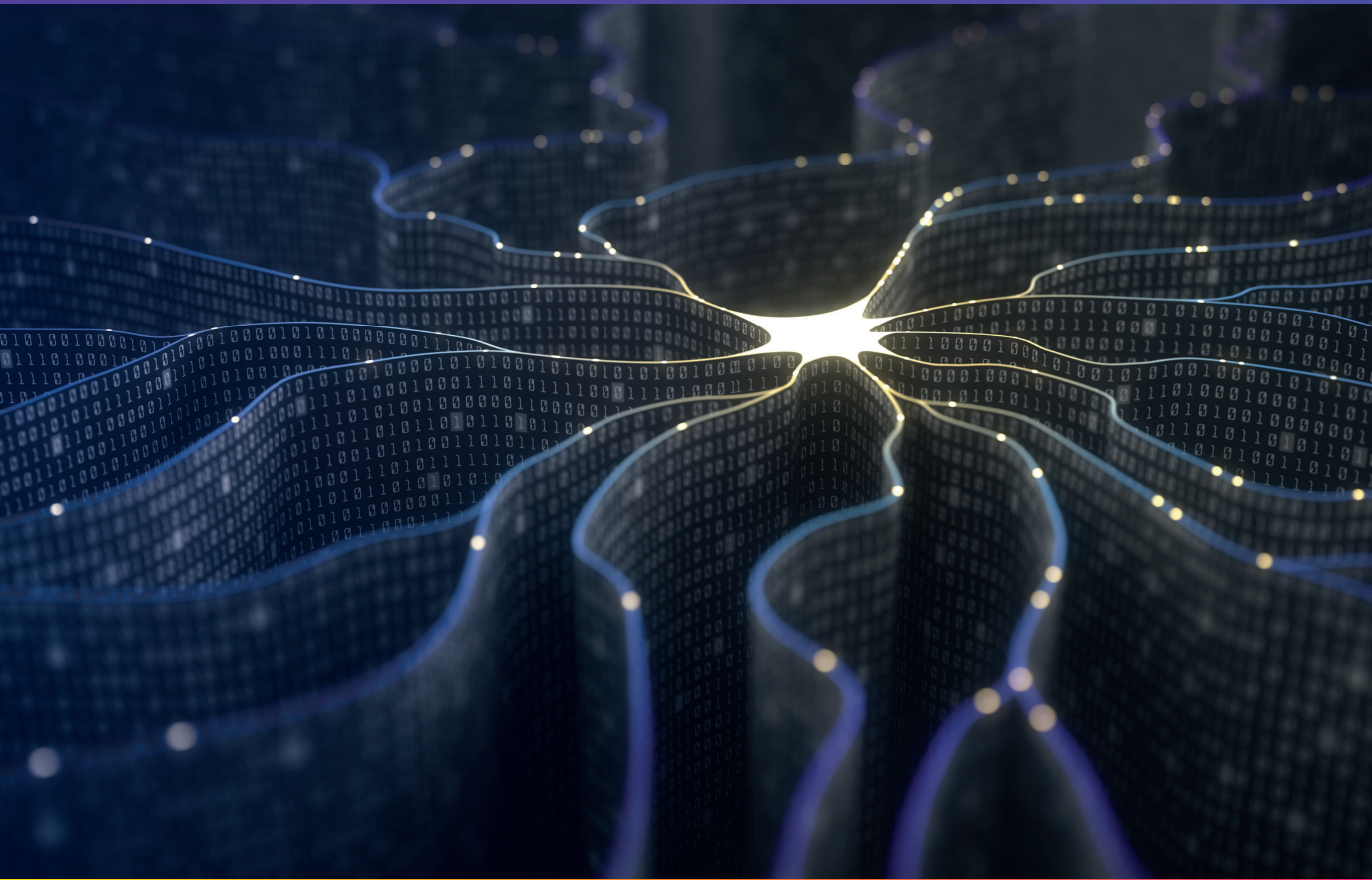


UNIVERSAL REGISTRATION DOCUMENT 2021

Including the annual financial report

content

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

UNIVERSAL REGISTRATION DOCUMENT 2021

Including the annual financial report

A unique range of geoscience technologies and solutions

This Universal Registration Document was filed on March 11, 2022 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).

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.

This Document has been prepared in both French and English. However, in all matters of interpretation of information, views or opinions expressed therein, the original French language version takes precedence over this English one.

Pursuant to Article 19 of Regulation (EU) 2017/1129, the following information is incorporated by reference into this Universal Registration Document:

- for fiscal year 2020: Group consolidated financial statements and Statutory Auditors' report on the consolidated financial statements for the year ended December 31, 2020, 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 March 5, 2021, under number D.21-0099; and
- 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.

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". These forward-looking statements may be identified by the use of 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, the Company's actual results may differ materially from those expected. These forward-looking statements are based on the Company's views and assumptions about future events. While the Company believes that these assumptions are reasonable, it is very difficult to predict the impact of known factors, and, of course, it is impossible to anticipate all factors that could affect the Company's actual results. All forward-looking statements are based upon information available to the Company on the date of this Document.

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

Neither the Company nor any of its subsidiaries assumes any 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 Document might not occur. When considering forward-looking statements, you should keep in mind the risk factors and other cautionary statements included in this Document, including those described in section 2.2 "Main Risk Factors and Control Measures" of this Document.

CGG

MESSAGE FROM CEO

SOPHIE ZURQUIYAH

How did CGG navigate through 2021?

2021 was a turning point for us on many fronts: after a slow first half of the year, and a gradually improving second half, our core businesses are now on a path to improve their performance moving forward, supported by a positive macro-environment, and we have taken the steps required to structure and accelerate our initiatives that will enable us to develop new businesses beyond our core areas.

We articulated our carbon footprint reduction plans and committed to net zero emissions of Scope 1 and 2 by 2050, which we hope to achieve well before that. The most important element of this commitment is the energy that we use in our data centers and their efficiency; we have set targets to switch to green energy and improve efficiency over the years. We have achieved an MSCI rating of AA, which puts us amongst the best energy services companies.

The year 2021 unfolded as we had anticipated. Throughout the first half of the year our customers' activity was very similar to that of 2020, the International Oil Companies maintaining their spending discipline, while the National Oil Companies and the Large Independents remained more active. The second half of the year saw a significant improvement, with a favorable economic environment supported by the high price of hydrocarbons. Clearly, our client's investment priority is towards short-cycle projects with the best economics and lowest GHG emissions footprint, which mainly target development and production in their core areas. Despite the very strong macro environment and many calling for the beginning of a mega cycle given the lack of investments, our clients have remained very financially disciplined, but I believe the macro trends will eventually translate into increased spending, including Exploration.

In March 2021, CGG successfully refinanced its debt and simplified its capital structure with a refinancing of $1.2 billion in EUR and USD.

The Geoscience business began to recover in the second half of the year and remained stable year over year with increased demand for our superior technologies and services in geologically complex subsurface areas. Multi-client data sales were down 19% year-on-year despite a high level of pre-funding of our programs at 89%. We were active in Norway and Brazil and invested around $168 million in Capex. After sales suffered from the lack of licensing rounds and reduced Exploration spend, however showing a strong recovery in the 4th quarter. Our Equipment business recorded very strong growth at 23% with significant sales in the Middle East, North Africa and Russia.

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."

Finally, in 2021, the CGG Group will have generated $19 million in net cash before refinancing cash costs, which is an achievement in a difficult year.

What is your assessment of CGG's technological developments?

I believe we continue pushing the envelope of what is feasible and constantly deliver to our clients better and better images of the subsurface that differentiate CGG in the market. Beyond the pure technology, we are recognized for our dependability and excellence in service delivery.

In both Imaging and Equipment, CGG is the technological leader.

For all our clients' activities aimed at optimizing production from their current reservoirs and meeting the growing demand for hydrocarbons, CGG's high-end technology is the clear choice of our clients, and always a key part of the value chain.

The energy transition is a major topic. How does CGG tackle this challenge?

With our technologies and expertise in the field of algorithms, data, digitalization, HPC capacity of around 300 petaflops, smart sensors and acquisition solutions, along with our earth subsurface library of more than 1.3 million square kilometers, CGG has significant assets to participate in the energy transition and has been active in most of these areas for decades.

We include in energy transition CCUS, Geothermal, and Mining, which all carry similar characteristics to oil & gas, requiring a precise understanding of the subsurface and subsequent sensor or satellite monitoring solutions to detect changes.

Beyond energy transition, we looked at adjacent businesses where we could use our leading technologies such as in the digital, environmental and infrastructure monitoring or defense sectors. In Digital, we offer our high-performance computing cloud to external clients; in Monitoring, we extract insights from our sensors, satellite imaging and other data sources, to monitor environmental concerns such as pollution, or the health of infrastructure such as bridges or railways where we can provide information that can anticipate mechanical failures before they happen.

In 2021, we set up the organization and the teams to organically develop and offer a range of solutions in these Beyond the Core sectors to our clients. In 2021, these new businesses were launched and represent today approximately 5% of our revenue. This is a solid starting point to grow from, especially knowing that growth rates in these targeted new markets are multiples of the growth rates of our core traditional markets.

How is the year 2022 looking?

Our macro environment is improving as we are heading into a favorable cycle with high oil and gas prices due to the lack of recent investments by the oil and gas companies. Even though financial discipline and addressing energy transition remain their priorities, our clients will have to accelerate spending to meet the recovery in demand for hydrocarbons.

Geoscience should still be supported by the focus on near-field exploration, production optimization and the increase in new field developments. Equipment will benefit from acquisition service companies becoming healthier as the business environment improves. And finally, as demonstrated in Q4 2021, there will eventually be a regained interest in multi-client data as the E&P companies need to reload their portfolios of exploration opportunities.

CGG is as focused as ever and providing high value to our clients, and I am confident that with the 3,300 women and men of CGG, we will capture our core market improvements and successfully position the company for energy transition and long term growth.

Sophie Zurquiyah
CEO

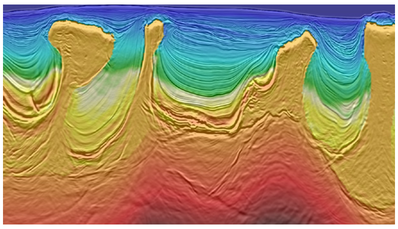
CGG AT A GLANCE

2021
Key Operational Highlights

January

_01

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.



March

_02

CGG Extends Northern Viking Graben Dual-Azimuth Multi-Client Survey. CGG announced phase two of its multi-client 3D survey in the Northern North Sea, which will expand on the phase one acquisition initiated in 2020 to add a second azimuth over CGG's existing Northern Viking Graben (NVG) multi-client 3D survey and extend coverage into the UKCS. The survey is supported by industry pre-funding.

April

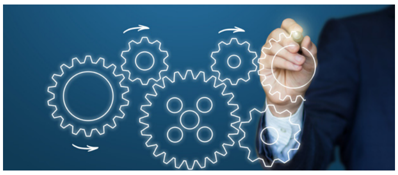
_03

CGG and dCarbonX Sign Strategic Agreement for Decarbonisation Exploration. CGG has signed a strategic agreement to support dCarbonX in the subsurface assessment of its operated clean energy projects offshore Ireland and the UK (which include geothermal energy and storage sites for CO_2, hydrogen and ammonia).

July

_04

Sercel Makes First Major Sale of GPR300 - Seabed Nodal Solution. CGG announced the first major sale by Sercel of its recently launched GPR300 seabed nodal solution to BGP Inc., a worldwide major geophysical service provider. The sale includes 18,000 nodes that will be deployed in Q4 2021 on a large-scale, long-term, multi-vessel operation in the Middle East region.



_05

CGG Sells its GeoSoftware Business to Topicus.com and Vela Software. CGG and Topicus.com Inc. ("Topicus") (TSXV: TOI) announced an agreement for the sale of GeoSoftware business was concluded.

September

_06

Sercel Awarded Major Seismic Equipment Contract in North Africa. CGG announced the award to Sercel of a major contract to supply land seismic equipment for a 3D mega-crew survey in North Africa.

October

_07

CGG, PGS and TGS Announce Versal, a Unified Ecosystem for Accessing Multi-Client Seismic Data across Multiple Vendors. Versal – a unified seismic data ecosystem provides access to three of the world's largest multi-client libraries via a single log-in.

November

_08

CGG Delivers New Multi-Client Screening Study for CO_2 Storage Sites in UK and Norway Northern North Sea. CGG has released a new GeoVerse™ Carbon Storage screening study to support CCUS operators in quickly identifying suitable CO_2 storage sites in a region extending over CGG's North Viking Graben 3D seismic dataset, including areas in both UK and Norwegian waters.

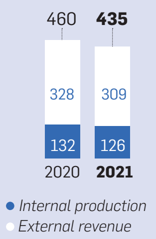
Activities

CGG (www.cgg.com) is a global geoscience technology leader. Employing around 3,300 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.

01 Geoscience

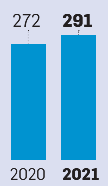
As recognized leaders in advanced subsurface imaging, our experts bring a collaborative approach to problem-solving. Our global network of 23 data imaging centers provides region-specific expertise, outstanding service and remarkable technology in every image. We provide integrated reservoir characterization 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 *(in $m)*



TOTAL PRODUCTION/HEAD *(in $k)*

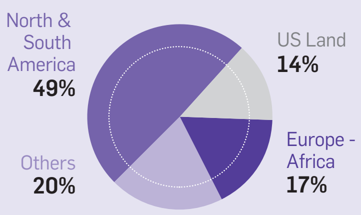
COMPUTING POWER *(Pflops)*



02 Multi-client

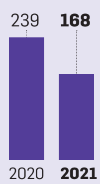
We invest in a portfolio of geographical opportunities to build a geoscience database and thrive to achieve a high prefunding for our new projects. We typically invest in the range of $200 million in our surveys. At the end of 2021, we had over 1.2 million square kilometers of high-end offshore, over 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 31/12/2021



MULTI-CLIENT REVENUE *(in $m)*

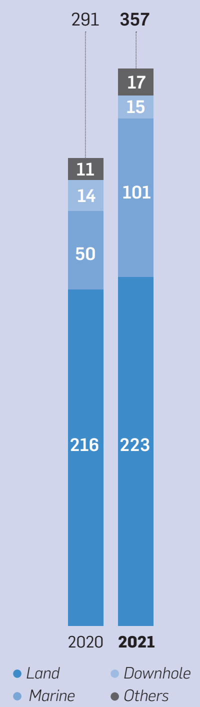
MULTI-CLIENT CAPEX *(in $m)*



03 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.

TOTAL PRODUCTION *(in $m)*



INDICATORS AS OF 31/12/2021

KEY FINANCIAL INDICATORS

941
955 in 2020
Segment revenue
(in million dollars)

2.9
2.8 in 2020
Net Debt/ Segment EBITDAs

337
403 in 2020
Adjusted Segment EBITDAs
(in million dollars)

78
50 in 2020
Adjusted Segment Operating Income
(in million dollars)

19
-247 in 2020
Net Cash Flow before refinancing fees
(in million dollars)

NON-FINANCIAL INDICATORS

3,312

3,890 in 2020

Headcount

Europe	Africa, Asia, Middle-East	North America	South America
54%	23%	19%	4%

Revenue breakdown per region

291

272 in 2020

Computing Power *(Pflops)*

1.35

1.32 in 2020

Energy efficiency *(Pflops)*

45

53 in 2020

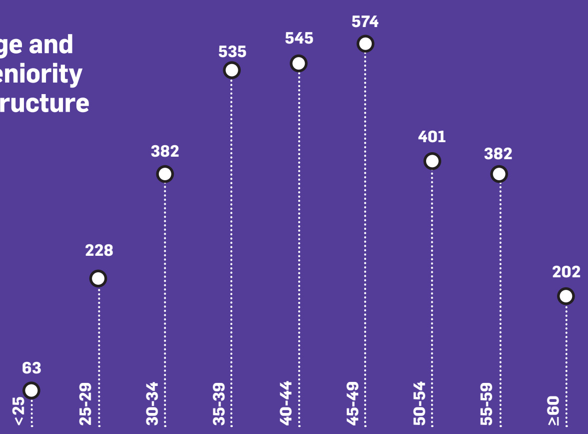
Direct and indirect greenhouse gas emissions *(ktCO2eq)*

ESG Rating

AA

by MSCI

Age and seniority structure



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.that supports the discovery and responsible management of the Earth's natural resources.

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:

4 clear objectives

01

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.

02

Strengthening our core value-add profitable businesses

Secondly, 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.

03

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.

04

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 core 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.

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

- **We always act responsibly** and abide by all applicable environmental laws
- **We continue to advance our technology and services** to enable our clients to sustainably and responsibly discover, develop and manage the Earth's natural resources
- **We continue to advance our data collection capabilities** to best measure, monitor and continuously reduce our impact
- **We commit to improving our power usage efficiency**, increasing the low-carbon content of our energy supply, and reducing our GHG emissions
- **We 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

With an intermediary milestone in 2030 with a target

REDUCTION OF 50%

of our direct emissions

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: **$1.006 bn**
- Net Debt: **$989 m**
- Liquidity: **$419 m**
- Capital employed: **$1.996 bn**

Industrial

- Manufacturing sites: **6**
- Imaging centers: **23**
- Datacenters: **3**

Human

- Permanent employees: **3,312**
- Diversity:
  - Nationalities: **77**
  - Gender equality index W-M: **85/100**

Intellectual

- R&D Investment: **$65 m**
- Employees in R&D: **411**

Social

- Code of Business Conduct: **Yes**
- Independent Board members: **87.5%**

Natural

- Energy consumption
  - Sercel : **23.6 GWh**
  - Datacenters: **72 GWh**

Inputs

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

QUALITY

SOCIAL RESPONSABILITY

Impacts

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

MARKET EXPECTATIONS

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

VALUE CREATION

Financial

- % of Segment Revenue growth: **-1%**
- % of Segment Ebitdas margin: **37%**
- Net cash flow: **$19 m**

Industrial

- Production/head: **$277 K**
- Numbers of k. channels delivered: **337**
- Number of sections delivered: **333**

Human

- Employees with more than 5 years of seniority: **77%**

Intellectual

- Patents: **897**
- Kimberlite ranking: **CGG #1**

Social

- ESG Rating by MSCI: **AA**

Natural

- Direct & Indirect GHG emissions (excluding Scope 3):
  - Scope 1: **2 kt eq. CO_2**
  - Scope 2: **43 kt eq. CO_2**
- Power efficiency (PUE): **1.35**
- % of revenues dedicated to sustainable activities: **7.8%**

GOVERNANCE

Chaired by Philippe SALLE, the Board of Directors determines the orientations of the Company's and the Group's activities and ensures their implementation in accordance with its corporate interest, taking into consideration the social and environmental issues of its activity.

The functioning of the Board is governed by the Internal Regulations of the Board of Directors, which are available on the Company's website (www.cgg.com).

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

Philippe SALLE
Chairman of the Board
End of term of office: GM 2025

Michael DALY
Director
End of term of office: GM 2025

Patrick CHOUPIN
Director representing the employees
End of term of office: GM 2025[1]

9 Directors

87.5% of members are independent
62.5% of members are women

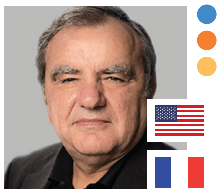
13 meetings
(vs. 8 meetings in 2020)

96.5%
attendance rate
(vs. 100% in 2020)

Anne-France LACLIDE-DROUIN
Director
End of term of office: GM 2025

Heidi PETERSEN
Director
End of term of office: GM 2024

Colette LEWINER
Director
End of term of office: GM 2023



Mario RUSCEV
Director
End of term of office: GM 2023

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

* *Director whose mandate is proposed for renewal at the 2022 General Meeting*
● *Independent Director*

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

(1) Patrick CHOUPIN is a director representing the employees, appointed by the Group Committee, in accordance with Article 8 of the Company's Articles of Association. He was elected on April 6, 2021 in replacement of Patrice GUILLAUME and took function as from May 12, 2021.

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.

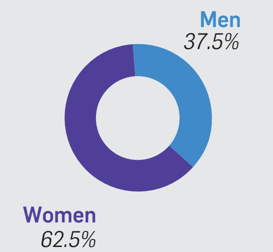
	Audit and Risk Management Committee	**Appointment, Remuneration and Governance** Committee	**HSE/Sustainable Development** Committee	**Investment** Committee
meetings	7	5	3	3
attendance rate	100%	95%	100%	91.6%
of independence	100%	100% (1)	100% (2)	100%
members	3	4	3	4

(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.

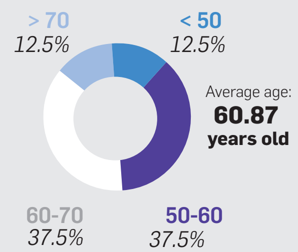
A diversity of profiles, skills and expertise within the Board of Directors (1)

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.

