptionally determine the average achievement rate on the basis of the two fiscal years preceding the date of notice of termination.

The Board of Directors must verify, prior to payment of the special termination indemnity, (i) that the applicable performance conditions have been met; and (ii) that the special termination indemnity remains compliant with the company's code of corporate governance in force at the departure date.

The amendment to this commitment has been approved by the general meeting held on June 16, 2020.

The Statutory auditors

Mazars	ERNST & YOUNG et Autres	
Paris-La Défense, March 5, 2021	Paris-La Défense, March 5, 2021	
Jean-Louis Simon	Nicolas Pfeuty	Claire Cesari-Walch

4.2 REMUNERATION

4.2.1 Remuneration policy for corporate officers

This remuneration policy has been established in accordance with the provisions of Article L. 22-10-8 of the Commercial Code.

As of the date of this report, the Company's corporate officers are Mr. Philippe SALLE, Chairman of the Board of Directors and Mrs. Sophie ZURQUIYAH, Chief Executive Officer of the Company, as well as all the members of the Board of Directors ("the Directors").

For the purposes of this report and pursuant to the provisions of the Code of Corporate Governance for Listed Companies (hereinafter "the AFEP-MEDEF Code"), "executive corporate officers" shall mean the Chief Executive Officer and any Deputy Chief Executive Officers. The executive corporate officers, the Chairman of the Board of Directors and the Directors are collectively referred to as "corporate officers".

4.2.1.1 Information relating to all corporate officers

a) Decision-making process and general principles

a. Determination of the remuneration policy

The remuneration policy for corporate officers is determined by the Board of Directors on the recommendation of the Appointment, Remuneration and Governance Committee. This policy is regularly reviewed and discussed by the Board of Directors in order to be in accordance with corporate interest of the Company, contribute to its sustainability and be in line with its business strategy.

The Company has defined its corporate social responsibility via four cornerstones which form the heart of the Company's day-to-day focus – its employees, its sustainability as a company, the fight against corruption, and the environment. Through an ongoing and forward-looking approach, every effort has been made to identify, prevent, manage and resolve all risks linked to these four fields, both at a site and/or project level as well as at the level of governance bodies. These key areas of focus are at the foundations of the Company's commercial strategy, which is defined via promotion and development objectives within the industry, building long-term relationships, developing alliances with major clients and partners, and on a global level, sustaining operational performance. These various elements are implemented by ensuring the Company attracts and retains key skills in a stimulating work environment while maintaining the health and safety of all.

As such, the remuneration policy complies with the following general principles, which are established in accordance with the provisions of the AFEP-MEDEF Code to which the Company refers:

- **balancing principle**: Care is taken to ensure that there is a good balance between the different components of the remuneration package and that none of its elements is disproportionate;
- **comparability principle**: The positioning of the remuneration of the Company's corporate officers is regularly reviewed in relation to that of companies in the sector and comparable markets, on the basis of studies carried out by specialized external firms. Thus, the Group's practices are consistent and competitive with market practices to ensure the retention of key executives and to support the Company's business strategy;
- **principle interest alignment and link to performance**: In general, the Board of Directors and the Appointment, Remuneration and Governance Committee pay particular attention to ensuring that the remuneration policy for Executive corporate officers is in line with the Company's performance and oriented towards the creation of long-term value (quantifiable criteria) as well as Group's strategic priorities and corporate social and environmental responsibility (qualitative criteria). Consequently, the main purpose of the remuneration policy is to encourage the achievement of ambitious strategic objectives by setting demanding short, medium and long-term performance criteria.

The global remuneration policy for executive corporate officers focuses on the variable portion of remuneration, which is at risk for the beneficiary. Thus, their remuneration structure includes a significant variable component aimed at aligning executive remuneration more directly with the Group's business strategy and social purpose while encouraging performance. The long-term remuneration tools put in place by the Company also represent a significant part in linking the remuneration of the corporate officers to the interests of the shareholders.

Therefore, this policy makes it possible to remunerate, in an appropriate manner, decision-making that creates long-term value for the Company, ensuring its sustainability.

A suitable remuneration policy is essential, particularly taking into account the cyclical nature of the Group's activity, in order to attract, motivate and retain talent while generally ensuring a good level of competitiveness for remuneration packages. This dual objective of attracting and retaining talent was one of the principal strands of the general sustainable development policy across all employees.

The Group Human Resources policy enables employees to benefit from a working environment and conditions that encourage professional achievement, in order to bring the best out of human capital. The Group guarantees a uniform remuneration system in line with local practices. To that end, all employees benefit from a remuneration policy built on principles of competitiveness, attractiveness and motivation, which at the same time meets market practices and encourages improvement in Company's performance in order to serve both the Company's commercial strategy and corporate purpose (please refer to Chapter 3 "Statement on non-financial performance" of the 2020 Universal Registration Document for more details).

The Company has implemented, at Group level, an annual variable remuneration policy named the Global Performance Incentive Plan (GPIP). This policy applies to most employees and to executive corporate officers. The financial portion of the GPIP policy is based on financial objectives related to the activity, which depends on each business line and which takes into account directives provided by the Board of Directors. The individual portion is based on non-financial objectives related to the Group's strategic and operational development. This scheme ensures the alignment of the remuneration conditions applied across the Group with Company's and shareholders' interests.

b. Review of the remuneration policy

The Group remuneration policy is regularly reviewed, taking into account market practices and how competitors have evolved in order to ensure consistency at both a global and industry level. Concerning executive corporate officers, the Company works with specialized external firms whose comments are submitted to the Appointment, Remuneration and Governance Committee. The latter then shares its recommendations with the Board of Directors for their decision-making process.

c. Implementation of the remuneration policy

The remuneration policy applicable to the corporate officers will be implemented by the Board of Directors, in compliance with applicable legal, regulatory and statutory frameworks and in respect of the general principles outlined in section 4.2.1 of the present Document.

The Appointment, Remuneration and Governance Committee meets regularly to verify that the remuneration policy adopted by the General Meeting is correctly applied.

d. Role of the Appointment, Remuneration and Governance Committee

The tasks of the Appointment, Remuneration and Governance Committee in determining, reviewing and implementing the remuneration policy are defined in section 4.1.4.2.a) of the present Document.

The Appointment and Remuneration Committee was created on March 15, 2000 on the initiative of the Board of Directors. On June 16, 2020, this Committee became the Appointment, Remuneration and Governance Committee, reflecting its missions in a more appropriate manner.

The Appointment, Remuneration and Governance Committee is composed of more than 50% Independent Directors. In accordance with the provisions of the AFEP-MEDEF Code, an Independent Director is a non-executive corporate officer of the Company or its group with no special interest in the Company or its group [1].

The Appointment, Remuneration and Governance Committee shall meet at least three times a year in order to consider:

- the remuneration allocated to each corporate officer;
- the allocation of long-term remuneration elements; and
- the procedures for evaluating the Board of Directors and the Chief Executive Officer.

The Appointment, Remuneration and Governance Committee assists the Board of Directors in determining the remuneration of the corporate officers, taking into account all of the general principles set forth above.

It makes proposals and recommendations regarding, in particular:

- the remuneration of corporate officers, including the procedures for determining the related variable portion and the possible allocation of benefits in kind;
- the elements of remuneration for corporate officers to be submitted to the annual General Meeting of Shareholders;
- all provisions relating to the retirement of corporate officers;
- the assessment of the financial impact of all remuneration components for corporate officers on the Company's financial statements;
- the implementation of share-based remuneration plans.

The Appointment, Remuneration and Governance Committee may also be assisted by an external and independent advisor specializing in remuneration issues.

e. Conflict of Interest

Directors

In accordance with the Internal Regulations of the Board, each Director must inform the Board about any conflict of interest situation, even potential, that may directly or indirectly involve him/her because of the duties he/she may hold in other companies or because of personal interest. In such a case, the Director shall abstain from attending the debate and taking part in voting on the related resolution.

This obligation is complemented by an annual formal statement provided to the Company by each Director, testifying that he/she is not involved in any conflict of interest.

On March 5, 2020, the Board of Directors resolved to amend its Internal Rules and Regulations in order to enhance the Directors' attention on the topic of conflict of interest. These Internal Regulations are available on the Company's website.

(1) For more information about the independence of Directors, please refer to section 4.1.3.d) of this document.

Corporate officers who are not Directors

The corporate officers who are not Directors (Chief Executive Officer, Deputy Chief Executive Officer, as the case may be) must inform the Executive Leadership team or, in the case of a Chief Executive Officer not being a Director, the Board of Directors, in case of any real or potential conflict of interest situation with the Company.

In any case, and in case of any doubt, each corporate officer (being a Director or not) has the possibility to consult the Group Ethics Committee.

b) Application of the remuneration policy

Appointment of new corporate officers

In the event that a new Chairman is appointed, the principles, criteria and elements of remuneration provided in the Chairman's remuneration policy would apply.

In the event that a new Chairman and Chief Executive Officer/ Chief Operating Officer is appointed, the principles, criteria and elements of remuneration provided in the Chief Executive Officer's remuneration policy would apply.

In the event that a new Director is appointed, the principles, criteria and elements of remuneration set out in the remuneration policy for Directors would be applicable.

The Board of Directors, on the recommendation of the Appointment, Remuneration and Governance Committee, will then determine, adapting them to the situation of the person concerned, the objectives, performance levels, parameters, structure and maximum percentages in relation to their fixed annual remuneration, which may not exceed those of the Chairman, in the case of a new Chairman, of the Chief Executive Officer, in the case of a new Chief Executive Officer, or of the Directors, in the case of a Director.

Exceptions to the application of the remuneration policy

In the event of exceptional circumstances, the Board of Directors may, in accordance with Article L. 22-10-8, III paragraph 2 of the French Commercial Code, depart from the application of the remuneration policy when this departure is temporary, in accordance with the Company's interests and necessary to guarantee the Company's continuity or viability.

Same as for the remuneration policy approved by the General Meeting held on June 16, 2020 for the 2020 financial year, a modification to the remuneration policy is proposed for the 2021 financial year. This modification allows the possibility of deviating from the remuneration policy on the objectives relating to the variable remuneration of the Chief Executive Officer in 2021 in the event of exceptional circumstances linked to the Covid-19 crisis.

In order to take into account the exceptional situation linked to the potential prolongation of the Covid-19 crisis over the year 2021 and its unforeseeable impacts on the Company, the Board of Directors may, for the financial year 2021 alone and after consulting the Appointment, Remuneration and Governance Committee, adjust the component of the annual variable remuneration in light of the economic situation, which only concerns performance criteria and/or conditions. Under no circumstances may the ceiling of the annual variable remuneration be modified. The Board of Directors will justify these adjustments in detail in view of the impact on the Company's performance and the economic consequences resulting from these exceptional circumstances. Under no circumstances may the ceiling of the annual variable remuneration be modified.

These exceptions will be strictly implemented. Indeed, the annual variable remuneration will be submitted to the vote of the shareholders at the General Meeting and may only be paid in the event of a positive vote by the latter in accordance with the provisions of Articles L. 22-10-8 and L. 22-10-34, II of the French Commercial Code.

c) Consideration of the last vote of the General Meeting

Following the Annual General Meeting held on June 16, 2020, the Company approached the main shareholders who had voted against certain resolutions, in particular those relating to the remuneration of the Chief Executive Officer.

Thus, in January 2021, a dialogue was initiated with its main shareholders and the various consulting firms to inform them of changes in governance and the remuneration policy for the Company's corporate officers, and to ensure maximum convergence of expectations on all these issues.

The Company acknowledged the reasons and criteria of these shareholders and reminded them of the major principles of its remuneration policy for the Chief Executive Officer and the compliance of this policy with the AFEP-MEDEF Code.

d) Changes in remuneration policy

The remuneration policy proposed for 2021 does not include any substantial changes compared to the one approved by the General Meeting held on June 16, 2020 with respect to the financial year 2020.

A few minor changes have been made, notably on the following points :

- possibility to deviate from the remuneration policy on the objectives relating to the variable remuneration of the Chief Executive Officer in 2021 in the event of exceptional circumstances generated by the Covid-19 crisis;
- modification of the reference market for determining the Chief Executive Officer's remuneration;
- possibility of reducing the number of shares allocated to the Chief Executive Officer under the long-term remuneration plans in the event of circumstances which would make the use of equity instruments constraining;
- addition of details to the justifications to be provided in the event of a decision to maintain long-term remuneration in the case of the Chief Executive Officer's departure;
- reduction in the amount of remuneration for the attendance to a Board or a Board Committee meeting, due to the increase in the number of meetings over the year.

Each of these changes is detailed in the relevant part of the proposed remuneration policy for the financial year 2021.

4.2.1.2 Information relating to each Corporate officer

a) Remuneration policy applicable in 2021 to the 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 Company'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.

a. Term of office

On April 26, 2018, the Board of Directors appointed Mr. Philippe SALLE as Chairman for the duration of his office as Director. Mr. Philippe SALLE was appointed as Director for the first time on March 8, 2018, by cooptation in replacement of Mr. Loren Carroll, for the remainder of the term of office of his predecessor, i.e. until the end of the General Meeting to be held to approve the financial statements for fiscal year ending December 31, 2020. The renewal of Mr. Philippe SALLE's office as Director will proposed to the General Meeting to be held on May 12, 2021. In case of approval, Mr. Philippe SALLE will also be renewed in his capacity as Chairman of the Board of Directors.

Pursuant to Article 8 of the Company's articles of association, Directors are appointed for a 4-year term.

The Board of Directors may revoke the Chairman at any time. The Chairman's office comes to an end at the latest after the annual Ordinary General Meeting following the date on which he reaches the age of 65 years. However, the Board of Directors may further extend the office of the Chairman, once or several times for a total period not to exceed 3 years.

b. Total remuneration and benefits of any kind

i. Respective Importance of Remuneration Elements

The remuneration of the Chairman of the Board of Directors consists solely of fixed elements, to the exclusion of any variable or exceptional remuneration.

ii. Fixed remuneration

The Chairman of the Board of Directors may receive a fixed annual remuneration.

For the 2021 financial year, the fixed remuneration of Mr. Philippe SALLE is maintained at €170,000 gross on an annual basis by decision of the Board of Directors taken on March 4, 2021.

iii. Other short-term remuneration components

Social protection schemes

The Chairman of the Board may benefit from the social protection schemes set up for the Group's employees.

Consequently, the Chairman may benefit from an insurance scheme covering death and disability risks.

For the 2021 financial year, this coverage will continue to be provided by the insurance policy taken out with SwissLife.

Benefits are calculated on the basis of the contribution base consisting of gross annual remuneration.

This scheme is capped and guarantees:

- the payment of temporary incapacity and 2nd category invalidity benefits up to a maximum amount of €119,295 per year in addition to social security payment;
- the risk of death according to several options at the beneficiary's choice, the maximum amount of which is set at 32 PASS in case of accidental death;
- the payment of a spouse's pension, if applicable.

The benefit limits are set by the insurance contract and depend on the marital status at the time of death and the option chosen by the beneficiaries.

This scheme is capped as detailed below, and premiums are calculated in reference to the *plafond annuel de sécurité sociale* [Annual Social Security Ceiling] (PASS) and are set for the year 2021 at:

- tranche A – up to 100% of the PASS: 0.23% beneficiary premiums and 1.14% company premiums;
- tranche B – between 100% and 400% of the PASS: 1.52% beneficiary premiums and 1.57% company premiums;
- tranche C – between 400% and 800% of the PASS: 0.13% beneficiary premiums and 0.51% company premiums.

Premiums are paid on the employee's gross annual remuneration.

The Chairman may also benefit from medical coverage covering medical fees.

For the 2021 financial year, this coverage will continue to be provided by the insurance policy taken out with SwissLife.

Premiums are calculated in reference to the *plafond annuel de sécurité sociale* [Annual Social Security Ceiling] (PASS) and are set for the year 2021 at:

- a fixed fee of €33.40 borne by the beneficiary and of €33.40 borne by the Company;
- on top of which are paid premiums in proportion to earnings:
  - tranche A and B: up to 400% of the PASS: 0.52% beneficiary premiums and 0.52% company premiums.

Premiums are paid on the beneficiary's gross annual remuneration.

The amount of the premiums and the coverage provided are reviewed yearly, without necessarily being modified.

The above insurance contracts can be terminated by following standard legal procedure.

For the 2021 financial year, Mr. Philippe SALLE will benefit, as in 2020, from both of the above social protection schemes.

Benefits in kind

The Chairman of the Board may receive benefits in kind linked to the allocation of a company car.

For the financial year 2021, as in 2020, Mr. Philippe SALLE will not benefit from a company car.

iv. Remuneration allocated to Directors

The Chairman of the Board of Directors may receive remuneration allocated to the Directors.

The Chairman of the Board of Directors receives a fixed amount of Directors' fees, in his/her capacity as Director, which amount is approved by the Board of Director.

For the 2021 financial year, on the recommendation of the Appointment, Remuneration and Governance Committee, and subject to shareholder approval at the Annual General Meeting to be held on May 12, 2021, it will be proposed to pay an annual fixed remuneration of €70,000 as remuneration allocated to Directors, for the position as Chairman of the Board.

v. Other forms of remuneration

The Chairman of the Board of Directors does not receive any other form of remuneration. In particular, he does not perceive:

- any annual or multi-annual variable remuneration;
- any stock options or stock purchase options;
- any free or performance shares.

The Chairman of the Board of Directors does not benefit from any retirement benefits, non-compete indemnities or contractual severance payments.

b) Remuneration policy applicable in 2021 to 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 Company, 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 Company 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.

a. Term of office

On March 23, 2018, the Board of Directors appointed Mrs. Sophie ZURQUIYAH as Chief Executive Officer of the Company. This appointment became effective at the end of the Annual General Meeting held on April 26, 2018 and remain in force until the end of the General Meeting to be held to approve the 2021 financial statements. On April 26, 2018, the General Meeting approved the appointment of Mrs. Sophie ZURQUIYAH as Director for a 4-year term, in accordance with Article 8 of the Company's articles of association. It is hereby noted that the duration of the office of Mrs. Sophie ZURQUIYAH as Chief Executive Officer is the same as the duration of her office as Director.

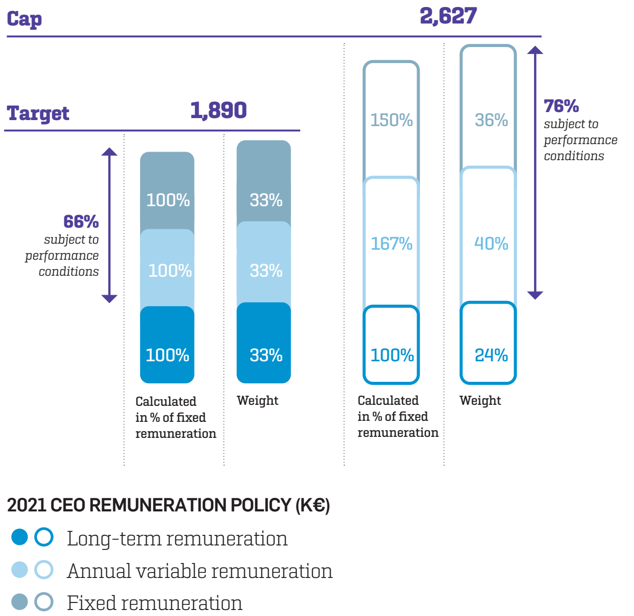
The Chief Executive Officer may be revoked at any time by the Board of Directors. The functions of Chief Executive Officer will terminate at the latest at the end of the Ordinary General Meeting which follows the date on which he reaches the age of 65 years. However, the Board of Directors may extend the Chief Executive Officer's term of office beyond this limit, all at once or on several occasions, for a total duration that may not exceed three years.

b. Total remuneration and benefits of any kind

i. Respective importance of remuneration elements

The total remuneration package is structured in a balanced way around the three main remuneration components (fixed remuneration, annual variable remuneration, long-term remuneration):

2021 CEO REMUNERATION POLICY *(in thousands of €)*



Details of the breakdown of the components of each element of remuneration are set out in the following paragraphs.

ii. Fixed Remuneration

In accordance with the AFEP-MEDEF Code, the remuneration of the Chief Executive Officer is reviewed annually by the Appointment, Remuneration and Governance Committee. On the other hand, its amount is not changed annually but at relatively long intervals (every two or three years).

Any increase shall be justified and explained.

If the Board of Directors decides, on the recommendation of the Appointment, Remuneration and Governance Committee, on a significant increase, this must be explained and take into account market practices.

Compared to the remuneration policy approved by the General Meeting held on June 16, 2020 for the 2020 financial year, a modification is proposed for the 2021 financial year relating to the modification of the reference market for the determination of of the Chief Executive Officer's remuneration as set out below.

To determine the Chief Executive Officer's remuneration, 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, financial services and insurance companies).

It should therefore be noted that the fixed remuneration of the Chief Executive Officer is currently positioned at the median of this comparison panel, used to benchmark positioning on the French market.

The fixed remuneration is used as a reference for determining the annual variable remuneration percentage and the valuation of long-term remuneration.

It is paid monthly.

For the 2021 financial year, the Board of Directors held on March 4, 2021 decided to maintain the fixed remuneration of Mrs. Sophie ZURQUIYAH at €630,000 gross on an annual basis.

The stability of her fixed remuneration reflects the Board of Directors' desire to change it at relatively long intervals. In addition, the Board of Directors decided not to increase this fixed remuneration for fiscal year 2021 given the difficult market environment that the Group has been facing since March 2020.

iii. Annual variable remuneration

Methods of determination

Within the Group, the Company has set up an annual variable remuneration scheme which benefits most employees. This policy may vary with respect to the Group's objectives and strategy. To date, the Company has implemented a program called the Global Performance Incentive Plan (GPIP) also applicable to the Chief Executive Officer.

The Board of Directors and the Appointment, Remuneration and Governance Committee pay particular attention to ensuring that the Chief Executive Officer's annual variable remuneration policy is aligned with Company performance and focused on creating value in the long term (financial objectives) as well as the Group's strategic priorities (non-financial objectives).

The above criteria contribute to the objectives of the remuneration policy by directly aligning executive remuneration with the Group's commercial strategy (via criteria related to Group governance, relationships with major clients and partners, promotion and development within the industry) and social purpose (in particular via the criterion related to corporate social and environmental responsibility), while encouraging operational and financial performance.

In accordance with the AFEP-MEDEF Code, and in order to ensure that they are in line with the Company's short-term strategy, the criteria for annual variable remuneration are reviewed by the Board of Directors every year, without necessarily being modified.

The variable annual remuneration of the Chief Executive Officer is broken down into two parts:

- the first part is based on quantifiable criteria (2/3);
- the second is based on qualitative criteria (1/3).

Quantifiable criteria (financial objectives) are precisely defined by the Board of Directors in relation to the Group's budgetary objectives. They may include, but are not limited to, the following: (i) the Free Cash flow, (ii) EBITDA, (iii) the turnover for Group and (iv) the results of operations.

Qualitative criteria (non-financial objectives) are precisely defined by the Board of Directors in relation to the annual priorities for the Group. They may, in particular, and not exclusively, concern: (i) the governance of the Group, (ii) relationships with major customers, shareholders and the financial community, (iii) social and environmental responsibility, (iv) the promotion and development of the Group in its business sector, (v) the Group's operating performance and (vi) human resources.

The Board of Directors decides on the weighting assigned to the achievement of each of the considered criteria according to the context and their importance for the Group.

The amount of variable annual target remuneration (when 100% of the quantifiable and qualitative criteria are met) set for the Chief Executive Officer is expressed as a percentage of the fixed part of the remuneration.

Finally, as an incentive to outperform on quantifiable criteria, the annual variable remuneration program allows for the payment of amounts in excess of the target remuneration. This mechanism does not affect qualitative criteria. Therefore, annual variable remuneration may attain a maximum amount of 166.67% of the fixed remuneration.

Target objectives are not communicated for reasons of confidentiality. Nevertheless, the rate of achievement of each of the criteria is communicated a posteriori.

The indicators set each year by the Board of Directors for the Chief Executive Officer apply to all Group employees in order to ensure consistency between the variable remuneration policy for the Chief Executive Officer, senior executives and, more generally, other Group employees.

Method of evaluating performance criteria

The performance appraisal for the Chief Executive Officer regarding the qualitative criteria defined by non-financial objectives is carried out by the Appointment, Remuneration and Governance Committee. The level of achievement of the criteria is assessed in the presence of the Chairman who submits his observations to the Committee.

To conclude, the Appointment, Remuneration and Governance Committee shares its recommendations with the Board of Directors in order for the latter to reach a decision.

Terms of payment

The variable portion due in respect of a given financial year is determined by the Board of Directors approving the accounts for the same financial year. Thus, in accordance with Article L. 22-10-34, II of the Commercial Code, the payment of the variable portion due in respect of the year 2021 will be subject to the approval of the *ex-post* vote by the General Meeting called in 2022 to approve the financial statements for the financial year 2021. It shall be paid in the month following the validation of this payment by the General Meeting.

There is no possibility for the Company to claim back the annual variable remuneration and there are no other possible deferral periods.

Appointment or termination of mandate

In the event of the appointment or departure of the Chief Executive Officer during the year, these same principles would apply pro rata temporis for the period of office.

However, in the event of an appointment during the second half of the year, the performance assessment would be carried out at the discretion of the Board of Directors on a recommendation from the Appointment, Remuneration and Governance Committee.

Applicable remuneration in 2021

For the 2021 financial year, during the meeting held on March 4, 2021, the Board of Directors has decided not to modify the annual variable remuneration system applicable to the Chief Executive Officer and has determined the structure of the annual variable remuneration of Mrs. Sophie ZURQUIYAH and the applicable objectives.

The Board of Directors defined the financial objectives in relation to the Group's budgetary Objectives. The Extra-financial objectives have been defined in relation with the annual priorities of the Group and are based on:

- The implementation of the Group strategy and financial plan, including the preparation of the 2022-2024 strategic plan;
- The Company organization including the management of its talents, succession plans, as well as the diversity of its people;
- The achievement of Business and Operations objectives with a strong focus on clients and technology leadership and differentiation;
- The Company performance in Health, Safety, Environment and Sustainable Development as well as the growth of new initiatives related to the Energy transition.

The variable remuneration target amount is set at 100% of the fixed remuneration, split between 2/3 of financial objectives and 1/3 of extra-financial objectives. Its maximum amount is set at 166.67% of the fixed remuneration.

Variable remuneration for the 2021 financial year breaks down as follows:

Indicator	Target		Maximum	
	As a % of fixed remuneration	On a basis of 100	As a % of fixed remuneration	On a basis of 100
Financial objectives	**66.67%**	**66.67%**	**133.33%**	**80.00%**
Group net cash flow	16.67%	16.67%	33.33%	20.00%
EBITDA free assets	16.67%	16.67%	33.33%	20.00%
Group external sales	16.67%	16.67%	33.33%	20.00%
Operating income	16.67%	16.67%	33.33%	20.00%
Non Financial objectives	**33.33%**	**33.33%**	**33.33%**	**20.00%**
Group strategic and financial plans management	13.33%	13.33%	13.33%	8.00%
Organization and human resources management	6.67%	6.67%	6.67%	4.00%
Business and Operations performance management	6.67%	6.67%	6.67%	4.00%
HSE / Sustainable Development	6.67%	6.67%	6.67%	4.00%
OBJECTIVES TOTAL	**100.00%**	**100.00%**	**166.67%**	**100.00%**

In order to take into account the economic consequences resulting from exceptional circumstances, the Board of Directors may, after consultation with the Appointment, Remuneration and Governance Committee, modify the criteria and/or performance conditions of the annual variable remuneration. The Board will justify these adjustments in detail in view of the impact on the Company's performance and the economic consequences resulting from these exceptional circumstances.

iv. Remuneration allocated as a Director

The Chief Executive Officer, who would also be a Director of the Company, does not receive any remuneration allocated to the Directors.

v. Exceptional remuneration

No exceptional remuneration may be granted to the Chief Executive Officer by the Board of Directors, except in very special circumstances.

In the event of the payment of exceptional remuneration, this will be justified and explained by the Board of Directors both in terms of the determination criteria and the amounts awarded.

In any case, the exceptional remuneration could not exceed 150% of the Chief Executive Officer's fixed remuneration.

In accordance with Article L. 22-10-34, II of the Commercial Code, payment of such exceptional remuneration would be subject to the approval of the *ex-post* vote by the General Meeting convened to approve the financial statements for the previous financial year.

vi. Other short-term remuneration components

Social protection schemes

The Chief Executive Officer may benefit from the social protection schemes set up for the Group's employees.

Consequently, the Chief Executive Officer may benefit from an insurance scheme covering death and disability risks.

For the 2021 financial year, this coverage will continue to be provided by the insurance policy subscribed with SwissLife.

Benefits are calculated on the basis of the contribution base consisting of gross annual remuneration.