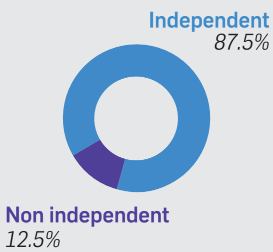
Gender balance



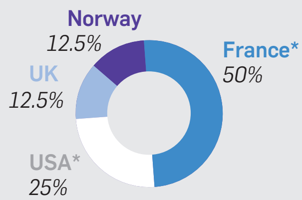
Age



Independence

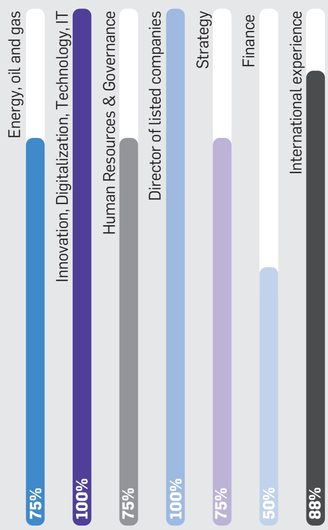


Nationalities

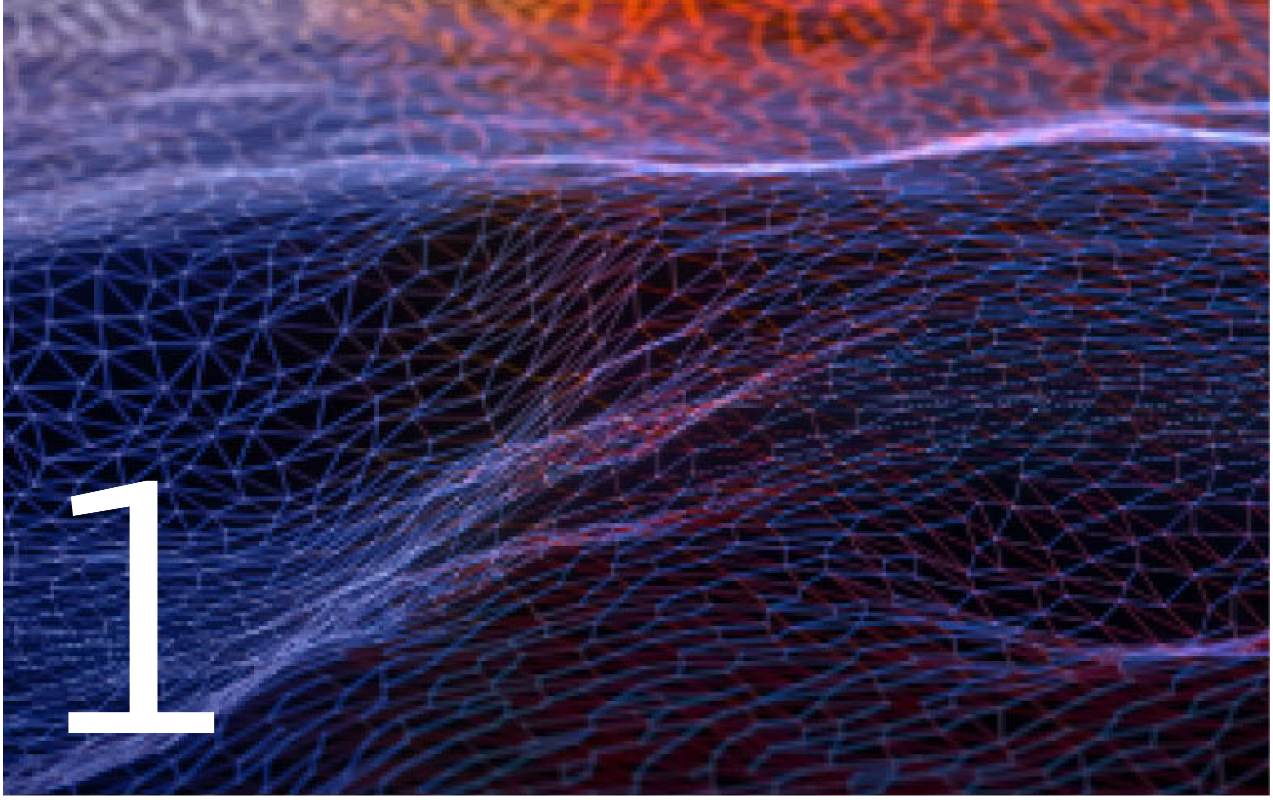


** For the purpose of this chart, Sophie ZURQUIYAH and Mario RUSCEV have been accounted for in both "France" and "USA" as they have both nationalities.*

Skills



(1) It shall be noted that Patrick CHOUPIN, as Director representing the employees, has not been taken into account when determining the above figures as this diversity policy should only target Directors elected by the shareholders, based upon the Board's proposal.



PRESENTATION OF THE CGG GROUP AND ITS ACTIVITIES

1.1 OBJECTIVES AND STRATEGY

CGG Overview

CGG (www.cgg.com) is a global geoscience technology leader. Employing around 3,300 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 7.1.1. of this Document for additional information relating to our American Depositary Receipt).

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 economic crisis triggered by the Covid-19 pandemic, together with the drop in demand for oil and gas and the increase in their 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 adapt to this reduced level of activity.

Since the summer of 2021, the macro-environment clearly strengthened, with Brent oil price remaining above US$70/bbl. However, the International Oil Companies maintained capital discipline despite higher cash flow generation in 2021.

CGG is 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 under the brands of Sercel, Metrolog, GRC and DeRegt.

As a result of the announcement of our CGG 2021 Strategy to exit the Contractual Data Acquisition segment 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 60 consolidated subsidiaries as of December 31, 2021 (55 abroad and 5 in France).

REVENUES BY ACTIVITY

In millions of US$	2021	2020
Multi-Client Data	276	340
Geoscience	309	328
Geology, Geophysics & Reservoir (GGR) segment revenues	**586**	**668**
Equipment segment revenues	**357**	**291**
Eliminated revenues and others	**(1)**	**(4)**
IFRS 15 impact on multi-client pre-commitments	**121**	**(69)**
CONSOLIDATED REVENUES	**1,062**	**886**

REVENUES BY REGION – BY LOCATION OF CUSTOMERS

	2021		2020	
In millions of US$, except percentages	MUS$	%	MUS$	%
North America	170	16%	153	17%
Latin America	232	22%	141	16%
Europe, Africa and Middle East	393	37%	410	46%
Asia Pacific	267	25%	182	21%
TOTAL	**1,062**	**100%**	**886**	**100%**

1.1.1 Market environment and client needs

Following the collapse in oil prices and E&P spending due to Covid-19 pandemic in 2020, oil and gas prices have fully recovered in 2021. Historically, this would have led to a significant recovery in the oil & gas E&P capex budgets. However, the reality is different: large IOCs and major independent oil & gas companies generally appear much more disciplined in their investment plans.

In 2020 & 2021, 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. They have turned into energy companies and are allocating increasing amounts of capital to renewable energy. 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 fuel-based power generation.

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, lower carbon intensity and higher and accelerated returns.

We believe that the development of renewable energy will be long and will require significant investments, and that oil and, especially, gas will for the time being remain at the core of oil and gas companies, as cash flow generated by this core will be needed to progressively transform their energy portfolios and ensure the world has the energy it needs throughout this 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 from the supply side that will need to be addressed.

At the macro-environment level, we see the early effects of several years of reduced investments, which are translating into high commodity prices. Yet, there is a de-correlation between oil price and E&P investments from our clients, especially the IOCs, who remain particularly cautious when it comes to longer-term opportunities to replace reserves and maintain production. We estimate that oil companies will increase their capex budgets by about ~15-18% in 2022e, but with lower growth rates in oil & gas than in renewables, and we see offshore E&P spending growing by ~8-10%. The consensus among oil analysts (FactSet) is for growth in budgets of around 14% in '22e and 6% in '23e.

We expect that oil and gas companies will remain focused on increasing production from existing reservoirs 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. We continue to expand our library in the most resilient basins. We made a conscious effort to successfully increase our participation in development and production, and have avoided those frontier areas that we believed would be less robust. 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 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.

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 new downturn in the oil & gas industry triggered by 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. 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 advantaged oil & gas.

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 de-risking medium-term oil and gas demand, setting up a macro recovery cycle. The macro-environment has clearly strengthened, with Brent Oil price remaining above 70 US$/bbl. This is triggering an increase in short-cycle investments, mostly targeting development and production. We believe that the industry's underinvestment in upstream development and production since 2014, especially in 2020 and 2021, could be setting the stage for global undersupply of oil in the near future.

1.1.3 Significant events in the course of 2020 and 2021

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 that 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 objectives:

- **General and administrative expenses and support costs:** adjust in line with new size and footprint.
- **Land:** wind down and exit the market; CGG progressively reduced the Land Data Acquisition business over 2019 and fully shut down the activity in the first quarter of 2020.
- 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").
- **Multi-Physics:** market for sale and monetize when suitable; Effective July 1, 2021 the Multi-Physics business except its processing and multi-client library, was sold to Xcalibur group.
- **Marine:**
  - reduce the number of seismic vessels in operation in 2019,
  - search for a strategic partner to cost efficiently operate and control the vessels.

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 ("Streamer NewCo").

It was announced on November 5, 2020 that CGG and Shearwater jointly agreed to suspend negotiations around the creation of the Streamer NewCo. 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.

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

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.

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 agreement;
- 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.

1.1.3.2 Cost base reduction plan

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, to preserve cash. The cost reduction measures were 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 with all its creditors. For more information, see section 2.4 "Legal and arbitration proceedings" of this Document.

1.1.4 A strategy based on growing core highly differentiated businesses and accelerating growth of beyond the core initiatives

Despite the new period of depressed activity in 2020 and H1 2021, 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 highly differentiated businesses 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 cloud-native high-performance computing, imaging services and multi-client data. These help our customers make better and faster decisions.

Our strategy is based on growing our core highly differentiated businesses and accelerating growth of our beyond the core initiatives utilizing our unique expertise and technologies in new sectors. The Beyond The Core new businesses are expected to generate above 20% of total revenue in 2025.

Growing core highly differentiated businesses: 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 & gas 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 2021 Geoscience segment revenue continued its sequential recovery from the second quarter onwards with overall revenue for the year decreasing by 6% year-on-year. We expect Geoscience to continue its recovery sustained by increased demand for high-end technologies and improved images of the subsurface for reservoir optimization and development.

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.

In 2021, Multi-Client segment sales were down 19% mainly driven by a 30% reduction of our multi-client capex.

In 2022, we will increase our multi-client capex and will continue to target our future multi-client programs in 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.

Growing core highly differentiated businesses: 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, as well as 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 that 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 2021, Sercel's external segment revenue increased by 23% as compared to 2020, mainly driven by an increase of Land activity.

In 2022, 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).

The streamer marine market is expected to progressively recover as current fleets are aging and their equipment excess is shrinking. Eventually, we believe that updates and replacements will be required.

Accelerating growth beyond the core (BTC): 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 especially into the rapidly growing digitalization, observation & monitoring, and energy transition markets. 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. These are all areas in which we currently do business and are staffed with experts to deliver the products and services.

- **Digital Sciences:** With the continued rapid and global advance of digital technology and solutions, including areas such as data analytics, digital transformation, big data, machine learning, artificial intelligence and cloud computing, companies are increasingly considering their data as one of their core assets. In this context, CGG is concentrating its long-standing leadership in digital technology, especially as applied to geoscience, to provide expert digital solutions to its clients. These include digital transformation, cloud-ready data processing, management and delivery solutions, cloud-based Platform, Data and Software as a Service offerings (PaaS, DaaS/SaaS), pioneering and industry leading data-driven algorithms and approaches, as well as data analytics, machine learning and artificial intelligence solutions that augment workflows. Anticipating and leveraging the exponential increase in the volume of digital data (Big Data) that our clients are experiencing, along with the need to extract value from these growing volumes, CGG will continue to dedicate considerable research and development towards digital sciences including, our advanced high-performance computing (HPC) practice and internal/external capacity, CGG Cloud based PaaS, SaaS and DaaS offerings, and digital transformation technologies and services. This will enable CGG to uniquely provide the digital capabilities our clients require to address their advanced high-performance computing, Cloud and digital transformation requirements.
- **Monitoring and observation:** Through our unique portfolio of industry leading sensor technology, HPC compute capacity, data processing and analysis systems, global cloud-based data management and delivery capabilities and renowned earth sciences expertise, CGG is well positioned to expand into the rapidly growing digital observation and monitoring solutions markets. From infrastructure monitoring to enhance the safety of structures such as buildings, bridges, dams, and railways, to monitoring solutions that support the Energy Transition markets of CCUS, minerals & mining and geothermal, and solutions for monitoring business activity, defense, and environment, along with the health and safety of industry and society. CGG's technologies, expertise, and solutions provide the input needed to reduce the risks and costs of operations. Our satellite mapping technologies help our clients monitor offshore pollution, critical earth movements such as the stability of mines and tailing dams, and environmental variations. Our high-end data processing and geoscience labs provide detailed analysis of the gathered data, as an example for understanding environmental pollutants and their potential impact on health. Our industry leading equipment provides the sensor technology and solutions, as an example for the infrastructure monitoring market, which is growing at the high CAGR rate of 15%-17% per year. Through continued advances in our sensor technologies and cloud-based computing capabilities, aging infrastructure can be cost effectively and proactively monitored remotely, to reduce risks and extend the operational life of the structure.
- **Energy transition:** Our historic and new clients are increasingly focused on energy transition, reduction of their environmental footprint and decarbonization. One of the key enablers for achieving these ambitious objectives is carbon capture, utilization, and storage (CCUS). Many of our clients are planning significant CCUS projects and are starting to incorporate application of CCUS technologies into their field development plans. Low carbon energy, such as green or blue hydrogen, will also require long term storage and monitoring. The energy transition requires significantly more mineral resources than produced today, to meet the power demands of society with clean energy. To address this, the mineral and mining industry, along with new investors entering the market, are ramping up efforts to meet future demand. Finally, there is increased interest around geothermal energy and the technologies required to increase its efficiency and effectiveness in the clean energy mix. To be successful, all of these areas require a detailed understanding of the subsurface, and this is where CGG excels, through its unique expertise, advanced geoscience and digital science technologies and its global earth data library.
- **Earth data library:** For all these growing markets, the input for better decisions starts with the right data, and our clients increasingly need access to our extensive and growing Earth Data library to guide their business, as an example, to reduce the costs and carbon footprint of their energy portfolio. With our seismic and geologic data, satellite imagery and growing environmental information, along with our unique taxonomy, global cloud services, data delivery capabilities and digital data management solutions, CGG provides a unique data ecosystem that enables our clients to effectively access, visualize, procure and utilize the data they need to optimize their business.

1.1.5 Financial and non-financial 2022 outlook and objectives

2022 non financial outlook: Entering a positive industry cycle

In 2021, CGG confirmed the value generated by its technology in traditional energy as clients focused on reservoir optimization and near field exploration. The multi-client strategy, focused on proven and mature producing basins, has confirmed its relevance.

In 2022, the E&P sector is entering a positive upcycle with market recovery expected to further accelerate in 2023. Resumption of licensing rounds in core mature basins is expected to further support this acceleration.

2022 financial objectives: Accelerating business initiatives

In 2022, CGG will continue to invest in core domains leveraging its high-end positioning while also accelerating the development of Beyond the Core (BTC) new businesses to address digital sciences, energy transition monitoring & observation and demand from other industries.

In 2022, CGG segment Revenue is expected to increase by around 10% sustained by ~18% GGR growth and stable Equipment. CGG is anticipating a slow first quarter revenue due to lower equipment sales year-on-year.

CGG 2022 segment EBITDAs margin is expected to increase to around 39%-40% on full impact of cost savings, revenue growth and favorable business mix.

CGG is expanding its hiring program to support the growth of BTC businesses.

2022 Capex will increase to capture the favorable upcycle and accelerate the development of BTC businesses:

- Multi-Client cash capex is expected to be back to around US$200 million, including new offshore programs in Latin America and the North Sea.
- Industrial cash investment is expected to be around US$70 million, including notably up to 100 petaflops of additional Cloud High Performance Computing (HPC) capacity.

We have included above and elsewhere in this Document certain targets and projections (Segment EBITDAs 2022) 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$75/bbl in 2022;
- 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 2019 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 and imaging seismic data;
- selling seismic data processing software;
- providing geoscience and petroleum engineering consulting services;
- collecting, developing and licensing geological data.

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. 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 technologies and 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 cloud centers, 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. We have a leading position in OBN data processing that we will capitalize on as the recovery will be led by increased near field exploration, field development and production, where the benefits of OBN technology are most pronounced.

In October 2021, we announced the completion of sale of CGG's GeoSoftware business to Topicus.com Inc. ("Topicus") and Vela Software ("Vela") for the total cash consideration of US$95 million. We expect that together they will further invest into and develop the GeoSoftware product suite and continue its success.

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.

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.

Oil & gas will remain at the core of oil & gas companies, as its cash flow is needed to progressively transform their energy portfolios and meet the world's energy demands through the transition. New barrels will be more difficult and riskier to extract, and the latest technologies will play a key role in the characterization of new prospects and discoveries, along with their effective and low carbon intensity development and production.

In this environment, Geoscience imaging technology will continue to play a key role as it enables clients to allocate their investments more effectively and reduce their carbo footprint.

We expect 2022 Geoscience spending to increase by a high single digit our central scenario.

b) Multi-Client (MC)

The Multi-Client (MC) business line utilizes the resources of Geoscience 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, development 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, CCUS 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.

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.

We continue to expand our library in the most resilient basins. Indeed, we made a conscious effort to increase our participation in development and production, successfully, and have avoided those frontier areas that we believed would be less robust. Brazil and Norway receive most of our investments, and we also look for those well prefunded reprocessing projects, that leverage our imaging technology.

We also anticipate demand for our multi-client programs and data to strengthen on the basis of our positions in the industry's preferred mature basins, along with the emergence of new private equity backed players. We believe that our exposure to reservoir development, production and near field exploration provides solid resilience through the cycles, particularly with current short and longer-term outlooks. We expect that our clients will retrench into their core areas and prioritize capital expenditure on projects with lower risks, lower carbon intensity and higher returns, both to manage through the existing challenging market, but also to best support their longer-term energy transition goals.

We have also been working on our client portal that enables them to access information about all of our available data and their entitlements.

MC operates in marine environments on a worldwide basis and on land in the United States. It has significant investments offshore Brazil, in 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 2021, the library of 3D seismic surveys consisted of approximately 1,110,000 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 2021, MC capitalized US$186 million of total costs, of which US$168 million represented cash expenditures, and amortized US$186 million to cost of sales, including US$23 million of impairment charges related to one multi-client survey offshore North Sea.

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.

The main competition to our MC business line comes from TGS, PGS and Schlumberger (WesternGeco). Competition in the Multi-Client business is focused on location of basins 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.

2021 segment figures

GGR segment revenues in 2021 amounted to US$586 million, a decrease of 12% compared to 2020. GGR segment revenues represented 62% of the consolidated revenues in 2021.

Geoscience segment revenue was US$309 million, down (6)% year-on-year. Multi-Client segment revenue sales were US$276 million, down (19)% year-on-year. Prefunding revenue was US$150 million, down (29)% year-on-year on lower cash Capex. Multi-Client cash Capex was US$(168) million, down (30)% year-on-year. Cash prefunding rate was 89%. The IFRS net book value of the seismic multi-client library was US$393 million at the end of 2021.

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, 2021, Sercel operated five seismic equipment manufacturing facilities, located in Nantes and Saint Gaudens in France, Houston, Texas in the US, Krimpen aan de Lek in the Netherlands and in Singapore. In China, Sercel operates through Hebei Sercel-JunFeng Geophysical Prospecting Equipment Co. Ltd. ("Sercel-JunFeng"), based in Hebei, in which Sercel has a 51% equity stake. In addition, Sercel has three sites in Massy, Toulouse and Brest in France, which are dedicated to specific applications.

General description of activities

Sercel sells its equipment and provides customer support services including training on a worldwide basis. Sercel offers a complete range of geophysical equipment for land and marine seismic data acquisition, including seismic recording equipment, software and seismic sources for land (vibrators) 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-electromechanical system (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. 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 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. Sercel announced the launch of GPR300, a new nodal seismic acquisition solution specially designed for deployment in shallow waters down to depths of 300 meters. Developed in partnership with BGP, the new solution expands Sercel's existing GPRNT range which includes GPR1500 for high-end deep-water subsurface imaging.

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 earthworks 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 increased by around 6% in terms of revenues in 2021. The marine streamer market remains weak, as the demand for new streamers remains very limited. We estimate that Sercel's global revenue market share remains around 50%. For land products, the main competitors are Inova (a joint venture between BGP and Ion Geophysical Inc.), Geospace Technologies Corporation and DTCC. Our main competitor for the manufacturing of marine seismic equipment is Teledyne. 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.

2021 segment figures

In 2021, the total sales of the Equipment segment (Sercel) amounted to US$357 million, a 23% increase compared to 2020. Equipment represented 38% of the consolidated revenues in 2021.

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:

	2021		2020	
	In MUS$	As % of net revenue	In MUS$ (restated)	As % of net revenue (restated)
Gross research and development expenditure	64.7	6.1%	78.1	8.8%

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

1.3.2 2021 Innovation highlights

While we see a reduction in demand for frontier exploration, it is also our observation that the need for higher-quality, higher-resolution data for development and production purposes continues to increase.

We continually develop a suite of technologies to improve our ability to deliver high-quality images, with the most important being our developments in full waveform inversion (FWI) and FWI Imaging.

Breakthroughs in this domain, especially when combined with high-end data acquisition such as OBN (ocean bottom node), are leading to images of unprecedented quality and precision, and allowing remarkable insights even in the most challenging areas.

What we also observe is that the ability to integrate different expertise and data types to derive better insights, coupled with machine learning and AI to leverage our computing more effectively, is becoming increasingly valuable. This is at the heart of our R&D innovation, leveraging not only our expertise in seismic imaging but also our geological, reservoir and earth observation expertise.

Also underpinning this strategy is a continuous growth in our HPC capacity, now in excess of 300 Pflops. It is this combination of our deep scientific knowledge, HPC and data that is facilitating our strategy to continue growing our business in many segments, including CCUS, H2 Storage, Geothermal, Mining, Environmental Science, Infrastructure and Earthworks Monitoring.

1.4 INVESTING ACTIVITIES

In 2020, our total capital expenditures – industrial, capitalized development costs and multi-client cash capital expenditures amounted to US$303 million (US$303 million excluding asset suppliers' variance). In 2021, our total capital expenditures decreased to US$227 million (US$228 million excluding asset suppliers' variance).

In 2020 and 2021, our industrial capital expenditures amounted to US$23 million (US$23 million excluding asset suppliers' variance) and US$29 million (US$30 million excluding asset suppliers' variance), respectively.

Our capitalized development costs amounted to US$41 million in 2020 and US$30 million in 2021.

In 2020 and 2021, our multi-client cash capital expenditures amounted to US$239 million and US$168 million, respectively.

In 2021, our industrial capital expenditures and capitalized development costs (excluding asset suppliers' variance) amounted to US$31 million and US$28 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 original participants.

The cash prefunding rate was of 89% in 2021 stable year on year.

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, 2021. 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 2021 Universal Registration Document.