This scheme is capped and guarantees:

- the payment of temporary incapacity and 2nd category invalidity benefits up to a maximum amount of €119,295 per year in addition to social security payment;
- the risk of death according to several options at the beneficiary's choice, the maximum amount of which is set at 32 PASS in case of accidental death;
- the payment of a spouse's pension, if applicable.

The benefit limits are set by the insurance contract and depend on the marital status at the time of death and the option chosen by the beneficiaries.

Premiums are calculated in reference to the *plafond annuel de sécurité sociale* [Annual Social Security Ceiling] (PASS) and are set for year 2021 at:

- tranche A – up to 100% of the PASS: 0.23% beneficiary premiums and 1.14% company premiums;
- tranche B – between 100% and 400% of the PASS: 1.52% beneficiary premiums and 1.57% company premiums;
- tranche C – between 400% and 800% of the PASS: 0.13% beneficiary premiums and 0.51% company premiums.

The Chief Executive Officer may also benefit from medical coverage covering medical fees.

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For the 2021 financial year, this coverage will continue to be provided via an insurance policy subscribed with SwissLife.

Premiums are calculated in reference to the *plafond annuel de sécurité sociale* [Annual Social Security Ceiling] (PASS) and are set for the year 2021 at:

- a set fee of €33.40 for the beneficiary and €33.40 for the Company;
- on top of which premiums are paid proportionally to earnings:
  - tranches A and B: up to 400% of the PASS: 0.52% beneficiary premiums and 0.52% company premiums.

Premiums are paid on the beneficiary's gross annual remuneration.

Premiums amount and associated coverage are reviewed yearly, without necessarily being modified.

The above insurance contracts can be terminated by following standard legal procedure.

For the 2021 financial year, Mrs. Sophie ZURQUIYAH will benefit, as in 2020, from both of the above social protection schemes.

International medical insurance

Because of his/her frequent trips abroad, the Chief Executive Officer may benefit from an international medical insurance policy.

Benefits in kind

The Chief Executive Officer may receive a benefit in kind related to the allocation of a company car.

For the 2021 financial year, Mrs. Sophie ZURQUIYAH will benefit, as in 2020, from the social protection schemes applicable to the Group's employees, from an international medical insurance susbscribed by CGG Services (US) Inc. whose annual amount payable by the Company is estimated at €25,749 and from a company car which may not give rise to a benefit in kind in excess of €11,990.

vii. Multi-year variable remuneration

The Board of Directors has decided not to use a long-term variable remuneration mechanism to be paid in cash, preferring to align the remuneration of the Chief Executive Officer with the interests of the shareholders by favoring equity instruments, which helps ensure that the remuneration policy respects the social interest.

However, it is specified that this type of remuneration could be considered in the event of regulatory changes or circumstances that would make the use of equity instruments restrictive or impossible. In this case, the principles and criteria described for share-based plans will be incorporated in the structuring of such multi-annual remuneration by adapting the terms and conditions.

viii. Long-term remuneration

The Board of Directors, on the recommendation of the Appointment, Remuneration and Governance Committee and with the authorization of the General Meeting, grants the Chief Executive Officer long-term remuneration which may take the form, in particular, of stock options covered by Articles L. 225-177 *et seq.* and L. 22-10-56 *et seq.* of the French Commercial Code or performance shares covered by Articles L. 225-197-1 *et seq.* and L. 22-10-59 *et seq.* of the French Commercial Code, or any other plan linked to the growth of the share.

The long-term remuneration instruments implemented by the Company contribute to the objective of the remuneration policy by rewarding executives' loyalty and by linking executive corporate officer remuneration to shareholder interests and more globally to the Company's social purpose. This policy enables the Company to reward long-term value creation for the Company, ensuring its sustainability.

In addition, these plans are not reserved solely for the Group's managers; they may also benefit employees who have contributed to the Group's performance or who have strong potential for development within the Group. As a result, the long-term remuneration policy addresses the objectives to attract and retain talents included in the Group remuneration policy.

As a rule, grants are made annually in the first half of the year after the closing of the accounts for the previous financial year in the form of stock-options and/or performance shares.

No discount is applied when stock-options are granted or acquired. The purchase price is at least equal to the average share price over the twenty trading days preceding the Board's decision.

The implementation of these plans is subject to performance and attendance conditions for Group executives. Thus, the Chief Executive Officer may benefit from a stock options and performance shares plan subject to the fulfilment of performance conditions in respect of the following years, with an acquisition period of at least three years.

The target of the total allocation linked to long-term remuneration in shares and options is equal to 100% of the Chief Executive Officer's fixed remuneration, without being able to exceed a ceiling of 150% of this same fixed remuneration.

Compared to the remuneration policy approved by the General Meeting held on June 16, 2020 for the 2020 financial year, a modification to the remuneration policy is proposed for 2021 financial year relating to the addition of details to the justifications to be provided in the case of a decision to maintain long-term remuneration in the event of the Chief Executive Officer's departure.

In accordance with the provisions of the AFEP-MEDEF Code, in the event of exceptional circumstances, the performance conditions may be modified during the period in question. In this case, these amendments shall be made public after the meeting of the Board of Directors that adopted them. Changes in performance conditions must maintain the alignment of the interests of shareholders and beneficiaries.

In the event of the departure of Executive Directors before the expiry of the period provided for the performance conditions assessment, the Board of Directors will decide whether to maintain all or part of their long-term remuneration. Its decision will be duly justified if this remuneration is maintained or paid. In the event of retirement, stock-options and/or performance shares in the process of acquisition will be reduced in proportion to the time spent in service over the acquisition period and the beneficiary will remain subject to all the provisions of the plans.

The Board of Directors determines the minimum number of registered shares outcomes of the allocations that the Chief Executive Officer must keep until his term of office. In addition, the Chief Executive Officer must, as a Director of the Company, hold 20,000 (twenty thousand) shares in the Company. The combination of these obligations will enable the Chief Executive Officer to hold a significant number of securities.

The obligation to keep in registered form shares resulting from the allocation of performance shares and the exercise of stock-options granted applies until the value of all the shares retain in registered form represents two years of fixed and variable annual cash remuneration. Above this threshold, the retention obligations no longer apply.

Allocation for the 2021 financial year

For the 2021 financial year, subject to the approval from the General Meeting to be held on May 12, 2021, the Board of Directors intends to maintain the same long-term remuneration policy applicable to corporate officers as in 2020 based on a mix of stock options and performance shares. These grants will be subject to a vesting period of at least three years and to demanding performance conditions that have been especially reviewed and made more stringent in 2020 for stock option grants.

The target of the total allocation linked to long-term remuneration in shares and options is equal to 100% of the fixed remuneration of the Chief Executive Officer, without being able to exceed a ceiling of 150% of this same fixed remuneration.

Same as for the remuneration policy approved by the General Meeting held on June 16, 2020 for the 2020 financial year, a modification to the remuneration policy is proposed for the 2021 financial year relating to the possibility of reducing the number of shares allocated to the Chief Executive Officer under the long-term remuneration plan in the event of circumstances which would make the use of equity instruments constraining.

Thus, in order to take into account the impact of a low share price on the valuation of the long-term remuneration awarded, and in view of the allocation envelope voted constrained by the effects of dilution, the Board of Directors may decide to award the Chief Executive Officer a number of shares whose overall valuation will be lower than the target of the remuneration policy.

It should be noted that the long-term remuneration of the Chief Executive Officer has been positioned, for several years, below the median of companies in the comparison panel used for the positioning benchmark on the French market. In 2020, the Chief Executive Officer's allocation is in the first distribution quartile of the Group's reference market.

Performance conditions applicable to performance shares that may be granted for the 2021 fiscal year will be subject to the terms of the 16th resolution approved by the General Meeting held on June 16, 2020, in accordance with Articles L. 225-197-1 *et seq.* of the French Commercial Code.

In the same way, performance conditions applicable to stock-options that may be granted for the 2021 fiscal year will be subject to the terms of the 17th resolution approved by the General Meeting held on June 16, 2020 in accordance with Articles L. 225-177 *et seq.* of the French Commercial Code.

ix. Supplementary pension plans

Defined contribution pension plan (Article 83 of the CGI (Code général des impôts [General Tax Code]))

In order to enable the Group's senior executives to supplement the level of pension paid by the mandatory French pension plans, a supplementary funded collective pension plan has been put in place since January 1, 2005.

The Chief Executive Officer benefits from this pension plan.

This scheme is capped as such and calculated with reference to the *plafond annuel de sécurité sociale* [Annual Social Security Ceiling] (PASS):

- tranche A – up to 100% of the PASS: 0.5% beneficiary contribution and 1% company contribution;
- tranche B – above 100% of the PASS and up to 400% of the PASS: 2% beneficiary contribution and 3% company contribution;
- tranche C – above 400% of the PASS and up to 800% of the PASS: 3.5% beneficiary contribution and 5% company contribution.

The contribution base consists exclusively of the gross annual remuneration for the year declared, the base salary, the annual variable remuneration and the benefit in kind (car). This base excludes, as a matter of principle, any other element of remuneration.

Pension rights under this scheme may be liquidated, at the earliest, when the beneficiary has liquidated his pension rights under the general social security scheme. The above scheme can be terminated by following standard legal procedure.

For the 2021 financial year, Mrs. Sophie ZURQUIYAH will benefit, as in 2020, from the above-mentioned defined contribution pension scheme. The estimated amount for the 2021 fiscal year is €20,774, of which €12,341 to be borne by the Company.

Alternative pension plan

The Board of Directors may decide to set up an alternative retirement plan for the benefit of the Chief Executive Officer, giving preference to defined contribution plans or any other similar mechanism, depending on legislative and regulatory developments.

This plan would be subject to the fulfillment of demanding performance conditions defined by the Board of Directors, in accordance with the legislation in force and with the recommendations of the AFEP-MEDEF Code to which the Company refers.

x. Individual unemployment insurance

The Chief Executive Officer, not benefiting from an employment contract, is not subject to the legislation of ordinary law concerning remuneration for unemployment when he/she loses his/her job. The Board of Directors may therefore authorize the conclusion of a specific unemployment guarantee for his/her benefit.

For the 2021 financial year, Mrs. Sophie ZURQUIYAH will benefit, as in 2020, from individual unemployment insurance. The amount to be borne by the Company for the 2021 year is €11,261.

xi. Contractual termination indemnity in the event of departure from the Group

The Chief Executive Officer of the Company may benefit from a contractual termination indemnity in the event of departure from the Group, the terms and conditions of which are defined by the Board of Directors on a recommendation from the Appointment, Remuneration and Governance Committee.

The contractual termination indemnity may only be paid in the event of a forced departure (in the absence of serious or gross misconduct). The amount of this indemnity is set as the difference between (i) a gross amount equal to 200% of the annual reference remuneration of the corporate officer and (ii) any sums to which the Chief Executive Officer may be entitled as a result of the termination of his corporate office, in particular, the indemnity likely to be paid under the Chief Executive Officer's non-compete commitment. The total amount of the contractual termination indemnity is therefore capped at 200% of the annual reference remuneration.

The annual reference remuneration is exclusively comprised of the annual fixed remuneration paid over the 12-month period prior to the notice date, 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 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. If the aggregate amount exceeds that amount, the contractual termination indemnity will be reduced to the level of the aforementioned cap.

No remuneration will be paid if the Chief Executive Officer is able to exercise his retirement rights at the time of his departure.

The payment of the contractual termination indemnity is contingent on achieving a performance condition. This performance condition is defined by the Board of Directors, as the average rate of achievement of the objectives related to the Chief Executive Officer's annual variable remuneration, as measured over the three complete financial years prior to the date of the Chief Executive Officer's termination.

The above performance condition, derived from the achievement of variable remuneration performance criteria, contributes to the remuneration policy's objectives by aligning the Chief Executive Officer's remuneration with Group strategy and social purpose while encouraging operational and financial performance.

The payment of the indemnity will be contingent upon the recognition by the Board of Directors of the achievement of the above performance condition as appraised on the date of termination, following the conditions contained in the applicable legal framework.

The terms of payment and the assessment of the performance conditions of the indemnity comply with the recommendations of the AFEP-MEDEF Code.

Contractual termination indemnity in force

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 Company 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.

xii. Non-compete commitment

In order to protect the Group's interests in the event of the departure of certain senior executives, including the Chief Executive Officer, the Company provides for the application of non-compete clauses.

This commitment applies to activities involving the acquisition, processing or interpretation of geophysical data, or the provision of equipment or products designed for the acquisition, processing or interpretation of geophysical data, and involving the individual's contribution to projects or activities in the same field as those in which he or she participated within CGG group.

In consideration for this commitment for a term defined at the conclusion of the agreement, the Chief Executive Officer receives remuneration corresponding to a percentage of his/her annual reference remuneration. For the determination of these elements, the Company refers to the recommendations of the AFEP-MEDEF Code and also provides for a stipulation authorizing the Board of Directors to waive the implementation of the clause upon the beneficiary's departure.

The indemnity shall be paid in instalments and shall not be payable when the person concerned claims his/her pension rights and, in any event, beyond the age of 65 years.

The non-compete commitment exists for the protection of the Group's interest, and the non-compete indemnity fulfils 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 related financial remuneration would be owed on that basis.

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 Company 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.

xiii. Indemnity for taking-up position

The Board of Directors may, if necessary, grant an indemnity for taking-up position to a new Chief Executive Officer coming from a company outside the Group in accordance with the AFEP-MEDEF recommendations. The payment of this indemnity, which may take different forms, is limited to compensating for the loss of the benefits enjoyed by the executive and must be duly substantiated.

c) Remuneration policy applicable to Directors in 2021

a. Term of office

The Directors are appointed for a four-year term. The dates of appointment, renewal and termination of each Director are summarized in the table below:

	First appointment	Last renewal	Expiration date
Mr. Philippe SALLE	March 8, 2018 [b]	n.a.	General Meeting 2021 [c]
Mrs. Sophie ZURQUIYAH	April 26, 2018	n.a.	General Meeting 2022
Mr. Michael DALY	September 30, 2015 [b]	October 31, 2017	General Meeting 2021 [c]
Mr. Patrice GUILLAUME [a]	December 15, 2017	n.a.	General Meeting 2021 [d]
Mrs. Anne-France LACLIDE-DROUIN	October 31, 2017	n.a.	General Meeting 2021 [c]
Mrs. Helen LEE BOUYGUES	March 23, 2018 [b]	June 16, 2020	General Meeting 2024
Mrs. Colette LEWINER	March 8, 2018 [b]	May 15, 2019	General Meeting 2023
Mrs. Heidi PETERSEN	March 23, 2018 [b]	June 16, 2020	General Meeting 2024
Mr. Mario RUSCEV	March 8, 2018 [b]	May 15, 2019	General Meeting 2023

(a) Director representing the employees.
(b) Appointment by cooptation of another Director in office.
(c) The renewal of this office is submitted to the General Meeting to be convened to approve the financial statements ending on December 31, 2020.
(d) Mr. Patrice GUILLAUME's office as Director will expire at the end of the 2021 General Meeting. As of the date of this Document, a procedure to elect a new Director representing the employees is on-going with the Group Committee.

b. Allocation rules applicable to the Directors' remuneration

i. 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.

ii. General distribution rules[1]

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, 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.

iii. Specific rules applicable to the Chairman of the Board, the Chief Executive Officer and the Director(s) representing the employees

Chairman of the Boards of Directors

The Chairman of the Board receives:

- in his/her capacity as Director: a fixed amount of Directors' fees, as well as travel indemnity (if any), as set-out in the table below; and
- in his/her capacity as Chairman of the Board: a fixed remuneration, as described in section 4.2.1.2.a) of this Universal Registration Document.

The Chairman also benefits from travel indemnities, as the case may be.

Chief Executive Officer

The Chief Executive Officer, who would also be a Director of the Company, does not receive any Directors' fees nor any travel indemnity. The various remuneration components of the Chief Executive Officer are as described in section 4.2.1.2.b) of this Universal Registration Document.

Director(s) representing the employees

The Director(s) representing the employees, appointed pursuant to Article 8 of the Company's articles of association, do(es) not receive any remuneration pursuant to his/her/their office as Director nor any travel indemnity. He/she/they receive(s) a salary pursuant to the employment agreement he/she/they entered into with the Company or any of its affiliates.

(1) Subject to the specific rules described below.

c. 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 [a]	€7,000
Chairman of the Audit and Risk Management Committee [a]	€10,000
Member of the Audit and Risk Management Committee [a]	€5,000
Chairman of any Board Committee other than the Audit and Risk Management Committee [a]	€4,000
Member of any Board Committee other than the Audit and Risk Management Committee [a]	€2,000

(a) 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 [a]

	Variable remuneration
Attendance to a Board meeting	€3,570
Attendance to a Board Committee meeting	€1,785

(a) 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 [a]

	Travel indemnity
Intercontinental travel	€2,000
Travel within the same continent	€500

(a) 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.

d. 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 Company.

e. Expenses

Travel expenses incurred by reason of the attendance to Board and Board Committee meetings are reimbursed by the Company.

f. 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 Company.

Note: 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 Document, 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.

4.2.2 Global remuneration of Corporate officers in 2020

4.2.2.1 Information relating to each corporate officer

A. Total annual remuneration of the Chairman of the Board of Directors for the 2020 financial year

a. Consideration of the last vote of the General Meeting

The General Meeting of June 16, 2020 approved resolution no. 8 regarding the information provided for in Article L. 22-10-9 of the French Commercial Code and relating to the remuneration paid or allocated to corporate officers for the year ended December 31, 2019.

In light of this positive vote, the Company has maintained, in 2021, the practices applied to the remuneration of corporate officers in 2020 (notably remuneration policy and information), with the exception of a few minor adjustements referred to in section 4.2.1.1.d) of this Document.

b. Compliance of the remuneration paid with the remuneration policy

The remuneration paid to the Chairman of the Board of Directors complies with the principles and criteria for determining, distributing and allocating the elements of fixed, variable, exceptional remuneration and all benefits of all kinds attributable to the Chairman of the Board of Directors approved by the General Meeting held on June 16, 2020 and applicable for the 2020 financial year.

The remuneration paid to the Chairman of the Board of Directors complies with the long-term financial and extra-financial performance objectives of the Company.

For the 2020 financial year, the Company did not deviate nor derogate from the procedure for implementing the remuneration policy.

c. Total remuneration and benefits of any kind

The gross remuneration amounts paid by the Company and the controlled companies to Mr. Philippe SALLE for 2019 and 2020 financial years are shown in the table below.

i. Fixed Remuneration

The table below presents the gross fixed remuneration of the Chairman of the Board of Directors and how it has changed:

	2019	2020	2019-2020 variation
Philippe SALLE, Chairman of the Board of Directors	€170,000 [a]	€170,000	0%

(a) Annualised amount.

The fixed remuneration of the Chairman of the Board of Directors on an annual basis remained unchanged compared to 2019.

ii. Other short-term remuneration elements

Social protection schemes

The Board of Directors, at its meeting of April 26, 2018, authorized, 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 of the general compulsory provident and health care scheme of the Group applicable to all employees, to Mr. Philippe SALLE, Chairman of the Board of Directors. For 2020, the amount corresponding to the expense borne by the Company under this scheme represents €4,050 for Mr. Philippe SALLE.

This commitment was ratified by the General Meeting held on May 15, 2019.

Benefits in kind

Mr. Philippe SALLE did not benefit from any benefit in kind (including company car) during 2020 financial year.

iii. Remuneration allocated to Directors

In accordance with the applicable allocation rules decided by the Board on June 25, 2020, Mr. Philippe SALLE received a fixed amount of remuneration allocated to the Directors of €70,000 for the financial year 2020 (no travel indemnity). This amount remained unchanged compared to 2019.

As the Board of Directors is composed in compliance with the provisions of Articles L. 225-18-1 and L. 22-10-3 of the French Commercial Code, payment of the remuneration provided for in the first paragraph of Article L. 225-45 and at the Article L. 22-10-14 of the aforementioned Code has not been suspended.

iv. Other forms of remuneration

The Chairman of the Board of Directors did not receive any other form of remuneration. In particular, he did not receive:

- any annual or multi-annual variable remuneration;
- any stock-options;
- any performance shares.

The Chairman of the Board of Directors did not benefit from any retirement benefits, non-compete indemnities or contractual termination indemnities.

d. Remuneration paid by a Company within the scope of consolidation

The Chairman of the Board of Directors did not receive any remuneration paid by the companies included in the scope of consolidation of the Company.

e. Respective importance of remuneration elements

The Chairman of the Board received only fixed items, to the exclusion of any variable or exceptional remuneration.

f. Equity/Pay ratio

(Pursuant to Article L. 22-10-9, 6° and 7° of the French Commercial Code).

The table below presents the median and average ratios of the overall remuneration of the Chairman of the Board of Directors., in accordance with the recommendation of the AFEP-MEDEF Code to which the Company refers. The ratio was calculated on the basis of the legal requirement, i.e. the top holding company CGG SA. Taking into account the small number of employees in that company, which does not allow to disclose representative date, the ratio was also calculated on the basis of Group's scope of consolidation in France (CGG SA, CGG Services SAS and Sercel SAS).

These two ratios have been calculated on the basis of remuneration paid in fiscal year 2020, i.e.:

- the 2020 fixed remuneration;
- the variable remuneration paid in 2020 for 2019;
- the exceptional remuneration paid in 2020 for 2019;
- the profit-sharing and participation paid in 2020;
- the Options and Performance shares definitively awarded during the 2020 [1] financial year (valued amount of the benefit under IFRS 2);
- the benefits in kind paid during the 2020 financial year;
- the employer contributions paid in respect of defined contribution plans paid in respect of the financial year 2020.

In the interest of consistency, employees' remuneration considers the following:

- the 2020 fixed remuneration;
- the variable remuneration paid in 2020 for 2019;
- the exceptional remuneration paid in 2020;

- the profit-sharing and participation paid in 2020;
- the Options and Performance shares definitively awarded during the 2020 [1] financial year (valued amount of the benefit under IFRS 2);
- the benefits in kind paid during the 2020 financial year;
- the employer contributions paid in respect of defined contribution plans paid in respect of the financial year 2020.

The procedure is the same as for previous years.

EQUITY/PAY RATIO BETWEEN THE LEVEL OF REMUNERATION OF THE CHAIRMAN OF THE BOARD OF DIRECTORS AND THE AVERAGE AND MEDIAN REMUNERATION OF THE EMPLOYEES OF THE SCOPE

The scope taken into account is that of the Group's employees located in France, including CGG SA, CGG Services SAS and Sercel SAS.

	2016	2017	2018 [a]	2019 [b]	2020
Chairman of the Board of Directors *(EUR)*					
Rémi Dorval [a]	178,110	170,810	170,810	n.a.	n.a.
Philippe Salle	n.a.	n.a.	n.a.	240,000	240,000
(evolution compared to the previous fiscal year)		*(4.1)%*	*0.0%*	*40.5%*	*0.0%*
Ratio gross salary Chairman/median gross salary employees of the Group in France	3.5	3.3	3.1	4.6	4.8
(evolution compared to the previous fiscal year)		*(5.6)%*	*(6.6)%*	*47.9%*	*4.1%*
Ratio gross salary Chairman/average gross salary employees of the Group in France	3.0	2.8	2.7	3.8	4.0
(evolution compared to the previous fiscal year)		*(5.8)%*	*(5.7)%*	*41.7%*	*6.7%*
Ratio gross salary Chairman/median gross salary CGG SA employees [b]	2.2	2.0	2.0	0.7	1.1
(evolution compared to the previous fiscal year)		*(10.1)%*	*(1.1)%*	*(62.0)%*	*49.0%*
Ratio gross salary Chairman/average gross salary CGG SA employees [b]	1.1	1.0	0.9	0.8	0.9
(evolution compared to the previous fiscal year)		*(5.4)%*	*(7.4)%*	*(14.8)%*	*18.3%*
Company's performance					
Segment EBITDA *(MUSD)* (IFRS restated 2016-2020)	386	434	556	721	361

(a) 2018 Chairman (Rémi Dorval) Fixed remuneration is annualized.
(b) CGG SA's headcount decreased from 28 employees in 2018 to 14 employees in 2019.

In the event of a change in leadership during the year, it is specified that the remuneration taken into account for the table above is that paid for the position. Compliance of the remuneration paid with the remuneration policy.

B. Total annual remuneration of the Chief Executive Officer for the 2020 financial year

a. Consideration of the last vote of the General Meeting

The General Meeting held on June 16, 2020 approved the resolution no. 8 concerning the information provided for in Article L. 22-10-9 of the French Commercial Code and relating to the remuneration paid or allocated to corporate officers for the year ended December 31, 2019.

In light of this positive vote, the Company has maintained, in 2021, the practices applied to the remuneration of corporate officers in 2020 (notably remuneration policy and information), with the exception of a few minor adjustements referred to in section 4.2.1.1.d) of this Document.

(1) For the sake of precision, only options ("Options") and shares subject to performance conditions ("Performance shares") definitively granted during the year have been valued. As such, this equity/pay ratio does not include Options and Performance Shares which:
- have not yet been definitively granted due to the application of the various vesting periods; or
- have not been definitively awarded due to the non-attainment of the performance conditions governing their definitive award.
This methodology differs from that used to calculate the equity ratio published in April 2020, which took into account all of the Options and Bonus Shares initially granted, thus representing a valuation of potential benefits that may not ultimately be granted.

b. Compliance of the remuneration paid with the remuneration policy

The remuneration paid to the Chief Executive Officer complies with the principles and criteria for determining, distributing and allocating the elements of fixed, variable, exceptional remuneration and all benefits of all kind attributable to the Chief Executive Officer approved by the General Meeting held on June 16, 2020 and applicable for the 2020 financial year.

The remuneration paid to the Chief Executive Officer complies with the long-term financial and extra-financial performance objectives of the Company.

For the 2020 financial year, the Company did not deviate nor derogate from the procedure for implementing the remuneration policy.

c. Total remuneration and benefits of any kind

In a March 2020 press release, the Board of Directors of the AFEP asked corporate officers of companies referring to the AFEP-MEDEF Code to reduce their total remuneration by one quarter for the period in which employees in their company were on short-time working.

It has to be reminded that During the Covid-19 crisis, CGG Group implemented actions enabling almost all of its employees to work remotely. Only a small number of the Group's employees were affected by the short-time working scheme (4%), and this for a very limited period of time, with net pay being maintained;

In that framework, the Board of Directors of CGG SA made the decision that:

- the financial targets applicable to the variable remuneration set before the Covid-19 crisis will not be adjusted. Therefore, the Board of Directors has anticipated a significant reduction in the variable remuneration of the Chief Executive Officer (CEO) for 2020;
- as a result, for the 2020 financial year, CEO's short-term remuneration (fixed and annual variable remuneration) was down 47% compared to last year, with a 78% reduction of the annual variable remuneration;
- considering this situation, no further adjustment was made with respect to the CEO's remuneration.

i. Fixed remuneration

The below table presents the fixed remuneration of the Chief Executive Officer and how it has changed:

	2019	2020	2019-2020 variation
Sophie ZURQUIYAH, Chief Executive Officer	€630,000[a]	€630,000	0%

(a) For her duties as Chief Executive Officer on an annual basis.

The fixed remuneration of the Chief Executive Officer on an annual basis remained unchanged compared to 2019.

ii. Annual variable remuneration

The annual variable remuneration of Mrs. Sophie ZURQUIYAH, Chief Executive Officer, is based on financial objectives, representing two thirds of variable remuneration, as well as on extra-financial objectives, representing one third of variable remuneration.

Her target amount is set at 100% of her fixed remuneration and the criteria for allocating the variable annual portion are of two types:

- quantifiable criteria (financial objectives); and
- qualitative criteria (extra-financial objectives).

Finally, it is specified that in order to encourage financial performance, the quantifiable (financial) objectives make it possible to reach a variable amount whose ceiling is set at 166.67% of the fixed remuneration.

→ **For fiscal year 2020,** the structure of the variable remuneration (performance criteria and conditions of achievement) of Mrs. Sophie ZURQUIYAH was determined by the Board of Directors at its meeting held on March 5, 2020.

Following the introduction of the state of health emergency by law no. 2020-290 of March 23, 2020, the first non-financial criterion was modified by the Board of Directors held on March 31, 2020 in order to integrate the management of the Covid-19 crisis into the management of the Company's strategic plans.

Details of the structure of the objectives set and their level of achievement noted by the Board of Directors' meeting on March 4, 2021, are set out below.

I. The quantifiable criteria (financial objectives), based on the achievement of the Group's budgetary objectives, are as follows:

- Cash Flow Net of the Group (weighting of 25% on the financial portion);
- EBITDA free assets (weighting of 25% on the financial portion);
- the Group's external sales (weighting of 25% on the financial portion); and
- operating income (weighting of 25% on the financial portion).

The minimum payment for each of the criteria is subject to 70% achievement threshold for each objective. Depending on the objective's achievement rate for each criterion, the payment may be increased up to 200% of the target amount associated with the considered criterion.