In millions of US$, except per share data	2021	2020 Restated [b]
Statement of operations data:		
Operating revenues	1,062.2	886.0
Other revenues from ordinary activities	0.8	0.7
Cost of operations	(853.2)	(726.5)
Gross profit	209.8	160.2
Research and development expenses, net	(17.0)	(18.6)
Marketing and selling expenses	(29.9)	(32.5)
General and administrative expenses	(62.9)	(67.9)
Other revenues (expenses)	(123.2)	(214.5)
Operating income	(23.2)	(173.3)
Cost of financial debt, net	(120.5)	(134.1)
Other financial income (loss)	(42.4)	(39.4)
Income taxes	4.4	(29.3)
Net income (loss) from companies accounted for under the equity method	0.1	(31.8)
Net income (loss) from continuing operations	(181.6)	(407.9)
Net income (loss) from discontinued operations	1.6	(28.9)
Net income (loss)	(180.0)	(436.8)
Attributable to owners of CGG SA	(180.5)	(440.5)
Attributable to non-controlling interests	0.5	3.7
Net income (loss) per share – attributable to shareholders:		
– Basic [a]	(0.25)	(0.62)
– Diluted [a]	(0.25)	(0.62)
Net income (loss) from continuing operations per share – attributable to shareholders:		
– Basic [a]	(0.25)	(0.58)
– Diluted [a]	(0.25)	(0.58)

(a) Basic and diluted per share amounts have been calculated on the basis of 711,526,474 and 710,739,746 weighted average outstanding shares in 2021 and 2020, respectively.

(b) In accordance with IFRS 5 "Non-current Assets Held for Sale and Discontinued Operations", financial information was restated to present comparative amounts for each period presented following the reclassification of our stake in a joint-venture to continuing operations.

In millions of US$	2021	2020 Restated [c]
Balance sheet data:		
Cash and cash equivalents	319.2	385.4
Working capital [a]	228.6	187.7
Property. plant & equipment, net	212.1	268.1
Multi-client surveys	393.1	492.4
Goodwill	1,083.6	1,186.5
Total assets	2,924,6	3,377.5
Gross financial debt [b]	1,308.4	1,389.1
Equity attributable to owners of CGG SA	962.7	1,119.7

(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 current and non-current portion (leases included), including accrued interests and bank overdrafts.

(c) In accordance with IFRS 5 "Non-current Assets Held for Sale and Discontinued Operations", financial information was restated to present comparative amounts for each period presented following the reclassification of our stake in a joint-venture to continuing operations.

In millions of US$ except per ratios	2021	2020 Restated [(i)]
Other financial data and other ratios:		
Segment [(g)] EBIT [(b)]	(48.6)	(196.7)
IFRS [(a)] EBIT [(b)]	(23.1)	(205.1)
Segment [(g)] EBITDAs [(c)]	344.1	360.1
IFRS [(a)] EBITDAs [(c)]	464.9	290.9
Segment [(g)] Operating income	(48.7)	(164.9)
IFRS [(a)] Operating income	(23.2)	(173.3)
Segment Free-cash flow [(h)]	201.1	(38.6)
Capital expenditures [(d)]	58.6	64.1
Investments in multi-client surveys, net cash	168.3	239.0
Net financial debt [(e)]	989.2	1,003.7
Gross financial debt [(f)]/Segment [(g)] EBITDAs [(c)]	3.8x	3.9x
Net financial debt [(e)]/Segment [(g)] EBITDAs [(c)]	2.9x	2.8x
Segment [(g)] EBITDAs [(c)]/Cost of financial debt, net	2.9x	2.7x
Gross financial debt [(f)]/IFRS [(a)] EBITDAs [(c)]	2.8x	4.8x
Net financial debt [(e)]/IFRS [(a)] EBITDAs [(c)]	2.1x	3.5x
IFRS [(a)] EBITDAs [(c)]/Cost of financial debt, net	3.9x	2.2x

(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 current and non-current portion (leases included), including accrued interests 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.

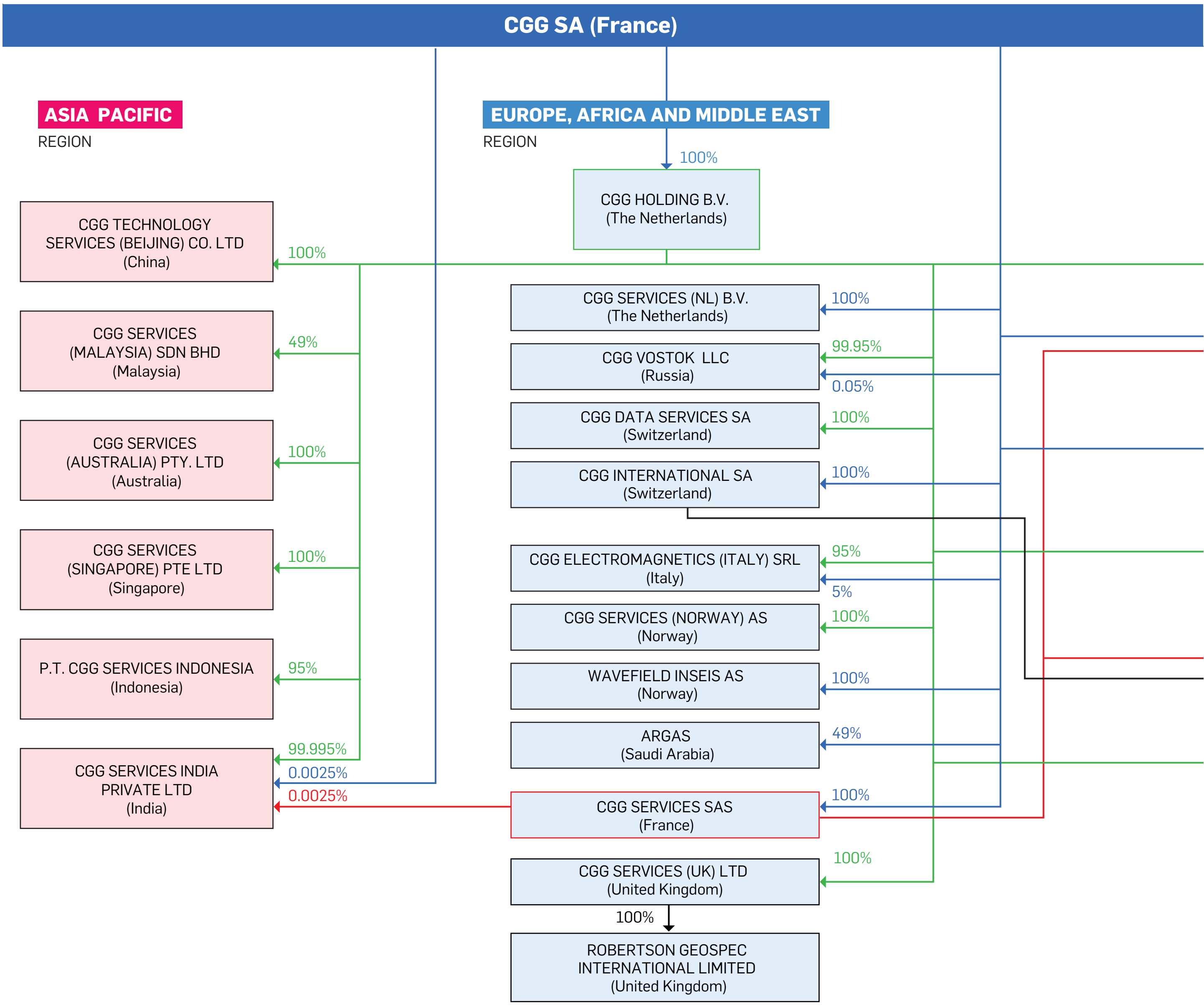
(h) "Segment Free-cash flow" is defined as "Net cash flow provided by operating activities" plus "Proceeds from disposals of tangible and intangible assets", minus "Total capital expenditures" and "Investments in multi-client surveys", plus "Acquisition of investments, net of cash & cash equivalents acquired", "Proceeds from divestment of activities and sale of financial assets" and "Variation in subsidies for capital expenditures" 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.

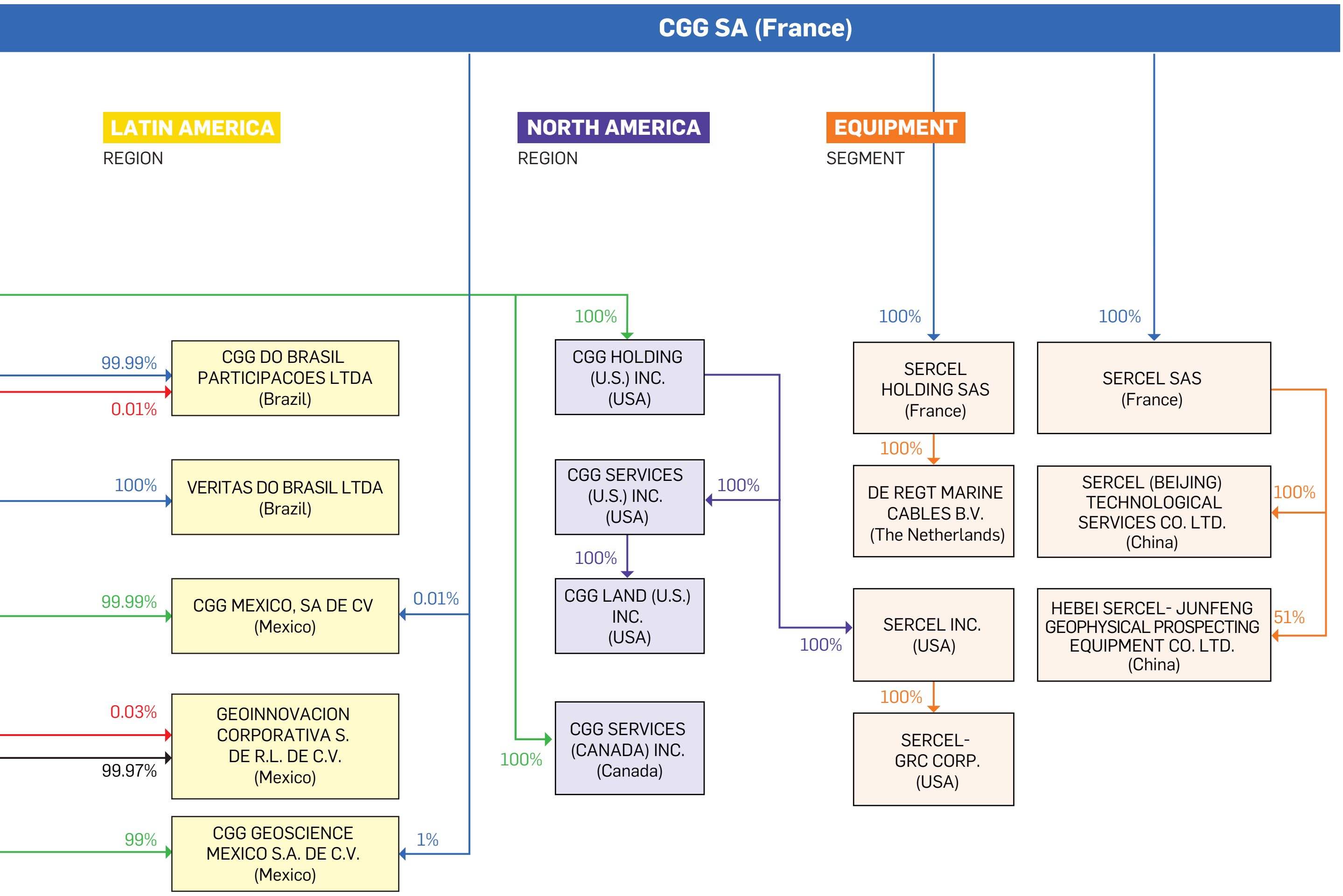
(i) In accordance with IFRS 5 "Non-current Assets Held for Sale and Discontinued Operations", financial information was restated to present comparative amounts for each period presented following the reclassification of our stake in a joint-venture to continuing operations.

1.6 CGG ORGANIZATION

1.6.1 Organization chart

CGG SA is the parent holding company of the CGG group, listed on Euronext Paris stock exchange. The Group's subsidiaries are directly or indirectly owned by CGG SA. The simplified organization chart (showing the percentage of share capital and/or voting rights owned) as of December 31, 2021 is presented below.




CGG SA (France)
LATIN AMERICA
REGION
NORTH AMERICA
REGION
EQUIPMENT
SEGMENT
99.99%
0.01%
CGG DO BRASIL PARTICIPACOES LTDA (Brazil)
100%
VERITAS DO BRASIL LTDA (Brazil)
99.99%
0.01%
CGG MEXICO, SA DE CV (Mexico)
0.03%
99.97%
GEOINNOVACION CORPORATIVA S. DE R.L. DE C.V. (Mexico)
99%
1%
CGG GEOSCIENCE MEXICO S.A. DE C.V. (Mexico)
100%
CGG HOLDING (U.S.) INC. (USA)
100%
CGG SERVICES (U.S.) INC. (USA)
100%
CGG LAND (U.S.) INC. (USA)
100%
CGG SERVICES (CANADA) INC. (Canada)
100%
SERCEL HOLDING SAS (France)
100%
DE REGT MARINE CABLES B.V. (The Netherlands)
100%
SERCEL INC. (USA)
100%
SERCEL-GRC CORP. (USA)
100%
SERCEL SAS (France)
100%
SERCEL (BEIJING) TECHNOLOGICAL SERVICES CO. LTD. (China)
51%
HEBEI SERCEL- JUNFENG GEOPHYSICAL PROSPECTING EQUIPMENT CO. LTD. (China)

1.6.2 Intra-group transactions

The Group carries out intra-group transactions in various fields (e.g. different kinds of services, 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 2021 and 2020, financial flows between the parent company and its subsidiaries were as follows:

In millions of US$	2021	2020
Services provided	34.5	19.2
Expense rebilling	20.5	7.5

1.7 RECENT EVENTS

Binding offer for the sale and leaseback of its headquarter building

On 14 January 2022, CGG has signed a binding offer with Pramena Investment & Anacap Financial Partners for the sale, in the frame of sale and leaseback transaction, of its headquarter building Galileo located in Massy, France. The closing of this transaction is expected early Q2 2022 at the latest.

Ukraine invasion

The company is monitoring very closely the implications of the invasion of Ukraine with the main objective of supporting our employees and evaluating its economic consequences. In 2021, revenue generated from Russia represented around 4% of CGG Group revenue.

RISK MANAGEMENT AND INTERNAL CONTROL

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 Treadeway 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 subsidiaries (the Company and its subsidiaries 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 is conducted by the management with the support of the Finance Function, the Internal Control, the Risk Management and Internal Audit Departments, while the monitoring of its effectiveness is performed by the Board of Directors in particular via its Audit and Risk Management Committee.

Our internal control and risk management frameworks are designed to provide reasonable assurance regarding the achievement of objectives in the following areas:

- optimization of Group processes notably ones leading to safeguarding of its resources;
- reliability and accuracy of financial information; and
- compliance with applicable laws and regulations.

The principal objective of our internal control and risk management system 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.

CGG commits to act with integrity and professionalism across all locations, business lines and support 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.

For more information on the Group's Ethics Policy, see section 3.3.1 of this Document.

Organization of the Group with respect to internal control

The Chief Executive Officer and the Executive Leadership team

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 Executive Leadership team which includes the heads of business lines and functions, who have responsibility for internal control and risk management related to their organizational unit's operational and business objectives *(for more information on the Executive Leadership team's composition, see* section 4.1.2.2 *of this Document).* The heads of business lines and functions are responsible for the development and implementation of internal control rules and procedures that address their unit's operational and business objectives and ensure that these are consistent with the Group's objectives. These responsibilities are cascaded through the organization in each business line and function.

The Executive Leadership team is chaired by the Chief Executive Officer and 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 its Committees.

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 effectively mitigate 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 and common 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 role 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 and business planning process as well as the monthly, quarterly and annual financial reporting. It prepares management accounts and Group financial synthesis in close coordination with business lines' financial controllers and is closely involved in the preparation of the Board Committees' and Board of Directors meetings. Along with the business lines' financial controllers, it ensures, on a regular basis, the oversight of the Group's operations and follow-up of the action plans initiated at the Group level.
- **Accounting and Consolidation:** functionally headed by the Group Controller and Chief Accounting Officer, this organization is ultimately in charge of the production of the financial accounts within the Group, on a statutory basis for each legal entity, in close cooperation with business lines' financial controllers, and on a consolidated basis as part of the quarterly and annual financial reporting. From this perspective, it defines the 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.
- **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 cash flow reporting on a monthly basis. The department also manages the balance sheets of Subsidiaries.
- **Tax:** this department manages the Group's tax compliance and obligations as well as 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.

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 based on 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 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.

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 at all levels, across all business lines and support functions. 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 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 could 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 as per their criticality according to their impact (critical/major/significant/low) and likelihood of occurrence (almost certain/possible/rare/unlikely). In assessing risks managers consider the residual risks (after mitigation measures and controls in place) and their potential impact on people, health and safety, environment, finance, compliance with laws and regulations and on the Group's reputation. Additional mitigation plans can be required to be set up to manage these risks. Their 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 Risk Management System is managed by the Director of Risks Management and Insurance, who reports to 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, Governance & Strategy risks, Operational risks, Information Assets & Technologies risks, People risks, Finance Risks and Legal, Regulatory & Compliance risks. The risk registers and the risk map 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 considering 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;
- the financial 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 specified dates depending on the nature of 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 Group 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 over 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 over financial reporting (CFR) to ensure that all financial and operational managers of each operation 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 processes and procedures for closing the accounts, consolidating and preparing the financial statements It also outlines the principles for preparing the notes to the consolidated financial statements.

To limit the risks of fraud, the segregation of duties is in place, from approval of the orders to goods and services receipts to payments to the vendors and suppliers.

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

Intercompany transactions are carried out in accordance with market conditions and transfer pricing principles. Information Systems represent the backbone of the Group's internal control framework and are fully supporting our processes.

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

Information about IT infrastructure and information systems security is described in Chapter 3, section 3.4.4 of this Document.

Control of the disclosure of information externally

- The Group has rules and specified procedures for preparing, validating and approving press and news 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 Management Task Force

The Group has set up a Risk Management Task Force in charge of monitoring the efficiency of the internal control and risk management systems. Its members are the Internal Audit Director, the Risk Management and Insurance Director, the Internal Control & Quality Coordinator, the VP Legal Affairs and Group Compliance Officer, the Chief Information Security Officer, and the HSE & quality global manager. The Committee meets every month. 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; and
- recommendations for and coordination of the mitigation or process improvement actions taken in these areas.

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;
- provide guidelines to ensure the reporting of material information to be disclosed within the framework of half-year or annual communication to market authorities or 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 2021, the Committee was chaired by the SVP Group Controller and Chief Accounting Officer and is composed of EVP Equipment; EVP Geoscience; EVP Multi-Client; VP Controller Geoscience; VP Finance Equipment; SVP Finance Strategy Risk GGR; Group Internal Audit Director; SVP Group Tax Director; SVP Group Treasurer; EVP Group General Counsel 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 and its Committees regularly review key risks faced by the Group. The Board receives annually mapping of the key risks the Group faces and monitors implementation of agreed action 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. In accordance with Article L. 823-19 of the French Commercial Code, the Audit and Risk Management Committee monitors in particular the effectiveness of the internal control and risk management frameworks, with regard to the procedures relating to the preparation and processing of accounting and financial information.

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 entities of the Group.

2.2 MAIN RISK FACTORS AND CONTROL MEASURES

This chapter includes the main risks identified during the year ended December 31, 2021 to which CGG is exposed, at the date of this 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 by 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.

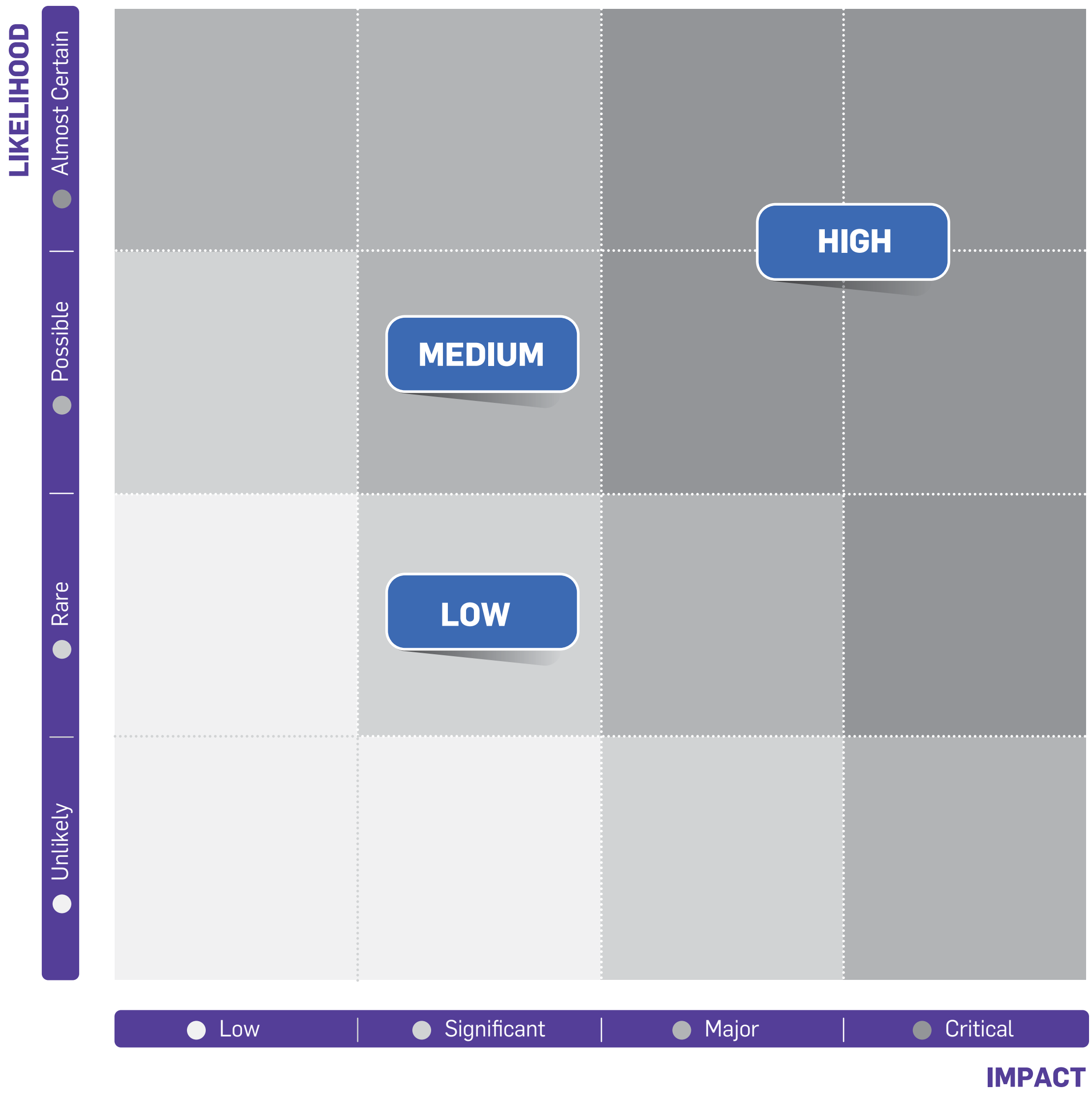
As detailed in the section 2.1.2 "Risk Management", the main risks described below (as per the Risk Map revised annually) are residual risks, after implementation of mitigation measures to prevent and control them.

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

RISK SIGNIFICANCE



The main Group risk factors and uncertainties identified and assessed in the year ended December 31, 2021 are ranked into the following six categories:

Category	Risk Factors	Net Significance Level
Risks relating to our Business, Governance and Strategy		
2.2.1.1	Market Cyclicity and Highly Competitive Environment **ESG**	High
2.2.1.2	Geopolitical Risks	High
2.2.1.3	Strategic Partner Risks	High
2.2.1.4	Energy Transition and Market Shift **ESG**	High
2.2.1.5	Environmental Sustainability **ESG**	Medium
Operational Risks		
2.2.2.1	Loss of Key Asset and Value Impairment	High
2.2.2.2	Supplier failure/Supply Chain Interruption/Shortage of component **ESG**	High
2.2.2.3	Intellectual Property Mismanagement/Failure to protect Intellectual Property **ESG**	Medium
Information Technology and Information Security Risks		
2.2.3.1	Critical Business Information Technology Failure and Cyber Security **ESG**	High
People Risks		
2.2.4.1	Difficulties to Attract and Develop Adequate Expertise - Loss of Key People/Key Expertise **ESG**	High
Economy and Finance Risks		
2.2.5.1	Cash generation/Working capital variation Risk	High
2.2.5.2	Unfavorable Currency/Exchange Rate	Medium
Legal, Regulatory and Compliance 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 sections describe the main risks identified in the year ended December 31, 2021, their potential impact and their treatment plan.

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

It must be noted that there are three transverse risks – Covid-19 pandemic, climate change and inflation - present in several of CGG's risks described below.

The Covid-19 pandemic has had and continues to have an impact on the Group, namely:

- energy transition and market shift: international oil companies have reduced their exploration expenditures as they pursue new strategies involving : stricter cash management for deleveraging and dividend assurance ; focus on low cost/low carbon oil ; diversion of capital into green energy and/or carbon capture. Exploration investments do not seem to be recovering commensurate with oil price increases, as was the case in the past;
- supply chain disruption/shortage of raw materials and components: the supply chain was also affected due to demand variation, distancing measures, lower productivity, higher transportation costs and logistical constraints and;
- cybersecurity was challenged due to social distancing and due to imposed teleworking during Covid-19 pandemic.

For more details, please refer to sections 2.2.1.4, 2.2.2.2 and 2.2.3.1 of this chapter and section 3.2.2 of Chapter 3.

The climate change risk also impacts many of the risks of the Group, namely:

- energy transition and market shift and environmental sustainability;
- adverse regulatory change; and
- investor moves away from oil & gas.

From an operational point of view, as Group's activities are directly linked to the energy sector, its value chain may be affected by climate change and its consequences on fossil energy demand.

For more details, please refer to sections 2.2.1.4 and 2.2.1.5 of this chapter and sections 3.5.1, 3.5.2, 3.6.1 and 3.8 of Chapter 3.

Inflation could also have a transverse impact on others risks of the Group.

Global inflation is running at an unusually high rate driving up the prices of goods, services, and wages. If most economic surveys and Central Bank Authorities used to conclude that such inflation was temporary, they are now progressively stating that inflation is back, but at undetermined levels and could lead to supply shortage.

While generally we benefit from energy price increases, which we did see in 2021, general inflation could negatively impact our operations and profitability to the extent we would be unable to push cost increases to our customers. At CGG, we consider that the main risks of cost increases, related to inflation, reside in the electricity needed to run our processing centers, and in salary inflation. Cost of components in our Equipment division, as well as variable costs in relation to our contract for marine seismic acquisition services with Shearwater, to support our Multi-Client business, could also be impacted. However, the main portion of our contract with Shearwater is set at a fixed rate.

Except for our $100 million undrawn Revolving Credit, most of our financing bear fixed interest rates, as do our facility leases and real estate rents.

For more details, please refer to sections 2.2.1.1, 2.2.4.1 and 2.2.5.2 of this chapter.

2.2.1 Risks related to our Business, Governance and Strategy

2.2.1.1 Market Cyclicity and Highly Competitive Environment

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 and the decline of the Brent oil price 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 during 2021 from their lowest levels in March 2020, our clients, especially the IOCs, did not increase their E&P spending and continued to maintain capital discipline, prioritizing deleveraging, dividends and share buybacks, at the same time increasing their investments into energy transition. It is possible that trends in oil and gas exploration, development and production will become increasingly divorced from commodity prices.

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 balance supply and demand;
- 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;
- 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 extensive 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 have not changed that strategy and continue to balance our investments with the activity and spend of our customers; and
- 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 implemented such reductions.

For more details, please refer to Chapter 1, section 1.1.3.2 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 and service offerings, project execution, customer service and price. Maintaining our competitive advantage in high-quality solutions requires us to continuously invest into research and development (R&D) 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 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 value and 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 value and quality solutions, our products and services may not be perceived as 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 and financial condition.

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 lower cost technologies by our customers;
- we seek to maintain premium positioning by differentiating ourselves through technological advances, data and image 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 high-performance computing 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, sections 3.4.1, 3.4.2 and 3.8 of this Document.

Inflation

We are seeing inflationary pressure coming from goods, services and wages. We attempt to pass these costs on to our clients, but there is no guarantee we will be successful as pricing pressure from clients and competitors remains strong in our markets, regardless of general inflation. Our failure to increase prices would result in reduced margins.

Examples of mitigating activities

- we try to compete as much as possible on the value and quality of our products and services;
- we try to maintain multiple suppliers of products and services; and
- we monitor and respond to wage inflation on a country-by-country basis.

2.2.1.2 **Geopolitical Risks**

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 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;
- 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.

CGG is exposed to geopolitical risks mainly due to its business in/with China and Brazil as well other countries such as Russia, which can have significant impact.

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 affected the balance between the demand and supply for oil and natural gas. This dynamic has resulted in increased volatility in oil and gas prices and a reduction in the levels of exploration, development and production spend for hydrocarbons, therefore affecting demand for our products and services.

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 and capital 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.

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;
- we deliver general awareness and targeted training to exposed stakeholders to ensure understanding of the risks and risk mitigation responsibilities;
- we implement and maintain policies and procedures formalizing risk control processes and responsibilities; periodically audited to ensure applicability, compliance, efficiency and to identify opportunities for improvement;
- we monitor and analyze 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; and
- we apply specific due diligence processes related to exposed/high risk transactions and third parties.

2.2.1.3 **Strategic Partner Risk**

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 by our strategic partners to perform their obligations in accordance with our expectations or in breach 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 Ltd. (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 SJF. 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 decided to stop cooperating with Sercel or to develop its own equipment manufacturing factory.

On January 8, 2020, the Group completed the sale of its interest in Global Seismic Shipping AS (GSS), an entity indirectly owning five seismic vessels, which subsequently acquired all of CGG's streamers, to Shearwater. The Group contracted with Shearwater for guaranteed access to 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.

For more details on the terms and conditions of the Capacity Agreement, please refer to section 1.1.3.1 of this Document.

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).

For more details on the terms and conditions of the Step-In Agreements, please refer to section 1.1.3.1 of this Document.

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; and
- we try to maintain good communications with joint venture parties to ensure early notice of any issues.

2.2.1.4 Energy Transition and Market Shift

Our business today 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. Society in general and numerous organizations such as governments, non-governmental organizations, and financial institutions are increasingly encouraging directly or indirectly the reduced consumption of carbon-based energy products and the establishment of a low-carbon renewable energy mix, in order to combat climate change. As social interest regarding the energy transition continues to grow worldwide, demand for renewables (as a partial or complete substitute for hydrocarbons) continues to increase. In this context, oil and gas companies are experiencing a shift in demand away from traditional oil and gas and toward lower-carbon sources of energy such as renewables. A rapid and 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;
- raising inflation, if it impacts oil and gas more than renewables energies;
- 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;
- the change in the perception of the energy transition by potential employees that makes it more difficult for us to attract qualified talent;
- our ability to predict global energy demand and modify our business to effectively address the pace and magnitude of these changes; and
- the strategies and investments selected by oil and gas companies to address the energy transition.

Driven by political forces and forecasts of a world moving away from petroleum products, several large oil companies have recently stated that they have the reserves needed to produce all the oil they ever will. Actions driven by this position could drastically reduce frontier exploration with particular impact on our multi-client library.

A theme of finding "cheap, low-carbon oil" is developing in the industry. This could have a negative impact on our multi-client library by reducing geographic areas of interest.

In particular, laws or regulations intended to limit or reduce emissions of gases, such as carbon dioxide, methane and other greenhouse gases or nitrogen oxides, can impact our business and may seriously impact the demand for our clients' core products in the future, and therefore would significantly reduce the demand for our current core 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 emission regulations as have many other countries, including the United States. If regulations are updated, or new regulations are put in place that reduce demand for oil and gas, or increase our direct or indirect costs, as an example if our suppliers incur additional costs that get passed on to us, this could impair our business.

Examples of mitigating activities

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

- implementation of an energy transition strategy and roadmap to ensure awareness and to anticipate and respond to the pace and magnitude of the shifts in demand for our products and services;
- expansion of our products and services offerings into markets beyond oil & gas, such as those associated with energy transition, as an example geothermal, carbon capture, utilization and storage (CCUS) and environmental geoscience, as well as markets beyond oil & gas and energy transition as an example digital sciences and infrastructure monitoring;
- regularly monitoring 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, sections 3.5.1 3.5.2 and 3.8 of this Document.

2.2.1.5 Environmental Sustainability

We are subject to the risk that the global community, governments, stakeholders and their carbon neutral commitments, impose increased pressures on the regulatory bodies, investors, bankers, insurers and other players, including but not limited to our clients and suppliers to distance themselves from O&G related companies. We recognize the impact of climate change and the potential effect on our business, and our market and acknowledge the risks associated with not taking steps, taking the wrong steps or not taking them at the right time to mitigate its impact.

CGG group is committed in lowering its carbon footprint throughout its value chain. We monitor our progress towards the reduction targets we have made public in 2020. The majority of our direct emissions come from our electricity requirements to power our Data Centers. We continually look for ways to reduce this impact on the environment by focusing on increasing the share of low carbon content energy in our mix and by investing in technologies that improve our global energy efficiency.

CGG group is committed to facilitating the transition towards lower carbon and renewable energy supplies. We participate proactively in sustainability which is aligned with our long-term culture of responsibility and accountability in the way we conduct our operations.

Examples of mitigating activities

The following measures have been put in place with the aim to mitigate the risks related to Environmental Sustainability:

- we invest and will continue to invest, in new technologies that reduce our direct carbon emissions that allow us to offer to our Clients products to support environmentally conscious activities;
- we measure and strive to improve our overall sustainability performance and we publish it so that stakeholders can review our progress;
- we participate in the carbon disclosure project (CDP) and we see value integrating our score with prominent ESG Ratings Agencies to manage and mitigate risks and identify opportunities; and
- we started in 2021 a project to monitor the ESG performance of our supply chain that we will actively deploy in 2022.

For more details on our efforts and initiatives, please refer to Chapter 3, sections 3.5.1, 3.5.2, 3.6.1 and 3.8 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 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 primarily at three data centers. 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 and a large loss of service capability and revenue. In our Equipment business, Sercel manufactures a wide range of geophysical equipment at various manufacturing facilities. Damage to or destruction of any one of our factories could result in significant loss of production capacity as well as in loss of access to certain of our information technology databases.

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 and stock split 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 business combinations leading to the recognition of goodwill on our balance sheet. Goodwill is subject to impairment that could have material adverse effects on our results of operations.

As mentioned in notes 1 and 11 to our 2021 Consolidated Financial Statements, at least once a year, we perform the impairment test of the goodwill allocated to the cash generating units to assess whether an impairment loss must be recognized. To do so, we determine the value in use of our cash generating units by estimating their future cash flows, discounted to the present value at the updated sector weighted average cost of capital (WACC). In addition to this year-end test, we also perform impairment tests whenever there is any indication of potential loss of value. Factors that could trigger such ad hoc reviews include, among others, the following:

- significant underperformance relative to expected operating results;
- significant changes in the strategy for our overall business;
- significant negative industry or economic trends;
- material change in the trajectories of recovery of E&P spending or growth of Beyond the Core new businesses ;
- specific events affecting the value of the asset, such as a change in goverment policy affecting lease rounds; and
- introduction of new Businesses.

We recognize an impairment loss in the income statement whenever the carrying amount exceeds the recoverable value. In 2021, for the second consecutive year, the level of activity of our Multi-Client business was impacted by cuts and deferrals in E&P spending. While we expect the multi-clients sales to increase significantly going forward, fueled by spending recovery after two years of underinvestment and expected growth coming from Beyond the Core new businesses (CCUS in particular), we revised downwards the near-term future cash flows of our Multi-Clients CGU compared to our forecasts at December 31, 2020, based on lower than expected sales both in 2020 and in 2021. We hence recorded US$102 million of impairment loss relating to the goodwill of our Multi-Client cash generating unit in 2021. Given the volatility of the markets where we operate, the uncertainty in the E&P spending and Beyond the Core new businesses growth trajectories, we may need to write down goodwill in potentially material amounts in the future.

We may also need to impair or write-down the value of other assets on our balance sheet, such as our multi-client library, depending on a variety of factors, many of which are beyond our control, including the level of spending from our customers which itself notably depends on the future hydrocarbons price and volatility. Technological or regulatory changes or other developments could also adversely impact the value of our assets. 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 data, and technological changes could make existing data obsolete.

In this context, we run regular reviews, especially for our multi-client library. As mentioned in notes 1 and 10 to our 2021 Consolidated Financial Statements, we perform, at least once a year, an impairment test for all multi-client surveys, based upon updated sales forecasts, on top of the systematic test which is carried out on the delivery date of each survey. In addition to these regular tests, we also conduct impairment tests whenever there is any indication of potential loss of value. As of December 31, 2021, the carrying value of our multi-client library was US$393 million. In 2021, we recorded US$21.2 million of impairment loss, due to the downward revision of expected sales of one survey pursuant to the development of political context in the UK unfavorable for exploration.

See Notes 1, 10 and 11 to the Group's 2021 Consolidated Financial Statements, for more details.

2.2.2.2 Supplier Failure, Supply Chain Interruption and Shortage of Components

The high technology content of our products and services renders us dependent on the supply of electronic components. These components could be unavailable to us temporarily or for extended periods of time, as a consequence of the worldwide generalized shortage post Covid-19 and/or when the demand is high, and their production is fully captured by larger users. This would mainly affect single source suppliers where there is a lack of or limited number of alternatives.

In order to reduce the impact of a temporary shortage (below 6 months), as per our Business Continuity Management Plan, the single source components used in our main (strategic) products are identified and properly secured depending on their risk assessment.

In case of the generalized and long-term shortage, as materialized with the outbreak of Covid-19, immediate mitigation actions were taken at the first signs of the shortage. From February 2021, ramping-up gradually during the year, we ordered components to cover all 2022 estimated production plan for the strategic products. Lately, we ordered the components for H1 2023 production plan (without being sure to be delivered on time). Thanks to our agility and fast decision-making, our production and sales have been fully secured in 2021 (and expected for Q1 2022). As the crisis endures, serious potential shortfalls have been identified for Q2 2022, which are being addressed by our Sourcing and Supply Chain Departments.

We are also vulnerable to other disruptions in the supply chain from changes in government regulations, tax regulations, currency exchange rates, strikes, boycotts, natural disasters and other disruptive events such as transportation congestions, as well as a sub-contracting failure. Our French manufacturing sites outsource part of their production to local third-party companies, which expose us to the risk of failure of such suppliers (such as bankruptcy, natural or industrial loss, default of compliance, etc.). According to our Business Continuity Management Plan, for all critical electronics sub-contractors, and most of the mechanical ones, we have an alternative supplier for the strategic products, which reduce our risk.

Because we rely on third party suppliers, we are subject to disruptions outside of our control, which may adversely affect our ability to deliver our products and services to our customers.

Examples of mitigating activities

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

- implementation of Business Continuity Management Plans, periodically reviewed, tested and updated;
- distribution of outsourced operations among several subcontractors, each having a small proportion of the aggregate outsourced activity, and identification of alternative suppliers for the strategic products;
- periodical analysis of single source components (including analysis of other risk factors related to relevant supplier) with consequent adjustments to the safety stocks and/or search for alternative vendors;
- "key product business impact" analysis to determine the products for which further mitigation measures, to guarantee adequate supply, are necessary, such as safety stocks of key components, duplicate production lines (i.e. production at multiple Sercel sites or subcontracted sites) and split inventory (products stored at multiple sites); and
- anticipation of components' obsolescence, using a worldwide platform, which alerts us soon enough to take mitigating decisions (last buy, alternative component, etc.).

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

2.2.2.3 Intellectual Property Mismanagement/Failure to Protect Intellectual Property

Technology changes rapidly in energy and natural resources 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 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, in our Geoscience division where this is the primary asset and proprietary database as well, 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 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 for example, 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 methodology. Considering that keeping such algorithms and codes secret from our competitors and other third parties is essential in giving us a competitive edge, we often seek to maintain these as trade secrets rather than patents, which may offer less protection.

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

We also actively monitor our operations to ensure that our activities do not infringe third parties' intellectual property rights. However, we cannot assure 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, if 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 actively monitor our technological developments to guard against inadvertent use of a third-party/competitors' IP rights;
- 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, research and development 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, we regularly conduct assessments and provide training to relevant employees; and
- 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 for the confidentiality and ownership of commonly developed proprietary technology and information.

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

2.2.3 Risks related to Information Technology and Cyber Security

2.2.3.1 Critical Business Information Technology Failure and Cyber Security risks

The technologies we apply in our industry are increasingly using emerging tools, techniques and applications 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 Information Technology (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 operational data.

Also, the Covid-19 pandemic has accelerated and intensified the remote working adding dependance on information technology and challenging our systems and networks and those of our vendors, suppliers and other business partners.

In the context of intensification of digitalization, the frequency and sophistication of cyber incidents, including deliberate attacks, and other data breaches are increasing and may result in an increase in our exposure to risks such as:

- hacking of physical facilities (plants, security systems, etc.);
- failure of data protection through unauthorized release, gathering, monitoring, misuse, loss, or destruction of proprietary, personal and other data/information;
- cyber fraud & ransomware attacks; and
- any other disruption of business operations.

Moreover, 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 between our systems and from our servers to our customers. In addition, our business lines are increasingly managed through IT solutions. The majority of the operational functions related to our businesses are managed through enterprise resource planning (ERP) systems and centralized global treasury management systems. If we were to lose access to these systems, we may experience issues with processes such as customer invoicing, vendor payments, accounting (including delayed monthly closings), production planning (for instance, in connection with our Equipment business), compliance and human resources issues. As these systems are integral with our ability to operate smoothly, we apply a risk-based approach to protecting them from cyber and other threats.

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.

Examples of mitigating activities

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

- we have a Group policy signed by the CEO, and a dedicated information security team at the Group level supported by a network of individuals at the regional and business line level;
- we have implemented a number of processes aimed at cyber security, including a dedicated information security management system aligned with international recognized standards (NIST), an information security incident response plan, training and drills, annual 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 emails;
- we also have partnerships with a well-recognized security service provider and with industry groups for sharing information and intelligence;
- we utilize the latest technologies such as network traffic monitoring and management, firewalls, network access controls, vulnerability scanning, patch management tools, VPN access, encryption, end-point protection, cloud access security controls and secured internet gateways, among others;
- we have data recovery plans in case of critical outages tested regularly;
- we have maintenance of back-ups for critical business processes;
- we have data managed by hosting partners on two separate sites, providing data redundancy;
- we deploy tools to improve our visibility and alignment with internal and external data compliance obligations and to leverage the data classification processes;
- we monitor through our Information Security systems potential/actual incidents; 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, section 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 key people and key expertise as highly skilled scientists, engineers and technicians to develop, launch and service our products and solutions. If we are unable to hire, engage and retain these key people 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 and industries 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.

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 employees. At the same time and aligned with our focus on high-end technological activities, we have refocused our recruitment strategies to attract skilled applicants for careers in engineering, geophysics, IT, data science, digital and environmental sciences. These cost reduction actions and other similar measures have had an impact on our reputation, which may ultimately make it more difficult to hire and/or retain enough qualified employees. In addition, the roll out of our new strategy and our differentiation will only be successful if we are able to attract the most qualified talent to meet the needs of our clients, which may be difficult considering the war for talents in those specific technological employment markets.

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

In addition, the inflation rates and salary increase market trends that we experienced in 2021 in the countries where we operate are generating a risk of having an increase in our compensation cost base as well as difficulties in retaining and attracting employees if we were unable to cope with those compensation market trends and expectations.

Examples of mitigating activities

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

- identification of key employees during yearly people review process; talent management and development programs to drive career progression and individual engagement;
- succession planning initiatives, including attempts to duplicate certain technical expertise and to avoid customer relationships relying only on one individual;
- annual review of compensation, long-term incentive plans and performance reward frameworks;
- renewal of our employer branding, updating the Group description and perception to improve our applicants' knowledge of our activities and career opportunities and ultimately improve our attractiveness, as CGG shifts more and more towards technology and digital oriented services activities;
- increased use of digital recruitment platforms, processes and software;

- improving candidate sourcing through various channels including social media, university relationships, worldwide recruitment and integration programs for new graduates;
- adjusting work environments and implementing flexible working arrangements that are adapted to the region and business line; and
- working with top industry benchmark providers to ensure compensation and benefits are competitive.