→ **For 2020 fiscal year,** taking into account the Group's financial performance and the achievement of its financial objectives, the financial portion of the variable annual remuneration amounted to 0% of the total variable remuneration target. Details of the calculation of the objectives' achievement are summarized in the summary table below.

II. The qualitative criteria (extra-financial objectives) are focused on:

1 2 3 4 5 6 7 8

A. Covid-19 crisis management and strategic plans (weighted of 50% on the extra-financial portion)

Half of the qualitative objectives relate to the Covid-19 crisis management and its impact on the implementation of the Group's 2021 strategy. These are specific objectives, managed through indicators which details are confidential. They group criteria related to the crisis management and the Group adaptation to this context, to the continued implementation of the 2021 strategic plan and to the preparation of the next strategic cycle.

→ **For fiscal year 2020**, the objectives relating to the crisis management and its impact on the Group's 2021 strategy have been 100% achieved. Performance assessment is based on the following main achievements: successful management of the Covid-19 crisis, efficient business and operational continuity throughout the crisis, adaptation of the Company's structure and preparation for post-crisis business situation, continued implementation of the CGG 2021 strategy and proposal of potential new business development opportunities for the Group in preparation of the 2021-2024 strategy.

B. Company organization and Human resources management (weighted of 20% on the extra-financial portion)

20% of the qualitative objectives are related to talent management and retention of key personnel of the organization, succession plans and Group transformation through simplification and rationalization. In a transformation and crisis context, these retention and planning criteria are key parameters for the Group's medium-term performance.

→ **For fiscal year 2020**, the objectives relating to the Group's Human Resources management have been 100% achieved. Performance appraisal is based on the following main achievements: talent management and succession planning processes carried out during the year and presented to the Board of Directors with a strong focus on women promotions in the Company. Succession plans for key positions have been prepared and some of them successfully implemented this year and a plan to further simplify the Company's organization particularly in relations to its support functions was developed and largely implemented.

C. Group operational performance (weighted of 20% on the extra-financial portion)

20% of the qualitative objectives relate to maintaining the Group operational performance by consolidating and developing relationships with the most important clients and continuing to develop the Group's positioning as an undisputed technical leader in Geoscience and Equipment.

→ **For fiscal year 2020,** the objectives relative to the Group operational performance were 100% achieved. Performance assessment is based on the following main achievements: the Chief Executive Officer continued to maintain and develop valuable relationships with the Group's major customers by meeting regularly with their senior leaders. Customer feedback on the quality of the work carried out by the Group is excellent and leading in many areas compared to peers. In 2020, successful deployment of new technologies such as the development of new processing algorithms, the commercialization of land nodes systems and progress of marine nodes systems. Finally, the Company continued to deploy its digitalization strategy, in particular with regard to access to its data library.

D. HSE and Sustainable Development (weighted 10% on the extra-financial portion):

10% of the qualitative objectives relate to improving the performance of the Group with regard to the Health, Safety, Environment and Sustainable Development policies linked to its activity.

→ **For fiscal year 2020**, the objectives relating to Health, Safety, Environment and Sustainable Development policies have been 100% achieved. Performance appraisal is based on the following main achievements: the Company's position in Health, Safety and Environment improved significantly in 2020 with a remarkable performance, particularly following the exit from the Acquisition business. No significant incidents were to deplore in 2020. The Company has also implemented an environmental policy in line with the energy transition and has developed a framework to define its continuous improvement objectives and monitor its performance. The Group has also significantly reduced its emissions, thus playing a key role in the sustainable development policy of its customers.

The variable portion linked to the qualitative criteria varies between 0% and 100% of the target amount, or between 0% and a third of the target variable remuneration (with no possibility of outperformance on these criteria).

Each of the quantitative and qualitative criteria is weighted and a target and maximum weight are determined for each criteria.

For fiscal year 2020, considering the performance achieved in relation to the extra-financial objectives, the extra-financial part of the annual variable remuneration amounted to 33.33% of the total variable remuneration target. Details of the objectives' achievement calculation are summarized in the below table.

The overall achievement rate for fiscal year 2020 is 33.33% of the target. In accordance with the applicable policy, this rate was applied to Mrs. ZURQUIYAH's annual variable remuneration target to determine the amount to be paid in respect of financial year 2020. As a reminder, this rate was 150.60% for 2019.

	Target		Maximum		2020 Fulfilment rate		
Indicator	As a % of Target Variable	On a basis of 100	As a % of Target Variable	On a basis of 100	% of achievement per criterion	As a % of Target Variable	On a basis of 100
Financial objectives	**66.67%**	**66.67%**	**133.33%**	**80.00%**	**n.a.**	**0.00%**	**0.00%**
Group net cash flow	16.67%	16.67%	33.33%	20.00%	0.00%	0.00%	0.00%
EBITDA free assets	16.67%	16.67%	33.33%	20.00%	0.00%	0.00%	0.00%
Group external sales	16.67%	16.67%	33.33%	20.00%	0.00%	0.00%	0.00%
Operating income	16.67%	16.67%	33.33%	20.00%	0.00%	0.00%	0.00%
Non Financial objectives	**33.33%**	**33.33%**	**33.33%**	**20.00%**	**n.a.**	**33.33%**	**33.33%**
Covid-19 crisis management and strategic plans	16.67%	16.67%	16.67%	10.00%	100.00%	16.67%	16.67%
Organization and Human Resources Management	6.67%	6.67%	6.67%	4.00%	100.00%	6.67%	6.67%
Group operational performance	6.67%	6.67%	6.67%	4.00%	100.00%	6.67%	6.67%
HSE / Sustainable Development	3.33%	3.33%	3.33%	2.00%	100.00%	3.33%	3.33%
TOTAL CRITERIA	**100.00%**	**100.00%**	**166.67%**	**100.00%**	**n.a.**	**33.33%**	**33.33%**

With regard to the fulfilment of the above criteria, the Board of Directors meeting on March 4, 2021 decided the amount of annual variable remuneration for Mrs. Sophie ZURQUIYAH at €210,000.

As a reminder, this amount was €948,780 for 2019 financial year, which corresponds to a 78% decrease of the variable remuneration.

In accordance with what is provided in the remuneration policy, the Company has not requested the return of the variable remuneration of Mrs. Sophie ZURQUIYAH.

iii. Exceptional remuneration

Mrs. Sophie ZURQUIYAH did not receive any exceptional remuneration for the 2020 financial year.

iv. Remuneration allocated to Directors

Mrs. Sophie ZURQUIYAH, who is also a Director since April 26, 2018, does not receive any remuneration allocated to Directors.

As the Board of Directors is composed in compliance with the provisions of Articles L. 225-18-1 and L. 22-10-3 of the French Commercial Code, the payment of the remuneration provided for in the first paragraph of Articles L. 225-45 and L. 22-10-14 of the aforementioned Code has not been suspended.

v. Other short-term remuneration elements

General benefits plan

The Board of Directors, at its meeting of April 26, 2018, authorized, 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 of the general compulsory provident and health care scheme of the Group applicable to all employees, to Mrs. Sophie ZURQUIYAH, Chief Executive Officer. This commitment was ratified by the Combined General Meeting held on May 15, 2019. For 2020, the amount corresponding to the expense borne by the Company under this scheme represents €4,502 for Mrs. Sophie ZURQUIYAH.

International medical insurance

The Board of Directors, during its meeting of April 26, 2018, authorized, according to 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 conclusion of a contract for international medical insurance subscribed by CGG Services (U.S.) Inc. to the benefit of Mrs. Sophie ZURQUIYAH, Chief Executive Officer, due to her frequent trips abroad. The annual contribution paid by CGG Services (U.S.) Inc. under this contract amounts to €22,559 for 2020. This commitment was ratified by the Combined General Meeting held on June 16, 2020.

Benefits in kind

Mrs. Sophie ZURQUIYAH benefited from a company car during the 2020 financial year. The valued amount of the benefit is €9,600.

vi. Multi-annual variable remuneration

Mrs. Sophie ZURQUIYAH did not receive any multi-annual variable cash remuneration for the 2020 financial year.

vii. Long-term remuneration

Each year, the Company's Board of Directors, on the recommendation of the Appointment, Remuneration and Governance Committee, implements a long-term remuneration system. This remuneration is allocated through stock options and/or free shares plans subject to past performance conditions ("performance conditions"), and has a twofold objective:

- implement a globally harmonized variable remuneration system that is more in line with the Group's growing internationalization;
- more closely link the remuneration of the main executives with the combined stock performance and the economic and extra-financial performance of the Group as a whole and over the medium term; and
- retain and maintain attractive remuneration for the most effective and high-potential employees in a context of tension on the labor market in engineering and digital professions in all countries where the Group has a presence.

Members of the Executive Leadership team (including the Chief Executive Officer), executives and employees who have contributed to the Group's performance or who have strong potential for development within the Group are eligible for this system.

2020 allocation and performance conditions for previous plan evaluated in 2020

In 2020, the Board of Directors maintained the allocation of long-term remuneration through stock option and performance shares plans and also noted the achievement rate of the performance conditions of the previous plans in accordance with their respective provisions and maturities.

The Board of Directors meeting maintained the long-term remuneration policy for the Chief Executive Officer with a one-time vesting, subject to a vesting period of 3 years.

For the Chief Executive Officer, the level of allocation of long-term remuneration for 2020 has been set at 60% of the base salary (value amount of the benefit under IFRS 2). The Board of Directors took into account the low market price of the CGG share and decided to award a grant below the target set out in the current remuneration policy (100% of fixed remuneration), allocating the same number of stock-options and performance shares as in 2019.

It should be noted that the long-term remuneration of the Chief Executive Officer has been positioned, for several years, below the median of the comparison panel used to benchmark the positioning on the French market. For 2020, the level of the Chief Executive Officer's long term allocation is at the first distribution quartile of the Group's reference market.

I. STOCK OPTIONS

A. Grant of stock options to the Chief Executive Officer under the terms of the plan dated June 25, 2020

- Performance conditions

The Board of Directors meeting held on June 25, 2020 maintained a performance condition relating to a growth in the CGG share price over the acquisition period, with a target rate that takes into account the volatility of CGG shares, which is greater than that of the companies making up the comparative index. Two additional performance conditions were added, based on the budgetary objectives in line with the Group's Strategic Plan.

The terms and conditions of the plans applicable to the Chief Executive Officer are those of the general plans plus those described below:

The vesting of rights is subject to the condition of presence in June 2023 (i.e. three years from the grant), subject to the fulfilment of the following performance conditions, to be satisfied over a 3-year vesting period:

- a performance condition related to CGG share price growth condition in relation with the relative evolution of the PHLX Oil Service Sector℠ (OSX℠) index over the vesting period, calculated at the acquisition date, allowing 50% of the options granted, being specified that:
  - a growth of the CGG share greater or equal to 100% of the benchmark index will allow the exercise of 100% of the options of this first tranche,
  - a growth of the CGG share greater than or above 80% and below 100% of the benchmark index will allow the exercise of 50% of the options of this first tranche,
  - if the growth is below 80% of the benchmark index, no right shall be acquired in respect of this first tranche;
- a performance condition related to the achievement of a cumulative Free EBITDA objective on the fiscal years 2020, 2021 and 2022, allowing 25% of the option granted; in case this objective is not achieved, no right shall be acquired in respect of this second tranche;
- a performance condition related to the achievement of an average Net Debt over EBITDAs ratio target in fiscal year 2022, allowing 25% of the option granted; in case this objective is not achieved, no right shall be acquired in respect of this third and last tranche.

The fulfilment of the performance conditions entitles the grant of each tranche of the options on the date on which such achievement will be noted by the Board of Directors.

On June 25, 2020, 2,268,512 options were allocated to 240 beneficiaries within the Group, including 360,000 stock options to the Chief Executive Officer. The exercise price of the said options is €1.10, set on the basis of the average opening price of the CGG share during the twenty (20) trading sessions preceding the grant.

The options have a term of eight years.

— Applicable rules

— *Obligation to retain registered shares*

The Board of Directors also decided that, in accordance with the provisions of Article L. 225-185 of the French Commercial Code, the quantity of shares resulting from the exercise of stock options that Mrs. Sophie ZURQUIYAH is required to keep in registered form, for the duration of her mandate, should represent 25% of the amount of the net capital gain upon exercise of the options allocated by the Board of Directors.

In addition, the Chief Executive Officer must, in his capacity as Director of the Company, own 20,000 (twenty thousand) shares in the Company. The combination of these obligations will enable the Chief Executive Officer to hold a significant number of securities.

The Chief Executive Officer's obligation to keep in registered form shares resulting from the allocation of performance shares and the exercise of stock-options granted applies until the value of all the shares retained in registered form represents two years of fixed and variable annual cash remuneration. Above this threshold, the retention obligations no longer apply.

— *Prohibition from using hedging instruments*

In accordance with the provisions of the Code to which the Company refers and the recommendations of the Financial Markets Authority, Mrs. Sophie ZURQUIYAH has committed not to use hedging transactions both on options and on shares resulting from the exercise of options until the end of the retention period for registered shares set by the Board of Directors in accordance with the provisions of Article L. 225-177 of the French Commercial Code.

— Stock-options exercise period

The Board of Directors recalls that the exercise of options by Mrs. Sophie ZURQUIYAH is subject to compliance with the rules for abstention from trading in the Company's shares set by the Group applicable to all of the Group's permanent insiders (see paragraph 4.1.3.h) of this Universal Registration Document).

— Stock-options exercised in 2020 financial year by the Chief Executive Officer

No stock-option was exercised during the 2020 financial year.

B. Status of performance conditions fulfilment for previous plans

— Rate of fulfilment of the performance criteria of the 2016 option plan

In 2020, the Board of Directors noted that the performance conditions had been partially achieved at 50% on the third and last tranche (25%) of the stock-options plan allocated on June 23, 2016 for the members of the Corporate Committee and the corporate officers.

In 2020, the Board of Directors noted that the performance conditions of the first tranche (50%) and second tranche (25%) of this plan, that matured respectively in June 2018, and June 2019, have been reassessed in accordance with the plan's rules. Performance conditions had not been achieved; consequently, no stock-option was acquired under these first and second tranches by the members of the Corporate Committee and the corporate officers.

Consequently, on this 2016 option plan:

— for the first tranche (50%) maturing in June 2018, no stock-option was acquired by the members of the Corporate Committee and the corporate officers;

— for the second tranche (25%) maturing in June 2019, no stock-option was acquired by the members of the Corporate Committee and the corporate officers;

— for the third and last tranche (25%) maturing in June 2020, 50% of stock-options of this tranche were acquired by the members of the Corporate Committee and the corporate officers.

Mrs. Sophie ZURQUIYAH was thus granted 4,428 subscription options resulting from the 2016 option plan.

The exercise price of these options is set at €8.52 (adjusted further to various transactions on the Company's share capital since the date of allocation).

— Rate of fulfilment of the performance criteria of the 2018 option plan

In 2020, the Board of Directors noted that the performance condition had not been achieved on the second tranche (25%) of the option plans allocated on June 27, 2018 and on December 11, 2018 for the members of the Executive Leadership team and the corporate officers. Consequently, no option was acquired under this second tranche by the members of the Corporate Committee and the corporate officers. The achievement of the performance conditions will be assessed again in June 2021, in accordance with the plan's rules.

In 2020, the Board of Directors noted that the performance conditions of the first tranche (25%) of this plan, that matured in June 2019, have been reassessed in accordance with the plan's rules. Performance conditions had not been achieved; consequently, no stock-option was acquired under these first and second tranches by the members of the Executive Leadership team and the corporate officers. The achievement of the performance conditions will be assessed again in June 2021, in accordance with the plan's rules.

The exercise price of these options is €2.15 for the allocation of June 27, 2018.

— Rate of fulfilment of the performance criteria of the 2019 option plan

The performance conditions pertaining to the 2019 plan are appraised over a period of two and three years and will be assessed in June 2022 and June 2023.

The exercise price of these options is €1.52 for the allocation of June 27, 2019.

C. Summary of Stock-options granted or acquired by Executive Directors during the 2020 financial year

	Mains conditions of stock options plans							Information regarding the reported financial year					
								Opening balance	During the Year		Closing balance		
Name of the Chief Executive Officer	Plan date	Perfor-mance period	Award date	Vesting date	End of holding period	Exercice period	Exercice price	Stock options awarded at the begin-ning of the year	Stock options awarded	Stock options vested	Stock options subject to perfor-mance condi-tions	Stock Options awarded and unvested	Stock Options subject to a holding period
Sophie ZURQUIYAH Chief Executive Officer	Allocation of June 25, 2020	3 years	06.25.2020	06.26.2023	06.26.2023	06.25.2028	€1.10	0	360,000	0	360,000	360,000	360,000
	Allocation of June 27, 2019	3 years	06.27.2019	06.28.2022	06.28.2022	06.27.2027	€1.52	360,000	0	0	360,000	360,000	360,000
	Allocation of June 27, 2018	1 year	06.27.2018	06.28.2019	06.28.2019	06.27.2026	€2.15	183,139	0	0	183,139	183,139	0
		2 years		06.28.2020	06.28.2020			183,139	0	0	183,139	183,139	0
		3 years		06.28.2021	06.28.2021			183,139	0	0	183,139	183,139	183,139
		4 years		06.28.2022	06.28.2022			183,141	0	0	183,141	183,141	183,141
	Allocation of June 23, 2016	2 years	06.23.2016	06.23.2018	06.23.2018	06.23.2024	€8.52	17,713	0	0	0	17,713	0
		3 years		06.23.2019	06.23.2019			8,857	0	0	0	8,857	0
		4 years		06.23.2020	06.23.2020			8,856	0	4,428	0	4,428	0
TOTAL								**1,127,984**	**360,000**	**4,428**	**1,452,558**	**1,483,556**	**1,086,280**

II. PERFORMANCE SHARES

A. Grant of performance shares to the Chief Executive Officer under the terms of the plan dated the June 25, 2020

— Performance conditions

On June 25, 2020, the Board of Directors maintained the same performance conditions as for the 2019 performance share plan. The acquisition of the shares is subject to a condition of presence in June 2023 (i.e. 3 years starting from the grant date), subject to the fulfilment of two performance conditions assessed over the vesting period, and relating to:

- achieving a cumulative Free EBITDA objective on 2020, 2021 and 2022 years (giving rise to the acquisition of 50% of the rights; if the objective is not achieved, no rights are acquired);
- achieving an Average Net Debt to EBITDAs ratio objective by 2022 (giving rise to the acquisition of 50% of the rights; if the objective is not achieved, no rights are acquired).

Achievement of the two performance conditions is based on budgetary objectives in line with the Group's strategic plan and entitles the holder to the allocation of shares on the date on which such achievement is acknowledged by the Board.

On June 25, 2020, the Board of Directors decided to allocate 1,953,148 performance shares subject to performance conditions to 240 beneficiaries within the Group, including 220,000 performance shares allocated to the Chief Executive Officer.

These shares subject to the fulfillment of performance conditions will be acquired in June 2023 for the Chief Executive Officer and the Executive Leadership team. The acquisition period is set at the later of the two following dates: June 25, 2023 or the date of the General Meeting to approve the 2022 financial statements, and after the Board of Directors has noted the achievement of the performance conditions.

— Applicable rules

— *Obligation to retain registered shares*

The Board of Directors also decided that, in accordance with the provisions of Article L. 225-185 of the French Commercial Code, the quantity of shares resulting from the acquisition of shares that Mrs. Sophie ZURQUIYAH is required to keep in registered form, for the duration of her mandate, should represent 25% of the shares permanently allocated by the Board of Directors.
In addition, the Chief Executive Officer must, in her capacity as Director of the Company, own 20,000 (twenty thousand) shares in the Company. The combination of these obligations will enable the Chief Executive Officer to hold a significant number of securities.

The Chief Executive Officer's obligation to keep in registered form shares resulting from the allocation of performance shares and the exercise of options granted applies until the value of all the shares retained in registered form represents two years of fixed and variable annual cash remuneration. Above this threshold, the retention obligations no longer apply.

— *Prohibition from using hedging instruments*

In accordance with the provisions of the Code to which the Company refers and the recommendations of the Financial Markets Authority, Mrs. Sophie ZURQUIYAH undertook not to use hedging transactions on the performance shares allocated until the end of the retention period for registered shares set by the Board of Directors in accordance with the provisions of Article L. 225-185 of the French Commercial Code.

B. Status of performance condition fulfilment for previous performance share plans

— Rate of fulfilment of the performance criteria of the 2018 Performance share plan

In 2020, the Board of Directors confirmed that the performance conditions on the first tranche (50%) of performance share plans allocated on June 27, 2018 and on December 11, 2018 were achieved for all beneficiaries. Consequently, 100% of the performance shares were acquired under this first tranche by the members of the Executive Leadership team and the Chief Executive Officer.

— Rate of fulfilment of the performance criteria of the 2019 Performance share plan

The performance conditions pertaining to the 2019 plan are appraised from a period of two years (three years for the Chief Executive Officer) and will be assessed in June 2021 (June 22 for the Chief Executive Officer).

— Performance shares made available over the period of the 2020 financial year for the Chief Executive Officer

The achievement of the performance conditions of the 2018 plan confirmed by the Board of Directors in 2020, resulted in the allocation of the first tranche of performance shares granted on June 27, 2018 to the Chief Executive Officer, i.e. 78,750 shares. No retention period being set under this plan, these shares became available upon final allocation.

C. Summary of Performance shares granted or vested for the Chief Executive Officer during the 2020 Financial year

	Main conditions of performance share award plans					Information regarding the reported financial year					
						Opening balance	During the Year		Closing balance		
Name of the Executive Corporate Officer	Plan date	Performance period	Award date	Vesting date	End of holding period	Shares awarded at the beginning of the year	Shares awarded	Shares vested	Shares subject to performance conditions	Shares awarded and unvested	Shares subject to a holding period
Sophie ZURQUIYAH *Chief Executive Officer*	Allocation of June 25, 2020	3 years	06.25.2020	06.26.2023	06.26.2023	0	220,000	0	220,000	220,000	220,000
	Allocation of June 27, 2019	3 years	06.27.2019	06.28.2022	06.28.2022	220,000	0	0	220,000	220,000	220,000
	Allocation of June 27, 2018	2 years	06.27.2018	06.28.2020	06.28.2020	78,750	0	78,750	0	0	0
		3 years		06.28.2021	06.28.2021	78,750	0	0	78,750	78,750	78,750
TOTAL						**377,500**	**220,000**	**78,750**	**518,750**	**518,750**	**518,750**

III. PERFORMANCE UNITS

A. Grant of performance units to the Chief Executive Officer during the 2020 financial year

— Performance units granted to the Chief Executive Officer during the 2020 financial year

No performance unit was granted to the Chief Executive Officer during the 2020 financial year.

— Performance units permanently acquired by the Chief Executive Officer during the 2020 financial year

No performance unit was permanently acquired by the Chief Executive Officer during the 2020 financial year.

B. Status of performance condition fulfilment for previous performance unit plans

No previous performance unit plan was in progress for the year 2020.

viii. Supplementary pension plans

Defined contribution pension plan (Article 83 of the CGI (*Code général des impôts* [General Tax Code]))

Mrs. Sophie ZURQUIYAH benefits from the collective defined-contribution funded pension plan implemented for the Group's executives since January 1, 2005 according to the same terms as those applicable to the said executives.

This scheme is capped as such and calculated with reference to the *plafond annuel de sécurité sociale* [Annual Social Security Ceiling] (PASS) and is set for 2020 at:

- tranche A – up to 100% of the PASS: 0.5% beneficiary contribution and 1% company contribution;
- tranche B – above 100% of the PASS and up to 400% of the PASS: 2% beneficiary contribution and 3% company contribution;
- tranche C – above 400% of the PASS and up to 800% of the PASS: 3.5% beneficiary contribution and 5% company contribution.

The contribution base consists exclusively of the gross annual remuneration for the year declared, the base salary, the annual variable remuneration and the benefit in kind (company car). As a matter of principle, this base excludes any other remuneration element.

For 2020, the amount corresponding to the expense borne by the Company under this scheme represents €12,341 for Mrs. Sophie ZURQUIYAH.

Alternative pension plan

Mrs. Sophie ZURQUIYAH does not benefit from an alternative pension plan.

ix. Individual unemployment insurance

The Board of Directors, during its meeting of April 26, 2018, authorized, according to 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 conclusion of a specific guarantee of unemployment insurance with the GSC to the benefit of Mrs. Sophie ZURQUIYAH. This commitment was ratified by the General Meeting held on May 15, 2019.

The annual contribution paid by the Company under this guarantee amounts to €11,261 in 2020. This insurance 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.

x. Contractual termination indemnity in the event of departure from the Group and non-compete commitment

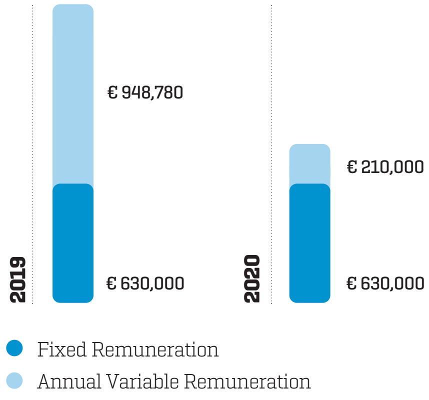
Mrs. Sophie ZURQUIYAH benefits from a contractual termination indemnity in case of departure from the Group and a non-compete commitment, the details of which are presented in section 4.2.1.2.B. of this Universal Registration Document.

d. Remuneration paid by a company within the scope of consolidation

Mrs. Sophie ZURQUIYAH did not receive any remuneration paid by the companies included in the scope of consolidation of the Company.

e. Respective importance of remuneration elements

The short-term remuneration of Mrs. Sophie ZURQUIYAH (fixed + variable) decreased by 47% full-time equivalent from 2019 to 2020.



The gross remuneration amounts paid by the Company and the controlled companies to Mrs. Sophie ZURQUIYAH for the 2019 and 2020 financial years are presented in the table below.

For the 2020 financial year, Mrs. Sophie ZURQUIYAH's remuneration structure consisted of fixed remuneration (€630,000 gross on an annual basis), variable remuneration (€210,000 gross on an annual basis), and benefits in kind (€20,868 on an annual basis).

f. Equity/Pay ratio

(Pursuant to Article L. 22-10-9, 6° and 7° of the French Commercial Code).

The table below presents the median and average ratios of the overall remuneration of the Chairman of the Board of Directors. In accordance with the recommendation of the AFEP-MEDEF Code to which the Company refers. The ratio was calculated on the basis of the legal requirement, i.e. the top holding company CGG SA. Taking into account the small number of employees in that company, which does not allow to disclose representative data, the ratio was also calculated on the basis of Group's scope of consolidation in France (CGG SA, CGG Services SAS and Sercel SAS).

These two ratios have been calculated on the basis of remuneration paid in fiscal year 2020, i.e.:

- the 2020 fixed remuneration;
- the variable remuneration paid in 2020 for 2019;
- the exceptional remuneration paid in 2020 for 2019;
- the profit-sharing and participation paid in 2020;
- the Options and Performance shares definitively vested during the 2020[1] financial year (valued amount of the benefit under IFRS 2);
- the benefits in kind paid during the 2020 financial year;
- the employer contributions paid in respect of defined contribution plans paid in respect of the financial year 2020.

In the interest of consistency, employees' remuneration takes the following into account:

- the 2020 fixed remuneration;
- the variable remuneration paid in 2020 for 2019;
- the exceptional remuneration paid in 2020;
- the profit-sharing and participation paid in 2020;
- the Options and Performance shares definitively vested during the 2020[1] financial year (valued amount of the benefit under IFRS 2);
- the benefits in kind paid during the 2020 financial year;
- the employer contributions paid in respect of defined contribution plans paid in respect of the financial year 2020.

The procedure is the same as for previous years.

EQUITY/PAY RATIO BETWEEN THE LEVEL OF REMUNERATION OF THE CHIEF EXECUTIVE OFFICER AND THE AVERAGE AND MEDIAN REMUNERATION OF THE EMPLOYEES OF THE COMPANY

The scope taken into account is that of the Group's employees located in France, including CGG SA, CGG Services SAS and Sercel SAS.

	2016	2017	2018[a]	2019[b]	2020
Chief Executive Officer *(EUR)*					
Jean-Georges Malcor[a]	1,133,552	1,037,865	1,569,828	n.a.	n.a.
Sophie Zurquiyah[b]	n.a.	n.a.	n.a.	1,512,729	1,681,940
(evolution compared to the previous fiscal year)		*(8.4)%*	*51.3%*	*(3.6)%*	*11.2%*
Ratio gross salary CEO/median gross salary employees of the Group in France	22.4	20.2	28.5	28.9	33.5
(evolution compared to the previous fiscal year)		*(9.9)%*	*41.2%*	*1.4%*	*15.7%*
Ratio gross salary CEO/average gross salary employees of the Group in France	19.0	17.1	24.4	23.7	28.2
(evolution compared to the previous fiscal year)		*(10.0)%*	*42.7%*	*(2.8)%*	*18.7%*
Ratio gross salary CEO/median gross salary CGG SA employees[c]	14.0	12.0	18.0	4.7	7.8
(evolution compared to the previous fiscal year)		*(14.1)%*	*49.7%*	*(73.9)%*	*65.7%*
Ratio gross salary CEO/average gross salary CGG SA employees[c]	6.8	6.1	8.6	5.0	6.6
(evolution compared to the previous fiscal year)		*(9.6)%*	*40.0%*	*(41.6)%*	*31.5%*
Company's performance					
Segment EBITDA *(MUSD)* (IFRS restated 2016-2020)	386	434	556	721	361

(a) 2018 CEO (Jean-Georges Malcor) Fixed remuneration is annualized.
(b) 2019 CEO (Sophie Zurquiyah) Annual variable remuneration is annualized.
(c) CGG SA's headcount decreased from 28 employees in 2018 to 14 employees in 2019.

In the event of a change in leadership during the year, it is specified that the remuneration taken into account for the table above is that paid for the position.

(1) For the sake of precision, only options ("Options") and shares subject to performance conditions ("Performance shares") definitively granted during the year have been valued based on market conditions at the final date of acquisition. As such, this equity/pay ratio does not include Options and Performance Shares which:
- *have not yet been definitively vested due to the application of the various vesting periods; and/or*
- *have not been definitively vested due to the non-achievment of the performance conditions governing their definitive vesting.*

This methodology differs from that used to calculate the equity ratio published in April 2020, which took into account all of the Options and Bonus Shares initially granted, thus representing a valuation of potential benefits that may not ultimately be granted.

C. Total annual remuneration of Directors for the 2020 fiscal year

On June 25, 2020, further to the approval of the global annual amount of Directors' fees by the General Meeting, set at €550,000, the Board of Directors adopted the remuneration principles applicable to the Directors as defined hereafter.

a. Consideration of the last vote of the General Meeting

The Annual Shareholders' Meeting of June 16, 2020 approved resolution no. 8 concerning the information provided for in Article L. 22-10-9 of the French Commercial Code and relating to the remuneration paid or allocated to corporate officers for the year ended December 31, 2019.

In light of this positive vote, the Company has maintained, in 2021, the practices applied to the remuneration of corporate officers in 2020 (notably remuneration policy and information), with the exception of a few minor adjustments referred to in section 4.2.1.1.d) of this Document.

b. Compliance of the remuneration paid with the remuneration policy

The remuneration allocated to the Directors for the 2020 fiscal year complies with the allocation rules set by the Board of Directors held on June 16, 2020 in accordance with the remuneration policy approved by the General Meeting held on June 16, 2020.

For the 2020 financial year, the Company did not deviate nor derogate from the procedure for implementing the remuneration policy.

The aggregate remuneration allocated to the Directors for 2020 amounted to €496,250, paid in February 2021.

c. Total remuneration and benefits of any kind

a. Remuneration components

i. General distribution rules[1]

The total annual 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, 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. 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.

ii. Specific rules applicable to the Chairman of the Board, the Chief Executive Officer and the Director(s) representing the employees

CHAIRMAN OF THE BOARDS OF DIRECTORS

The Chairman of the Board receives:

- in his/her capacity as Director: A fixed amount of Directors' fees, as well as travel indemnity (if any), as set-out in the table below; and
- in his/her capacity as Chairman of the Board: A fixed remuneration, as described in section 4.2.1.2.a) of this Universal Registration Document.

The Chairman also benefits from travel indemnities, as the case may be.

CHIEF EXECUTIVE OFFICER

The Chief Executive Officer, who is a Director of the Company in 2020, did not receive any Directors' fees nor any travel indemnity. The various remuneration components of the Chief Executive Officer are as described in section 4.2.1.2.b) of this Universal Registration Document.

DIRECTOR REPRESENTING THE EMPLOYEES

The Director representing the employees, appointed pursuant to Article 8 of the Company's articles of association, did not receive any remuneration pursuant to his office as Director nor any travel indemnity. He received a salary pursuant to the employment agreement he entered into with the Company or any of its affiliates.

(1) Subject to the specific rules described below.

iii. Amounts applicable to 2020

For 2020, the rules set by the Board of Directors for the calculation of the remuneration to be paid to the Directors, in the basis of the approval received from the General Meeting, were as follows:

FIXED REMUNERATION (FOR AN ENTIRE FISCAL YEAR) BASED ON THE FUNCTION

	Fixed remuneration
Chairman of the Board	€70,000
Director [a]	€7,000
Chairman of the Audit and Risk Management Committee [a]	€10,000
Member of the Audit and Risk Management Committee [a]	€5,000
Chairman of any Board Committee other than the Audit and Risk Management Committee [a]	€4,000
Member of any Board Committee other than the Audit and Risk Management Committee [a]	€2,000

(a) 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 [a]

	Variable remuneration
Attendance to a Board meeting	€4,600
Attendance to a Board Committee meeting	€2,300

(a) 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.

TRAVEL INDEMNITY, IRRESPECTIVE OF THE DIRECTOR'S NATIONALITY [a]

	Travel indemnity
Intercontinental travel	€2,000
Travel within the same continent	€500

(a) This does not apply to the Chief Executive Officer and the Director(s) representing the employees.

This travel indemnity also applies to the annual Board seminar, if any.

iv. 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 nor performance shares of the Company.

v. Expenses

Travel expenses incurred by reason of the attendance to Board and Board Committee meetings are reimbursed by the Company.

d. Remuneration paid by a Company within the scope of consolidation

With the exception of the Director representing the employees, who received a remuneration from CGG Services SAS pursuant to his employment agreement, Directors do not receive any remuneration paid by the companies included in the scope of consolidation of the Company.

e. Respective importance of remuneration elements

With the exception of the Director representing the employees, who received a variable remuneration from CGG Services SAS pursuant to his employment agreement, Directors receive only fixed items, to the exclusion of any variable or exceptional remuneration.

f. Suspension of the remuneration paid to Directors

As the Board of Directors is composed in compliance with the provisions of Articles L. 225-18-1 and L. 22-10-3 of the French Commercial Code, the payment of the remuneration provided for in the first paragraph of Article L. 225-45 and at the Article L. 22-10-14 of the aforementioned Code has not been suspended.

g. Remuneration paid to the Non-Executive Directors for the 2020 fiscal year

The remuneration paid to the Non-Executive Directors for the 2020 fiscal year is presented on page section 4.2.2.2.D. of this Universal Registration Document (Table 3 of the AMF recommendation no. 2009-16).

4.2.2.2 Presentation tables of Corporate officers' remuneration

The table below presents a summary of the remuneration elements of corporate officers for the 2019 and 2020 financial years. These elements are detailed in the rest of the report.

A. Summary table of remuneration and options and shares allocated to each corporate officer

	2019 financial year	2020 financial year
Philippe SALLE, Chairman of the Board of Directors		
TOTAL REMUNERATION DUE FOR THE FINANCIAL YEAR (detailed in one of the tables below)	**€240,500.00**	**€240,000.00**
Valuation of multi-annual variable remuneration allocated during the financial year [a]	n.a.	n.a.
Valuation of the options allocated during the financial year [a]	n.a.	n.a.
Valuation of the performance shares allocated during the financial year [a]	n.a.	n.a.
TOTAL POTENTIAL DEFERRED REMUNERATION RIGHTS SUBJECT TO THE FUTURE RESULTS OF THE COMPANY	**n.a.**	**n.a.**
Sophie ZURQUIYAH, Chief Executive Officer		
TOTAL REMUNERATION DUE FOR THE FINANCIAL YEAR (detailed in one of the tables below)	**€1,599,347.00**	**€860,861.00**
Valuation of multi-annual variable remuneration allocated during the financial year [a]	n.a.	n.a.
Valuation of the options allocated during the financial year (detailed in one of the tables below) [a]	€176,342.00	€147,600.00
Valuation of the performance shares allocated during the financial year (detailed in one of the tables below) [a]	€316,589.00	€228,800.00
TOTAL POTENTIAL DEFERRED REMUNERATION RIGHTS SUBJECT TO THE FUTURE RESULTS OF THE COMPANY	**€492,931.00**	**€376,400.00**

Table 1 of the 2009-16 Financial Markets Authority Recommendation.

(a) *The Company considers that these elements cannot be combined with the other elements of remuneration actually due for the financial year and that the total is therefore not representative of the remuneration received during the year. Indeed, the final allocations of these elements of remuneration are on the one hand subject to the fulfilment of performance conditions (there can therefore be no allocation if these conditions are not met) and on the other hand, the valuation amount of multi-annual variable remuneration, options and performance shares at fair value on the date of allocation that does not correspond to the remuneration received by beneficiaries during the financial year of allocation.*

The valuation of options according to the method used for the consolidated accounts does not necessarily correspond to the real value that could be derived from the possible exercise of these options by their beneficiaries. Indeed, it is recalled that exercising these options is subject to the fulfilment of performance conditions and supposes an exercise price lower than the stock market price. The pre-tax profit that can, in addition, be withdrawn from the exercise of the said options will depend on the share price on the day of the transaction. The profit may be zero if, during the entire exercise period of the options, the exercise price remains higher than the share price.

B. Summary Table of Remuneration for Mr. Philippe SALLE, Chairman of the Board of Directors

The gross remuneration amounts paid by the Company 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 Amounts due	2019 Amounts paid	2020 Amounts due	2020 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 [a]	€52,445,39 [b]	€70,000 [c]	€70,500 [a]
Benefits in kind	n.a.	n.a.	n.a.	n.a.
TOTAL	**€240,500**	**€222,445.39**	**€240,000**	**€240,500**

Table 2 of the 2009-16 Financial Markets Authority Recommendation.

(a) Paid in February 2020 for the 2019 financial year (including €500 of travel indemnity).
(b) Paid in February 2019 for the 2018 financial year.
(c) Paid in February 2021, for the 2020 financial year.

C. Summary table of the remuneration for Mrs. Sophie ZURQUIYAH, Chief Executive Officer

Sophie ZURQUIYAH	2019 Amounts due	2019 Amounts paid	2020 Amounts due	2020 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 [a]	€727,516 [b]	€210,000 [e]	€948,780 [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	n.a.	n.a.	n.a.	n.a.
Benefits in kind	€20,567 [c]	€27,867 [d]	€20,861 [f]	€20,861 [f]
TOTAL	**€1,599,347**	**€1,385,383**	**€860,861**	**€1,599,641**

Table 2 of the 2009-16 Financial Markets Authority Recommendation.

(a) 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.
(b) 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.
(c) 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.
(d) This amount includes the benefit in kind of €7,299 under the 2018 unemployment insurance subscribed with the GSC.
(e) 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.
(f) 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.*

D. 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 [a]		
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 [b]		
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 [c]		
Directors' fees	€31,344.99	n.a.
Other remuneration	n.a.	n.a.

Table 3 of the AMF Recommendation no. 2009-16.

(a) Mr. Patrice GUILLAUME, as a Director representing the employees, does not receive Directors' fees.
(b) The term of office of Mrs. Gilberte LOMBARD ended on May 15, 2019.
(c) The term of office of Mr. Robert F. SEMMENS ended on May 15, 2019.

E. Stock options or stock purchase options allocated to the Chief Executive Officer by the issuer and any Group Company in the course of the 2020 fiscal year

The Chief Executive Officer was allocated, within the framework of the plans implemented by the Company during the 2020 financial year, the stock options shown in the table.

Name of the Executive Corporate Officer	Plan date	Nature of options	Valuation of options according to the method used for the consolidated accounts *(in €)*	Maximum number of options allocated during the financial year in question [a]	Price [b]	Exercise period
Sophie ZURQUIYAH *Chief Executive Officer*	06.25.2020	Stock options	€147,600	360,000 0.051%*	€1.10	06.26.2023 to 06.25.2028 inclusive

Table 4 of the 2009-16 Financial Markets Authority Recommendation.

(a) Allocation submitted on condition of performance described below.
(b) The exercise price corresponds to the average opening price of the CGG share during the twenty trading sessions preceding the meeting of the Board of Directors that allocated them.
** Portion of the allocation in relation to the share capital on the date of allocation.*

The valuation of options according to the method used for the consolidated accounts does not necessarily correspond to the real value that could be derived from the possible exercise of these options by their beneficiaries. Indeed, it is recalled that exercising these options is subject to the fulfilment of performance conditions and supposes an exercise price lower than the stock market price. The pre-tax profit that can, in addition, be withdrawn from the exercise of the said options will depend on the share price on the day of the transaction. The profit may be zero if, during the entire exercise period of the options, the exercise price remains higher than the share price.

No discount is applied when allocating stock options.

The terms and conditions of the plans applicable to the Chief Executive Officer are those of the general plans plus those described below:

- the vesting of rights is subject to the condition of presence in June 2023 (i.e. three years from the grant date), subject to the fulfilment of the following performance conditions, to be satisfied over a 3 years vesting period:
  - a performance condition related to CGG share price growth condition in relation with the relative evolution of the PHLX Oil Service Sector^{SM} (OSX^{SM}) index, over the vesting period, calculated at the acquisition date, allowing 50% of the options granted, being specified that:
    - a growth of the CGG share greater than or above 80% and below 100% of the OSX index will allow the exercise of 50% of the options of this first tranche,
    - a growth of the CGG share greater or equal to 100% of the OSX index will allow the exercise of 100% of the options of this first tranche,
    - if the growth is below 80% of the OSX index, no right shall be acquired in respect of this first tranche,
  - a performance condition related to the achievement of a cumulative Free EBITDA objective on the fiscal years 2020, 2021 and 2022, allowing 25% of the option granted; in case this objective is not achieved, no right shall be acquired in respect of this second tranche,
  - a performance condition related to the achievement of an average Net Debt over EBITDAs ratio target in fiscal year 2022, allowing 25% of the option granted; in case this objective is not achieved, no right shall be acquired in respect of this third and last tranche;
- the achievement of the performance conditions entitles the grant of each tranche of the options on the date on which such achievement will be recognized by the Board of Directors.

The Chief Executive Officer is also subject to an obligation to keep the shares in registered form and a prohibition on the use of hedging instruments, which are set out in paragraph 4.2.2.1.B of this Document.

SUMMARY TABLE OF PERFORMANCE CONDITIONS APPLICABLE TO THE STOCK OPTION PLAN SUBJECT TO PERFORMANCE CONDITIONS GRANTED TO THE CHIEF EXECUTIVE OFFICER IN FISCAL YEAR 2020

Plan date	Indicator	Weight	Performance conditions target	Target Achievement Threshold in % for allocation	% of Allocation at Target	Maximum grant in %	Level of achievement – % achievement by criterion and total	Number of shares corresponding to the level of achievement
Allocation of June 25, 2020 (Exercice price : €1.10)	TSR: relative evolution of CGG share price/ PHLX Oil Service Sector^{SM} (OSX^{SM}) index	50%	The relative evolution of the CGG share price shall be equal to the relative evolution of the PHLX Oil Service Sector^{SM} (OSX^{SM}) index, calculated over the vesting period, i.e. between June 26, 2020 and June 25, 2023.	80% achievement gives rise to 50% attribution	100% achievement gives rise to 100% attribution	100%	to be appreciated in 2023	n.a.
	Free EBITDA objective	25%	Achievement of an objective of cumulative Free EBITDA set by the Board of Directors, for years 2020, 2021 et 2022.		100%		to be assessed after the closing of the accounts for the year 2022.	n.a.
	Average Net Debt over EBITSAs ratio objective	25%	Achievement of an average Net Debt over EBITDAs ratio set by the Board of Directors for fiscal year 2022.		100%		to be assessed after the closing of the accounts for the year 2022.	n.a.
TOTAL FISCAL YEAR 2020		**100%**						**N.A.**

F. Stock-options exercised by the Executive Officers in the course of the 2020 fiscal year

Name of the executive officer	Date of the plan	Number of stock-options exercized in 2019	Subscription price *
Sophie Zurquiyah *Chief Executive Officer*	06.26.2012	n.a.	€186.62
	06.24.2013	n.a.	€193.27
	06.26.2014	n.a.	€107.66
	06.25.2015	n.a.	€62.92
	06.23.2016	n.a.	€8.52
	06.27.2018	n.a.	€2.15
	06.27.2019	n.a.	€1.52
	06.25.2020	n.a.	€1.10
TOTAL		**n.a.**	

Table 5 of the 2009-16 Financial Markets Authority Recommendation.

* *Considering the adjustments done further to the capital increase of October 23, 2012 for all plans previously granted and the adjustments done further to the capital increase of February 5, 2016, to the stock reverse split of July 20, 2016 and the capital increase of February 21, 2018.*

G. Performance shares allocated to the Chief Executive Officer (Articles L. 22-10-59, L. 22-10-60 and L. 225-97-1, of the French Commercial Code) in the course of the 2020 fiscal year

In accordance with the provisions of Articles L. 22-10-59, L. 22-10-60 and L. 225-97-1 of the French Commercial Code, the Chief Executive Officer was allocated, within the framework of the plans implemented by the Company during the 2019 financial year, the performance shares show in the table below:

Name of the Executive Corporate Officer	Plan date	Number of shares allocated during the financial year	Valuation of shares according to the method used for the consolidated accounts *(in €)*	Acquisition date	Availability date	Performance conditions
Sophie Zurquiyah *Chief Executive Officer*	06.25.2020	220,000 0.031%*	€228.80	06.25.2023 [a]	06.25.2023 [b]	Free EBITDA Average Net Debt to EBITDAs Ratio

Table 6 of the 2009-16 Financial Markets Authority Recommendation.

(a) *The acquisition date is based on the assumption that the Annual General Meeting called to approve the accounts closed on December 31, 2022 could have been held before June 25, 2023. If it cannot be held on this date, the final acquisition date will be that of the meeting of the 2023 Annual General Meeting.*
(b) *No retention period has been set by the Board of Directors.*
* *Portion of the allocation in relation to the share capital on the date of allocation.*

The valuation of performance shares according to the method used for the consolidated accounts does not necessarily correspond to the real value that could be derived from the possible acquisition of these shares by their beneficiaries. Indeed, it is recalled that acquiring these shares is subject to the fulfilment of performance conditions.

The acquisition of shares by Mrs. Sophie ZURQUIYAH is subject to a condition of presence in June 2023 (i.e. three years from the grant), subject to the fulfilment of two performance conditions over the vesting period relating to:

- the achievement of a cumulative Free EBITDA objective on the fiscal years 2020, 2021 and 2022, allowing 50% of the option granted; in case this objective is not achieved, no right shall be acquired in respect of this first tranche;
- the achievement of an average Net Debt over EBITDAs ratio target in fiscal year 2022, allowing 50% of the option granted; in case this objective is not achieved, no right shall be acquired in respect of this second and last tranche.

The Chief Executive Officer is subject to the other conditions applicable to beneficiaries, as well as to an obligation to keep the shares in registered form and a prohibition on the use of hedging instruments, which are set out in paragraph 4.2.2.1.B of this Document.

SUMMARY TABLE OF THE PERFORMANCE CONDITIONS APPLICABLE TO THE PERFORMANCE SHARES PLAN GRANTED TO THE CHIEF EXECUTIVE OFFICER IN FISCAL YEAR 2020

Plan date	Indicator	Weight	Performance conditions target	Target Achievement Threshold in % for allocation	% of Allocation at Target	Maximum grant in %	Level of achievement – % achievement by criterion and total	Number of shares corresponding to the level of achievement
Allocation of June 25, 2020	Free EBITDA objective	50%	Achievement of an objective of cumulative Free EBITDA set by the Board of Directors, for years 2020, 2021 and 2022		100%		to be assessed after the closing of the accounts for the year 2022.	n.a.
	Average Net Debt over EBITDAs ratio objective	50%	Achievement of an average Net Debt over EBITDAs ratio set by the Board of Directors for fiscal year 2022.		100%		to be assessed after the closing of the accounts for the year 2022.	n.a.
TOTAL FISCAL YEAR 2020		**100%**						**n.a.**

H. History of Performance shares which became available as of December 31, 2020

Name of the executive officer	Date of the plan	Number of performance shares which became available in the 2020 fiscal year	Acquisition conditions
Sophie Zurquiyah *Chief Executive Officer*	06.27.2018	78,750	Free EBITDA Average net debt over EBITDAs ratio
	06.27.2019	n.a.	Free EBITDA Average net debt over EBITDAs ratio
	06.25.2020	n.a.	Free EBITDA Average net debt over EBITDAs ratio
TOTAL		**78,750**	

Table 7 of the 2009-16 Financial Markets Authority Recommendation.

No performance share plan had been implemented between the 2012 and 2018 financial years.

I. History of allocations of stock options as of December 31, 2020

	2012 plan	2013 plan	2014 plan	2015 plan	2016 plan	2018 plan		2019 plan	2020 plan	Total
Date of the General Meeting	05.04.2011	05.03.2013	05.03.2013	05.29.15	05.29.2015	04.26.2018	04.26.2018	04.26.2018 [8]	06.06.2020	
Date of the Board of Directors' meeting	06.26.2012	06.24.2013	06.26.2014	06.25.2015	06.23.2016	06.27.2018	12.11.2018 [9]	06.27.2019	06.25.2020	
Number of beneficiaries	413	672	752	749	683	530	4	247	240	
Total number of shares that can be subscribed [3]	1,410,625	1,642,574	1,655,843	1,769,890	6,658,848	6,544,389	671,171	2,353,520	2,268,512	24,975,372
Out of which the number can be exercised by:										
Executive officers										
Philippe SALLE [6]	*n.a.*	*n.a.*	*n.a.*	*n.a.*	*n.a.*	*n.a.*	*n.a.*	*n.a.*	*n.a.*	*n.a.*
Sophie ZURQUIYAH [7]	*n.a.*	*120,000* [b]	*60,000* [c]	*79,500* [d]	*444,000* [e]	*732,558* [f]	*n.a.*	*360,000*	*360,000*	*2,156,058*
Start date of options exercise	06.27.2014	06.25.2015	06.27.2016	06.26.2017	06.24.18	06.28.2019	06.28.2019	**For CEO:** 06.28.2022 **For other beneficiaries:** 06.28.2021	**For CEO and members of Corporate Committee:** 06.25.2023 **For other beneficiaries:** 06.25.2022	
Expiration date	06.26.2020	06.24.2021	06.26.2022	06.25.2023	06.23.24	06.27.2026	06.27.2026	06.27.2027	06.25.2028	
Subscription price *(in €)* [1] [2] [4]	186.62	193.27	107.66	62.92	8.52	2.15	1.39	1.52	1.10	
Exercise rules (when the plan provides for several batches of options) [5]	▪ options accrue rights in three batches (50% after 2 years, 25% after 3 years and 25% after 4 years); ▪ prohibition to sell or transfer shares before June 26, 2016 for French tax residents.	▪ options accrue rights in three batches (50% after 2 years, 25% after 3 years and 25% after 4 years)	▪ options accrue rights in three batches (50% after 2 years, 25% after 3 years and 25% after 4 years)	▪ options accrue rights in three batches (50% after 2 years, 25% after 3 years and 25% after 4 years)	▪ options accrue rights in three batches (50% after 2 years, 25% after 3 years and 25% after 4 years)	▪ options accrue rights in four batches (25% after 1 year, 25% after 2 years, 25% after 3 years and 25% after 4 years)	▪ options accrue rights in four batches (25% after 1 year, 25% after 2 years, 25% after 3 years and 25% after 4 years)	**For CEO:** options accrue rights in one batch after 3 years **For other beneficiaries:** options accrue in two batches (50% after 2 years and 50% after 3 years)	**For CEO and members of Executive Leadership team:** options accrue rights in one batch after 3 years **For other beneficiaries:** options accrue in two batches (50% after 2 years and 50% after 3 years)	
Number of shares subscribed as of December 31, 2020 [4]	0	0	0	0	0	2,038	0	0	0	2,038
Cumulated number of stock-options which were cancelled or lapsed as of December 31, 2020 [4]	1,050,417	545,867	436,073	183,204	258,485	1,252,280	67,118	63,420	0	3,856,864

	2012 plan	2013 plan	2014 plan	2015 plan	2016 plan	2018 plan		2019 plan	2020 plan	Total
Remaining stock-options as of December 31, 2020 [4]	0	68,534	76,592	76,698	236,828	5,297,713	604,053	2,290,100	2,268,512	10,919,030
Out of which the remaining number is held by:										
Executive officers										
Philippe SALLE [6]	*n.a.*	*n.a.*	*n.a.*	*n.a.*	*n.a.*	*n.a.*	*n.a.*	*n.a.*	*n.a.*	*n.a.*
Sophie ZURQUIYAH [7]	*n.a.*	*0*	*359*	*475*	*4,428*	*659,302*	*n.a.*	*360,000*	*360,000*	*1,384,564*

(1) Considering the adjustements done further to the capital increase of February 5, 2016, to the stock reverse split of July 20, 2016 and and the capital increase of February 21, 2018.
(2) The subscription price corresponds to the average of the opening share prices of the share on the last twenty trading days prior to the meeting of the Board of Directors granting the options.
(3) Without taking into account the various adjustments that have occurred after the implementation of the plans.
(4) Considering the adjustments done further to the capital increase of October 23, 2012 for all plans previously granted and the adjustments done further to the capital increase of February 5, 2016, to the stock reverse split of July 20, 2016 and the capital increase of February 21, 2018.
(5) In addition, certain performance conditions are applicable to the senior executive officers and the members of Executive Committee/Corporate Committee/Executive Leadership team (depending in the allocation date) - see section 4.2.2.1.B of the Universal Registration Document.
(6) Executive officer of CGG SA since April 26, 2018.
(7) Executive officer of CGG SA from September 1, 2015 to January 4, 2017 (member of the Corporate Committee) and since April 26, 2018 (Chier Executive Officer).
(8) Figures presented in this column include stock-options granted by the Chief Executive Officer pursuant to the subdelegation granted by the Board of Directors, to the benefit of certain employees. In such a case, the subscription price has been set to reflect the average opening price of the CGG shares for the 20 trading days preceding the allotment date.
(a) For the senior executive officers and members of the Corporate Committee, this 2012 plan is subject to performance conditions which have not been met for each of the three batches in 2014, 2015 and 2016.
(b) For the senior executive officers and members of the Corporate Committee, this 2013 plan is subject to performance conditions which have not been met for each of the three batches in 2015, 2016 and 2017.
(c) For the senior executive officers and members of the Corporate Committee, this 2014 plan is subject to performance conditions:
- which have not been met in 2016 for the first batch nor for the second batch in 2017, and
- which have been partially met (leading to a 25% vesting only) for the third batch in 2018.
(d) For the senior executive officers and members of the Corporate Committee, this 2015 plan is subject to performance conditions:
- which have not been met in 2017 for the first batch,
- which have been partially met (leading to a 25% vesting only) for the second batch in 2018, and
- which have not been met in 2019 for the third batch.
(e) For the senior executive officer and members of the Corporate Committee, this 2016 plan is subject to performance conditions:
- which have not been met in 2018 for the first batch, and
- which have been partially met (leading to a 25% vesting only) for the second batch in 2019.
(f) For the senior executive officer and members of the Executive Leadership Team, this 2018 plan is subject to performance conditions:
- which have not been met in 2019 for the first batch.
(g) Allocation subject to the terms and conditions of the stock options plan date June 27, 2018, except for the subscription price.

J. Stock options granted to the Group's top 10 employees other than Executive Directors and options exercised by the Group's top 10 employees other than Executive Directors during 2020

	Number of options allocated/ shares subscribed or purchased	Weighted average price *(in €)*	Date of the plan
Options granted during the financial year by the issuer and any companies within its Group granting options to the top ten employees of the Company and any such Group company, receiving the highest number of options	1,010,00	€1.10	06.25.2020
Options held on the issuer and the companies included in the scope of allocation of the options exercised, during the year by the top 10 employees of the issuer and any company included in this scope, exercising the highest number of options	0	n.a.	n.a.

Table 9 of the 2009-16 Financial Markets Authority Recommendation.

K. History of allocations of performance shares as of December 31, 2020

As part of the 16th resolution of the Combined General Meeting held on June 16, 2020, the Board of Directors, at its meeting held on June 25, 2020, decided to allocate performance shares as detailed in the table below.