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

2.2.5 Risks related to Economy and Finance

2.2.5.1 Cash Generation/Working Capital Variation Risk

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 2021, our two most significant customers accounted for 6.1% and 6% of our consolidated revenues, compared with 8.7% and 6.8% in 2020 and 6.7% and 6.5% in 2019 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. Nevertheless, a growing part of our clients are private clients with less predictable behavior, which can result in a higher uncertainty in term of payment terms. In addition, in our international operations we work with a wide network of approximately 45 banks and are therefore subject to counterparty risk. As of December 31, 2021, 7% of our cash balances were located in banks rated below A3 by Moody's or A- by Standard & Poor's.

We may not be able to generate sufficient cash from operations to fund our activities or may find that cash generated in certain countries is blocked due to tax, compliance or other reasons. Cash and Cash equivalents included trapped cash amounting to US$38 million as of December 31, 2021 from US$49 as of December 31, 2020 mainly driven by a temporary working capital need in our Equipment activity in China.

Our Treasury Management System could be hacked, 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, we in addition will probably need diversification investments that we may have difficulty financing on satisfactory terms, or at all, due notably to limitations in our debt agreements or market conditions.

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, 2021, guarantees granted by financial institutions in favor of our customers amounted to approximately US$49 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$18 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$200 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 debt refinancing in 2021, our debt structure is stabilized and more flexible with covenants and restrictions in line with market practices for companies our size, business and ratings. The maturity of our Senior Secured Bonds has been extended to 2027, with fixed rates, and we have an undrawn $100 million revolving credit facility, maturing 2025 available. We have no maintenance covenant attached to our debt and incurrence covenant related to our revolving credit facility is only triggered if such facility is more than 40% drawn. *See note 2 to the Group's 2021 Consolidated Financial Statements, available in this Document.*

But we remain exposed to financial risks related to our substantial outstanding debt, associated with high interest rates, relatively high to our size, and which we may not be able to repay or refinance on favorable terms. As of December 31, 2021, our net financial debt (defined as gross financial debt less cash and cash equivalents) was US$866.4 million before giving effect to IFRS 16 and US$989.2 million after giving effect to IFRS 16. Our gross financial debt, as of December 31, 2021, was US$1,185.6 million (including US$20.5 million of accrued interest and bank overdrafts) before giving effect to IFRS 16 and US$1,308.4 million after giving effect to IFRS 16. As of December 31, 2021, our available financial resources amounted to US$281.7 million (including cash, cash equivalents and marketable securities and excluding trapped cash, but excluding undrawn revolving credit facility). *See note 28 to the Group's 2021 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, including inflation.

Continued difficult conditions in the markets where we operate or volatility in the financial markets, including in relation to the Covid-19 pandemic, to climate risk management/legislation or inflation, 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 CCC+ for Standard & Poors, B3 for Moody's and B- by Fitch).

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 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); 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 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.

Our net foreign exchange exposure, as of December 31, 2021, is principally linked to the Brazilian real (with a net asset position of US$32 million equivalent), the Euro (with a net asset position of US$16 million equivalent as of December 31, 2021), and the British pound (with a net asset position of US$18 million equivalent). 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, 2021, we estimated that our annual recurring net expenses in Euros were approximately 180 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$18 million. We may in the future, hedge a portion of the euros recurring expenses at budget rate to mitigate this risk depending on counterparties conditions.

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.

In addition, the potential come back of inflation could put pressure on some currencies to the extend such inflation would be equivalent everywhere. In such circumstances, we would expect a higher inflation in Brazil that would impact the cost of hedging our multi-client sales.

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; and
- rebalancing through spot and forward currency sales.

2.2.6 Legal, Regulatory and Non-Compliance Risks

2.2.6.1 Adverse Regulatory Changes

We operate worldwide in a complex, volatile and evolving sector, and, in light of the current economic conditions, oil price uncertainty, political and trade tensions 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.

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 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 "Energy Transition and Market Shift".*

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 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:

- we have set up a regulatory watch per country for different business teams/services (including, legal, tax, finance, compliance and trade compliance); and
- training is provided to exposed stakeholders to ensure understanding of the risks and risk mitigation responsibilities.

2.2.6.2 Non-Compliance

Operating a business in many jurisdictions requires us, our partners and our agents 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, regulations and related permit requirements.

We currently hold numerous regulatory authorizations, permits and licenses necessary to operate our business. We cannot assure 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 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 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.

Our failure to comply with such laws could result in civil or criminal fines and enforcement actions, as well as an adverse impact on our reputation.

Examples of mitigating activities

The following measures have been put in place to manage legal, regulatory and non-compliance risks:

- delivery of general awareness and targeted training (including e-learning) to key stakeholders (employees and third parties (business partners such as commercial consultants)), related to trade compliance, sanctions, anti-bribery and corruption risks, as well as data privacy;
- 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. EthicsPoint online hotline administrated by an independent third party supporting any anonymous reporting to enable employees to report any suspected behavior conflicting with the Business Code of Conduct);
- securing general due diligence screening processes for third parties and transactions at all steps in a project lifecycle, with specific due diligence processes related to high-risk transactions and third parties;
- implementation and maintenance, as well as 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 with a strong commitment of the Senior Management, a digitalized anti-corruption risk mapping and adequate corruption risk measures and procedures.

For more details, please refer to Chapter 3, section 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 or may 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;
- 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 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 to review and assess our covenants compliance; and
- systematic pre-transaction assessment of covenants compliance.

2.2.6.3 Fraud – internal & external

We have been and expect to continue to be subject to different types of attempted fraud, both internal, i.e. perpetrated against the Company by an employee, and external, i.e. third party attempt to defraud the Company.

Internal fraud threats include: (i) misappropriation of assets, being direct theft (such as theft of petty cash) or misuse perpetrated in the frame of various processes including bank payments (such as misuse of employee passwords to make unauthorized payments and schemes designed to change bank account details to direct payments to unauthorized persons), purchasing (such as employees purchasing goods and services for personal use or the use of fictitious suppliers), payroll (such as submission of fictitious expense claims and illegitimate overtime), inventory, fixed assets and IT (such as theft or abuse of proprietary information); (ii) financial reporting fraud with misreporting or manipulation of financial information; and (iii) corruption (including kickbacks to employees from suppliers or other unauthorized payments to government officials).

External fraud threats include purchasing fraud (involving submission of false purchase invoices with requests for payment), email fraud, imposter fraud and account takeovers. Increasingly, such attempts take the form of cybercrimes with 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 detective 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 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 Management Task Force;
- 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 three years and much more intensely these two past years, 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.

2.4 LEGAL AND ARBITRATION PROCEEDINGS

From time to time the Company and/or its subsidiaries are involved in disputes and proceedings arising in the normal course of their business. To the best of the Company's knowledge, there are no pending or impending administrative, judicial or arbitration procedures that are likely to have, or have had over the last twelve-month period, any significant impact on the Group's financial position or profitability.

ONGC 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. On March 3, 2021, the Court ordered and ONGC made a deposit of INR 2,686,439,944.00 to the Bombay High Court. This sum equivalent to approximately 36 million US dollars at the exchange rate in March 2021, was placed by ONGC in Indian rupees in a specific account open at Canara Bank. 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, 2021.

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

Legal proceedings related to the Safeguard Plan

Certain holders of convertible bonds ("Oceanes") due 2019 and 2020 lodged an appeal against the judgement dated December 1, 2017 approving the Safeguard Plan. The Appeals Court of Paris confirmed this judgment in a ruling dated May 17, 2018. By ruling dated February 26, 2020, the French Supreme Court rejected the appeal lodged by certain Oceanes bondholders against the ruling of the Appeals Court of Paris, thus 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 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.

Third opposition to the decision issued by the Commercial Court of Paris

On December 22, 2020, Mr. Jean Gatty in his capacity as former representative of each of the two bodies of OCEANE bondholders and JG Capital Management (a management company of JG Partners, itself a former holder of the Oceanes) of which he is the director, filed three third-party appeals against the decision dated November 24, 2020 which had acknowledged the anticipated completion of CGG's Safeguard Plan.

Further to Mr. Jean Gatty's withdrawal of his judicial proceedings, the Commercial court of Paris Court rejected the third-party appeal by ruling (which is now final) dated May 7, 2021.

Criminal complaints

Furthermore, on February 2, 2021, CGG was informed that JG Capital Management also filed a criminal complaint seeking to call into question again the terms of the CGG's financial restructuring approved in 2017 under CGG's Safeguard Plan. The Company reminds this point regarding the differential treatment of creditors holding high yield bonds and Oceanes has been debated at length before various courts in a wholly transparent fashion.

On April 29, 2021, CGG filed a complaint for slanderous denunciation in connection with the complaint filed by JG Capital Management.

Writ of summons (*Assignation / Recours en Révision)*

On March 29, 2021, JG Capital Management issued a writ of summons to CGG before the Commercial Court of Paris in order to try and obtain, through an appeal for modifying an existing judgement ("*recours en révision*"), the cancellation of the judgment dated December 1, 2017, which approved the CGG Safeguard Plan. As of the date of this Document, the corresponding judicial proceedings are still ongoing.

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.

Also, as Sercel manufactures products that may qualify as dual-use goods (items that can be used for both civilian and military applications), Sercel must obtain export licenses from authorities before delivering its products.

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. This global business exposes CGG to a panoply of changing regulations, involving among many things licensing of data and environmental regulations.

As we seek to perform all surveys and conduct the business in compliance with all regulations, changes in any of these may adversely affect the value of the surveys in any given country and/or affect CGG's ability to acquire data in a country.

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 allocates appropriate resources and expertise to ensure regulatory requirements are monitored in countries where business is operated. Risk mitigation measures are designed and specific due diligence processes related to exposed transactions and third parties are applied when necessary.

STATEMENT ON NON-FINANCIAL PERFORMANCE

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 pages 12 and 13.

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

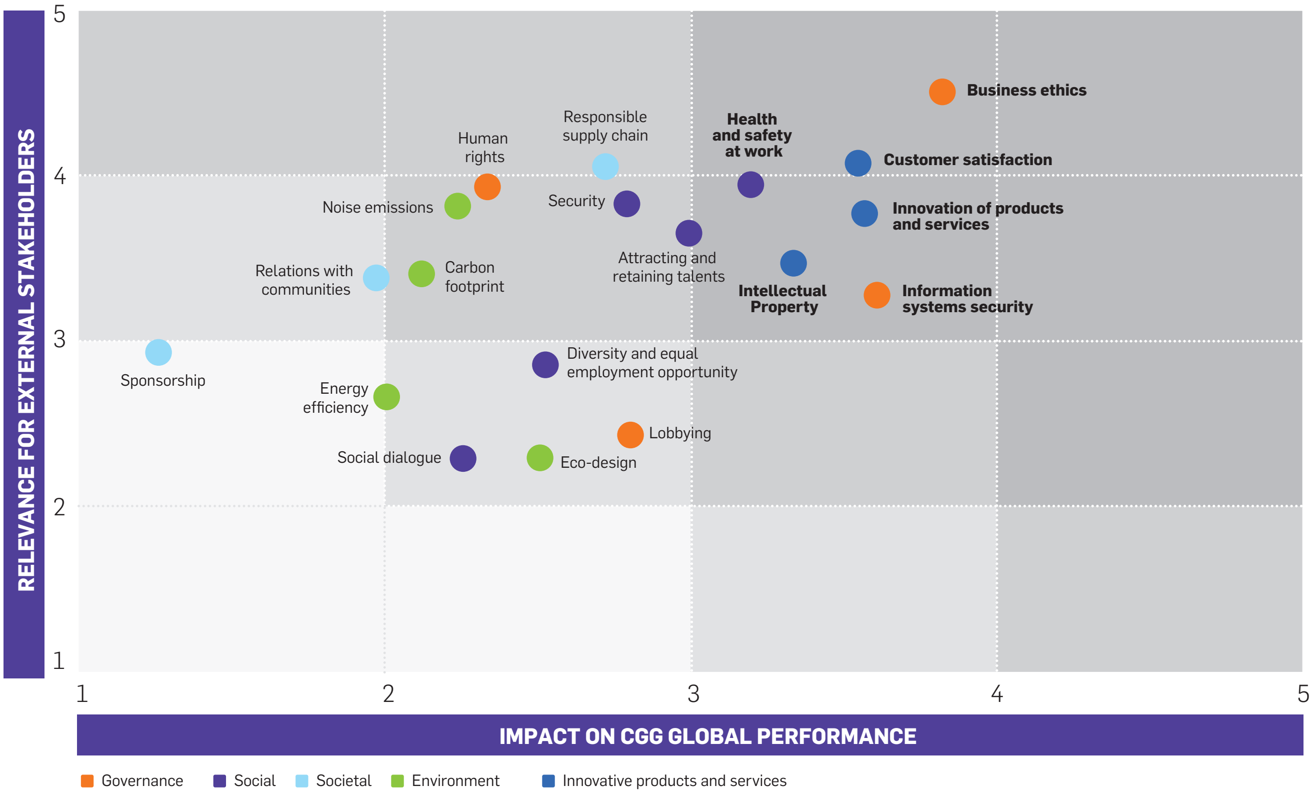
We conduct a benchmark of sectoral documents, peers and internal documentation to identify the main concerns of our sector. We then perform interviews of CGG employees as well as external stakeholders (including customers, sectoral and non-governmental organizations) during which participants rate each 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 will launch a new materiality analysis in 2022 and will adjust its 2022-2024 strategy according to the evolution of the non-financial risks and opportunities mapping.

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)	2020	2021
Voluntary turnover	5.2%	6.1%
Seniority of employees	14.3 years	14.2 years
Share of employees with a seniority over 5 years	78%	77%
Equality Index (for men & women) (calculation method by index)	88	85
Gender split at CGG (M/F)	70%/30%	70%/30%
Gender split in the recruitments (M/F)	76%/24%	70%/30%
Gender diversity in the top 10% of positions of responsibility	20%	24%

3.2.1 Talent attraction and retention

CGG operates in a competitive market in terms of talent acquisition and retention. Supporting our core business in Geoscience, Multiclients and Equipment and exploring Beyond the Core activities, the Company has made a shift in expected key competencies for our employees. To attract key talents in this new context, we have to demonstrate we are an attractive and sustainable place to work within our existing and prospective markets and offer compelling career opportunities.

Retention of our talents is also a top priority. Satisfying our customers with high quality products and services is linked to developing the skills of our employees, offering them clear career opportunities and ensuring they have the best work environment. These are essential factors in exceeding our customers' expectations. In building and fostering a diverse, inclusive and equitable environment, we enhance our ability to solve complex problems for our clients and are the kind of company people want to work for and with.

Attracting talents

We have developed a global recruitment process to manage all available job postings and applications. Our applicant tracking system (ATS) is a smart tool that aims to publish the job postings where they can have the most impact, such as ob 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 marketing of the Group to improve our applicants' knowledge of our activities and career opportunities and change potential applicants' perception of our company and ultimately improve our attractiveness. This rebranding started in 2019, was pursued in 2020 and finalized in 2021 as CGG shifts towards more technology and digital oriented activities, requiring increased technical profiles such as 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. 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 dedicated to the development of its employees throughout their careers. As such, we believe that career management is not something that can be addressed just once a year. We have developed a performance management platform 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 also have a people review and succession planning cycle along with ongoing learning and development opportunities.

We have developed an Employee Assistance Program (EAP), as a resource to employees who may require confidential support or counseling on a variety of personal topics such as mental wellbeing, legal assistance, financial planning and child or elder care.

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 strongly believe that diversity within our workforce is essential for CGG's performance, dynamism and capacity for innovation

In 2021, CGG has launched a global initiative called IDEA to promote Inclusion, Diversity and Equity in Action at CGG. The aim of IDEA is to raise awareness among our employees and implement actions especially toward 3 axis Attract, Develop and Engage. At the end of 2021 the participation rate to our IDEA e-learning was 79%.

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 2021, the proportion of women in the Group remained stable compared to 2020.

Gender balance in 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 2021, the gender balance in the Executive Leadership team, headed by a woman, thus stands at 22% while it stood at 11% in 2019. Although below the average of 25.5% observed within SBF 120 companies in the report of the High Committee for Corporate Governance in May 2021, the increase of 11 points in 3 years remains spectacular and the Group intends to continue its long-term policy aimed at promoting women's access to the highest levels of governance, including within the Group's management bodies. To this end, the Group acts in accordance with the methods and objectives defined by its strategy in favor of diversity.

In terms of gender diversity in the 10% of positions with the highest responsibilities (as defined in Article L. 22-10-10 of the French Commercial Code), the proportion of women stands at 24% in 2021, a 4-percentage point increase compared to 2020.

Being aware that this rate is slightly low in relation to the proportion of women in the Group, the Company's Board of Directors has set the objective of reaching 25% of women in the 10% of positions with the highest responsibilities in 5 years, i.e. at the latest in 2025.

Group strategy for diversity

Recruitment

As people recruited by the Group are mainly from the Science and Technology fields, the Group is confronted with the reality that a low percentage of graduates from STEM (Science, Technology, Engineering and Mathematics) field schools are women. Therefore, 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, 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, the individual needs to demonstrate high levels of managerial and/or technical competencies, a behavior in line with CGG values, consistent solid performance as observed at least in two consecutive annual performance reviews, and potential for future vertical growth within the organization. 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 abilities and agility.

As the identification of talents can be one of the obstacles to the promotion of women, specific focus is given to reduce any bias in identification or development.

CGG's objective here is to reinforce its focus on the levels of management representing the 10% of positions with the highest responsibilities within the Group.

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 all qualified applicants. 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

Fairness and equity in remuneration is at the foundation of our compensation philosophy.

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)	2020	2021
Total Recordable Cases Frequency rate (TRCF)	0.87	1.02
Lost Time Injury Frequency rate (LTIF)	0.35	0.46
Severity rate	0.009	0.004
Recordable occupational illness cases frequency rate	0.00	0.00
Exposure hours *(in million)*	11.5	8.8

HSE at CGG

Our approach to HSE is core in our aim to assure that CGG remains a healthy, safe and environmentally conscious company in direct support of our ethos "Care and Protect what Matters". HSE principles are integrated into our risk management, business planning and processes. We believe that all incidents are preventable and strive for zero harm to our people, the environment and the communities in which we operate. We annually review our HSE policy to ensure we are doing all that we can prevent all workplace accidents or occupational diseases of employees and contractors.

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 principles

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.

Reporting and communication

Transparent reporting and fast and efficient communication are critical to effective HSE management and therefore CGG have explicit expectations on reporting all HSE events.

PRISM is the internally developed reporting platform for all HSE, Social Responsibility and InfoSec incidents. PRISM is deployed on all CGG sites and is accessible by all staff. It also allows us to produce analyses, monitor performance, manage actions and record risk assessments with associated mitigation. Incidents within PRISM are assessed on their risks to allow better understand the cause of incidents and prevent reoccurrence.

Governance, risks and the HSE operating management system (HSE-OMS)

CGG maintains a robust HSE operating management system (HSE-OMS) deployed to all the Group operations. The HSE-OMS frameworks purpose is to control risk and deliver high HSE performance. Our HSE-OMS framework is built on the requirements of IOGP 510 and assessed externally by independent prequalification schemes.

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 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 supported by an HSE team at all levels of the business. 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.

The following projects were awarded in 2021:

- Health, Safety and Security Excellence Category

The use of collaborative robots (Cobots) for potentially hazardous work. During the manufacturing processes many of the steps involved can expose operators to hazards. The introduction of cobots reduces operators’ exposure to such dangers as repetitive strain, incorrect postures, vibration, manual handling and chemicals. Cobots can be safely used near to people and can help in particular with repetitive testing, frequent screwdriver use, and glue dispensing. Three cobots were deployed by our Sercel team in 2020 with more to come in the near future.

- Sustainable Development Excellence Category

"Competition for Good" Initiative to help the Rio Community through voluntary work. These initiatives took place throughout the year and were adapted to react to the Covid-19 crisis. Over 60 employees participated, creating 13 teams that each received points for their participation. Initiatives included "Gastromotiva" to help feed the homeless, sourcing and distributing back-to-school materials, and a ‘Todos por Todos’ fundraising campaign for the homeless affected by the consequences of Covid. An employee hackathon was also organized to identify new volunteering ideas for the future.

- Special Jury award: Resilience “The Global Collective Effort in Dealing with Covid-19”

This year, the Jury also wished to recognize the global collective effort in dealing with the Covid-19 pandemic and has recommended to the Board, which approved, the giving of a “Resilience” trophy to each and every site in the Group.

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.

Occupational Health & Safety

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.).

Covid-19 pandemic

CGG has continued in its proactive approach whereby its HSE community deployed and managed controls and mitigations, minimizing the impact on the health and safety of our employees and operations.

CGG has begun a phased return to office-based working where appropriate to do so. Careful preparations have been taken to return our people safely to the office with contingencies in place should there be any confirm Covid-19 cases.

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 to ensure a safety distance,
  - cleaning and disinfection protocols,
  - personal protective equipment 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 homeworking, 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 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,
  - 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.

3.3 SOCIAL MATTERS

3.3.1 Business Ethics

Key Performance Indicators

KPIs (excluding acquisition)	2020	2021
Percentage of employees that followed the Ethics e-learning course	82%	87%
Percentage of employees that followed the Anti-Corruption e-learning course	n.a.	96%
Number of alerts received by the Ethics Committee	4	7

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 in accordance with CGG's Ethics Policy and CGG's Code of Business Conduct

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 in compliance with Sapin II law. The Compliance Department, with the BLs and Finance teams, Internal Control, Group Internal Audit and 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. Since 2021, we have been working with an external advisor to migrate this matrix onto a digitalized format (software application) with the aim of facilitating the reporting to the Management and follow-up of our action plans, while confirming our compliance with Sapin II requirements. In this process, we have updated and reviewed all potential corruption scenarios identified, in collaboration with the relevant departments/functions. The full update of this new version will be finalized in 2022. In 2021, trainings/workshops have been organized with employees most exposed to corruption risks to confirm their awareness and additional sessions are planned for 2022 to cover all functions.

We have also reviewed and updated the review process of our procedures to adapt them to the new size and organization of the Group.

The Group developed two specific internal e-learning modules: one on ethics and one on anti-corruption to raise its employee's awareness at group level. New versions of both modules were created in 2021 and will be released in 2022.

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.

Communicating on Business Ethics

Workshops and presentations on the Code of Business Conduct, the Ethics Policy and Compliance program have been organized throughout 2021 for the business lines, the support functions and the country managers. As part of our global awareness initiative, regular communication is sent to employees under several means and a specific communication was made to employees for International Anti-Corruption Day which included general information and links to the relevant portals, resources, and persons to contact for help.

Code of Business Conduct

The Code of Business Conduct (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 current version of the CBC (released in 2020) includes seven 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 new ethics e-learning course was launched in January 2022.

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 2021, 7 claims, were reported to the ethics committee which investigated and closed them with an official report and recommendations. Of the 7 claims, only 1 was anonymous. Main topics addressed by the claims were conflict of interests and the protection of information and assets

2022 goals

In 2022, CGG wishes to:

- keep communicating on Ethics to reinforce awareness about this topic and the CBC;
- continue to 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)	2020	2021
Percentage of sourcing and supply chain employees that followed the anti-corruption e-learning course	93%	95%
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's 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.

2021 events

In 2021, 95% of our sourcing and supply chain employees (IT sourcing managers, supply chain global managers and purchasers) followed an e-learning course on anti-corruption.

In order to start monitoring the sustainability performance of our trading partners, CGG entered an agreement with EcoVadis, a trusted web-based platform providing sustainability ratings; the solution is still in its early phase of deployment.

2022 goals

In 2022, we shall accelerate our campaign requesting our main suppliers (i.e., those representing 80% of our annual spend) to join the EcoVadis program. We aim at disclosing in 2022 our first evaluation of the ESG performance of our Supply Chain and initiate a continuous improvement cycle on sustainability issues associated with our suppliers.

3.3.3 Relations with local communities

Key Performance Indicators

KPIs	2020	2021
Total Number of Social Development initiatives	**37**	**43**
Community service	*17*	14
Education	*8*	15
Environment	*5*	5
Health & Safety	*7*	9
Number of employees involved in volunteering	**205**	**663**
Number of volunteering hours	**1,390**	**468**
Cash granted by CGG & employees (excluding Babyloan)	**US$58,099**	**US$52,100**

Since the divestment of our data acquisition activities in 2019 we have a reduced impact on local communities. However, we wish to continue being 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.

In 2021, we maintained the same level of commitment to social development initiatives as last year. Our local social development actions were related to community services, charities, environmental preservation, education and health and safety. Unfortunately, due to the persistence of the Covid-19 pandemic in 2021, our activity with local communities was performed essentially remotely and we have not returned to the success of our pre-Covid years.

Micro-loans with Babyloan

Since 2012, CGG has developed a partnership program with Babyloan a micro finance organization. Over the years CGG has now invested €40,528 that were re-invested 17.1 times supporting 1080 projects to date resulting in a total amount loaned of €694,148 The field of activities covered by the projects we support are mainly agriculture (52%) and Trade (31%) and most of our micro-loans go to female entrepreneurs which represent 61% of the projects we financed since 2012.

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 a majority stake in the company, and to 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	2020	2021
Total capital expenditure (mUS$)	78	65
Share of Group revenues invested in research and development	9%	6%
Share of Equipment revenues invested in research and development	14%	11%
Share of CGG (excluding Equipment) revenues invested in research and development	6%	4%

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 strategic innovation

CGG's Geoscience innovation objectives include:

- maintaining a continuous effort on the identification and development of new technologies that enable us to obtain the highest quality seismic images possible in complex geologic settings;
- leveraging our subsurface knowledge, technology and expertise to accelerate our transition and diversification into renewable energy, environmental governance and digitalization markets;
- a broad integration of massive geoscience data sources to extract maximum information and knowledge to then apply and/or incorporate into our research and client results;
- continue to lead our industry in providing our clients with the highest quality data helping them to responsibly explore and exploit natural resources as well as monitor the environment supporting their societal and environmental responsibility goals. Our data contains information that can help to mitigate the associated risk and cost management for various development scenarios including:
  - improved well planning that assists in the avoidance of geohazards and reduces the number of unproductive holes,
  - reduction of safety risks and costs,
  - reduction in overall environmental impact while at the same time maximizing profitability.

Our R&D strategy is to develop differentiating technology that uniquely positions the company in the high-end of its market where price competition is less and profitability higher.

How the strategy is implemented

Integral to maintaining this high-end position is a large distributed global geoscience R&D team, consisting of 200+ researchers and developers around the world, focused on developing technology that addresses regional problem swiftly while at the same time maintaining a strong global technical continuity.

We also collaborate with a diverse range of universities and research consortia throughout the world. Our sponsorship to university Ph.D. students allows us to monitor 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.

2021 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. TLFWI algorithm was first developed 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. It was later been developed and adapted to various type of geology across the globe.

In 2021, we continue to make good progress on TLFWI robustness and efficiency which enable us to offer high resolution FWI image, i.e., a derivate product from beyond 100Hz velocity model derived from TLFWI algorithm. Combined with high density ocean bottom nodes, the FWI image is able to delineate near surface in great detail, such as pipeline, platform leg or other objects sitting near the seabed which are never be able to image by conventional seismic imaging technology. The success of our FWI across the globe led to massive amount of FWI case studies in 2021 major annual geophysics conferences, more than double than the next closest competitor.

Data Hub: From Data digitalization to knowledge extraction

CGG Data Hub offers data transformation services to extract, curate, integrate, and validate subsurface datasets that enable the user to efficiently discover all data, overcome subsurface challenges, and reduce cycle time. The Data Hub team pairs subsurface SMEs with data scientists and engineers to guarantee data confidence and develop leading technology solutions.

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.

2021 innovation highlights

Sercel deployed first GPR300 system (300m depth Ocean Bottom Node) in 2021 with a client operating in Abu Dhabi. It is a fully integrated Ocean Bottom Node system that combines optimum field operational efficiency with the highest level of data quality available to support the most precise imaging needs of the sea floor seismic industry.

Sercel also further developed advanced high productivity methods by managing the seismic vibrators fleets in the most effective and flexible manner. These methods are available for both cabled and wireless operations.

Innovation also implies developing new products for other fields of expertise, using our technology. A unique real-time structural monitoring and predictive maintenance solution been launched in 2020. First tests in the US have been performed in 2021. 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. A specific effort has been launched in 2021 to better identify areas of opportunities and define innovative solutions, accordingly, leveraging the value of accessible meta-data for predictive maintenance or optimization of operations.

3.4.2 Customer satisfaction

Key Performance Indicators

KPIs	2020	2021
CGG position in the Kimberlite review	Ranked highest performing Supplier	Ranked highest performing Supplier
Sercel position in the *Voix du Client* review	Ranked highest performing Supplier	Ranked highest performing Supplier
Completion rate of Equipment division internal quality objectives	78%	84%

As a high-end player, CGG consistently provides the highest quality products, data and services available in today's competitive market. Our highly ranked customers' satisfaction is achieved through an "on time" provision of best-in-class reliable products, data and services.

As such, customer satisfaction is a major concern for CGG 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;
- achieve our vision of being the geoscience partner of choice.

For this, we commit to:

- listen to our customers and exceed their expectations;
- 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.

Division Equipment

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 for each of the Sercel sites.

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.

A new Voice of the Client *(La Voix du Client)* review, commissioned by the Equipment division will be launched during summer 2022. Our customers will review us and others on a wide range of criteria (including on-time delivery, reparability, quality of products, ease of use and customer support). In 2018 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 three 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 2021, out of the 201 objectives identified for our Equipment sites in terms of quality, more than 78% of those goals had been reached.

This significative improvement of six percentage points compared to last year is an extremely positive result, it demonstrates our leadership and our recognized capability to respond to our customers' needs.

3.4.3 Intellectual property (IP)

Key Performance Indicators

	2020		2021	
KPIs (excluding acquisition)	**Titles**	**Patents**	**Titles**	**Patents**
Number of CGG Geoscience patents	441	**275**	378	**277**
Number of Equipment patents	874	**683**	780	**620**

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 unlawfully accessed by external sources, and to ensure CGG respects IP rights belonging to other parties.

Our IP rights are managed through dedicated IP departments that works closely with the various innovation departments of CGG. We have a Group policy that provides specific adaptations for each business line, with the goal of considering specificities related to their products and services. In particular, a unique General Instruction document addressing various sections of IP called "Protecting and Managing Intellectual Property" has been deployed within the Group. We continue to update our documentation and procedure to guide our employees to understand the procedures to follow for all IP matters Our IP department provides internal counselling and advice, and engages external specialists to assist the Group with specific matters if and when they arise. All employment contracts contain the protection of CGG intellectual property rights.

We hold regular IP reviews at various business level for covering internal technology developments and issues. We regularly check competitors' patent activity in our core business with a dedicated Patent Watch and we also compile and update competitive IP landscape on core and diversification technologies several times a year.

In the Geoscience division, our IP focus is the protection of the innovative algorithms, workflows and system design. The IP team works closely to define the ownership of each element of the data we produce and of their use and prevent any potential confusion or litigation.

In the "beyond the core activities", we ensure that our innovative developments for our diversification activities are protected, which includes all innovative algorithms, workflow, solutions and knowledge, along with ensuring that any developments requiring specific protection by means of patents are also protected.

At Sercel, product development teams follow a methodology called "Maestro" which covers, among many other topics, IP rights. As a result of its full deployment the development of products or services follows a dedicated workflow which is characterized by validation milestones including IP matters.

2021

Actions initiated in 2020 were pursued and consolidated, with organization of training sessions for employees, and the deployment of solutions for retention of know-how and related IP (see the relevant chapter for employee retention).

As a result of the actions implemented by the Group, no IP right infringements litigations were brought against CGG in 2021, as was the case the previous year.

3.4.4 Information security

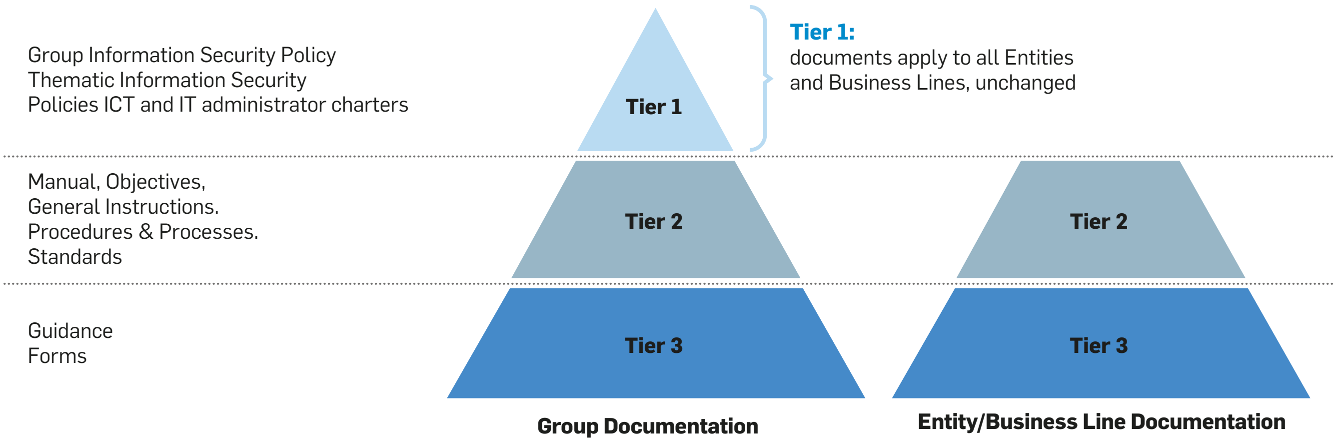
Key Performance Indicators

KPIs	2020	2021
Number of InfoSec incidents with a significant impact	0	0
Participation rate of the InfoSec e-learning	78%	67%
Number of people trained directly onsite by the InfoSec team	0	0

As the Group creates value by processing data, data management and data protection are a crucial component of our business conduct. CGG makes every effort to protect the information of its clients, employees 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) leads a dedicated information security team to oversee its application, supported by regional information security officers and business information security officers. The GISP concerns all entities including our Equipment division.

The CISO is placed under the supervision of the Group Steering Committee (which includes the Chief Executive Officer) and to the Audit & Risks Committee of the Board.

CGG considers its employees as the strongest line of defense. To this effect, Information Security e-learning is mandatory annually for all employees and is updated on a regular basis. In addition, the Group performs in-person Information Security Awareness training when possible to reinforce the message. Unfortunately, due to the Covid-19 pandemic, this has not been possible in either 2020 or 2021. Given the poor training results in 2021, we will intensify our cyber risk awareness actions in 2022.

We have implemented several technical measures to secure our information systems. These controls include, but are not limited, to network firewalls, intrusion detection systems, multi-factor authentication, Virtual Private Network (VPN) and network segmentation. Security updates are systematically deployed.

In order to continually evaluate our exposure and identify areas for improvement we conduct weekly vulnerability scans of our infrastructure, quarterly phishing simulations covering all employees and annual third-party penetration tests of our perimeter and critical systems, resolving any findings appropriately.

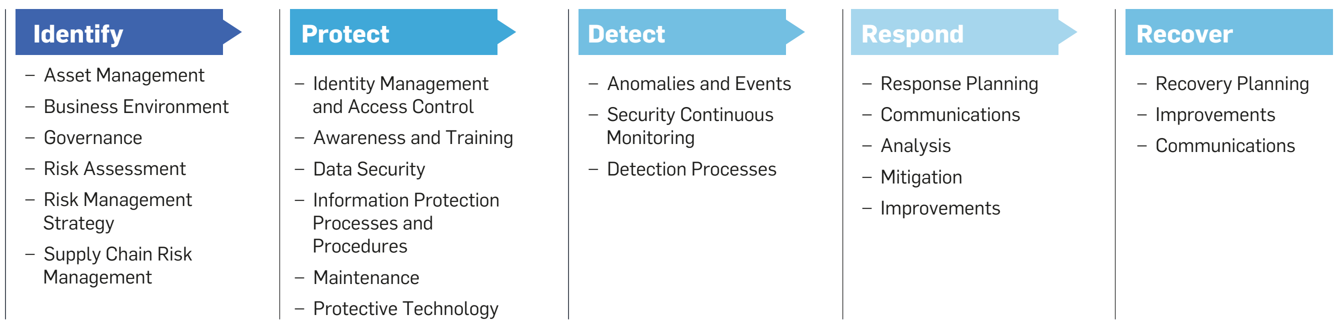
A global review of the Group Information Security Management System (ISMS) started in 2019, and was completed in 2021 to align it more closely to the National Institute of Standards and Technology (NIST) Cyber Security Framework. This revised ISMS will be deployed throughout the group in 2022.

The framework is based on five major elements, each containing several sections of controls. The existing and desired state of these controls is analyzed and a current and a target profile is created. These profiles are then used to determine projects and actions to close any gaps, leading to a stronger security posture.

2022 goals

In 2022, CGG wishes to:

- validate and start implementation of our 3-year plan, to be communicated across the company;
- run the second phase of the 2021 penetration test;
- start the process of SOC2 certification for our cloud services;
- focus on phishing awareness.



3.5 ENVIRONMENTAL PERFORMANCE

3.5.1 Energy efficiency and carbon footprint

Key Performance Indicators

KPIs (excluding acquisition)	2020	2021
CGG Power Usage Effectiveness (PUE)	1.32	1,35
Carbon Footprint Scope 1 ($ktCO_2eq$)	2	2
Carbon Footprint Scope 2 ($ktCO_2eq$)	51	43
Carbon neutral energy mix (% of Scope 1 & 2)	30%	36%
Green Company cars (hybrid/electric) (%)	11%	38%

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.

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)*.

- In 2021, our carbon intensity per petaflop has dropped 30% from 177.4 tCO_2eq/pflop in 2019 down to 123.8 tCO_2eq/pflop.
- In 2021, our carbon intensity per million$ of revenue for our Equipment Division has dropped 11% from 28.5 tCO_2eq/m$ to 25.4 tCO_2eq/m$.

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.

Advanced High-Performance Computing (HPC)

As a 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.

Reflecting the growth of our business offering advanced HPC to clients, both in the Energy sector and in other industries, a transition to a new, purpose-built UK site will begin during 2022. This larger site will incorporate improved energy-efficiency through novel liquid cooling technology, building on our decade of innovation in immersion technology. The new compute-hub will accommodate future expansion opportunities.

CGG, an early adopter of renewable energy sources for its UK operations nine years ago, has in 2021 improved on its commitment to green energy by ensuring 100% renewable energy is used to power all its operating sites in the UK. CGG evaluated the suppliers' energy portfolios, sourcing stability and transparency, carbon emissions and re-investment practices, and considered the legitimacy beyond published REGO statements. The 100% renewable energy contract also covers the UK CGG Cloud facility which provides High Performance Compute (HPC) resources for CGG's global business and for a number of its major 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

During 2021, CGG formed an integrated Energy Transition & Environment organization to facilitate the rapid growth of the business initiatives launched in 2020 in the domain of Environmental Monitoring and Low Carbon Transition solutions. CGG's historic and new clients are increasingly focused on energy transition, reduction of their environmental footprint and decarbonization. The energy transition will require both a detailed understanding of the subsurface & a comprehensive.

3.5.2.1 Carbon Capture, Utilization & Sequestration (CCUS) and Energy Storage

Carbon Capture, Utilization and Energy Storageis a key feature in overall efforts to de-carbonize our atmosphere and heading-off climate change. The business potential is significant. 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. Many of our clients are planning significant CCUS projects and are starting to incorporate application of CCUS technologies into their field development plans. Low carbon energy, such as green or blue hydrogen, will also require long term storage and monitoring. Building on 15 years of CCUS related experience, during 2021, CGG licensed its high-end Northern Viking Graben multi-client seismic data set in the Northern North Sea to the Northern Lights JV DA, for use in its ongoing and future CO_2 storage developments. In addition to this, a carbon-capture screening study in the UK & Norway was delivered, and strategic agreements with dCarbonX & Geoptic were announced, enhancing both our market position and technology portfolio.

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 in sedimentary basins and this brings new opportunities for CGG. Expertise in subsurface geoscience, including seismic imaging, reservoir modelling and geological analysis are highly sought-after skills in this emerging energy sector. CGG's experience includes over 130 targeted projects and in 2021, included two global resource assessments and associated outputs, one focused on global geothermal potential and the other on global lithium potential from geothermal brines We are thus well placed to support both our existing customers, as they seek to transition, and also a whole range of new clients.

3.5.2.3 Environmental science

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. During 2021, a consortium led by CGG was awarded a project aimed at developing new environmental monitoring technology and services to help combat the global marine litter crisis by the European Space Agency.

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. As an example, during 2021, CGG launched SeaScope, an innovative pollution monitoring solution, as part of its growing portfolio of products and services for environmental application.

3.5.2.5 Critical minerals & mining

The demand for critical minerals such as lithium, nickel, cobalt and copper is growing extremely fast because these are all minerals required to support the energy transition. Countries across the globe are stepping up their efforts to reduce dependencies and secure their own sources of these minerals. The requirement to seek these minerals and then monitor that the minerals are extracted safely and with the minimum possible impact on the surrounding environment presents significant business opportunities for CGG, leveraging our full suite of geoscience capabilities to ensure responsible exploration and our full suite of monitoring capabilities to manage associated risks. Building on many years of monitoring mine site integrity and safety, during 2021 CGG released TailingsPulse, it's unique integrated solution for complete mine site monitoring.

3.5.3 Sound emissions

Key Performance Indicators

KPIs (excluding acquisition)	2020	2021
Number of species identified by QuietSea™	9	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 2021, 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 2021, 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). In 2021 efforts have been made to improve detections, especially dolphins clicks.

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

3.6 EU GREEN TAXONOMY

3.6.1 EU Taxonomy at a glance

The EU Taxonomy is a tool to help investors, companies, issuers and project promoters navigate the transition to a low-carbon, resilient and resource-efficient economy.

The Taxonomy sets performance thresholds for economic activities which:

- make a substantive contribution to one of six environmental objectives (see table 1);
- do no significant harm (DNSH) to the other five, where relevant;
- meet minimum safeguards (e.g., OECD Guidelines on Multinational Enterprises and the UN Guiding Principles on Business and Human Rights).

The performance thresholds will help companies, project promoters and issuers access green financing to improve their environmental performance, as well as helping to identify which activities are already environmentally friendly.

In doing so, it will help to grow low-carbon sectors and decarbonize high-carbon ones.

TABLE 1: ENVIRONMENTAL OBJECTIVES

1. CLIMATE CHANGE MITIGATION	**2. CLIMATE CHANGE ADAPTATION**	**3. THE TRANSITION TO A CIRCULAR ECONOMY**
4. POLLUTION PREVENTION AND CONTROL	**5. THE SUSTAINABLE USE AND PROTECTION OF WATER AND MARINE RESOURCES**	**6. THE PROTECTION AND RESTORATION OF BIODIVERSITY AND ECOSYSTEMS**

■ *Applicable from financial year 2021* ■ *Only applicable from financial year 2023*

3.6.2 Activities covered by the Taxonomy

Economic sectors and economic activities included in the Taxonomy to date have the potential to make a substantial contribution to climate change mitigation or climate change adaptation. The approach differs for each of these objectives, reflecting their nature.

For climate change mitigation, sectors responsible for 93.5% of direct greenhouse gas emissions in the EU were prioritized when identifying economic activities for which technical screening criteria were developed. Sectors that have a large emissions footprint were prioritized and identifying activities making a substantial contribution to climate change mitigation in these sectors is likely to have a large impact.

Among CGG portfolio of activities, three of them make a substantial contribution to climate change mitigation:

NACE	Sector	Activity #	Activity
J63.11	Information and communication	8.1	Data processing, hosting and related activities
J61, J62, J63.11	Information and communication	8.2	Data-driven solutions for GHG emissions reductions
E39.00	Water supply, sewerage, waste management and remediation	5.12	Underground permanent geological storage of CO_2

3.6.2.1 Data processing, hosting and related activities

Through our activity in the geosciences, we transform seismic and geologic data into information and high-quality images of the subsurface. We process 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 images. In order to do so, we require a very large data processing capacity and own our own internal servers and facilities.