(Article L. 225-97-1 of the French Commercial Code)	Information about performance shares			
Date of General Meeting	04.26.2018	04.26.2018 [a]	04.26.2018	06.15.2020
Date of Board of Director's resolution	06.27.2018	12.11.2018 [a]	06.27.2019 [b]	06.25.2020
Total number of performance shares allocated, of which the number allocated to:	3,108,217	132,821	2,047,720	1,953,148
Sophie ZURQUIYAH, Chief Executive Officer	157,500	n.a.	220,000	220,000
Date of acquisition of performance shares (for Chief Executive Officer)	Acquisition in 2 batches: ▪ 06.27.2020: 50% of the performance shares allocated; ▪ 06.27.2021: 50% of the performance shares allocated.	n.a.	Acquisition in 1 batch: ▪ 06.27.2022: 100% of the performance shares allocated.	Acquisition in 1 batch: ▪ 06.25.2023: 100% of the performance shares allocated.
Date of acquisition of performance shares (Members of the Executive Leadership team)	Acquisition in 2 batches: ▪ 06.27.2020: 50% of the performance shares allocated; ▪ 06.27.2021: 50% of the performance shares allocated.	Acquisition in 2 batches: ▪ 12.11.2020: 50% of the performance shares allocated; ▪ 06.27.2021: 50% of the performance shares allocated.	Acquisition in 2 batches: ▪ 06.27.2021: 50% of the performance shares allocated; ▪ 06.27.2022: 50% of the performance shares allocated.	
Date of acquisition of performance shares (other employees)				Acquisition in 2 batches: ▪ 06.25.2022: 50% of the performance shares allocated; ▪ 06.25.2023: 50% of the performance shares allocated.
Date of the end of the retaining period	n.a. [c]	n.a. [c]	n.a. [c]	n.a. [c]
Performance conditions	Free EBITDA and Average Net Debt over EBITDAs ratio	Free EBITDA and Average Net Debt over EBITDAs ratio	Free EBITDA and Average Net Debt over EBITDAs ratio	Free EBITDA and Average Net Debt over EBITDAs ratio
Number of performance shares acquired as of December 31, 2020	1,357,341	66,412	0	0
Cumulative number of performance shares cancelled or lapsed as of December 31, 2020	347,890	0	66,680	0
Performance shares remaining at the end of the financial year as of December 31, 2020	1,403,290	66,409	1,981,040	1,953,148

Table 10 of the 2009-16 Financial Markets Authority Recommendation.

(a) Acquisition subject to the terms and conditions of the performance shares plan of June 27, 2018, except for the first batch's acquisition date.
(b) In addition, 40,000 shares granted on January 6, 2020 to an employee under the terms and conditions of the Rules of the performance shares plan adopted June 27, 2019 are included in this column, except for the first batch's acquisition date.
(c) Considering the vesting period, no holding period has been set by the Board of Directors.

The individual details of the performance shares allocated to the Company's corporate officers are presented above in this paragraph.

No performance share plan had been implemented between the 2012 and 2018 financial years.

L. Summary Table as of December 31, 2020

Executive Corporate Officers	Employment contract		Supplementary pension plan		Indemnities or benefits due or likely to be due owing to the termination or change of position		Non-compete clause indemnity	
	Yes	No	Yes	No	Yes	No	Yes	No
Philippe SALLE *Chairman of the Board of Directors* First appointment: 2018 End of term of office: 2021		X		X		X		X
Sophie ZURQUIYAH *Chief Executive Officer* First appointment: 2018 End of term of office: 2022		X	X [a]		X [b]		X [c]	

Table 11 of the 2009-16 Financial Markets Authority Recommendation.

(a) The details of the supplementary pension plan are in paragraph 4.2.2.1.B of the present Document. Executive corporate officers are beneficiaries of a defined-contribution funded pension plan implemented for Group executives. This plan is partly covered by the Company. For 2020, the amount corresponding to the expense borne by the Company under this scheme represents €12,341 for Mrs. Sophie ZURQUIYAH.

(b) The details of the indemnities due owing to departure from the Group are in paragraph 4.2.2.1.B of the present Document.

(c) The details of the indemnities due for non-compete commitments are in paragraph 4.2.2.1.B of the present Document.

4.2.3 Remuneration elements paid or allocated for 2020 financial year submitted to the shareholders for approval

In accordance with Article L. 22-10-34, II, III of the French Commercial Code, the fixed, variable and exceptional elements making up the total remuneration and benefits of any kind paid or allocated for the 2020financial year to executive corporate officers, presented below, will be put to the vote of the shareholders, by separate resolutions for each person concerned, at the Shareholders' Meeting of May 12, 2021.

A. Remuneration elements paid or allocated for 2020 financial year to Mr. Philippe SALLE, Chairman of the Board of Director submitted to the shareholders for approval

Remuneration elements put to the vote	Amounts paid for the Year-End	Amount allocated for the Year-End or Accounting valuation	Information
Fixed remuneration	€170,000.00	Not applicable	On April 26, 2018, the Board of Directors decided that Mr. SALLE would receive fixed annual remuneration of €170,000 for his duties as Chairman of the Board of Directors. This fixed remuneration on an annual basis has remained unchanged for the year 2020.

Remuneration elements put to the vote	Amounts paid for the Year-End	Amount allocated for the Year-End or Accounting valuation	Information
Annual variable remuneration	Not applicable	Not applicable	Mr. SALLE does not receive any variable remuneration.
Deferred variable remuneration	Not applicable	Not applicable	Mr. SALLE does not receive any deferred variable remuneration.
Multi-annual variable remuneration (cash)	Not applicable	Not applicable	Mr. SALLE does not receive any multi-annual variable remuneration.
Exceptional remuneration	Not applicable	Not applicable	Mr. SALLE does not receive any exceptional remuneration.
Stock options, performance shares, and any other long-term remuneration element	Not applicable	Not applicable	Mr. SALLE does not receive any allocation of stock options or performance shares.
Remuneration allocated to directors	€70,500 (for 2019 fiscal year)	€70,000 (for 2020 fiscal year)	On April 26, 2018, the Board of Directors decided that Mr. SALLE would receive a fixed annual amount of remuneration allocated to directors of €70,000 for his duties as Chairman of the Board of Directors. In accordance with the applicable allocation rules decided by the Board on June 25, 2020, Mr. Philippe SALLE received, in 2021 for the year 2020, a fixed amount of remuneration allocated to the Directors of €70,000. No travel indemnity was due for 2020.
Valuation of benefits of any kind	Not applicable	Not applicable	Mr. SALLE does not benefit from any benefit in kind.
Severance pay	Not applicable	Not applicable	Mr. SALLE is not entitled to any severance pay.
Non-compete indemnity	Not applicable	Not applicable	Mr. SALLE is not entitled to any non-compete indemnity.
General Benefits plan	Not applicable	€4,050	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 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 Company under this scheme represents €4,050 for Mr. SALLE.
Supplementary pension plan	Not applicable	Not applicable	Mr. SALLE does not benefit from a supplementary pension plan.

B. Remuneration elements paid or allocated for 2020 financial year to Mrs. Sophie ZURQUIYAH, Chief Executive Officer, submitted to the shareholders for approval

Remuneration elements put to the vote	Amounts paid for the Year-End	Amount allocated for the Year-End or Accounting valuation	Information
Fixed remuneration	€630,000	Not applicable	On April 26, 2018, the Board of Directors decided that Mrs. ZURQUIYAH would receive a fixed annual remuneration of €630,000 for her duties as Chief Executive Officer. This fixed remuneration on an annual basis has remained unchanged for the year 2020.
Annual variable remuneration *(Payment of the annual variable remuneration is subject to approval by the Shareholders' Meeting convened for May 12, 2021 under the conditions provided for in Article L. 22-10-34, II of the French Commercial Code)*	€948,780 (for 2019 fiscal year)	€210,000 (for 2020 fiscal year)	Mrs. ZURQUIYAH receives a variable remuneration subject to fulfilling qualitative objectives (representing one third of variable remuneration) and quantifiable objectives (representing two thirds of variable remuneration). The quantifiable criteria are based on fulfilling the Group's budgetary objectives, set by the Board of Directors. Her target amount is set to 100% of her fixed remuneration. The performance criteria and/or conditions were established by the Board of March 5, 2020, prior to the introduction of the state of health emergency by law no. 2020-290 of March 23, 2020. The first non-financial criterion was thus modified by the Council of March 31, 2020 in order to integrate the management of the Covid-19 crisis into the management of the Company's strategic plans. The other criteria were not reviewed by the Board and the financial targets remained the same as those initially set for the 2020 fiscal year. **The quantifiable criteria (financial objectives)** are as follows: - Group's Net Cash Flow (25% weighting); - EBITDA free assets (25% weighting); - Group's external turnover (25% weighting); and - Operating income (25% weighting). **The qualitative criteria (non-financial objectives)** are focused on: - Covid-19 crisis management and strategic plans (50% weighting); - Group organization and human resources management (20% weighting); - Group's operational performance (20% weighting); - HSE/Sustainable development (10% weighting). On the basis of fulfilling the above qualitative and quantifiable criteria and the financial statements for the year 2020, and upon recommendation of the Appointment, Remuneration and Governance Committee, the Board of Directors, at its meeting of March 4, 2021, set this variable remuneration at €210,000. This payment corresponds to an overall fulfilment rate of 33.33% of the objectives (out of a possible maximum of 166,67%). This rate is applied to the target amount of variable remuneration (corresponding to 100% of the annual fixed remuneration of Mrs. ZURQUIYAH). Payment of this remuneration will be subject to the approval by the General Meeting of May 12, 2021.
Deferred variable remuneration	Not applicable	Not applicable	Mrs. ZURQUIYAH does not receive any deferred variable remuneration.

Remuneration elements put to the vote	Amounts paid for the Year-End	Amount allocated for the Year-End or Accounting valuation	Information
Exceptional remuneration	Not applicable	Not applicable	Mrs. ZURQUIYAH did not receive any exceptional remuneration in 2020.
Remuneration allocated to directors	Not applicable	Not applicable	Mrs. ZURQUIYAH does not receive any remuneration allocated to directors.
General Benefits plan	Not applicable	€4,502	The Board of Directors, at its meeting of April 26, 2018, approved, 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 Mrs. ZURQUIYAH of the general compulsory benefits plan of the Group applicable to all employees. This commitment was ratified by the General Meeting of June 16, 2020 (13th resolution). For 2020, the amount corresponding to the expense borne by the Company under this scheme represents €4,502 for Mrs. ZURQUIYAH.
International medical insurance	Not applicable	€22,259	In accordance with the provisions of 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 Board of Directors, at its meeting of April 26, 2018, approved the conclusion of an international medical insurance contract for the benefit of Mrs. ZURQUIYAH. This commitment was ratified by the General Meeting of June 16, 2020 (13th resolution). For 2020, the amount corresponding to the expense borne by the Company under this contract is €22,559 (US$25,651 converted in euros on the basis of an average conversation rate for the year 2020 of 0,8795).
Valuation of benefits of any kind	Not applicable	€9,600	The Board of Directors, at its meeting of April 26, 2018, decided that for her duties as Chief Executive Officer, Mrs. ZURQUIYAH would benefit from a company car, the reinstatement of which cannot give rise to a benefit in kind greater than an annual amount of €11,880.
	Not applicable	€11,261	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).
Remuneration allocated to Directors	Not applicable	Not applicable	Mrs. ZURQUIYAH does not receive any remuneration allocated to the Directors.

Remuneration elements put to the vote	Amounts paid for the Year-End	Amount allocated for the Year-End or Accounting valuation	Information
Multi-annual variable remuneration (cash)	Not applicable	Not applicable	No multi-annual variable remuneration plan was implemented by the Company during the 2020 financial year.

Stock options, performance shares, and any other long-term remuneration element *(Valuation according to the method used for the consolidated accounts for the 2020 financial year)*		Stock options: €147,600	During its meeting of June 25, 2020, and on the basis of the 17th resolution of the General Meeting held on June 16, 2020, the Board of Directors allocated 360,000 stock options to Mrs. ZURQUIYAH, i.e. 0.05% of the share capital of the Company on the date of allocation.
			The vesting of rights is subject to the condition of presence in June 2023 (i.e. 3 years from the grant by the Board of Directors). The acquisition of the shares is subject to the fulfilment of three performance conditions assessed over the vesting period relating to:
			- the fulfilment of a performance condition relating to a growth in the CGG stock market price over the acquisition period, of the PHLX Oil Service Sector[SM] (OSX[SM]) index, calculated on the acquisition date (first tranche giving rise to the acquisition of 50% of the rights):
			  - a growth of the CGG share equal or above 80% and below 100% of the benchmark index will result in the definitive acquisition of 50% of the options of this first tranche,
			  - a growth greater than or equal to 100% will result in the definitive acquisition of 100% of the options of this first tranche;
			- achieving a cumulative Free EBITDA objective over the acquisition period (second tranche giving rise to the acquisition of 25% of the rights;if the objective is not achieved, no rights are acquired);
			- achieving an Average Net Debt to EBITDAS ratio objective by 2022 (third tranche giving rise to the acquisition of 25% of the rights;if the objective is not achieved, no rights are acquired).
			The fulfilment of the performance condition gives the right to the allocation of 100% of the options on the date on which this fulfilment will be noted by the Board.The exercise price of the said options is €1.10, set on the basis of the average opening price of CGG shares over the twenty (20) trading days preceding the grant. The options have a term of eight years.
			The other conditions applicable to this plan are in paragraph 4.2.2.1.B of the Universal Registration Document for 2020.

Remuneration elements put to the vote	Amounts paid for the Year-End	Amount allocated for the Year-End or Accounting valuation	Information
		Performance shares: €228,800	During its meeting of June 25, 2020, and on the basis of the 16th resolution of the General Meeting held on June 16, 2020, the Board of Directors allocated 220,000 performance shares to Mrs. ZURQUIYAH, i.e. 0.03% of the share capital of the Company on the date of allocation. Thus, the acquisition of the shares is subject to a condition of presence in June 2022 (i.e. 3 years from the grant), subject to the fulfilment of two performance conditions assessed over the vesting period relating to: - achieving a cumulative Free EBITDA objective over the acquisition period (giving rise to the acquisition of 50% of the rights;if the objective is not achieved, no rights are acquired); - achieving an Average Net Debt to EBITDAS ratio objective by 2022 (giving rise to the acquisition of 50% of the rights;if the objective is not achieved, no rights are acquired). The other conditions applicable to this plan are in paragraph 4.2.2.1.B of the Universal Registration Document for 2020.
Supplementary pension plan	Not applicable	€12,341	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 extension to Mrs. ZURQUIYAH of the collective defined-contribution funded pension plan implemented for the Group’s executives since January 1, 2005. The contribution is calculated with reference to the Annual Social Security Ceiling: - tranche A – up to 1 Annual Social Security Ceiling: 0.5% employee contribution and 1% employer contribution; - tranche B – between 1 and 4 Annual Social Security Ceilings: 2% employee contribution and 3% employer contribution; - tranche C – between 4 and 8 Annual Social Security Ceilings: 3.5% employee contribution and 5% employer contribution. The contribution base consists exclusively of the gross annual remuneration for the year declared, the basic salary, the annual variable remuneration and the benefit in kind (company car). As a matter of principle, this base excludes any other remuneration element. For 2020, the amount corresponding to the expense borne by the Company under this scheme represents €12,341 for Mrs. Sophie ZURQUIYAH. This commitment was ratified by the General Meeting of June 16 2020 (13th resolution).

Remuneration elements put to the vote	Amounts paid for the Year-End	Amount allocated for the Year-End or Accounting valuation	Information
Contractual termination indemnity	No amount paid to Mrs. ZURQUIYAH for the 2020 financial year	No amount allocated to Mrs. ZURQUIYAH for the 2020 financial year	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. The Board of Directors meeting on March 5, 2020 amended the terms of these benefits. They now have the following characteristics: Mrs. Sophie ZURQUIYAH benefits from a contractual termination indemnity in the event of revocation and 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 shall be made in the event of serious or gross misconduct regardless of the reason for leaving. The payment of the contractual termination indemnity will depend on the average achievement rate 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: a) If the average achievement rate is less than 80%, no contractual termination indemnity will be paid; b) 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; c) 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-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 termination indemnity would be reduced by the amount of this cap. The Annual Reference Remuneration consists exclusively of the annual fixed remuneration received during the twelve rolling months prior to the notice date, plus the annual average of the variable remuneration due for the last three financial years ended prior to the departure date or beginning of the notice period, if applicable.

			At its meeting on March 5, 2020, the Board of Directors authorized, in accordance with the procedure applicable to regulated agreements 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 signature of an agreement formalizing these changes. The agreement concluded in this respect on March 6, 2020 has been approved by the General Meeting of June 16, 2020 (7th resolution). It is specified that, the Board of Directors must acknowledge, prior to the payment of the special termination indemnity, (i) that the performance conditions described above have been met and (ii) that the contractual termination indemnity complies with the Corporate Governance Code in force at the date of the departure of the person concerned.
Non-compete commitment indemnity	No amount paid to Mrs. ZURQUIYAH for the 2020 financial year	No amount allocated to Mrs. ZURQUIYAH for the 2020 financial year	Mrs. ZURQUIYAH has a non-compete commitment applicable 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 she participated within the CGG Group. In consideration for this commitment for a period of 18 months from the date of the termination of Mrs. ZURQUIYAH's duties, she would receive remuneration corresponding to 100% of her Annual Reference Remuneration. The Board of Directors' meeting of December 11, 2019 authorized the modification of the terms of payment of the commitment in order to bring it into compliance, in particular, with the recommendations of the AFEP-MEDEF Code and the provisions resulting from Order no. 2019-1234 of November 27, 2019 and the decree of the same date adopted for its application, and the signature of an agreement formalizing these modifications. Pursuant to these amendments, the allowance will be paid in instalments and will not be payable when the person concerned claims his or her pension rights and, in any event, beyond the age of 65. The agreement concluded in this respect on March 6, 2020 has been approved by the General Meeting of June 16, 2020 (7th resolution).

OPERATING AND FINANCIAL REVIEW

5

5.1 OPERATING AND FINANCIAL REVIEW

References to a numbered "note" in this chapter are to the notes to our Consolidated Financial 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 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'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, 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.

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 spending ("E&P") 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.

The Covid-19 pandemic, the drop in oil price and resulting 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 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 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 renewable 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.

With consolidated operating revenues as reported down by 35% 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 also 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, the Group 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, the Group recorded the following non-recurring costs in 2020 in continuing operations:

- US$42 million of costs corresponding mainly to severance costs *(see note 16)*;
- US$37 million of impairment loss related to fair value re-measurement of our GeoSoftware business available for sale *(see note 5)*;
- US$36 million of impairment loss related to fair value re-measurement of the Shearwater Vendor Notes *(see note 7)*;
- US$98 million of impairment loss on multi-client library as consequence of downward revision in sales forecasts for surveys in frontier exploration areas following governmental decisions and political unrest *(see note 10)*;
- US$24 million of impairment loss relating to the goodwill affected to our GeoConsulting CGU mainly involved in exploration and upstream evaluation *(see note 11)*;
- US$11 million of loss related to the fair value re-measurement of the Eidesvik put option *(see note 14)*;
- US$9 million of loss on deferred tax asset *(see note 24)*;
- US$7 million impairment loss on customer relationship and trade name of our GeoConsulting business *(see note 21)*; and
- US$4 million of impairment loss of right of use *(see note 9)*.

In discontinued operations, the Group recorded the following charges in relation to 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 Land, partly offset by US$1 million of gain on Multi-Physics;
- 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, commitments and contingencies — Capacity Agreement and Idle Vessels Compensation" below and note 2)*.

Seasonality

We have historically experienced higher levels of activity during the fourth quarter, since our clients seek to fully spend their annual budget before year-end. Equipment deliveries and Multi-Client after-sales during the month of December usually reflect this pattern.

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 *International Financial Reporting Standards* (IFRS) and its 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 consolidated financial statements.

5.1.1 Significant events, acquisitions and divestures

During 2020, 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 the economic slowdown of the world economy and resulted in the collapse of the oil price and significate cuts in E&P spending by our clients.

The most significant change to our perimeter was the finalization of our Marine strategic partnership with Shearwater on January 8, 2020.

Shearwater acquired all of the shares in Global Seismic Shipping AS and five sets of streamers, while the Capacity Agreement entered into force.

Please refer to note 2 for a discussion on major events of the year.

5.1.2 Twelve months ended December 31, 2020 compared to twelve months 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	-	328.4	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 demand from National Oil Companies, 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 solid 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 the 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, Middle East, India and Russia. Additionally, the first land node WiNG system was successfully delivered by Sercel in North America during the year;
- 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;
- downhole equipment and Non-Oil & 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 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. *(Please refer to paragraph 5.1 "Impairment and non-recurring and restructuring costs").*

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$212 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 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 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 SA

Operating revenues of CGG SA 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 result 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 income and expense amounted to a loss of €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.

5.1.3 Comments on the financial situation of the Company and the Group

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 to 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. 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.

Going concern assumptions

As of December 31, 2020, in light of the Group's cash flow projections based on the current operations, CGG had enough cash liquidity to fund its operations, taking into account a period of twelve months from the closing date.

Cash flows from continuing operations

Operating activities

The following table presents a summary of the net cash as reported related to operating activities for each of the periods stated:

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

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.

Investing activities

The following table presents the main items linked to investing activities for each of the periods stated:

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

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, 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.

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.

Net cash flows from discontinued operations

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

	Year ended December 31,	
(In millions of US$)	**2020**	**2019**
Net cash flow incurred by discontinued operations	(72.5)	(167.6)

Net 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.

"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 net financial debt to financing items of our statement of financial position at December 31, 2020 and December 31, 2019:

	Year ended December 31,	
(In millions of US$)	**2020**	**2019**
Bank overdrafts	0.2	-
Current portion of financial debt	58.6	59.3
Financial debt	1,330.3	1,266.7
Gross financial debt	**1,389.1**	**1,326.0**
Less cash and cash equivalents	(385.4)	(610.5)
NET FINANCIAL DEBT	**1,003.7**	**715.5**

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:

(In millions of US dollars)	Year ended December 31, 2020		
	Segment figures	IFRS 15 adjustments	As reported
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)**

(In millions of US dollars)	Year ended December 31, 2019		
	Segment figures	IFRS 15 adjustments	As reported
EBITDAs	**720.9**	**(44.6)**	**676.3**
Depreciation and amortization	(171.2)	-	(171.2)
Multi-Client surveys impairment and amortization	(315.9)	40.8	(275.1)
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	(1.2)	-	(1.2)
EBIT	**246.1**	**(3.8)**	**242.3**
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**

(In millions of US dollars)	Year ended December 31, 2020 Segment Figures	IFRS 15 adjustments	As reported
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**

(In millions of US dollars)	Year ended December 31, 2019 Segment Figures	IFRS 15 adjustments	As reported
GGR	652.1	(44.6)	607.5
Equipment	96.1	-	96.1
Non-Operated Resources	-	-	-
Eliminations and other	(27.3)	-	(27.3)
EBITDAs	**720.9**	**(44.6)**	**676.3**

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" and "Investments in multi-client surveys, net cash" 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 amounted to outflows of US$247 million in 2020 compared to inflows of US$186 million in 2019. Net cash flow before net cash flow incurred by Discontinued Operations represented outflows of US$174 million in 2020, compared to inflows of US$353 million in 2019.

(In millions of US$)	Year ended December 31, 2020	2019
Net cash flow provided by operating activities	264.3	751.4
Total capital expenditures (including variation of fixed assets suppliers, excluding multi-client surveys)	(64.1)	(75.3)
Investments in multi-client surveys, net cash	(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 and cash equivalents acquired	(0.4)	-
Lease repayments	(55.5)	(56.9)
Financial expenses paid	(80.2)	(80.5)
Net cash flow before net cash flows incurred by Discontinued Operations	**(174.4)**	**353.2**
Net cash flows incurred by Discontinued Operations	(72.5)	(167.6)
NET CASH FLOW	**(246.9)**	**185.6**

Contractual obligations, commitments and contingencies

The following table sets forth our future cash obligations (not discounted) 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 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 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 dollar at December 31, 2020 exchange rates.
(c) These amounts are principal amounts and do not include any accrued interests.

Capacity Agreement and Idle Vessels Compensation

On January 8, 2020, the Capacity Agreement between CGG and Shearwater became effective. The Capacity Agreement is 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 to 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.

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

On January 11, 2021, Eidesvik Offshore ASA exercised its put option to sell to CGG 1,987,284 Class A shares of Shearwater for US$30 million. Through this transaction, CGG SA increased its shareholding in Shearwater Geoservices Holding AS to 3,945,532 Class A shares (6.64% of the total outstanding shares).

On January 12, 2021, CGG accepted to sell to Rasmussengruppen for total cash consideration of US$27.62 million all the Shearwater shares held by CGG SA, including those acquired through Eidesvik exercising its put option.

Please refer to note 2, note 14 and note 30 to our Consolidated Financial Statements.

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, which we believe are likely to result in a material adverse effect on our consolidated financial statements.

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.

For more information, please refer to note 17 "Contractual obligations, commitments and contingencies" to our Consolidated Financial Statements

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 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 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.

5.2 INFORMATION ON THE USE OF FINANCIAL INSTRUMENTS

In 2020 and 2019, our turnover was mainly denominated in US dollar, representing respectively 68% and 73% of our total turnover and to a significantly lesser extent in euro, Brazilian real, Chinese yuan, Norwegian kroner, British pound, Australian dollar and Canadian dollar.

Most of our expenses in 2020 were paid in US dollar, euro, British pound, Norwegian kroner and Chinese yuan.

We aim to match our foreign currency revenues and expenses in order to balance, to the extent possible, our net position of receivables and payables denominated in foreign currencies, in particular currencies that are not readily available or are difficult to convert. Nevertheless, in past years, the Group did not succeed in totally balancing its foreign currency revenues and expenses, especially for euro, due to personnel costs payable in euro in France and in certain European countries.

In addition, our general policy is, when possible, to hedge major currency exposures related to forecasted excess currency originating from operational contracts at the time such contracts are entered in the backlog. This strategy to reduce foreign exchange risks led us to mitigate, without eliminating the positive or negative impact of the foreign exchange rate variation on the operating income of the Group.

On the contrary, we do not enter into forward foreign currency exchange contracts to hedge recurring fixed expenses in any currency, especially euro.

We maintain a majority of our financing in US dollars. As of December 31, 2020 and 2019, our total outstanding debt (without giving effect to the adoption of IFRS 16) denominated in US dollar was US$752 million and US$716 million, respectively, representing 62% and 63% of our total financial debt outstanding at such dates.

As of December 31, 2020, forward contracts were outstanding for the US dollar equivalent of US$47.5 million (of which US$25.4 million were applied), of which US$28.0 million were against euros, €1.6 million were against the Chinese yuan, and US$17.5 million were against the Chinese yuan.

As of December 31, 2019, forward 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 reais, and US$0.9 million against Chinese yuan.

5.3 SUBSIDIARIES MAIN AGGREGATES

The following table provides the main aggregates for the top holding company CGG SA, the GGR segment and the Equipment segment (Sercel and its subsidiaries).

IFRS *In millions of US$ except for personnel*	CGG SA	Services Subsidiaries	Equipment Subsidiaries	Consolidation adjustments	Total CGG group
2020					
Non-current assets	3,189.9	2,702.6	287.9	(4,068.1)	2,121.3
Financial debt	623.0	892.1	11.7	(137.9)	1,388.9
Cash and cash equivalents	245.3	74.9	65.3	(0.1)	385.4
Dividends paid to CGG SA	-	203.7	-	(203.7)	-
Operating revenues	19.2	663.1	290.7	(87.0)	886.0
Operating income	(156.7)	(319.5)	(9.1)	312.6	(172.7)
Net income (loss) from continuing operations	127.7	(468.1)	(2.1)	(33.1)	(375.6)
Total equity	2,743.3	1,442.1	864.7	(3,885.5)	1,164.6
Personnel	17	2,444	1,429	-	3 890
2019					
Non-current assets	2,806.0	2,805.1	284.5	(3,647.8)	2,247.8
Financial debt	571.1	1,176.3	12.1	(433.5)	1,326.0
Cash and cash equivalents	430.4	92.7	87.5	(0.1)	610.5
Dividends paid to CGG SA	-	215.2	-	(215.2)	-
Operating revenues	29.6	954.6	452.1	(80.4)	1,355.9
Operating income	(126.3)	302.5	66.5	0.8	243.5
Net income (loss) from continuing operations	108.2	100.8	64.2	(146.9)	126.3
Total equity	2,385.9	1,518.1	837.4	(3,134.0)	1,607.4
Personnel	20	3,001	1,543	-	4,564

2020 FINANCIAL STATEMENTS - FINANCIAL INFORMATION ON THE COMPANY'S ASSETS, FINANCIAL POSITON AND RESULTS

6

6.1 2019-2020 CGG CONSOLIDATED FINANCIAL STATEMENTS

6.1.1 Consolidated statement of operations

		Year	
In millions of US$	Notes	2020	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.

6.1.2 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.

6.1.3 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)

		Year	
In millions of US$	Notes	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.

6.1.4 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.

6.1.5 Notes to the consolidated financial statements

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.

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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

In millions of US$	December 31, 2020					
	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.*

In millions of US$	December 31, 2019					
	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:

	December 31,	
In millions of US$	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.*

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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:

In millions of US$	December 31 2020 Current	2020 Non-current	2020 Total	2019 Current	2019 Non-current	2019 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.