Our scientific computing capacity in 2021 is split into three major sites at three different locations: Houston (USA), Redhill (UK) and Singapore. Each site acting as a regional hub for our smaller data centers throughout the world.

Only 2 out of 3 units at our Houston data processing center use a refrigerant gas with a GWP (Global Warming Potential) index of less than 675. In 2021 our other data processing sites do not meet this eligibility condition. In addition, we have validated and initiated in 2021 the construction of a new center in the United Kingdom which will be operational at the end of 2023 and which will implement the very latest technologies in terms of energy performance and carbon footprint. As a result, our Redhill and Singapore centers will be gradually decommissioned between 2022 and 2023.

We have a procedure in place for the recycling of our IT equipment and we contract locally with specialized companies for the recycling process where appropriate. Note that most of our servers are rented so we usually return them to the leasing company. In the rare cases where we buy back this equipment, our recycling procedure applies when the servers are no longer used.

3.6.2.2 Data driven solutions for GHG emissions reductions

Our integrated Energy Transition & Environment department was formed during 2021 to facilitate the rapid growth of the business initiatives launched in 2020 in the domain of Environmental Monitoring and Low Carbon Transition solutions. It provides data driven solutions to climate change mitigation in the following domains (for more details on these activities please refer to section 3.5.2 of this Document):

- Carbon Capture, Utilization and Energy Storage (CCUS) which is one of the big hopes for de-carbonizing our atmosphere and heading-off climate change.
- Geothermal energy: traditionally exploited in tectonically active areas, where CGG has consistently played a role through its Multi-Physics. There is a new push to exploit geothermal energy in sedimentary basins and this brings new opportunities for CGG.
- Environmental science: 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.
- Satellite enabled solutions: CGG has a long history of processing and interpreting satellite data. 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 play a substantial role.

In the 2021 financial year, these solutions do not yet generate sufficient activity to appear in this report. We expect our activity in this area to increase in 2022.

3.6.2.3 Underground permanent geological storage of CO_2

Although we are actively engaged on the Carbon Capture, Utilization and Energy Storage market through our data-driven solutions offer in the activity # 8.2 above, the sector is not mature enough in 2021 for CGG to deploy its monitoring solutions on operational underground geological CO_2 storage sites.

In that regard we will not report any contribution to climate change from this activity in 2021. We anticipate however a growing importance of this activity in our portfolio as the implementation of CCUS sites will grow.

3.6.3 Key Performance Indicators

Economic activities	8.1 Data processing, hosting and related activities	8.2 Data-driven solutions for GHG emissions reductions	5.12 Underground permanent geological storage of CO_2	Consolidated total
% Taxonomy Eligible Turnover	7.8%	n.a. in 2021	n.a. in 2021	**7.8%**
% Taxonomy Eligible CapEx	13.9%	n.a. in 2021	n.a. in 2021	**13.9%**
% Taxonomy Eligible OpEx	1.2%	n.a. in 2021	n.a. in 2021	**1.2%**

Methodology

Turnover

- Activity 8.1: In 2021 only two units out of three of our Houston data center are eligible under the Taxonomy. The equivalent revenue was calculated using the same proportion as the power consumption of those units compared to the entire data center. By 2023 when we will benefit from the full impact of our investments to improve the energy performance of our data centers, all of our Geoscience external turnover less the turnover of our Geovation software sales, as well as the Imaging component of our MultiClient Business Line turnover will most probably be eligible and aligned. At the denominator we used the Group Operating Revenues as reported in this document.
- Activity 8.2: No reporting in 2021 as mentioned in 3.6.2.2.
- Activity 5.12: No reporting in 2021 as mentioned in 3.6.2.3.

CapEx

Capex is understood as per the definition of the Taxonomy as the increase in the gross value of tangible and intangible fixed assets for the financial year, considered before depreciation, amortization and any revaluation, including those resulting from revaluations and depreciations, for the financial year concerned and excluding fair value adjustments. Leases and long-term leasing are to be recognized in CapEx, in application of IFRS 16 (rights of use).

Obviously reported CapEx is associated with the economic activities eligible for the taxonomy i.e consistent with activities 8.1, 8.2 and 5.12. Investments allowing the transition to an eligible activity with regard to the taxonomy as well as investments qualified as "green" (for example purchases of electric vehicles, energy efficiency renovation of buildings, etc.) are also eligible.

- Activity 8.1: : Reported in 2021 is the share of Houston data center Capex including IFRS16 using the same proportion as for the turnover calculation. In the denominator, we have retained the acquisitions of tangible and intangible fixed assets, excluding Multi-Client studies, plus increases in rights of use.
- Activity 8.2: No reporting in 2021.
- Activity 5.12: No reporting in 2021.

OpEx

The EU Taxonomy has defined as eligible OpEx, non-capitalized direct costs that relate to research and development, building renovation measures, short-term rentals, maintenance and repairs and any other direct expense related to the day-to-day maintenance of assets and which is necessary to ensure the continuous and efficient operation of these assets (e.g. maintenance supplies, cost of employees assigned to maintenance, IT dedicated to maintenance).

Obviously relating to assets or processes that are associated with the economic activities eligible for the taxonomy i.e consistent with activities 8.1, 8.2 and 5.12:

- Activity 8.1: For 2021 we reported the Houston data center non-capitalized direct costs of facilities, utilities, maintenance and related personnel using the same proportion as for the turnover calculation. For the denominator, we used operating (or operational) cash costs, excluding amortization and depreciation.
- Activity 8.2: No reporting in 2021.
- Activity 5.12: No reporting in 2021.

3.7 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.

3.8 INDICATORS

TALENT ATTRACTION AND RETENTION

	2019	2020	2021
Voluntary turnover	5.5%	4.9%	6.1%
Seniority of employees	13.5 years	14.3 years	14.2 ans
Share of employees with a seniority over 5 years	81%	78%	77%
Equality Index (for men & women) – France	88	88	85
Gender split at CGG (M/F)	71%/29%	70%/30%	70%/30%
Gender split in the recruitments (M/F)	73%/27%	76%/24%	70%/30%

HEALTH, SAFETY AND SECURITY OF OUR EMPLOYEES AND SUBCONTRACTORS

	2019	2020	2021
Total Recordable Cases Frequency rate (TRCF)	1.60	0.84	1.02
Lost Time Injury Frequency rate (LTIF)	0.51	0.34	0.46
Severity rate	0.009	0.009	0.004
Recordable Occupational illness cases frequency rate	0.17	0.00	0.00
Exposure hours *(in million)*	29.2	11.8	8.8

BUSINESS ETHICS

	2019	2020	2021
Percentage of employees that followed the Ethics e-learning course	85%	82%	87%
Percentage of employees that followed the Ethics e-learning course on anti-corruption			96%
Number of alerts received by the Ethics Committee	8	4	7

RESPONSIBLE SUPPLY CHAIN

	2019	2020	2021
Percentage of sourcing and supply chain employees that followed the anti-corruption e-learning course	92%	93%	95%
Percentage of suppliers having signed the Supplier Code of Conduct *or* with a purchasing order mentioning the Supplier Code of Conduct	100% [(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 2021.

RELATIONS WITH LOCAL COMMUNITIES

	2019	2020	2021
Total number of social development initiatives	**89**	**37**	**43**
Community service	*27*	*17*	14
Education	*18*	*8*	15
Environment	*27*	*5*	5
Health & Safety	*17*	*7*	9
Number of employees involved in volunteering	2,903	205	663
Number of volunteering hours	872	1,390	468
Cash granted by CGG & employees (excluding Babyloan)	US$74,458	US$58,099	US$52,100

INNOVATION OF PRODUCTS AND SERVICES

	2019	2020	2021
Total capital expenditure *(in million of US$)*	81	78	65
Share of Group revenues invested in R&D	5%	9%	6%
Share of Equipment revenues invested in R&D	9%	14%	11%
Share of CGG (excl. Equipment) revenues invested in R&D	4%	6%	4%

CUSTOMER SATISFACTION

	2019	2020	2021
CGG position in the Kimberlite review	Ranked highest performing Supplier	Ranked highest performing Supplier	Ranked highest performing Supplier
Sercel position in the *Voix du Client* review	Ranked highest performing Supplier	Ranked highest performing Supplier	Ranked highest performing Supplier
Completion rate of Equipment division internal quality objectives	85%	78%	84%

INTELLECTUAL PROPERTY

	2019	2020	2021	
	Titles/**Patents**	Titles/**Patents**	Titles	**Patents**
Number of CGG Geoscience patents	505/**295**	441/**275**	378	**277**
Number of Equipment patents	950/**675**	874/**683**	780	**620**

INFORMATION SECURITY

	2019	2020	2021
Number of incidents with an important InfoSec impact	0	0	0
Participation rate of the InfoSec e-learning	81%	78%	67%
Number of people trained directly onsite by the InfoSec team	251	0	0

ENERGY EFFICIENCY AND CARBON FOOTPRINT

	2019	2020	2021
CGG Power Usage Effectiveness	1.33	1.32	1.35
Carbon Footprint Scope 1 ($ktCO_2eq$)	337	2	2
Carbon Footprint Scope 2 ($ktCO_2eq$)	55	51	43
Carbon Footprint Scope 3 ($ktCO_2eq$)	278	342	325

SOUND EMISSIONS

	2019	2020	2021
Number of species identified by QuietSea™	8	9	9
Number of vessels equipped with QuietSea™	4	4	4

GREEN TAXONOMY

	2019	2020	2021
% Taxonomy Eligible Turnover	n.a	n.a	7.8%
% Taxonomy Eligible CapEx	n.a	n.a	13.9%
% Taxonomy Eligible OpEx	n.a	n.a	1.2%

3.9 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 third party, 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 (hereinafter "entity"), we conducted our work in order to provide a conclusion expressing a limited level of assurance on the compliance of the consolidated non-financial statement for the year ended December 31, 2021 (hereinafter the "Statement") with the provisions of Article R. 225-105 of the French Commercial Code (*Code de commerce*) and on the fairness of the historical information (whether observed or extrapolated) provided pursuant to 3° of I and II of Article R. 225-105 of the French Commercial Code (hereinafter the "Information") prepared in accordance with the entity's procedures (hereinafter the "Guidelines"), 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*).

Conclusion

Based on the procedures performed, as described in "Nature and scope of the work", and on the elements we have collected, we did not identify any material misstatements that would call into question the fact 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.

Preparation of the non-financial performance statement

The absence of a generally accepted and commonly used framework or established practices on which to base the assessment and measurement of information allows for the use of different, but acceptable, measurement techniques that may affect comparability between entities and over time.

Therefore, the Information should be read and understood with reference to the Guidelines, the significant elements of which are presented in the Statement.

Limitations inherent in the preparation of the information

The information may be subject to uncertainty inherent in the state of scientific or economic knowledge and the quality of external data used. Certain information is sensitive to the methodological choices, assumptions and/or estimates made in preparing it and presented in the Statement.

The entity's responsibility

It is the responsibility of the Board of Directors to :

- select or establish appropriate criteria for the preparation of the Information;
- prepare a Statement in accordance with legal and regulatory requirements, including a presentation of the business model, a description of the main non-financial risks, a presentation of the policies applied with regard to these risks as well as the results of these policies, including key performance indicators and, in addition, the information required by Article 8 of Regulation (EU) 2020/852 (green taxonomy);
- and to implement the internal control procedures it deems necessary to ensure that the Information is free from material misstatement, whether due to fraud or error.

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

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.

As it is our responsibility to form an independent conclusion on the Information as prepared by management, we are not permitted to be involved in the preparation of the Information, as this could compromise our independence.

However, it is not our responsibility to comment on:

- the entity's compliance with other applicable legal and regulatory requirements, in particular the information required by Article 8 of Regulation (EU) 2020/852 (green taxonomy), the French duty of care law and anti-corruption and tax avoidance legislation;
- the fairness of the information required by Article 8 of Regulation (EU) 2020/852 (green taxonomy);
- the compliance of products and services with the applicable regulations.

Regulatory provisions and applicable professional standards

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].

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.

Means and resources

Our verification work mobilized the skills of four people and took place between October 2021 and February 2022 on a total duration of intervention of about fourteen weeks.

We conducted ten interviews with the persons responsible for the preparation of the Statement including those in charge of human resources, health, safety, the environment, information systems security, subcontracting management, innovation, intellectual property and customer satisfaction.

Nature and scope of the work

We planned and performed our work taking into account the risks of material misstatement of the Information.

In our opinion, the procedures we have performed in the exercise of our professional judgment enable us to provide a limited level of assurance:

- 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 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 its [their] business relationships, its [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 (professional ethics, information security, product and service innovation, intellectual property, 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 : Crawley Crompton Way, Redhill, and Massy Galilé;
- 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 between 18% and 20% of the consolidated data relating to the key performance indicators and outcomes selected for these tests (18% of headcounts, 20% of electricity consumption);
- 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.

Paris-La Défense, March 11, 2022

French original signed by:

Independent third party
EY & Associés

Christophe Schmeitzky
Partner, Sustainable Development

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

APPENDIX 1: THE MOST IMPORTANT INFORMATION

SOCIAL INFORMATION

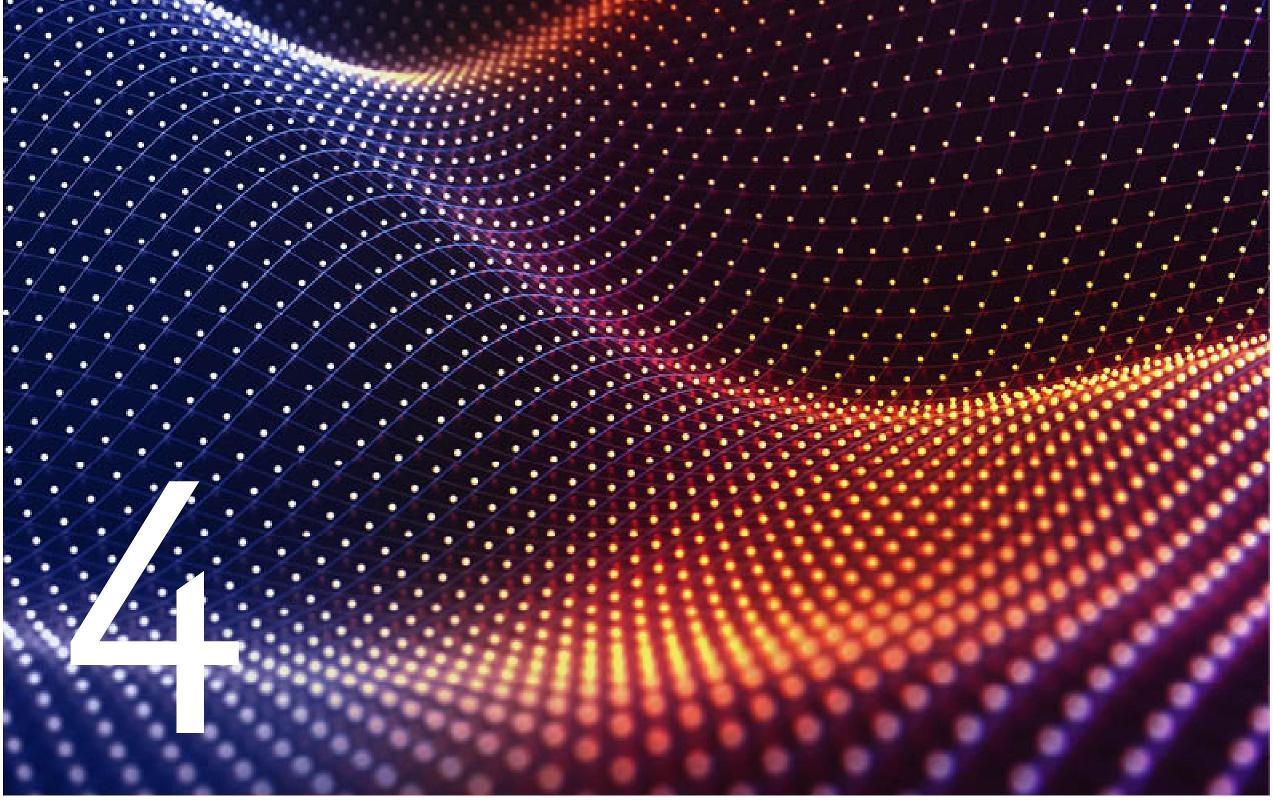
Quantitative Information (including key performance indicators)	*Qualitative Information (actions or results)*
Voluntary turnover *(%)* Gender split at CGG *(%)* Gender split in the recruitments *(%)* TRCF : Total Recordable Cases Frequency rate LTIF : Lost Time Injury Frequency rate Severity rate Exposure 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 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

4.1 GOVERNANCE BODIES

This chapter includes in particular the elements constituting the report on corporate governance established by the Board of Directors at its meeting on March 3, 2022, following the recommendation of the Appointment, Remuneration and Governance Committee pursuant to Article L. 225-37 of the French Commercial Code. The sections of this report relating to the composition of the Board of Directors and the conditions for preparing and organizing its work have been prepared based on contributions from several functional departments of the Company, in particular the Legal, Financial and Human Resources Departments.

4.1.1 Governance Structure

a) Code of Corporate Governance

In accordance with Article L.22-10-10 of the French Commercial Code, the Company complies voluntarily with the AFEP-MEDEF Code of Corporate Governance for listed companies (the "AFEP-MEDEF Code") and applies all its recommendations. This Code is available on the websites of the AFEP (www.afep.com) and MEDEF (www.medef.com).

b) Separation of the Chairman and Chief Executive Officer's functions

The Company is a limited company *(société anonyme)* with a Board of Directors.

Since June 30, 2010, the functions of Chairman of the Board and Chief Executive Officer have been separate. This separation helps ensure a long-lasting and efficient governance by promoting the balance of powers between:

- on the one hand, the Board of Directors, responsible for overseeing the Company's General Management, composed mainly of independent members, and headed by a Chairman; and
- on the other hand, the Chief Executive Officer, in charge of the general conduct of the day-to-day business of the Company.

For more information on the role of the Chairman of the Board of Directors, see section 4.1.3.2.a). For a presentation of the General Management, see section 4.1.2 below.

4.1.2 General Management

4.1.2.1 Chief Executive Officer

a) Appointment

In accordance with Article 10 of the articles of association, the Board of Directors appoints the Chief Executive Officer, sets his/her term of office, and determines his/her compensation. The Chief Executive Officer may be revoked at any time by the Board of Directors. The functions of Chief Executive Officer end no later than the end of the Ordinary General Meeting following the date on which he/she reaches the age of 65. However, the Board of Directors may extend the term of the Chief Executive Officer beyond this limit, on one or more occasions, for a total period which may not exceed three years.

On March 23, 2018, the Board of Directors appointed Sophie ZURQUIYAH as the Company's Chief Executive Officer effective from the General Meeting of April 26, 2018 for a period of four years, i.e. until the Ordinary General Meeting called to approve the financial statements as of December 31, 2021.

b) Cumulative mandates

Sophie ZURQUIYAH combines her term of office as Chief Executive Officer with that of Director of the Company for concurrent four-year terms expiring at the end of the Ordinary General Meeting called to approve the financial statements as of December 31, 2021.

Her renewal as Director will be proposed at the General Meeting to be held in 2022, after which the Board of Directors will decide on the renewal of her term of office as Chief Executive Officer. The Board of Directors believes that combining the function of Chief Executive Officer with that of Director contributes to an efficient governance, allowing the Chief Executive Officer to be fully involved in Board discussions. Thus, while sharing her operational vision as Chief Executive Officer, this combination also allows her to have the right to vote as a Director in the same way as her peers for the decisions taken collectively by the Board of Directors. Insofar as the vote of the Chief Executive Officer, who is also a Director, is not decisive in the event of a tie, the Board of Directors considers that there is no violation of the balance of powers.

In accordance with Article L. 225-54-1 of the French Commercial Code, Sophie ZURQUIYAH does not hold any other office as Chief Executive Officer within a public limited company having its registered office in France. She also holds other offices in other companies, the details of which are presented in section 4.1.3.1.f) of this Document.

c) Powers and limitations

The Chief Executive Officer is granted the broadest powers to act on behalf of the Company in any circumstances within the limit of the corporate object and subject to the powers allocated expressly by applicable laws to the Company's General Meeting or Board of Directors, and to the corporate governance rules applicable to the Company. 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's business to the Board and its Chairman.

The Internal Rules and Regulations of the Board of Directors which are available on the Company's website (www.cgg.com) provide certain limits to the powers of the Chief Executive Officer. In particular, the prior authorization of the Board of Directors is required for any significant transaction for the Group's strategy, such as in particular the completion of external growth operations, partnerships, disposals or strategic investments above the threshold of US$10 million *(for more information on the missions of the Board of Directors, see section 4.1.3.3.a)*.

4.1.2.2 Executive Leadership team

The Chief Executive Officer is assisted by an Executive Leadership team which she chairs. It meets at least once a month and as often as the interests of the Company require, for the analysis and general conduct of the Group's business.

Composition of the Executive Leadership team as of the date of this Document

Sophie ZURQUIYAH	Chief Executive Officer
Yuri BAIDOUKOV	Chief Financial Officer
Eduardo COUTINHO	EVP Group General Counsel
Hovey COX	EVP Group Marketing & Sales and Communications
Jérôme DENIGOT	EVP Group Human Resources
Emmanuelle DUBU	EVP Equipment
Dechun LIN	EVP Multi-Clients
Emmanuel ODIN	SVP Group HSE/Sustainable Development
Peter WHITING	EVP Geoscience

The Chief Executive Officer is the only corporate officer (*mandataire social*) member of the Executive Leadership team.

4.1.3 Board of Directors

Appointment, Remuneration, and Governance Committee

4 Members · **5** Meetings · **95%** Attendance

Composed of 4 Directors of which 3 are independent and 1 represents the employees

Colette LEWINER ★●, Patrick CHOUPIN ■, Heidi PETERSEN ●, Mario RUSCEV ●

HSE/Sustainable Development Committee

3 Members · **3** Meetings · **100%** Attendance

Composed of 3 Directors of which 2 are independent and 1 represents the employees

Michael DALY ★●, Patrick CHOUPIN ■, Heidi PETERSEN ●

Board of Directors

Chaired by Philippe SALLE, the Board of Directors determines the orientations of the Company's activities and ensures their implementation.