In millions of US$	December 31, 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	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:

Weighted average exercise price in €	2020 Number of options	2020 Weighted average exercise price	2019 Number of options	2019 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 :

In millions of US$	December 31, 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:

	December 31, 2020			December 31, 2019		
In millions of US$	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".*

In millions of US$, except for assets and capital employed in billions of US$	2019 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:

In millions of US$	December 31, 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

	December 31,	
In millions of US$	**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

	December 31,	
In millions of US$	**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.

6.1.6 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;

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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

6.2 2019-2020 STATUTORY FINANCIAL STATEMENTS OF CGG SA

6.2.1 Balance sheet

This section is in French only.

6.2.2 Income statement

This section is in French only.

6.2.3 Cash flow statement

This section is in French only.

6.2.4 Notes

This section is in French only.

6.2.5 Information on terms of payment

As of December 31, 2020, the parent company's trade payables totaled €6.3 million, which can be broken down as follows:

Article D. 441 I.-1°: Invoices received and not paid as of the end of the financial year although the due date has passed

	0 days	1 to 30 days	31 to 60 days	61 to 90 days	91 days or more	Total (1 day or more)
(A) Late payment periods (see note below)						
Total number of invoices concerned	24					10
Total amount of invoices concerned, in millions of euros (incl. VAT)	5.5				0.8	0.8
Percentage of the total amount of invoices concerned	88.3%				11.7%	11.7%
(B) Invoices excluded from (A) that relate to unrecorded liabilities						
Number of excluded invoices	9					
Total amount of excluded invoices, in millions of euros (incl. VAT)	1.4					
(C) Reference payment terms used (contractual or statutory - Article L. 441-6 or Article L. 443-1 of the French Commercial Code [*Code du commerce*])						
Payment terms used to calculate late payments		Contractual payment terms				
		Statutory payment terms				

As of December 31, 2020, the parent company's trade receivables totaled €65 million, which can be broken down as follows:

Article D. 441 I.-1°: Invoices received and not paid as of the end of the financial year although the due date has passed

	0 days	1 to 30 days	31 to 60 days	61 to 90 days	91 days or more	Total (1 day or more)
(A) Late payment periods (see note below)						
Total number of invoices concerned	30					2
Total amount of invoices concerned, in millions of euros (incl. VAT)	6.5			0.0	0.0	0.0
Percentage of the total amount of invoices concerned	99.3%			0.2%	0.5%	0.7%
(B) Invoices excluded from (A) that relate to unrecorded liabilities						
Number of excluded invoices	None					
Total amount of excluded invoices, in millions of euros (incl. VAT)	None					
(C) Reference payment terms used (contractual or statutory - article L. 441-6 or article L. 443-1 of the French Commercial Code [*Code du commerce*])						
Payment terms used to calculate late payments		Contractual payment terms				
		Statutory payment terms				

6.2.6 Financial results of CGG SA (group holding company) over the last five years

In €	2016	2017	2018	2019	2020
I. Financial position at year-end					
a) Capital stock	17,706,519	17,706,519	7,099,448	7,099,563	7,113,923
b) Number of shares outstanding	22,133,149	22,133,149	709,944,816	709,956,358	711,392,383
c) Maximal number of shares resulting from convertible bonds (see note below)	1,160,368	1,160,364	-	-	-
d) Total Equity	1,224,949,893	280,022,548	1,790,163,681	1,887,496,882	811,891,486
II. Earnings					
a) Sales net of sales tax	49,107,467	26,467,304	27,549,575	26,389,011	16,884,801
b) Earnings before taxes, employee profit sharing, depreciation and reserves	424,222,896	9,019,980	52,664,150	60,121,733	12,844,224
c) Employee profit sharing	-	-	-	-	-
d) Income taxes	1,319,915	(57,430,849)	250,482	(19,924,332)	(7,256,246)
e) Income after taxes, employee profit sharing, depreciation and reserves	(841,019,498)	(944,927,344)	(271,326,175)	97,295,002	(1,075,646,338)
f) Dividends	-	-	-	-	-
III. Earnings per share					
a) Earnings after taxes and profit sharing but before depreciation and reserves	19.11	3.00	0.07	0.11	0.03
b) Earnings after taxes, depreciation and reserves	(38.00)	(42.69)	(0.38)	0.14	(1.51)
c) Net dividend per share	-	-	-	-	-
IV. Personnel					
a) Average number of employees	34	32	27	22	18
b) Total payroll	6,664,549	8,923,393	8,229,076	8,263,169	5,515,555
c) Employee benefits (social security, etc.)	2,301,997	3,423,145	2,731,349	3,116,675	1,919,830

Note on convertible bonds: On February 21, 2018, CGG finalized the implementation of its financial restructuring plan. All bonds have been converted into shares.

6.2.7 Statutory auditors' report on the statutory financial statements of CGG SA

This section is in French only.

INFORMATION ON SHARE CAPITAL, SHAREHOLDERS AND GENERAL MEETINGS

7

7.1 SHAREHOLDING

7.1.1 Main shareholders

7.1.1.1 Summary of the share capital at closing of the three last years and as of March 1, 2021

	As of March 1, 2021	As of December 31, 2020	As of December 31, 2019	As of December 31, 2018
Share capital	€7,113,935	€7,113,923	€7,099,563	€7,099,448
Number of shares	711,393,503	711,392,383	709,956,358	709,944,816
Nominal value	€0.01	€0.01	€0.01	€0.01

7.1.1.2 Information on the share capital as of December 31, 2020

As of December 31, 2020, we had 1,034 shareholders in registered form.

On December 31, 2020, our Directors and the members of our Executive Leadership team held 762,215 shares and 20,337 ADSs, representing 785,747 voting rights, i.e. 0.11% of the share capital and 0.11% of the voting rights.

On December 31, 2020, the number of shares held by the employees of the Group, through the Group employee savings plan instituted in 1997, amounted to 273 shares, each with double voting rights, i.e. 546 voting rights, corresponding to 0.00004% of the share capital and 0.00008% of the voting rights of CGG.

On December 31, 2020, the Company held 24,996 of its own shares, acquired pursuant to the authorizations granted by the 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% of our voting securities as of December 31, 2020:

	Number of shares	% capital	Number of theoretical voting rights	% theoretical voting rights	Number of voting rights to be exercized during General Meetings	% voting rights to be exercized during General Meetings
Contrarian Capital Management LLC [a]	65,633,491	9.23%	65,633,491	9.22%	65,633,491	9.22%
River & Mercantile [b]	51,130,195	7.19%	51,130,195	7.18%	51,130,195	7.18%
Boussard & Gavaudan [c]	49,929,578	7.02%	49,929,578	7.02%	49,929,578	7.02%
FCPE CGG Actionnariat [d]	273	0.00%	546	0.00%	546	0.00%
Public	544,673,850	76.56%	544,924,243	76.58%	544,924,243	76.58%
Treasury stock [e]	24,996	0.00%	24,996	0.00%	0	0.00%
TOTAL NUMBER OF SHARES OUTSTANDING AND VOTING RIGHTS	**711,392,383**	**100%**	**711,643,049**	**100%**	**711,618,053**	**100%**

(a) 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.
(b) Calculated on the basis of the number of shares held by River & Mercantile as indicated in the notice of threshold crossing dated November 19, 2020.
(c) Calculated on the basis of the number of shares held by Boussard & Gavaudan as indicated in the notice of threshold crossing dated April 7, 2020.
(d) As of December 31, 2020, 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 exercized during General Meeting). Fot the sake of clarity of this table, they have been rounded to 0.00%.
(e) As of December 31, 2020, 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. Fot the sake of clarity of this table, they have been rounded to 0.00%.

To our knowledge, on December 31, 2020, there was no other shareholder holding, on an individual basis or pursuant to any agreement with another shareholder, more than 5% of the share capital or of the voting rights.

7.1.1.3 Evolution of the share capital over the past three years – Share capital as of March 1, 2021

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% 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 [a]	9.23	9.22	9.23	9.22	9.24	9.24	9.24	9.24
Boussard & Gavaudan [b]	7.19	7.18	7.19	7.18	6.05	6.05	-	-
Thunderbird Partners LLP [c]	7.02	7.02	7.02	7.02	5.72	5.71	5.05	5.05
Morgan Stanley [d]	-	-	-	-	5.39	5.39	5.23	5.23
River & Mercantile [f]	-	-	-	-	5.00	5.00	5.01	5.01
Norges Bank [e]	-	-	-	-	5.16	5.16	-	-
UBS Group AG [g]	-	-	-	-	5.00	5.00	-	-
Treasury stock [h]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FCPE CGG Actionnariat [i]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Public	76.56	76.58	76.56	76.58	58.42	58.43	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**

* *Theoretical voting rights.*
(a) *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.*
(b) *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.*
(c) *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.*
(d) *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.*
(e) *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.*
(f) *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.*
(g) *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.*
(h) *As of December 31, 2020 and February 28, 2021,table, they have been rounded to 0.00%.*
(i) *As of December 31, 2020 and February 28, 2021,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% of the share capital or of the voting rights.

7.1.2 Transactions in the Company'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 (see section 4.1.2.3 of this Document) are forbidden from carrying out any transactions in the Company'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 [1] (transactions in the Company'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.

(1) *The Board of Directors held on March 5, 2020, resolved to amend its Internal Regulations in order to reduce the black-out periods applying prior to the publication of quarterly results from 30 days to 15 days.*

7.2 STOCK MARKET INFORMATION

7.2.1 Places where CGG securities are listed

The trading market for our ordinary shares is Euronext Paris SA, SRD. Our ordinary shares will entitle their holders to all rights attached to them on January 1, 2020.

In addition:

- our senior first lien secured notes due 2023 and our senior second lien secured notes due 2024, are listed on the Euro MTF market of the Luxembourg Stock Exchange; and
- the Warrants #1 and Warrants #2 are listed on Euronext Paris.

On September 21, 2018, the Company filed a Form 25 with the Stock and Exchange Commission ("SEC") to effect the delisting of its American depositary Shares ("ADSs") from the New York Stock Exchange. A Form 15F was filed with the SEC on October 2, 2018 to terminate its SEC reporting obligations and the registration of its ADSs. The termination of the registration of its ADSs became effective 90 days after the date of filing of the Form 15F with the SEC, i.e. on January 2, 2019. Following delisting of the ADSs from the New York Stock Exchange, CGG maintains its American Depositary Receipt program at "level one". This enables investors to retain their ADSs and facilitates trading on the US over-the-counter market. The depositary of CGG's ADR program remains The Bank of New York Mellon.

7.2.2 Other market places

Since the delisting of our shares from the New York Stock Exchange, our shares are not listed on any other market place than Euronext Paris.

7.2.3 Shares and ADS price

	EURONEXT PARIS				NEW YORK STOCK EXCHANGE			
	Share price		Volumes		ADS price [b]		Volumes	
	Highest	Lowest	Shares	Amount	Highest	Lowest	ADS	Amount
	(in €)		*(in millions of €)*		*(in US$)*		*(in millions of US$)*	
2021								
January	1.00	0.81	282,424,718	259.48	1.21	0.99	n.a.	n.a.
2020								
December	0.96	0.76	284,161,661	243.78	1.10	0.92	n.a.	n.a.
November	1.06	0.46	483,326,225	374.25	1.19	0.54	n.a.	n.a.
October	0.65	0.44	218,219,114	120.55	0.75	0.50	n.a.	n.a.
September	0.76	0.52	212,676,354	135.43	0.85	0.62	n.a.	n.a.
August	0.89	0.70	195,038,454	156.84	1.01	0.86	n.a.	n.a.
July	1.01	0.71	236,249,907	211.97	1.14	0.86	n.a.	n.a.
June	1.40	0.96	387,731,366	433.32	1.53	1.08	n.a.	n.a.
May	1.20	0.93	176,162,523	182.30	1.38	1.05	n.a.	n.a.
April	1.26	0.80	279,442,759	286.44	1.41	0.93	n.a.	n.a.
March	2.54	0.76	430,081,743	492.54	2.87	0.86	n.a.	n.a.
February	3.07	2.33	103,923,244	279.02	3.24	2.59	n.a.	n.a.
January	3.12	2.53	84,779,092	243.27	3.41	2.76	n.a.	n.a.

	EURONEXT PARIS				NEW YORK STOCK EXCHANGE			
	Share price		Volumes		ADS price [b]		Volumes	
	Highest	Lowest	Shares	Amount	Highest	Lowest	ADS	Amount
	(in €)			(in millions of €)	(in US$)			(in millions of US$)
2019								
December	2.96	2.26	91,197,671	239.48	3.37	2.52	n.a.	n.a.
November	2.50	2.05	113,523,373	268.78	2.76	2.39	n.a.	n.a.
October	2.24	1.83	94,596,716	193.27	2.47	2.03	n.a.	n.a.
September	2.38	1.97	127,739,613	274.84	2.60	2.20	n.a.	n.a.
August	2.02	1.56	115,602,961	200.94	2.27	1.76	n.a.	n.a.
July	2.01	1.68	143,853,484	265.06	2.28	1.93	n.a.	n.a.
June	1.73	1.27	133,197,470	204.76	1.94	1.51	n.a.	n.a.
May	1.77	1.29	164,933,022	252.64	1.98	1.48	n.a.	n.a.
April	1.89	1.61	125,724,488	218.79	2.13	1.82	n.a.	n.a.
March	1.85	1.42	130,035,162	219.51	2.12	1.68	n.a.	n.a.
February	1.72	1.43	87,179,236	140.67	1.98	1.66	n.a.	n.a.
January	1.71	1.08	131,122,049	189.22	1.98	1.33	n.a.	n.a.
2018								
December	1.48	1.00	146,300,057	172.65	1.68	1.11	n.a.	n.a.
November	2.24	1.28	207,657,658	326.60	2.47	1.46	n.a.	n.a.
October	2.49	1.86	92,566,376	202.62	2.86	2.17	n.a.	n.a.
September [b]	2.50	2.15	87,821,129	207.84	2.99	2.53	n.a.	n.a.
August	2.60	2.24	117,978,131	285.52	2.99	2.53	412,860	1.15
July	2.42	2.04	97,258,431	215.96	2.78	2.35	556,213	1.40
June	2.29	2.00	84,731,599	181.12	2.73	2.33	594,933	1.49
May	2.48	1.81	192,724,767	422.99	3.15	2.34	1,641,927	4.47
April	2.04	1.53	121,262,621	217.58	2.45	1.95	1,186,232	2.53
March	1.69	1.30	144,225,221	224.88	4.82	1.88	2,371,263	5.50
February	3.01	1.41	58,492,698	103.05	7.15	3.27	1,161,137	5.41
January	4.10 [a]	1.52 [a]	28,723,569	117.03	6.66	4.45	305,037	1.75
2017								
December	4.35	3.68	6,983,891	27.44	7.50	4.08	185,652	0.90
November	4.89	3.52	11,261,325	45.66	5.12	4.13	37,628	0.17
October	5.09	3.57	16,661,650	73.30	5.66	4.30	92,798	0.47
September	5.60	4.24	22,149,680	110.48	6.44	5.20	275,593	1.62
August	6.27	2.83	43,912,034	211.38	7.14	3.26	356,614	2.03
July	4.43	3.72	4,527,851	18.19	4.77	4.36	53,397	0.24
June	6.32	3.95	10,859,380	55.40	7.67	4.37 [c]	377,237	2.19
May	6.72	4.88	6,704,600	36.60	7.23	5.55	59,174	0.36
April	6.95	6.17	3,924,182	25.60	7.27	6.64	32,545	0.22
March	9.10	6.11	16,640,720	114.80	9.65	6.57	111,276	0.79
February	9.98	8.35	7,241,228	66.12	10.51	8.83	72,125	0.69
January	15.24	9.27	14,124,580	162.58	15.60	10.06	98,671	1.18

(a) Restated further to the operations linked to the financial restructuring held in February 2018.
(b) The listing of our shares on the New York Stock Exchange was terminated on October 2, 2018. Following the delisting, the ADS price is the price on the US over-the-counter market.
(c) On June 14, 2017, the trading of our ADSs was suspended pending the announcement of the opening of safeguard proceedings and no trading took place during the day. The theoretical closing price of our ADSs was US$3.73 per ADS as of June 14, 2017.

7.3 FINANCIAL COMMUNICATION POLICY

CGG strongly believes that prospective and existing shareholders, both individual and institutional, should be fully informed about the latest development of the Company and should have access to key information reasonably required to make an informed investment decision and exercise their rights on a fair and timely basis. The Company aims to provide and implement the best financial communication practices.

7.3.1 General financial communication policy

As per the Internal Regulations of the Board of Directors, the Chairman of the Board may communicate directly with shareholders, particularly with regard to corporate governance matters.

Information is communicated to shareholders and the investment community mainly through the Company's financial reports, annual General Meetings as well as by making available on the Company's website all corporate communications, any disclosures submitted to Euronext Paris and any other publications.

7.3.2 Communication by electronic channel

The Company's website (www.cgg.com) provides shareholders with access to important and relevant corporate information on an effective and timely basis. A dedicated "Investor Relations" section is available on this website. The Company will publish all important announcements/information on its website. Regular updates include, among others, the following information:

- financial performance of the Company in the form of quarterly, semi-annual or annual reports;
- webcasts and presentations on the Company's results announcements;
- announcements and press releases on the Company's latest developments;
- circulars to shareholders;
- corporate calendar with dates of important events of the Company;
- any other information, such as credit ratings, share information, etc.

Shareholders are also encouraged to visit the Euronext website to obtain information on regulatory publications of the Company.

In order to support the protection of the environment, the Company highly encourages its shareholders to access corporate communications of the Company through these websites. The Company believes that this is also one of the most efficient and convenient mean of communication with shareholders.

7.3.3 Communication by post

Upon demand, the Company will send by post the relevant materials to any shareholders (either to holders of registered shares or to holders of bearer shares, subject to evidence of this shareholding).

7.3.4 General Meetings

The Company attaches a high degree of importance to continuous communication with shareholders, especially direct dialogue with them. The Annual General Meetings of the Company are the primary forum for communication between the Company and its shareholders and for shareholder participation. The Company's Board members, members of the senior management and external auditors usually attend the Annual General Meetings to respond to questions and comments from shareholders. Shareholders are therefore encouraged to participate actively in the Company's Annual General Meetings. Shareholders who are unable to attend the Annual General Meetings are also encouraged to appoint proxies to attend and vote at the said meetings for and on their behalf.

To ensure that shareholders can have a better understanding of the agenda items to be discussed at the Annual General Meetings and to encourage their active participation, the Company will provide detailed information on the Annual General Meetings in the "Notice and Information Brochure" which is available on the Company's website prior to said meetings, together with the latest annual report, at least 21 calendar days prior to the Annual General Meetings.

In the exceptional context of the Covid-19 crisis, the Company decided, in accordance with the provisions of Order n°. 2020-321 of March 25, 2020, to hold the 2020 General Meeting at the Company's registered office, 27 avenue Carnot, 91300 Massy, France, behind closed doors, without the physical presence of shareholders and other persons authorized to attend.

Voting results and minutes of the Annual General Meetings are posted on the Company's website as soon as practicable.

The Company may also convene Extraordinary General Meetings whenever needed.

7.3.5 Communication with investment community

The Company will communicate actively with the investment community through meetings, conferences and roadshows. The investment community includes existing and potential investors of the Company's securities, analysts and securities market professional. Information concerning the Company will be discussed during these meetings.

In 2019, CGG organized 27 days of roadshow in Europe and in the US and participated in 11 energy or mid-cap conferences.

7.3.6 Shareholders' enquiries

Shareholders having queries or comments in relation to the shareholder communications can send written enquiries by email to the Company's investor relations department or call the Company's registered office.

Subject to legal disclosure obligations, it is the Company's general practice not to respond to media speculation, market rumours and analysts' reports.

7.3.7 Sell-side analysts and brokers

CGG is currently covered by 12 sell-side analysts and broker firms. CGG holds regular meetings with sell-side analysts and is seeking to enlarge its coverage by global and US based analyst firms.

7.4 DISTRIBUTION OF EARNINGS – DIVIDENDS

7.4.1 Distribution of earnings (Article 19 of the articles of association)

Out of the earnings of the fiscal year, reduced if necessary by previous losses, at least five percent shall be first appropriated to form the reserve fund required by law, until said reserve fund has reached one tenth of the share capital.

The balance, increased by retained earnings, if any, forms the distributable earnings.

Any amounts that the General Meeting would decide, either on proposal by the Board or by its own decision, to allocate to one or more general or special reserve funds or to carry forward, shall be withdrawn from said earnings.

The balance shall be distributed among the shareholders as a dividend.

The terms and conditions for the payment of dividends are determined by the General Meeting or, failing such, by the Board of Directors.

The General Meeting deciding on the financial statements is entitled to give each shareholder, for the dividend or part of the dividend to be distributed or for any advance payments on a dividend, the choice between payment of the dividend in cash or in stock.

7.4.2 Dividends

The Company did not distribute any dividends over the past five years.

The Board of Directors does not consider proposing to distribute dividends to the next General Meeting based on 2020 results. Nevertheless, we intend to introduce a meaningful dividends policy in the next couple of years (see section 2.2 "Main risk factors and control measures", and more especially section 2.2.6.2 of this Document).

7.5 GENERAL INFORMATION ON THE COMPANY'S SHARE CAPITAL

7.5.1 Recent major events affecting the share capital

2018

In the framework of the implementation of the financial restructuring plan, the Extraordinary General Meeting held on November 13, 2017 decided, among others, to reduce the share capital of the Company in an amount of €17,485,187.71 by reducing the nominal value of each share, from €0.80 to €0.01. This share capital reduction was completed by decision of the Board of Directors on January 15, 2018.

On January 15, 2018, further to the acknowledgment of the share capital reduction by the Board of Directors, the share capital of the Company amounted to €221,331.49, divided into 22,133,148 shares, all fully paid.

As part of the implementation of its financial restructuring plan, the Company issued on February 21, 2018:

- 71,932,731 shares of the Company, each with one share purchase warrant, all of which were subscribed by holders of preferential subscription rights;
- 35,311,528 new shares resulting from the equitization of the Convertible Bonds;
- 449,197,594 new shares 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 of 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").

As a result of these transactions, our issued share capital amounted to €5,785,750 divided into 578,575,002 shares of the same class with a nominal value of €0.01 per share, all fully paid. Various changes in the share capital occurred since then, as a result of the exercise of the warrants. These changes are detailed below.

Warrants #3, Coordination Warrants and Backstop Warrants expired on August 21, 2018.

As of December 31, 2018, our issued share capital amounted to €7,099,448, divided into 709,944,816 shares of the same class with a nominal value of €0.01 per share, all fully paid.

2019

As of December 31, 2019, as a result of the exercise of warrants and stock-options over the year, our issued share capital amounted to €7,099,563 divided into 709,956,358 shares of the same class with a nominal value of €0.01 per share, all fully paid.

2020

As of December 31, 2020, as a result of the exercise of warrants and of the final allocation of performance shares of the year, our issued share capital amounted to €7,113,923 divided into 711,392,383 shares of the same class with a nominal value of €0.01 per share, all fully paid.

2021

As of March 1, 2021, as a result of the exercise of warrants and of the final allocation of performance shares of the year, our issued share capital amounted to €7,113,935 divided into 711,393,503 shares of the same class with a nominal value of €0.01 per share, all fully paid.

DETAILS OF CHANGES IN SHARE CAPITAL DURING THE PAST THREE YEARS AND UNTIL MARCH 1, 2021

Transaction	Nominal value	Number of shares created	Amount of the share premium	Amount of the capital variation	Resulting total share capital
2021					
Share capital increase dated March 1, 2021 (as a result of the exercize of warrants)	€0.01	378	€1,422.18	€3.78	€7,113,935.03
Share capital increase dated February 3, 2021 (as a result of the exercize of warrants)	€0.01	742	€2,953.82	€7.42	€7,113,931,25
Share capital increase dated January 5, 2021 (as a result of the exercize of warrants)	€0.01	716	€2,619.16	€7.16	€7,113,923.83
2020					
Share capital increase dated December 11, 2020 (as a result of the final allocation of performance shares)	€0.01	66,412	-	€664.12	€€7,113,916.67
Share capital increase dated December 2, 2020 (as a result of the exercize of warrants)	€0.01	326	€1,123.66	€3.26	€7,113,252.55
Share capital increase dated November 2, 2020 (as a result of the exercize of warrants)	€0.01	566	€1,790.86	€5.66	€7,113,249.29
Share capital increase dated October 2, 2020 (as a result of the exercize of warrants)	€0.01	28	€87.08	€0.28	€7,113,243.63
Share capital increase dated September 1, 2020 (as a result of the exercize of warrants)	€0.01	392	€1,219.12	€3.92	€7,113,243.35
Share capital increase dated August 27, 2020 (as a result of the exercize of warrants)	€0.01	104	€323.44	€1.04	€7,113,239.43
Share capital increase dated July 6, 2020 (as a result of the exercize of warrants)	€0.01	280	€878.00	€2.80	€7,113,238.39
Share capital increase dated June 29, 2020 (as a result of the final allocation of performance shares)	€0.01	1,357,341	-	€13,573.41	€7,113,235.59
Share capital increase dated June 12, 2020 (as a result of the exercize of warrants)	€0.01	104	€323.44	€1.04	€7,099,662.18
Share capital increase dated June 3, 2020 (as a result of the exercize of warrants)	€0.01	504	€1,567.44	€5.04	€7,099,661.14
Share capital increase dated May 4, 2020 (as a result of the exercize of warrants)	€0.01	3,908	€12,153.88	€39,.08	€7,099,656.10
Share capital increase dated April 1, 2020 (as a result of the exercize of warrants)	€0.01	458	€1,778.98	€4.58	€7,099,617.02
Share capital increase dated March 5, 2020 (as a result of yje exercize of warrants)	€0.01	1,232	€4,450.72	€12.32	€7,099,612.44
Share capital increase dated February 4, 2020 (as a result of the exercize of warrants)	€0.01	3,654	€12,503.34	€36.54	€7,099,600.12
Share capital increase dated January 9, 2020 (as a result of the exercize of warrants):					
- *as a result of the exercize of warrants*	€0.01	1,594	€5,635.94	€15.94	€7,099,563.58
- *as a result of the exercize of stock options*	€0.01	2,038	€4,361.32	€20.38	
2019					
Share capital increase dated December 3, 2019 (as a result of the exercize of warrants)	€0.01	846	€2,931.66	€8.46	€7,099,527.26
Share capital increase dated November 4, 2019 (as a result of the exercize of warrants)	€0.01	234	€931.14	€2.34	€7,099,518.80

Transaction	Nominal value	Number of shares created	Amount of the share premium	Amount of the capital variation	Resulting total share capital
Share capital increase dated October 2, 2019 (as a result of the exercize of warrants)	€0.01	144	€447.84	€1.44	€7,099,516.46
Share capital increase dated September 4, 2019 (as a result of the exercize of warrants)	€0.01	1,260	€3,983.40	€12.60	€7,099,515.02
Share capital increase dated August 1, 2019 (as a result of the exercize of warrants)	€0.01	330	€1,085.70	€3.30	€7,099,502.42
Share capital increase dated July 4, 2019 (as a result of the exercize of warrants)	€0.01	758	€2,859.58	€7.58	€7,099,499.12
Share capital increase dated May 31, 2019 (as a result of the exercize of warrants)	€0.01	312	€1,251.12	€3.12	€7,099,491.54
Share capital increase dated May 13, 2019 (as a result of the exercize of warrants)	€0.01	100	€311.00	€1.00	€7,099,488.42
Share capital increase dated May 3, 2019 (as a result of the exercize of warrants)	€0.01	776	€2,740.96	€7.76	€7,099,487.42
Share capital increase dated April 2, 2019 (as a result of the exercize of warrants)	€0.01	208	€693.68	€2.08	€7,099,479.66
Share capital increase dated February 28, 2019 (as a result of the exercize of warrants)	€0.01	402	€1,266.42	€4.02	€7,099,477.58
Share capital increase dated February 6, 2019 (as a result of the exercize of warrants)	€0.01	2,540	€9,584.20	€25.40	€7,099,473.56
Share capital increase dated January 9, 2019 (as a result of the exercize of warrants)	€0.01	418	€1,308.98	€4.18	€7,099,448.16
2018					
Share capital increase dated December 5, 2018 (as a result of the exercize of warrants)	€0.01	512	€1,653.52	€5.12	€7,099,443.98
Share capital increase dated November 8, 2018 (as a result of the exercize of warrants)	€0.01	1,006	€3,292.46	€10.06	€7,099,438.86
Share capital increase dated October 2, 2018 (as a result of the exercize of warrants)	€0.01	2,162	€6,873.22	€21.62	€7,099,428.80
Share capital increase dated September 4, 2018 (as a result of the exercize of warrants)	€0.01	858	€2,878.98	€8.58	€7,099,407.18
Share capital increase dated August 23, 2018 (as a result of the exercize of warrants)	€0.01	10,613,316	€0	€106,133.16	€7,099,398.60
Share capital increase dated August 2, 2018 (as a result of the exercize of warrants)	€0.01	497,637	€6,827.84	€4,976.37	€6,993,265.44
Share capital increase dated July 2, 2018 (as a result of the exercize of warrants)	€0.01	1,115,710	€4,750.46	€11,157.10	€6,988,289.07
Share capital increase dated June 1, 2018 (as a result of the exercize of warrants)	€0.01	2,372,284	€9,939.32	€23,772.84	€6,977,131.97
Share capital increase dated May 4, 2018 (as a result of the exercize of warrants)	€0.01	68,953	€2,214.32	€689.53	€6,953,409.13
Share capital increase dated April 24, 2018 (as a result of the exercize of warrants)	€0.01	9,863,863	€27,608.64	€98,638.63	€6,952,719.60
Share capital increase dated April 3, 2018 (as a result of the exercize of warrants)	€0.01	99,950,700	€142,803.78	€999,507.00	€6,854,080.97
Share capital increase dated March 9, 2018 (as a result of exercise of certain warrants by their holders)	€0.01	6,882,395	€15,064.84	€68,823.95	€5,854,573.97
Share capital increase dated February 21, 2018 (reserved to the senior noteholders)	€0.01	449,197,594	€1,397,004,517.34	€4,491,975.94	€5,785,750.02

Transaction	Nominal value	Number of shares created	Amount of the share premium	Amount of the capital variation	Resulting total share capital
Share capital increase dated February 21, 2018 (reserved to the convertible bondholders)	€0.01	35,311,528	€361,943,162.00	€353,115.28	€1,293,774.08
Share capital increase dated February 21, 2018 (with preferential subscription right)	€0.01	71,932,731	€111,495,733.05	€719,327.31	€940,658.80
Share capital reduction dated January 15, 2018	€0.01	-	-	€17,485,187.17	€221,331.49

7.5.2 Dilutive instruments

As of December 31, 2020 and as of the date of this Document, the only dilutive instruments issued were stock options and performance shares (see section 4.2.2.2 of this Document) 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.

	12.31.2020	Dilution %
Stock-options	10,919,030 [a]	1.53%
Performance shares	5,403,887	0.76%
Warrants #1	29,419,884	4.14%
Warrants #2	47,925,114	6.74%

(a) 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 [a]	47,955,154	113,585,276	7,099,079	10,648,619
Expiry date of the warrants[b]	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.
(b) 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.

7.5.3 Share buyback program

A. Share buyback program approved by the General Meeting held on June 16, 2020

At the General Meeting held on June 20, 2016, our shareholders authorized the Board of Directors to acquire up to 10% of our share capital through purchases of shares and to resell shares so acquired for the 18 months following the date of such Meeting, with the following objectives:

- to support liquidity of our shares through a liquidity contract entered into with an investment service provider in compliance with the Code of Practice of the French *Autorité des marchés financiers;*
- to deliver shares in the scope of securities giving access, immediately or in the future, to shares by redemption, conversion, exchange, presentation of a warrant or by any other means;
- to deliver, immediately or in the future, shares in exchange in the scope of external growth within the limit of 5% of the share capital;
- to allocate shares to employees and officers of the Company or affiliated companies within the meaning of Article L. 225-180 of the French Commercial Code, including but not limited to options to purchase shares of the Company;
- to deliver shares for no consideration to executive officers and employees, including but not limited to the scope of Articles L. 225-197-1 *et seq.* of the French Commercial Code; and
- to cancel the shares through a capital reduction, subject to a decision of, or an authorization by the Extraordinary General Meeting.

In accordance with these objectives (save for liquidity contracts), the treasury shares so acquired may be either cancelled, sold or otherwise transferred. The shares may be acquired, sold or transferred, on one or several occasions, by any means, including by individual agreement or market purchase, by an offer to buy, or in a block of shares and at any moment, but not during a take-over bid. The maximum amount of share capital that can be purchased or transferred as block of shares can be up to the total authorized amount under this program.

The General Meeting approved a maximum purchase price of €4.02 per share.

The maximum number of shares that we are entitled to hold is 10% of our share capital as at the time of the purchase, less any shares acquired under previous authorizations. Notwithstanding the above, pursuant to Article L. 225-209, paragraph 6 of the French Commercial Code, the number of shares that may be acquired and retained for possible use for payment or exchange in the context of a merger, demerger or contribution may not exceed 5% of the share capital.

This authorization was granted for an 18-month period from the date of the General Meeting approving the program, i.e. until December 16, 2021.

As of the date of this Document, this share buyback program was not implemented.

As of December 31, 2020, we held 24,996 of our own shares, acquired in the course of 2010.

B. Share buyback program proposed to the General Meeting to be held on May 12, 2021

A share buyback program will be submitted to the General Meeting to be held on May 12, 2021 in order to acquire up to 10% of our share capital through purchases of shares and to resell shares so acquired for the 18 months following the date of such Meeting, with the following objectives:

- to ensure the animation of the secondary market or the liquidity of our shares through a liquidity contract entered into with an investment service provider acting in compliance with the market practice admitted by the French *Autorité des marchés financiers* (as amended from time to time);
- to deliver shares on the exercise of rights attached to securities giving access, immediately or in the future, to the Company's shares by redemption, conversion, exchange, presentation of a warrant or by any other means;
- retain or remit, immediately or in the future, shares in exchange for shares in connection with mergers, spin-offs or contributions, or in exchange, as payment or otherwise in the framework of external growth transactions, within the limit of 5% of the share capital;

- to allocate or sell shares thus acquired to employees and/or corporate officers (under the terms and conditions provided for by law), in particular with a view to the allocation of performance shares pursuant to the provisions of Articles L. 22-10-59 *et seq.* of the French Commercial Code, the allocation or sale of shares to employees in connection with their profit-sharing scheme or the implementation of any Company or Group savings plan (or similar plan) under the terms and conditions provided for by law and in particular Articles L. 3332-1 *et seq.* of the French Labor Code, and in general, to meet obligations related to stock option plans or other share allocations to employees or corporate officers of the Company or an associated company, or to cover a shareholding offer structured by a banking institution, or an entity controlled by such an institution within the meaning of Article L. 233-3 of the French Commercial Code, made at the Company's request;
- to cancel the shares through a capital reduction, in the framework of the authorization in place to reduce the share capital granted by the General Meeting; and
- generally, to implement any market practice that may be admitted by the French *Autorité des marchés financiers* and, more generally, to carry out any other transaction in accordance with applicable regulations (in such a case, the Company will inform its shareholders by means of a press release).

In accordance with these objectives (save for liquidity contracts), the treasury shares so acquired could either be cancelled, sold or otherwise transferred. The shares could be acquired, sold or transferred, on one or several occasions, by any means, including by individual agreement or market purchase, by an offer to buy, or in a block of shares and at any moment, but not during a take-over bid. The maximum amount of share capital that can be purchased or transferred as block of shares could be up to the total authorized amount under this program.

The maximum purchase price proposed to the General Meeting is set at €4.02 per share.

The maximum number of shares that we are entitled to hold is 10% of our share capital as at the time of the purchase, less any shares acquired under previous authorizations. Notwithstanding the above, pursuant to Article L. 22-10-62, paragraph 6 of the French Commercial Code, the number of shares that may be acquired and retained for possible use for payment or exchange in the context of a merger, demerger or contribution may not exceed 5% of the share capital.

This authorization would be granted for an 18-month period from the date of the General Meeting approving the program, i.e. until November 11, 2022.

7.5.4 Delegations of powers granted to the Board of Directors in force in the course of 2020

The tables below summarize the various delegations granted by the General Meeting to the Board of Directors, which are currently in force.

	Authorizations in force in 2020			
	Resolution number – General Meeting	Period	Maximum authorized amount	Use of the authorization in 2020
SHARE CAPITAL INCREASES				
With preferential subscription right	18th – GM 05/15/2019	26 months	€3,549,737 [a], i.e. 50% of the Company's share capital as of the date of convening of the General Meeting	None
Without preferential subscription right, within the scope of public offerings	19th – GM 05/15/2019	26 months	€709,947 [b], i.e. 10% of the Company's share capital as of the date of convening of the General Meeting	None
Without preferential subscription right, within the scope of private placements referred to in Article L. 411-2-II of the French Monetary and Financial Code	20th - GM 05/15/2019	26 months	€709,947 [b], i.e. 10% of the Company's share capital as of the date of convening of the General Meeting	None
Increase of the number of securities to be issued by the Company in the event of a share capital increase with or without preferential subscription right	22nd - GM 05/15/2019	26 months	15% of the initial issue	None

	Authorizations in force in 2020			
	Resolution number – General Meeting	Period	Maximum authorized amount	Use of the authorization in 2020
In consideration of contributions in kind	24th – GM 05/15/2019	26 months	€709,947 [b], i.e. 10% of the Company's share capital as of the date of convening of the General Meeting	None
Increase of capital, reserving the subscription of the shares to be issued to members of a Company savings plan *("Plan d'Épargne Entreprise")* [c]	18th – GM 06/16/2020*	26 months	2% of the Company's share capital as of the date of the General Meeting	None
	23rd – GM 05/15/2019	26 months	€141,990 [b] i.e. 2% of the Company's share capital as of the date of convening of the General Meeting	None
STOCK-OPTIONS AND PERFORMANCE SHARES				
Stock-options	17th – GM 06/16/2020: Allocation to the employees and senior executive officers*	26 months	0.60% of the share capital on 06/16/2020, with a sub-ceiling of 0.11% of the share capital on 06/16/2020 for senior executive officers No discount	06/25/2020: allocation of 2,268,512 stock-options, i.e. 0.320% of the share capital on 06/16/2020
	17th – GM 04/26/2018: Allocation to the employees and senior executive officers	26 months	Maximum number of 15,746,813 stock-options	None
Performance shares	16th – GM 06/16/2020:Allocation to the employees and senior executive officers*	26 months	0.634% of the share capital 06/16/2020, with a sub-ceiling of 0.071% of the share capital on 06/16/2020 for senior executive officers	06/25/2020: allocation of 1,953,148 performance shares, i.e. 0.275% of the share capital on 06/16/2020
	18th – GM 04/26/2018:Allocation to the employees and senior executive officers	26 months	Maximum number of 6,928,598 performance shares	None
SHARE BUY-BACK PROGRAM				
Share repurchase	15th – GM 06/16/2020	18 months	10% of the share capital Maximum amount: €4.02 per share	None
CAPITAL REDUCTIONS				
Share cancellation	20th – GM 06/16/2020*	18 months	10% of the share capital	None
	25th – GM 05/15/2019	18 months	10% of the share capital	None

(a) Aggregate ceiling for share capital increases, any operations considered, to the exception of stock-options and performance shares allocations.
(b) To be deducted from the aggregate ceiling of €3,549,737 set forth in the 18th resolution of the General Meeting held on May 15, 2019.
(c) Category of persons under Article L. 225-138 of the French Commercial Code.
** Cancels and replaces, for the non-used portion, the resolutions voted in this respect during the previous General Meetings.*

7.5.5 Securities not giving access to the share capital

First lien notes due 2023

On April 24, 2018, CGG Holding (US) Inc. (an indirect fully owned subsidiary of CGG SA) issued new first lien senior secured notes due 2023 (refinancing in whole its senior secured first lien notes issued on February 21, 2018 as part of the financial restructuring, see 1.2 "History and significant events in the development of the Company's activities – Financial restructuring process – Description of the Safeguard Plan" of the 2018 Reference Document, for more details), including a dollar tranche for a total nominal amount of US$300 million bearing interest at 9.00% and a euro tranche for a total nominal amount €280 million bearing interest at 7.875%. In connection with the issuance of the new first lien notes, CGG Holding (U.S.) Inc. as Issuer, the Company and certain of its subsidiaries as Guarantors and The Bank of New York Mellon, London Branch as Trustee, among others, executed an indenture dated April 24, 2018.

Second lien notes due 2024

As part of the financial restructuring, on February 21, 2018, the Company issued US$355.1 million and €80.4 million in principal amounts of second lien notes due 2024, bearing interest at a rate including a variable component indexed on the LIBOR (for the tranche denominated in US dollars) and EURIBOR (for the tranche denominated in euros), in each case, with a floor of 1%, plus a margin of 4.0% per annum, and PIK interest of 8.5% per annum. In connection with the issuance of the second lien notes, CGG SA as Issuer, certain of its subsidiaries as Guarantors, and The Bank of New York Mellon, London Branch as Trustee, among others, executed an indenture dated February 21, 2018. The net proceeds from the issuance of the new money portion of the second lien notes were used as set forth in 1.2 "History and significant events in the development of the Company's activities – Financial restructuring process – Description of the Safeguard Plan" of the 2018 Reference Document, for more details.

7.6 GENERAL INFORMATION ON THE COMPANY'S GENERAL MEETINGS

7.6.1 Convening (Articles 14.2 and 14.3 of our articles of association)

The General Meeting is convened and takes decision under the conditions set forth by law. The General Meeting meets at the head office or at any other place as may be indicated in the notice of convening.

7.6.2 Conditions to attend and vote at General Meetings (Article 14.6 of our articles of association)

Subject to the provisions of Articles L. 225-104 *et seq.* of the French Commercial Code, the conditions for shareholders to attend the General Meetings of the Company are described in Articles 14, 15 and 16 of our articles of association.

The General Meeting is composed of all the shareholders, either personally or represented by another person, whatever the number of shares they hold.

Any shareholder shall have the right to attend the General Meetings and to vote on the resolutions, either personally or by agent, regardless of the number of shares held, on simple justification of his/her identity, provided that, (i) in the case of a registered shareholder or financial intermediary referred to in Article L. 228-1 of the Commercial Code, the registered shareholder or financial intermediary referred to in Article L. 228-1 of the Commercial Code is registered in the securities accounts of the Company on the second business day prior to the date of the General Meeting at 12 a.m., Paris time, or, (ii) in the case of a holder of shares in bearer form, within the same period, a certificate delivered by an authorized financial intermediary, evidencing the recording of the shares in the book up to the date of the General Meeting, was sent to the place indicated in the convening notice. Such a certificate is also delivered to the holder of shares in bearer form willing to attend the General Meeting in a person but who has not received its admission card two business days prior to the date of the General Meeting at 12 a.m., Paris time.

7.6.3 Double voting rights (Article 14.6 of our articles of association)

As from May 22, 1997, a double voting right is allocated to all registered and fully paid-up shares registered in the name of the same holder for at least two years.

In the event of an increase in capital by incorporation of reserves, profits or paid in capital, this double voting right is granted to registered shares allocated free to a shareholder as soon as they are issued, at the rate of the former shares for which he benefits from this right.

The double voting right ceases ipso jure for any share having been subject to a conversion to bearer form or a transfer of ownership subject to exceptions provided for by law.

In accordance with Article L. 225-99, paragraph 2, of the French Commercial Code, the Extraordinary General Meeting cannot withdraw the double voting rights without a prior authorization granted by a special meeting of the holders of these double voting rights.

7.6.4 Threshold crossings to be notified to the Company pursuant to the articles of association (Article 7.2)

Any shareholder who directly or indirectly (as per the provisions of Article L. 233-7 of the French Commercial Code) acquires ownership or control of shares representing 1% or any multiple thereof of our share capital or voting rights, or whose shareholding falls below any such limit, must inform us within five trading days of the crossing of the relevant threshold, of the number of shares then owned by such shareholder.

Failure to comply with these notification requirements may result, at the request, recorded in the minutes of the General Meeting, of one or several shareholders holding at least 1% of the capital, in the shares in excess of the relevant threshold being deprived of voting rights for all Shareholder Meetings until the end of a two-year period following the date on which the owner thereof has complied with such notification requirements.

7.6.5 Legal threshold crossings in 2020 and until March 1, 2021

The table below shows all the legal threshold crossings reported during fiscal year 2020 and until March 1, 2021.

Date of the notification	Date of the transaction	Threshold crossed	Above/Below	Number of shares after the crossing	In % of the share capital	In % of the voting rights
By Norges Bank Investment Management						
01.14.20	01.13.20	5%	Below	33,575,240	4.73	4.73
01.22.20	01.21.20	5%	Above	35,608,075	5.02	5.02
02.03.20	01.31.20	5%	Below	33,340,100	4.70	4.70
02.04.20	02.03.20	5%	Above	37,355,380	5.26	5.26
03.24.20	03.20.20	5%	Below	33,603,637	4.73	4.73
04.03.20	03.30.20	5%	Above	37,303,804	5.25	5.25
	03.31.20	5%	Below	34,206,305	4.82	4.82
04.14.20	04.06.20	5%	Above	36,050,672	5.08	5.08
	04.07.20	5%	Below	28,951,107	4.08	4.08
04.20.20	04.16.20	5%	Above	39,713,758	5.59	5.59
04.21.20	04.17.20	5%	Below	31,832,382	4.48	4.48
04.24.20	04.22.20	5%	Above	36,459,562	5.14	5.14
04.30.20	04.28.20	5%	Below	32,031,084	4.51	4.51
	04.29.20	5%	Above	36,493,338	5.14	5.14
05.06.20	05.04.20	5%	Below	28,901,497	4.07	4.07
05.07.20	05.06.20	5%	Above	39,536,588	5.57	5.57
05.20.20	05.14.20	5%	Below	35,172,701	4.95	4.95
	05.15.20	5%	Above	36,752,315	5.18	5.18
05.25.20	05.21.20	5%	Below	34,501,285	4.86	4.86
	05.22.20	5%	Above	35,794,449	5.04	5.04
05.29.20	05.26.20	5%	Below	29,324,852	4.13	4.13
06.02.20	05.29.20	5%	Above	35,687,696	5.03	5.03
	06.01.20	5%	Below	35,249,986	4.97	4.97
06.09.20	06.05.20	5%	Above	38,229,334	5.38	5.38
06.12.20	06.11.20	5%	Below	33,935,723	4.78	4.78
06.18.20	06.16.20	5%	Above	39,419,179	5.55	5.55
06.19.20	06.18.20	5%	Below	33,165,517	4.67	4.67
08.10.20	08.04.20	5%	Above	36,995,767	5.20	5.20
08.11.20	08.06.20	5%	Below	30,554,147	4.30	4.29
08.14.20	08.12.20	5%	Above	36,119,696	5.08	5.08
08.19.20	08.17.20	5%	Below	31,687,389	4.45	4.45
08.26.20	08.21.20	5%	Above	37,030,140	5.20	5.20
	08.24.20	5%	Below	29,942,342	4.21	4.21
09.29.20	09.28.20	5%	Above	37,063,980	5.21	5.21

Date of the notification	Date of the transaction	Threshold crossed	Above/Below	Number of shares after the crossing	In % of the share capital	In % of the voting rights
10.07.20	09.30.20	5%	Above	39,306,723	5.53	5.53
10.08.20	10.02.20	5%	Below	29,315,023	5.53	5.53
10.13.20	10.07.20	5%	Below	NC	NC	NC
	10.09.20	5%	Above	39,191,371	5,51	5.51
10.14.20	10.12.20	5%	Below	33,511,533	4.71	4.71
10.28.20	10.27.20	5%	Above	35,674,587	5.01	5.01
11.02.20	10.29.20	5%	Below	34,601,884	4.86	4.86
11.16.20	11.16.20	5%	Above	36,432,462	5.12	5.12
11.20.20	11.17.20	5%	Below	31,413,034	4.42	4.42
	11.18.20	5%	Above	37,510,490	5.27	5.27
	11.19.20	5%	Below	31,336,790	4.41	4.41
11.25.20	11.20.20	5%	Above	42,556,232	5.98	5.98
	11.24.20	5%	Below	28,634,658	4.03	4.03
12.03.20	11.27.20	5%	Above	37,583,320	5.28	5.28
	12.01.20	5%	Below	32,539,800	4.57	4.57
12.07.20	12.04.20	5%	Above	37,144,061	5.22	5.22
12.11.20	12.08.20	5%	Below	34,625,794	4.87	4.87
	12.10.20	5%	Above	36,397,580	5.12	5.12
12.16.20	12.11.20	5%	Below	35,434,280	4.98	4.98
	12.14.20	5%	Above	35,680,840	5.01	5.01
12.22.20	12.16.20	5%	Below	26,467,845	3.72	3.72
01.12.21	01.07.21	5%	Above	37,341,358	5.25	5.25
01.13.21	01.08.21	5%	Below	33,796,572	4.75	4.75
By Morgan Stanley and affiliates						
01.23.20	01.17.20	5%	Below	37,725,079	5.31	5.31
01.27.20	01.21.20	5%	Above	38,651,059	5.44	5.44
01.31.20	01.27.20	5%	Below	36,916,309	5.20	5.20
02.04.20	01.29.20	5%	Above	36,914,767	5.20	5.20
02.13.20	02.07.20	5%	Below	37,397,146	5.27	5.27
02.17.20	02.11.20	5%	Above	37,193,524	5.24	5.24
02.20.20	02.14.20	5%	Below	35,742,806	5.03	5.03
02.21.20	02.17.20	5%	Above	35,742,995	5.03	5.03
02.25.20	02.19.20	5%	Below	9,702	0.001	0.001
02.26.20	02.20.20	5%	Above	35,567,249	5.01	5.01
03.03.20	02.26.20	5%	Below	9,702	0.001	0.001
03.09.20	03.03.20	5%	Above	35,588,487	5.01	5.01
03.10.20	03.04.20	5%	Below	9,702	0.0001	0.0001
03.30.20	03.24.20	5%	Above	36,635,696	5.16	5.16
06.04.20	05.29.20	5%	Below	34,651	0.005	0.005
06.09.20	06.03.20	5%	Above	36,388,055	5.13	5.13
06.18.20	06.12.20	5%	Below	0	0	0

Date of the notification	Date of the transaction	Threshold crossed	Above/Below	Number of shares after the crossing	In % of the share capital	In % of the voting rights
By BlackRock Inc.						
06.11.20	06.10.20	5%	Above	43,668,152	6.15	6.15
06.16.20	06.12.20	5%	Below	25,142,984	3.54	3.54
06.18.20	06.17.20	5%	Above	47,239,825	6.65	6.65
06.22.20	06.18.20	5%	Below	33,552,217	4.73	4.73
06.25.20	06.23.20	5%	Above	36,327,140	5.12	5.12
06.26.20	06.24.20	5%	Below	26,453,873	3.73	3.73
By River and Mercantile Asset Management LLP						
03.24.30	03.30.20	5%	Above	35,912,982	5.06	5.06
By Goldman Sachs Group, Inc.						
03.03.20	02.27.20	5%	Below	2,102,938	0.30	0.30
03.04.20	02.28.20	5%	Above	37,693,621	5.31	5.31
03.10.20	03.03.20	5%	Below	1,172,802	0.17	0.17
05.12.20	05.07.20	5%	Above	37,122,109	5.23	5.23
06.08.20	06.02.20	5%	Below	17,886	0.003	0.003
06.10.20	06.04.20	5%	Above	35,720,612	5.03	5.03
08.21.20	08.18.20	5%	Below	45,049	0.01	0.01
09.02.20	08.28.20	5%	Above	37,096,332	5.22	5.21
09.04.20	09.01.20	5%	Below	45,319	0.01	0.01
By UBS Group AG						
03.13.20	10.03.20	5%	Below	0	0	0
By Thunderbird Partners LLP						
06.10.20	06.09.20	5%	Below	35,038,781	4.94	4.94
By Société Générale						
01.15.20	06.11.20	5%	Above	37,838,003	5.33	5.33
	06.16.20	5%	Below	0	0	0

7.6.6 *Titres au porteur identifiables* (Article 7.1 of our articles of association)

We may avail ourselves of the legal procedure known as *titres au porteur identifiables*, according to which we are entitled to request Euroclear France to disclose the name, nationality, address and the number of shares held by holders of those securities of ours which have, or which may in the future acquire, voting rights.

7.6.7 Legal entity or natural person which/who may control the Company

As of the date of this Document, no natural person nor any legal entity has control over the Company. As of the date of this document, there is no specific measure in place to prevent a potential attempt to take over the Company. Aside from the legal and regulatory threshold crossing notification requirements, the only existing control over the interest owned by each of our shareholders in our share capital is the notification imposed by our articles of association when crossing the threshold of 1% of the share capital or the voting rights.

7.6.8 Changes in the share capital and voting rights

There are no specific rules in the Company's articles of association relating to the change in the share capital or the rights attached to the securities constituting the share capital. As a consequence, these changes shall be carried out in accordance with legal requirements.

7.6.9 Items likely to have an influence in the event of a take-over bid

Pursuant to Article L. 22-10-11 of the French Commercial Code, you will find below the elements which are likely to have an influence in case of a take-over bid.

Capital structure of the Company

Notice of crossing of a statutory threshold

Pursuant to Article 7.2 of the by-laws of the Company, any shareholder holding directly or indirectly a portion amounting to 1% of the stock capital or of the voting rights or a multiple of this percentage, within the meaning of Article L. 233-7 of the French Commercial Code, shall give notice to the Company of the number of shares or voting rights he holds, within five trading days from the date on which one of these thresholds was exceeded.

In the event of failure to comply with this notification requirement, and upon request of one or several shareholders holding at least 1 percent of the capital, such request being recorded in the minutes of the General Meeting, those shares in excess of the fraction that should have been declared shall be deprived of their voting rights from the date of said General Meeting and for any other subsequent General Meeting to be held until the expiry of a two-year period following the date on which the required notification of the passing of the threshold will have been regularized.

Similarly, any shareholder whose shareholding is reduced below one of these thresholds shall give notice thereof to the Company within the same five-day period.

Double voting right

As from May 22, 1997, a double voting right has been allocated to all registered and fully paid-up shares registered in the name of the same holder for at least two years.

Statutory restrictions concerning the exercise of voting rights and share transfers or clauses of agreements which the Company is aware of, in compliance with Article L. 233-11 of the French Commercial Code

There is no statutory restriction to the exercise of voting right and share transfers. The Company is not aware of any agreement in compliance with Article L. 233-11 of the French Commercial Code.

Direct or indirect shareholding in the share capital of the Company notified pursuant to sections L. 233-7 and L. 233-12 of the French Commercial Code

See sections 7.6.5 and 7.6.6 of this Document.

List of holders of any security with special control rights and related description

There is no holder of securities with special rights.

Control mechanism included in a potential system of employees share ownership, when control rights are not exercised by them

Not applicable

Agreements between shareholders which the Company is aware of and which are likely to restrict share transfers and the exercise of voting rights

As of December 31, 2019, no agreements between shareholders were notified to the Company.

Rules applicable to the appointment and replacement of members of the Board of Directors as well as the modification of by-laws

The rules applicable to the appointment and replacement of Board of Directors' members are described in Article 14 of the by-laws. The rules applicable to the modification of by-laws are described in Article L. 225-96 of the French Commercial Code.

None of these rules is likely to have an influence in case of a take-over bid.

Powers of the Board of Directors, in particular the issuance or re-purchase of shares

The Board of Directors does not have any specific power likely to have an influence in case of a take-over bid. The delegations of competence currently in force cannot be used by the Board of Directors in case of a take-over bid.

Agreements entered into by the Company and modified or terminated in the event of change of control over the Company

The indentures governing our outstanding senior notes and certain of our credit facilities provide for an early redemption of the loans, at the option of the lenders, in the event of a change of control, pursuant to the terms specified in each agreement.

Agreements providing for severance payments to employees who resign or who are dismissed without cause or employees whose employment is terminated in the event of a take-over bid

In addition to the agreements referred to section 4.2.1.2.b)b.xi. of this Document, with respect to the Company's executive officers, we inform you that certain executives of the Group benefit from a protection letter providing for the payment of a severance payment in the event of dismissal or change of control. The amount of such severance payment depends upon the positions and classifications of each concerned persons.

ADDITIONAL INFORMATION

8

8.1 INFORMATION ON THE COMPANY

8.1.1 Registered name

Registered name: CGG

8.1.2 Place and number of registration/APE code

The Company is registered with the Évry Commercial court registry under registration number "969202241 RCS Évry".

APE code: 7010 Z

8.1.3 Date of registration and duration of the Company (Article 5 of the articles of association)

The Company was incorporated in on March 27, 1931 for a 99-year duration, i.e. until March 26, 2030 – unless earlier dissolution or extension approved by the General Meeting.

8.1.4 Registered address and phone number – Legal form – Applicable law – Country of origin

The registered address of the Company is located at 27 avenue Carnot, 91300 Massy, France.

Phone number is +33 (0)1 64 47 30 00.

The Company is a French *société anonyme* (Article 1 of the articles of association).

The Company is governed by the French Commercial Code and, more generally, by French laws and regulations, as its has been registered in France since its incorporation in 1931.

8.1.5 Corporate object (Article 2 of the articles of association)

The corporate object of the Company is as follows:

- development and operation in any form and under any conditions whatsoever, of all and any business relating to the geophysical survey of the soil and subsoil in any all countries, on behalf of third parties or on its own behalf;
- direct or indirect participation in any business, firm or Company whose object would be likely to promote the corporate object; and
- generally, any business, industrial, mining, financial, personal or real property operations relating directly or indirectly to the above object without limitation or reserve.

8.1.6 Fiscal year (Article 18 of the articles of association)

The Company's fiscal year starts on January 1 and ends on December 31.

8.1.7 Legal Entity Identifier ("LEI")

The Company's Legal Entity Identifier is 969500FCVQ5SLAAUJV59.

8.1.8 Website

The Company's website is www.cgg.com.

8.2 MATERIAL CONTRACTS

The following material contracts were concluded in the course of the past two years:

Agreements entered into between CGG and Shearwater in the context of the Group's exit from the Contractual Data Acquisition segment:

Capacity Agreement: Idle Vessel Compensation and off-market component

On January 8, 2020, the Capacity Agreement between CGG and Shearwater became effecive. The main terms of the agreement are as follows:

- work exclusively with Shearwater's global fleet of high-end 3D and source vessels for our multi-client marine and nodes data acquisition 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 maximum Idle Vessel Compensation for a full year represents US$(21.9) million. As of December 31, 2020, the remaining maximum Idle Vessels Compensation until the end of the five-year commitment period was US$(88.1) million.

Step-In Agreements

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.

The Step-In Agreements will not impact our balance sheet unless Step-In Event, as described in note 2 to our Consolidated Financial Statements, 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.

Please refer to section 1.1.3.1 "Exit of Contractual Data Acquisition business" of this Document for more details.

Agreements entered into in connection with the Financial Restructuring

The following contracts were entered into in connection with the implementation of the financial restructuring plan, which was finalized on February 21, 2018, and are reported here for information:

- **First lien notes due 2023/Second lien notes due 2024, respectively issued by CGG Holding (U.S.) Inc. and by the Company:** please refer to section 7.5.5 "Securities not giving access to the share capital" of this Document for more details;
- **Warrants issued by the Company** in the context of its financial restructuring that was completed on February 21, 2018: Please refer to sections 7.5.1 "Recent major events affecting the share capital – 2018" and 7.5.2 "Dilutive instruments – Warrants" of this Document for more details. It shall be noted that Warrants #1 and Warrants #2 are the only ones in force as of the date of this document. Warrants #3, Coordination Warrants and Backstop Warrants expired on August 21, 2018.

8.3 RELATED PARTY TRANSACTIONS

Please refer to note 27 to our 2020 consolidated financial statements in section 6.1 of this Document for more details.

8.4 AUDITORS

8.4.1 Ernst & Young et autres

Member of the *Compagnie nationale des Commissaires aux Comptes de Versailles et du Centre*

Tour First, 1, place des Saisons, TSA 14444, 92037 Paris – La Défense Cedex

Represented by Mr. Nicolas PFEUTY and Mrs. Claire CESARI-WALCH

Date of the last renewal: May 15, 2019

Duration: until the end of the Ordinary General Meeting convened to approve the 2024 financial statements

8.4.2 Mazars

Member of the *Compagnie nationale des Commissaires aux Comptes de Versailles et du Centre*

Tour Exaltis, 61, rue Henri-Régnault, 92400 Courbevoie

Represented by Mr. Jean-Louis SIMON

Date of the last renewal: May 15, 2019

Duration: until the end of the Ordinary General Meeting convened to approve the 2024 financial statements

8.5 PUBLICLY AVAILABLE DOCUMENTS

The articles of association, reports, mail and other documents of the Company, as well as its historical financial data and those of its subsidiaries for the last two years prior to the disclosure of this document, may be consulted directly at the Company's registered office.

8.6 PERSONS RESPONSIBLE FOR THE PRESENT UNIVERSAL REGISTRATION DOCUMENT

8.6.1 Name and function of persons responsible

Mrs. Sophie ZURQUIYAH, Chief Executive Officer.

Mr. Yuri BAIDOUKOV, Chief Financial Officer.

8.6.2 Statement of the persons responsible

"We hereby testify that the information contained in this Universal Registration Document is, to our knowledge, consistent with the facts and does not omit anything likely to affect its significance.

We declare that, to the best of our knowledge, the financial statements have been prepared in accordance with applicable accounting standards and give a true and fair view of the assets and liabilities, financial position and results of the Company and all the companies included in the consolidation, and that the management report referred to in the concordance table presented in Chapter 8.7 of this Universal Registration Document presents a true and fair view of changes in the business, the results and financial position of the Company and all the companies included in the consolidation together with a description of the main risks and uncertainties the companies face."

Made in Massy, on March 5, 2021.

Mrs. Sophie ZURQUIYAH	Mr. Yuri BAIDOUKOV
Chief Executive Officer	Chief Financial Officer

8.7 CONCORDANCE TABLES

8.7.1 Concordance table for the Universal Registration Document

The table below lists the references to the information required by Annexes 1 and 2 of Commission Delegated Regulation (EU) 2019/980 of March 14, 2019, in accordance with the format of the URD.

	Section of the Universal Registration Document
1- Persons responsible, third party information, experts' reports and competent authority approval	
1-1 Identity of persons responsible	8.6.1
1-2 Declaration of persons responsible	8.6
1-3 Name, address, qualifications of persons acting as experts	n.a.
1-4 Confirmation relating to information sourced from a third party	n.a.
1-5 Statement relating to the competent authority	p. 1 – AMF insert
2- Statutory Auditors	
2-1 Identity of the Statutory Auditors	8.4
2-2 Any changes	n.a.
3- Risk factors	**2.2** **Chapter 3**
4- Information about the Company	
4-1 Legal and commercial name	8.1.1
4-2 Place of registration, registration number and LEI	8.1.2 8.1.7
4-3 Date of incorporation and length of life	8.1.3
4-4 Domicile and legal form, legislation governing operations, country of origin, address and telephone number of the registered office, website with a disclaimer	8.1.4 8.1.8
5- Business overview	
5-1 Principal activities	1.2 1.2.1 1.2.2 1.2.3
5-1-1 Nature of operations	1.2.1 1.2.2 1.2.3 6.1.5 note 19
5-1-2 New products and services	1.1.5 1.2.1 1.2.2
5-2 Principal markets	1.1 1.1.1 1.2 1.2.1 1.2.2 1.2.3 6.1.5 note 19

	Section of the Universal Registration Document
5-3 Important events	1.1.3 1.2.3 6.1.5 note 2 6.2.4 note 2 (in French only)
5-4 Strategy and objectives	1.1 3.2 3.3 3.4
5-5 Dependence on patents, licenses, contracts and manufacturing processes	2.2.3.2 3.4.3
5-6 Statement regarding competitive position	1.2.1 1.2.2 1.2.3
5-7 Investments	1.4 6.1.5 note 8
5-7-1 Material investments	1.4 6.1.5 note 8
5-7-2 Material investments in progress or pending	1.4 6.1.5 note 8
5-7-3 Information on joint ventures and associates	1.2.2 1.2.3 5.1 6.1.5 note 27 6.2.4 note 23 (in French only)
5-7-4 Environmental issues that may affect the use of property, plant and equipment	Chapter 3
6- Organizational structure	
6-1 Brief description of the Group	1.1 1.7 5.1
6-2 List of significant subsidiaries	1.7.1 6.1.5 note 31
7- Operating and financial position review	
7-1 Financial condition	1.5 Chapter 5 Chapter 6
7-1-1 Development of performance and financial position including financial and, where appropriate, non-financial key performance indicators	1.5 3.7 5.1 5.1.2 6.1 6.2
7-1-2 Indication of future development and activities in the field of research and development	1.3 3.4.3 6.1.5 note 20 6.2.4 note 1 (in French only)

	Section of the Universal Registration Document
7-2 Operating results	1.5 5.1 6.1 6.2 (in French only with the exception of 6.2.5 and 6.2.6)
7-2-1 Significant factors, unusual or infrequent events or new developments	1.1.3 5.1
7-2-2 Reasons for material changes in net sales or revenues	n.a.
8- Capital resources	
8-1 Information concerning the capital resources	5.1 6.1.2 6.1.4 6.2.1 (in French only)
8-2 Cash flows	5.1.4 6.1.3 6.1.5 note 28 6.2.3 (in French only)
8-3 Borrowing requirements and funding structure	2.2.5.1 5.1.2 6.1.5 note 13 6.2.4 note 9 (in French only)
8-4 Restrictions on the use of capital resources	2.2.5.1
8-5 Anticipated sources of funds	n.a.
9- Regulatory environment	
Description of the regulatory environment that may affect the Company's business	2.2.6 2.5
10- Trend information	
10-1 Description of the most significant trends and any significant change in the financial performance of the Group since the end of the last fiscal year	1.1.5 1.8 6.1.5 note 30 6.2.4 (in French only)
10-2 Events likely to have a material effect on prospects	1.1.5 1.8 2.2.1 6.1.5 note 30 6.2.4 note 24 (in French only)
11- Profit forecasts or estimates	
11-1 Published profit forecasts or estimates	1.1.5
11-2 Statement setting out the principal forecast assumptions	1.1.5
11-3 Statement of comparability with the historical financial information and consistency with the accounting methods	8.6.2
12- Administrative, management and supervisory bodies and senior management	
12-1 Information about members	4.1.2.1 4.1.2.2 4.1.2.3
12-2 Conflicts of interest	4.1.3 4.1.6 4.2.1.1

	Section of the Universal Registration Document
13- Remuneration and benefits	
13-1 Remuneration paid and benefits in kind	4.2.1 4.2.2 6.1.5 note 26 6.2.4 note 22 (in French only)
13-2 Provisions for pension, retirement or similar benefits	4.2.1 4.2.2 6.1.5 note 16 6.2.4 notes 1 and 8 (in French only)
14- Board practices	
14-1 Date of expiration of terms of office	4.1.2.1
14-2 Service agreements between members of administrative, management or supervisory bodies and the Company	4.1.6
14-3 Information about the Audit Committee and Remuneration Committee	4.1.4.2 4.1.4.3
14-4 Statement of compliance with the applicable corporate governance regime	4.1.1 4.2.1
14-5 Potential future changes in corporate governance	n.a.
15- Employees	
15-1 Number of employees	1.1 6.1.5 note 25 6.2.4 note 21 (in French only)
15-2 Shareholdings and stock options	4.2.2 6.1.5 note 15 6.2.4 note 7 (in French only)
15-3 Arrangements for involving the employees in the capital	4.2.2
16- Major shareholders	
16-1 Shareholders holding more than 5% of the capital	7.1.1
16-2 Existence of different voting rights	7.6.8 6.1.5 note 15
16-3 Direct or indirect control	7.6.7
16-4 Arrangements the operation of which may result in a change in control	7.6.9
17- Related party transactions	8.3 6.1.5 note 27
18- Financial information concerning the Company's assets and liabilities, financial position and profits and losses	
18-1 Historical financial information	Chapter 5 Chapter 6
18-1-1 Audited historical financial information covering the latest three financial years and audit report	6.1 6.2 (in French only with the exception of 6.2.5 and 6.2.6)
18-1-2 Change of accounting reference date	n.a.
18-1-3 Accounting standards	5.1 6.1.5 notes 1 and 19 6.2.4 note 1 (in French only)
18-1-4 Change of accounting framework	n.a.

	Section of the Universal Registration Document
18-1-5 Balance sheet, income statement, change in equity, cash flow statement, accounting methods and explanatory notes	5.1.2 6.1 6.2 (in French only with the exception of 6.2.5 and 6.2.6)
18-1-6 Consolidated financial statements	6.1
18-1-7 Age of financial information	6.1 6.2 (in French only with the exception of 6.2.5 and 6.2.6)
18-2 Interim and other financial information (audit or review reports, where applicable)	n.a.
18-3 Auditing of historical annual financial information	6.1.6 6.2.7 (in French only)
18-3-1 Independent audit of historical annual financial information	n.a.
18-3-2 Other audited information	3.8
18-3-3 Unaudited financial information	n.a.
18-4 Pro forma financial information	n.a.
18-5 Dividend policy	2.2.6.2 7.4.2
18-5-1 Description of the policy on dividend distributions and any restrictions	2.2.6.2 7.4.2
18-5-2 Amount of the dividend per share	6.2.4 note 7 7.4.2
18-6 Legal and arbitration proceedings	1.1.2 1.8 2.2.3.2 2.4 6.1.5 notes 2, 3, 17, 24 and 30 6.2.4 note 15 (in French only)
18-7 Significant change in the financial position	n.a.
19- Additional information	
19-1 Share capital information	7.1.1 7.5
19-1-1 Amount of subscribed capital, number of shares issued and fully paid and par value per share, number of shares outstanding	7.1.1 7.5 6.1.5 note 15 6.2.4 note 7 (in French only)
19-1-2 Information about shares not representing capital	7.5.5
19-1-3 Number, carrying amount and face value of shares held by the Company	7.1.1 7.5.3
19-1-4 Convertible securities, exchangeable securities or securities with warrants	6.1.5 note 15 6.2.4 note 7 (in French only) 7.1.1 7.5.2
19-1-5 Terms of any acquisition rights and/or obligations oversubscribed capital not paid up, or an undertaking to increase the capital	4.2 6.1.5 note 15 6.2.4 note 7 (in French only) 7.5.1

	Section of the Universal Registration Document
19-1-6 Option or conditional or unconditional agreement of any member of the Group	4.2 6.1.5 note 15 6.2.4 note 7 (in French only) 7.5.1
19-1-7 History of share capital	7.1.1.1 7.1.1.3 7.5.1
19-2 Memorandum and articles of association	8.1.3
19-2-1 Register and corporate purpose	8.1.5
19-2-2 Rights, preferences and restrictions attaching to each share class	7.6.3 7.6.9
19-2-3 Provisions having the effect of delaying, deferring or preventing a change in control	7.6.9
20- Material contracts	8.2
21- Documents available	8.5

8.7.2 Concordance table for the Management report / Report on corporate governance

The table below lists the references to sections of the Universal Registration Document corresponding to the required disclosures in the Board of Directors' management report and particularly those set out in Articles L. 225-100 *et seq.*, L. 232-1 II and R. 225-102 *et seq.* of the French Commercial Code, as well as those disclosures required in the corporate governance report (information referred to in Article L. 225-37 *et seq.* of the French Commercial Code and contained in the specific section of the management report on corporate governance).

	Section of the Universal Registration Document
ACTIVITY	
Position and activity of the Company and, as applicable, its subsidiaries and controlled companies during the previous fiscal year and of all the companies within the scope of consolidation	1.1.2
Analysis of changes in business, results and the financial situation of the Company and the Group	5.1
Key financial and non-financial performance indicators	1.5/3
Branches	1.7.1
Research and development activities	1.3
Company and Group foreseeable trends and outlook	1/1.1.4/1.1.5
Significant events occurring between the fiscal year closing date and the management report preparation date	1.8
INTERNAL CONTROL AND RISK MANAGEMENT	
Main risks and uncertainties	2.2/3
Financial risks relating to the impact of climate change	2.2.1.4 / 2.2.6.1
Exposure to price risk, credit risk, liquidity and cash-flow risks	2.1.5
Internal control and risk management procedures	2.1
CORPORATE GOVERNANCE	
Reference to a Code of corporate governance	4.1.1.a
Composition, preparation and organization of the works of the Board of Directors	4.1
List of all terms of office and functions held in any company by the corporate officers during the fiscal year	4.1.2.1.b
Diversity policy applicable to the Board of Directors	4.1.3.e
General management organization	4.1.1
Potential limits on Chief Executive Officer's powers	4.1.1.e
Description of the assessment procedure for agreements relating to usual operations and entered into under normal conditions	4.1.5/Appendix
Delegations of authority currently in force relating to capital increase and use of these delegations during the last financial year	7.5.4
Items likely to have an influence in the event of a take-over bid:	
- Share ownership and capital	7/7.1
- Direct or indirect participating interests in the Company's share capital, of which it is aware pursuant to Articles L. 233-7 and L. 233-12 of the French Commercial Code	7.6.4

	Section of the Universal Registration Document
- Restrictions on the exercise on voting rights and transfers of shares provided for in Company articles or agreements brought to the notice of the Company pursuant to Article L. 233-11 of the French Commercial Code	7.6.9
- Owners of any securities conferring special rights of control and description of these securities	7.6.9
- Control procedure provided in the event of potential employee shareholdings with control rights not exercised by the latter	7.6.9
- Agreements between shareholders of which the Company is aware and which may give rise to restrictions on share transfers	7.6.9
- Rules governing the appointment and replacement of Board members and the amendment of the articles of association	7.6.9
- Powers of the Board of Directors and in particular - concerning the issuance or buyback of shares	7.6.9
- Agreements entered into by the Company which are amended or terminated in the event of a change of control of the Company, unless such disclosure, other than in cases where disclosure is required by law, would seriously prejudice its interests	7.6.9
- Agreements providing for compensation for members of the Board of Directors or employees, if they resign or are dismissed without real and serious cause or if their employment is terminated due to a takeover or exchange offer	7.6.9
Agreements entered into between an agent or a shareholder holding more than 10% of the voting rights and a controlled company within the meaning of Article L. 233.3 of the French Commercial Code (excluding agreements relating to usual operations and entered into under normal conditions)	4.1.7
Remuneration policy of corporate officers (including, but not limited to, the relative proportion of fixed and variable compensation, the possibility of claiming back variable compensation, commitments of any kind made in favor of corporate officers when taking up, terminating or changing their functions)	4.2.1
Report on the corporate officers' remuneration for the last financial year (including, but not limited to, the remuneration granted or paid by a company included in the scope of consolidation, the annual evolution in remuneration, the way in which the vote of the last general meeting was taken into account, any potential deviations from the procedure for implementing the remuneration policy, any potential suspension of the payment of directors' remuneration in the event of failure to comply with the gender diveristy policy within the Board of Directors)	4.2.2
Ratio of the compensation of each executive corporate officer to the average and median compensation of Company employees	4.2.2.1.A.f. / 4.2.2.1.B.f.
Stock options and performance share grants	4.2.2.2
INFORMATION ABOUT SHARE CAPITAL	
Share ownership and capital	7/7.1
Acquisition and disposal by the Company of treasury shares	7.1.1.2
Share buyback programs	7.5.3
Employee share ownership in the Company on the last day of the fiscal year	7.1.1.2
Grant to and retention by corporate officers of performance shares and/or stock options granted	4.2.2.1 B.c.vii
Transactions on the Company's shares by the Corporate officers or their close relatives	7.1.2

	Section of the Universal Registration Document
ACCOUNTING AND FINANCIAL INFORMATION	
Modifications to accounts presentation method	5.1
Table of Company results over the past five fiscal years	6.2.6
Indication of the use of financial instruments	5.2
Dividend distributions during the last three fiscal years	5.1.2 (paragraph Statutory financial statements of CGG SA)
Information on suppliers and customers payment terms	6.2.5
STATEMENT OF NON FINANCIAL PERFORMANCE	3/ See Concordance table below
MISCELLANEOUS	
Terms of office of Statutory Auditors	8.4
Litigation and arbitration	2.4

8.7.3 Concordance table for the Annual financial report

The table below lists the references to sections of the Universal Registration Document corresponding to the information which constitutes the annual financial report that must be published by listed companies in accordance with Article L. 451-1-2 of the French Monetary and Financial Code and Article 222-3 of General Regulations of the French *Autorité des marchés financiers*.

	Section of the Universal Registration Document
Annual financial statements	6.2 (in French only) 6.2.6
Statutory Auditors' report on the Company's annual financial statements	6.2.7 (in French only)
Consolidated financial statements	6.1
Statutory Auditors' report on the Company's consolidated financial statements	6.1.6
Management report	See Concordance table above
Report on corporate governance	See Concordance table above
Statement of the persons assuming responsibility for the annual financial report	8.6.2
Auditors' fees	6.1.5 note 32

French Monetary and Financial Code and Article 222-3 of General Regulations of the French *Autorité des marchés financiers*.

8.7.4 URD – Universal Registration Document/Cross-reference table Non-Financial Performance Statement

The table below refers to the aspects of the Non Financial Performance to be found notably in the Chapter "Statement on Non-Financial Performance" that are required by Article L. 225-102-1 and Article L. 22-10-36 of the French Commercial Code.

Items	Section of the Universal Registration Document
Business model	Pages 12-13
Description of the main non-financial risks related to the Group's business	3.1
Results of the implementation of the policies, including key performance indicators	3.1 to 3.7
Respect for Human Rights	3.2.2 / 3.3.2
Fight against corruption and tax evasion	3.3.1
Consequences of the Company's business on climate change	Our exit of the Acquisition business significantly reduced the impact of the Company's activities on climate change. Therefore, it does not require further development in this report
Circular economy	Given the nature of our business, this subject was not considered as material and does not justify being developed in this report
Food waste	Given the nature of our business, this subject was not considered as material and does not justify being developed in this report
Fight against food insecurity	Given the nature of our business, this subject was not considered as material and does not justify being developed in this report
Collective agreements	3.1
Fight against discrimination and promotion of diversity	3.2.1
Societal commitments	3.3.3
Respect for animal well-being, fair and sustainable responsible nutrition	Given the nature of our business, these subjects were not considered as material and do not justify being developed in this report
Report from the undependent third party on non-financial statement	3.8

Cross-reference table Global Compact, SDG, GRI, OECD

Table of contents	Global Compact	SDG	GRI/G4	OECD principles
Overview of the Group			102 103	1.6
CSR Strategy			102 103	1.10.15
Respecting Ethical Principles	1-2-4-5-6-10	10 12	200	2.5
Innovating for Society	8-9	9 12	200 400	3.7.12.13.14
Managing Talent	1-2-3-4-5-6	5-8-10	400 200	4.5.8.9
Protecting the environnement	7-8-9	6-11-12-13-14-15	100 300	5.12

APPENDIX

CHARTER OF THE PERIODIC ASSESSMENT PROCESS OF AGREEMENTS RELATING TO USUAL OPERATIONS AND ENTERED INTO UNDER NORMAL CONDITIONS

Date: March 5, 2020

Preamble

This procedure for assessing agreements relating to usual operations and entered into under normal conditions with the interested parties as defined in Article L. 225-38 of the French Commercial Code, was agreed at the Board of Directors meeting held on March 5, 2020, in accordance with the second paragraph of Article L. 225-39 of the French Commercial Code, resulting from French law no. 2019-486 of May 22, 2019 ("PACTE" law) which states:

"In companies whose shares are traded on a regulated market, a procedure must be implemented by the Board of Directors in order to assess, on a regular basis, whether the agreements relating to usual operations and entered into under normal conditions fulfil those conditions."

This procedure is different from and supplements the measures for identifying agreements with related parties, within the meaning of accounting standard IAS 24.

1. Purpose

The purpose of this procedure, implemented by the Board of Directors, is to periodically assess the relevance of the classification of "agreements relating to usual operations and entered into under normal conditions" for agreements falling within the scope of Article L. 225-38 of the French Commercial Code, but whose application of the latter was ruled out by application of Article L. 225-39 of the French Commercial Code, and which therefore, have not been subject to the prior approval of the Board of Directors.

It is stated that this procedure only applies to agreements which fall within the scope of the above mentioned articles of the French Commercial Code, from the viewpoint of CGG SA (the "**Company**") only, and not that of its subsidiaries.

Notwithstanding the foregoing, it is specified that the "usual" nature of the operations referred to in the agreement and the "normal conditions" of said agreements must be assessed specifically with respect to the Group's activity, and not with respect to merely the Company's activities.

2. References

- Articles L. 225-38 and L. 225-39 of the French Commercial Code;
- the *Compagnie Nationale des Commissaires aux Comptes*' guidelines of February 2014 on regulated and standard agreements;
- the French Market Authority ("AMF") recommendation 2012-05 amended on October 5, 2018 (the "**AMF Recommendation**").

3. Description of the procedure

The diligences relating to this procedure are taken, under the authority of the Top Management, by the Legal Department and, where applicable, the relevant financial or operational departments. The parties who have a direct or indirect interest in one of these agreements do not take part in its assessment.

Every year, as part of the preparation of the annual accounts and the Annual General Meeting, the Legal Department shall submit to the Board of Directors a report summarizing the regulated agreements within the meaning of Article L. 225-38 of the French Commercial Code entered into during the past financial year and which were deemed to relate to "usual operations and to be entered into under normal conditions". This report shall indicate, for each of these agreements, the reasons why this classification was used, particularly with respect to the criteria presented below.

This report shall also present those agreements entered into during previous financial years which received the same classification, the performance of which continued during the financial year in question but which were amended during that same financial year.

Finally, with regard to pre-existing agreements, the performance of which continued during the financial year in question, but which either did not fall within the scope of Article L. 225-38 of the French Commercial Code at the time, or had been classified at the time as agreements relating to usual operations and entered into under normal conditions, the Legal Department shall explain, if it deems it necessary, how a change of circumstances would have the effect of calling such a classification into question.

When examining this report, the Board of Directors may also bring up and consider any agreement not mentioned in it.

In the light of the assessment report, the Board of Directors shall consider whether the change in the Group's activities and in the type of agreements involved justify these assessment criteria to be clarified, added to or amended, in which case, it shall amend this charter.

Furthermore, if it appears that an agreement, when this assessment was carried out before it was signed (and only in that case), was wrongly classified as an agreement relating to usual operations and entered into under normal conditions, the Board of Directors shall submit a resolution to the General Meeting of Shareholders for ratification, in accordance with Article L. 225-42 of the French Commercial Code.

With regard to agreements which met the criteria leading to the qualification as "agreement relating to usual operations and entered into under normal conditions", but which subsequently no longer meet them, they are not automatically reconsidered, since the usual nature of the operations involved and the normal nature of the conditions of the agreement are assessed when the agreement is signed. The Board of Directors is responsible for assessing, where applicable, if a revision of the relevant agreements is necessary. In any event, such a situation may lead the Board to amend the assessment criteria as indicated above.

4. Assessment criteria

4.1 Assessment of the usual nature of the operations referred to in the agreement

To assess the usual nature of the operations referred to in an agreement, all of the information should be gathered to allow the following to be assessed:

- whether the agreement relates to the Group's current activity;
- whether the agreement is in line with the standard practice for other companies placed in a similar situation;
- whether the agreement is entered into repeatedly;
- whether the agreement binds the Company over the long term;
- the circumstances in which the agreement was entered into;
- the financial implication of the agreement;
- the economic consequences of the agreement.

Examples, for information purpose, and on a non-exclusive basis:

Agreements relating to current operations	Agreements relating to non-recurring operations
- standard purchase, sale or service falling within the usual corporate purpose; - repair or routine renewal of equipment and/or service; - operation similar to that normally carried out by the Company as part of its activity with a company Director or officer.	- leasing agreements; - disposal of property or major equipment; - transfer of assets; - signature or renewal of a real estate lease agreement; - assignment of a patent by a company Director or officer.

4.2 Assessment of the normal nature of the conditions of the agreement

To assess the normal nature of the conditions of an agreement, the following should be assessed:

- whether it was entered into under the same conditions as those normally practised by the Group in its relations with third parties;
- whether it was entered into under the same conditions or under conditions comparable to those normally practised in the industry;
- whether the interested party [1] derives a benefit therefrom that he/she/it would not have had if he/she/it had been any supplier or client of the Company.

(1) *As a reminder:*
"Interested party" *means:*
- any person/entity that is or was on the date of signing an agreement entered into directly or through a third party, or when said person/entity has an indirect interest in an agreement (which may be the case especially when one of his/her/its Related Parties is a party thereto),
(i) the Managing Director of the Company,
(ii) a corporate officer of the Company,
(iii) a Member of the Company's Board of Directors,
(iv) actionnaire personne physique de la Société disposant d'une fraction des droits de vote supérieure à 10 %, et/ou
(v) the person/entity controlling, within the meaning of Article L. 233-3 of the French Commercial Code, a shareholder of the Company who is a legal entity with a share of voting rights exceeding 10%;
- any undertaking whose owner, partner with unlimited liability, manager, Director, member of the Supervisory Board or, generally, executive, is also or was also at the time that the relevant agreement was signed, (i) the Managing Director of the Company, (ii) a corporate officer of the Company, or (iii) a Member of the Company's Board of Directors.
"Related Party" *means, in relation to an Interested Party:*
- any natural person representing him/her/it on the Company's Board of Directors or within the governing body of another company, on a regular or ad hoc basis;
- any member of the immediate family of any of the aforementioned persons, i.e. any child, stepson or stepdaughter, parent, step-parent, partner, brother or sister, mother-in-law, father-in-law, son-in-law, daughter-in-law, brother-in-law or sister-in-law of that person and any person (other than a tenant or employee) who shares the household of that person; and
*- any undertaking, company or other entity in which any of the aforementioned persons is an executive, a partner or holds a position of primary control or similar (an "**Affiliated Company**").*

A French Société Anonyme with a share capital of €7,113,935

Registered office: 27 avenue Carnot, 91300 Massy

France

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This Universal Registration Document, prepared in accordance with Article 212-13 of the General Regulations of the *Autorité des marchés financiers* (French Market Authority), constitutes the 2020 annual report of CGG.

It may be used in support of a financial transaction only if supplemented by a prospectus which received approval from the *Autorité des marchés financiers.*

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