9 Members · **96.5%** Attendance · **13** Meetings

5 Women · **87.5%** Independent Directors* · **4** Nationalities

* Excluding the Director representing the employees.

Investment Committee

4 Members · **3** Meetings · **91.6%** Attendance

100% composed of independent Directors

Helen LEE BOUYGUES ★●, Michael DALY ●, Anne-France LACLIDE-DROUIN ●, Mario RUSCEV ●

Audit & Risk Management Committee

3 Members · **7** Meetings · **100%** Attendance

100% composed of independent Directors

Anne-France LACLIDE-DROUIN ★●, Helen LEE BOUYGUES ●, Colette LEWINER ●

★ *Chairperson* ● *Independent Director* ■ *Director representing the employees*

4.1.3.1 Composition of the Board of Directors and its Committees

In accordance with Article 8 of the articles of association, the Company is administered by a Board of Directors composed of at least six members and at most fifteen members, unless there is a decision to raise this maximum to a higher figure in the event of a merger. The Directors are appointed for a term of four years by the Ordinary General Meeting, upon proposal from the Appointment, Remuneration and Governance Committee. They can be dismissed at any time by decision of the General Meeting.

As of the date of this Document, the Board of Directors is composed of nine Directors including one Director representing the employees.

Director representing the employees

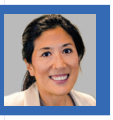
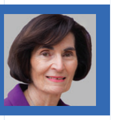
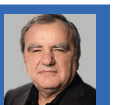
In accordance with the provisions of Article L. 225-27-1 of the French Commercial Code and Article 8 of the Company's articles of association, the Board of Directors includes one Director representing the employees.

By decision dated April 6, 2021, the Group Committee appointed Patrick CHOUPIN as Director representing the employees for a term of four years, i.e. until the General Meeting to approve the financial statements as of December 31, 2024.

A biography of Patrick CHOUPIN is presented in section 4.1.3.1.f) of this Document.

In accordance with Article R. 225-34-4 of the French Commercial Code, the Director representing the employees benefits from a training due to his function.

a) Overview of the composition of the Board of Directors and its Committees as of the date of this Document

		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	COMMITTEES: Audit & Risk Management	Appointment Remuneration & Governance	Investissements	HSE – Sustainable development
Philippe SALLE ***Chairman of the Board***			✔	M	56	2018	2021	GM 2025	4				
Sophie ZURQUIYAH ***CEO*** (a)				F	55	2018	N.A.	GM 2022	4				
Patrick CHOUPIN (b)				M	45	2021	N.A.	GM 2025	1		●		●
Michael DALY			✔	M	68	2015	2021	GM 2025	7			●	● ★
Anne-France LACLIDE-DROUIN			✔	F	54	2017	2021	GM 2025	5	● ★		●	
Helen LEE BOUYGUES			✔	F	49	2018	2020	GM 2024	4	●		● ★	
Colette LEWINER			✔	F	76	2018	2019	GM 2023	4	●	● ★		
Heidi PETERSEN			✔	F	64	2018	2020	GM 2024	4		●		●
Mario RUSCEV			✔	M	65	2018	2019	GM 2023	4		●	●	

(a) Director whose term is proposed for renewal at the 2022 General Meeting.
(b) Patrick CHOUPIN is a Director representing the employees, appointed by the Group Committee, in accordance with Article 8 of the Company's articles of association. He was elected on April 6, 2021 to replace Patrice GUILLAUME and took office as from May 12, 2021.

★ *Chairman/Chairwoman* ● *Member*

b) Changes in the composition of the Board of Directors and its Committees in 2021

The changes in the composition of the Board of Directors and its Committees that occurred in 2021 are presented in the following table:

	Date	Departure	Appointment	Renewal
Board of Directors	May 12, 2021	Patrice GUILLAUME	Patrick CHOUPIN	Philippe SALLE Michael DALY Anne-France LACLIDE-DROUIN
Audit and Risk Management Committee		n.a.	n.a.	n.a.
Appointment, Remuneration and Governance Committee		Patrice GUILLAUME	Patrick CHOUPIN	n.a.
Investment Committee		n.a.	n.a.	n.a.
HSE/Sustainable Development Committee		Patrice GUILLAUME	Patrick CHOUPIN	n.a.

c) Independent Directors

In accordance with the recommendations of the AFEP-MEDEF Code (Article 9), the qualification of the Directors as independent is reviewed every year by the Appointment, Remuneration and Governance Committee and decided by the Board of Directors.

The Board of Directors considers that a Director is independent when he has no relationship of any kind whatsoever with the Company, its group or its management that may impair his freedom of judgment. It therefore assesses the individual situation of each Director on an annual basis based on the following criteria as defined by the AFEP-MEDEF Code:

Criterion no. 1	Not being and not having been within the previous five years (i) an employee or executive officer of the corporation, (ii) an employee, executive officer or Director of a corporation consolidated within the Company, 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 being 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 being a customer, supplier, commercial banker, investment banker or consultant (or being 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 being a close family member of a company officer.
Criterion no. 5	Not having been an auditor of the corporation within the previous five years.
Criterion no. 6	Not having been a Director of the corporation for more than twelve years.
Criterion no. 7	For non-Executive Directors: not receiving 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 light of the make-up of the corporation's capital and the existence of a potential conflict of interest.

The Board of Directors, at its meeting of March 3, 2022, decided to qualify as independent, based on the criteria set by the AFEP-MEDEF Code above, seven Directors out of the eight Directors elected by the General Meeting, i.e. an independence rate of 87.5%, observation being made that, in companies with dispersed capital and without controlling shareholders – which is the case of CGG – the AFEP-MEDEF Code recommends compliance with the rule of at least 50% of independent directors. The independence rate does not take the Director representing the employees into account, in accordance with the recommendations of the same Code. The following Directors were therefore considered to be independent: Philippe SALLE, Michael DALY, Anne-France LACLIDE-DROUIN, Helen LEE BOUYGUES, Colette LEWINER, Heidi PETERSEN and Mario RUSCEV.

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
Patrick CHOUPIN	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
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

Concerning in particular criterion 3 defined by the AFEP-MEDEF Code, the Board of Directors ensured that none of the directors likely to be considered as independent was related directly or indirectly to a customer, supplier or commercial banker or advisor that was material to the Company or the Group. To this end, during its meeting on March 2, 2022, the Appointment, Remuneration and Governance Committee made a case-by-case and mutli-criteria assessment of the business relationships that may exist between the Group companies and companies at which certain directors hold professional functions or directorships (as detailed under section 4.1.3.1.f) of this Document). The Committee concluded there were no business relationships for Philippe SALLE, Michael DALY, Anne-France LACLIDE-DROUIN, Helen LEE BOUYGUES, Colette LEWINER and Heidi PETERSEN likely to implicate their independence. The Committee carried out a more in-depth assessment of Mario RUSCEV's function as Chief Technology Officer of TAQA effective since January 1, 2022. It concluded that he continued to qualify as an independent director based on the following analysis:

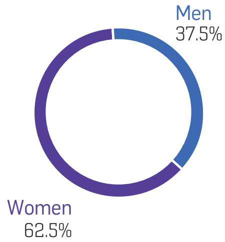
- There is a partnership relationship between CGG and TAQA through the Argas joint venture, of which they hold respectively 49% and 51% of the share capital;
- Mario RUSCEV has no professional function or office within Argas and therefore the latter has no decision-making power in the joint venture;
- Mario RUSCEV does not exercise any operational function within CGG, of which he is a director;
- TAQA is not a customer or supplier for the Company or the Group. However, there are business relationships between a subsidiary of CGG (Sercel) and Argas, but the turnover and volumes of these sales represent only a small proportion of the Group's activities. In addition, these business relationships occur in the ordinary course of business that takes place in a traditional competitive environment.

d) Diversity on the Board of Directors

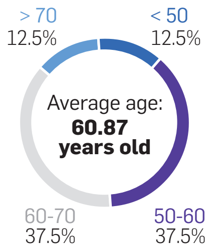
The Board of Directors considers that diversity of its membership is key to ensure a good performance. That is the reason why the Board has set composition targets and, to this end, applies diversity criteria in terms of gender, age, independence, nationalities and skills, as described below, in particular applicable in the selection process for new Directors.

It is noted that the Director representing the employees has not been taken into account when determining the below figures as this diversity policy targets only Directors elected by the shareholders, based upon the Board's proposal. In addition, considering the Board of Directors remained the same in 2021, there has been no significant change in the information provided compared to last year.

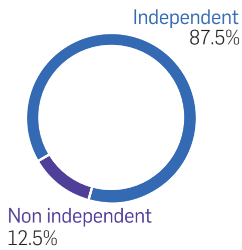
GENDER BALANCE

Objective	2021 Results
Reach a balanced representation between men and women 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

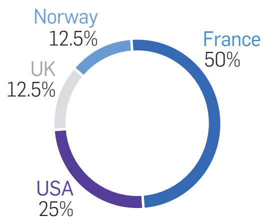
Objective	2021 Results
Reach a variety of ages among the Directors and comply with the applicable regulations, i.e. no more than one third of the Directors shall be 70 years old or older.	

INDEPENDENCE

Objective	2021 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 at least half the members of the Board in publicly held corporations without controlling shareholders.	

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

NATIONALITIES

Objective	2021 Results
Have a balanced composition in terms of nationalities to reflect as much as possible the geographical mix of the Company's activities.	

For the purpose of this chart, Sophie ZURQUIYAH and Mario RUSCEV have been accounted for in both "France" and "USA" as they have both nationalities.

SKILLS

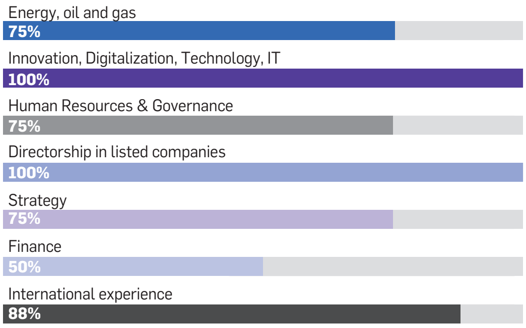
Objective

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.

2021 Results

The Board of Directors believes that with the expertise of its current members, the Company is well equipped to deal with the challenges linked to its new strategy.



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

Details on education, directorships, professional experiences and information about the age and nationality of each Director are presented in section 4.1.3.1.f) 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 section 3.2.1 of this Document.

e) 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 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 skills 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 General Management and unsolicited applications
Step 3.	**RECRUITMENT**	Constitution of files based on 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**	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: Co-optation approved by the Board, then submitted at the next General Meeting for ratification. In other cases : Proposal of appointment submitted for approval at the General Meeting

f) Individual information about the Directors

Age: 56

Nationality:
French

First appointment:
2018 (by co-optation)

Last renewal: 2021

Expiry of the current term of office:
2025

Number of CGG shares held on December 31, 2021:
288,711 shares

Professional address:
CGG SA
27 avenue Carnot
91300 Massy - France

Philippe SALLE, *Chairman – Independent Director*

Philippe SALLE is a graduate of the École des Mines of Paris (France) and holds an MBA from the Kellogg Graduate School of Management, Northwestern University (Chicago, USA).

Philippe SALLE began his career at 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). From 2007 to 2011, he served first as Deputy CEO and then Chairman and CEO of the Geoservices group (sold to Schlumberger in 2010, listed on the New York Stock Exchange), a technological company operating in the petroleum industry with 7,000 associates in 52 countries. 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 31, 2017. Since December 1, 2017, he has been Head of the Emeria group (formerly Foncia). 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 Emeria (formerly Foncia Management), as permanent representative of Hodpar
- Chairman of Emeria Holding (formerly Foncia Holding), as permanent representative of Emeria
- Chairman of Emeria Europe (formerly Foncia Groupe), as permanent representative of Emeria Holding
- Chairman of the Supervisory Board of Foncia Saturne
- Director of Gérance de Passy
- Chairman of Finellas
- Chairman of Hodpar, as permanent representative of Hodlux
- Chairman of Artellas
- Manager of Ellas
- Director of Diot Siaci
- Director of CIC Banque Transatlantique
- Director of Mister Temp Group

Foreign companies:
- Director of Emeria Res UK Limited (United Kingdom), as permanent representative of Hodlon and Director in his personal capacity
- Director of Emeria Res Newco Limited (United Kingdom)
- Director of Emeria Belux (formerly Trevi Group) (Belgium), as permanent representative of Emeria Holding
- Chairman of the Board of Directors of Emeria Switzerland (formerly Foncia Suisse) (Switzerland)
- Co-manager of Emeria Germany Management (formerly Foncia Deutschland Gmbh) (Germany)
- Manager of Hodlux SARL (Luxembourg)
- Chairman of Hodlon Limited (United Kingdom), permanent representative of Hodlux SARL
- Chairman of LHG Square Limited (United Kingdom) as permanent representative of Finellas

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)
- Chairman and CEO of Elior (France, a company listed on Euronext Paris)
- Director of GTT – Gaztransport and Technigaz (France, a company listed on Euronext Paris)

Age: 55

Nationality:
American and French

First appointment:
2018

Expiry of the current term of office:
2022 (renewal will be proposed at the 2022 Annual General Meeting)

Number of CGG shares held on December 31, 2021:
169,750 shares

Professional address:
CGG SA
27 avenue Carnot
91300 Massy - France

Sophie ZURQUIYAH, *Director and Chief Executive Officer*

Sophie ZURQUIYAH is a graduate of the École Centrale of Paris. She holds a Master's in Numerical Analysis from Pierre et Marie Curie University (Paris VI) and a Master's in Aerospace Engineering from the University of Colorado.

Sophie ZURQUIYAH started her career in 1991 in the oilfield services industry as a geophysical engineer at Schlumberger in P&L and in positions covering R&D, Operations and Support, in France, the United States and Brazil. She was then appointed Chief Information Officer (CIO) and then President of Schlumberger Data and Consulting Services that provided Processing, Interpretation and Consulting services for most of Schlumberger's business lines. She was also Vice President of Sustaining Engineering, which 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. Prior to her appointment as Chief Executive Officer of CGG SA on April 26, 2018, 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 and Member of the Audit and Risk Management Committee of Technip FMC (a company listed on New York Stock Exchange)
- Director of Bazean Corp. (United States)

POSITIONS WHICH EXPIRED OVER THE LAST FIVE YEARS

Within the Group:
- Senior Executive Vice President of CGG Services (U.S.) Inc. (USA)

Age: 45

Nationality:
French

First appointment:
2021

Expiry of the current term of office:
2025

Number of CGG shares held on December 31, 2021:
0 share

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

Professional address:
CGG SA
27 avenue Carnot
91300 Massy - France

Patrick CHOUPIN, *Director representing the employees*

Patrick CHOUPIN graduated from the École Nationale d'Ingénieurs de Brest (France) and Fachhochschule Ulm (Germany).

He began his professional activity in 2000 as a front-end developer at Xilinx International in Grenoble. After a year spent in Xilinx European HQ in Dublin, he oriented his career toward internal support and software quality. He joined Sercel Nantes in 2011 as a hardware verification engineer at the early stages of 508^XT development, and acts now as a senior software validation engineer for Solution Acquisition team.

CURRENT POSITIONS

Within the Group:
- Senior software validation engineer at Sercel (France)

Outside the Group:
None

POSITIONS WHICH EXPIRED OVER THE LAST FIVE YEARS

None

Age: 68

Nationality:
British

First appointment:
2015 (by co-optation)

Last renewal: 2021

Expiry of the current term of office: 2025

Number of CGG shares held on December 31, 2021:
20,000 shares

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

Professional address:
CGG SA
27 avenue Carnot
91300 Massy - France

Michael DALY, *Independent Director*

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

Michael 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, Michael 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 until his retirement in 2014 after 28 years with the company. He has also served as Senior Director at Macro Advisory Partners. He currently serves as a Non-Executive Director of 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 institution and 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)

Age: 54

Nationality:
French

First appointment:
2017

Last renewal: 2021

Expiry of the current term of office: 2025

Number of CGG shares held on December 31, 2021:
20,000 shares

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

Professional address:
CGG SA
27 avenue Carnot
91300 Massy - France

Anne-France LACLIDE-DROUIN, *Independent Director*

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*.

Anne France 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. Anne France 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)
- Director and Chairwoman of the Audit Committee of Believe (a company listed on Euronext Paris)
- Chief Financial Officer and Compliance Director of RATP Dev (an affiliate of the RATP Group) – some positions of non-independent director within RATP Dev

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)

Age: 49

Nationality:
American

First appointment:
2018 (by co-optation)

Last renewal: 2020

Expiry of the current term of office: 2024

Number of CGG shares held on December 31, 2021:
20,000 shares

Role in Board Committees:

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

Professional address:
CGG SA
27 avenue Carnot
91300 Massy - France

Helen LEE BOUYGUES, *Independent Director*

Helen LEE BOUYGUES received her Bachelor of Arts, magna cum laude, from Princeton University in Political Science and a Master of Business Administration from Harvard Business School.

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 the 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
- Governor and member of the Finance and Strategy Committees of the American Hospital of Paris (non-profit)
- Director of Guaranty Trust Holding Company (a bank in Nigeria)

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)
- Director and member of the Audit Committee and Chairwoman of the Remuneration Committee of Novartex SAS (France)

Age: 76

Nationality:
French

First appointment:
2018 (by co-optation)

Last renewal: 2019

Expiry of the current term of office: 2023

Number of CGG shares held on December 31, 2021
50,000 shares

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

Professional address:
CGG SA
27 avenue Carnot
91300 Massy - France

Colette LEWINER, *Independent Director*

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

Colette 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. Colette LEWINER was appointed Chairwoman of the Board and Chief Executive Officer of SGN (the engineering affiliate of Cogema) on March 1992. In 1998, Colette LEWINER joined Capgemini and headed the Utilities Global Market Unit. She was 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 the Capgemini Chairman. Colette LEWINER is a 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 and member of the Ethics and ESG Committee of Getlink (formerly Eurotunnel, a company listed on Euronext Paris)
- Director, 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 and member of the Audit Committee of Ingenico (France, a company listed on Euronext Paris)
- Director and Chairwoman of the Selection and Compensation Committee of Cromton Greaves (India)

Age: 64

Nationality:
Norwegian

First appointment:
2018 (by co-optation)

Last renewal: 2020

Expiry of the current term of office: 2024

Number of CGG shares held on December 31, 2021:
20,000 shares

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

Professional address:
CGG SA
27 avenue Carnot
91300 Massy - France

Heidi PETERSEN, *Independent Director*

Heidi PETERSEN holds an M. Sc. (cand. scient. degree) from the Norwegian University of Science and Technology in Trondheim, Department of Chemistry and Mathematics.

Heidi PETERSEN started her career as a research assistant at the Norwegian University of Science and Technology in Trondheim in 1983. She was employed at 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 buyout 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. Heidi PETERSEN is an independent businesswoman, 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 consulting engineering and construction solutions , notably in the oil and gas industry.

CURRENT POSITIONS

Within the Group:
None

Outside of the Group:
Foreign companies:
- Chairwoman of Future Technology AS (Norway)
- Director of Arendals 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 SIV (Sykehuset i VestFold) (Norway)
- Director of NIVA AS (Norway)

Age: 65

Nationality:
French and American

First appointment
2018 (by co-optation)

Last renewal: 2019

Expiry of the current term of office: 2023

Number of CGG shares held on December 31, 2021:
20,156 ADRs

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

Professional address:
CGG SA
27 avenue Carnot
91300 Massy - France

Mario RUSCEV, *Independent Director*

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

Mario 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. Mario RUSCEV is now EVP TAQA International and CTO of TAQA.

During his career, Mario RUSCEV had the opportunity to evolve in many environments where technology was a differentiator and his teams 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 gas sensors;
- many Wireline and Testing tools including the PlatForm Express Wireline combo still unequalled after 25 years;
- the first single-sensor seismic systems called Q;
- the first ever Aquifer Storage and Recovery in the Middle East;
- simulators of the formation and propagations of fractures during Frac operations or analytics applications in the oilfield operations.

His combined technological 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:
- Director of Noven, Inc. (USA)
- Director of Asco Group Ltd (United Kingdom)
- EVP TAQA International and Chief Technology Officer of TAQA (Saudi Arabia)

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)

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

a) 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.

Chairmanship of the Board of Directors

In accordance with Article 9 of the articles of association, the Board of Directors must appoint among its members a natural person as Chairman, for a term that cannot exceed the duration of his term of office, i.e. four years. The Board may revoke the Chairman at any time. The Chairman's duties end at the latest at the end of the annual Ordinary General Meeting following the date on which he reaches the age of 65. However, the Board of Directors may extend the term of the Chairman beyond this limit, on one or more occasions, for a total period which may not exceed three years.

The Chairman represents the Board of Directors and, except in exceptional circumstances, is the only person authorized to act and speak on behalf of the Board of Directors. He organizes and directs the work of the Board of Directors and ensures the efficient functioning of the corporate bodies in accordance with the principles of good governance. He ensures, in particular, that the Directors are able to fulfill their mission and ensures in particular that they have all the information necessary for the accomplishment of their mission. He is kept regularly informed by the Chief Executive Officer of significant events and situations related to the day-to-day business of the Group and may ask for any information likely to enlighten the Board of Directors and its Committees. He may interview the Statutory Auditors to prepare the work of the Board of Directors. At the request of General Management, he may also represent the Company in its high-level relations with the public authorities and the Group's major partners, both nationally and internationally. He may be required to interact with shareholders, particularly on corporate governance issues.

Philippe SALLE has been Chairman of the Board of Directors since April 26, 2018. His term as Director was renewed at the General Meeting on May 12, 2021 for four years, i.e. until the Ordinary General Meeting called to approve the financial statements as of December 31, 2024. The Board of Directors, during its meeting on May 12, 2021, confirmed his functions as Chairman of the Board of Directors.

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 financial statements and all events or operations of importance to 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.

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. This segment information 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 when convened by its Chairman, as often as the interests of the Company require and at least four times a year, and in accordance with Article L. 823-17 of the Commercial Code meets in the presence of the Statutory Auditors when reviewing the annual or interim financial statements. It is specified that in accordance with the recommendation of the AFEP-MEDEF Code (11.3), the Board meets at least once a year without the presence of the executive corporate officers.

The Board of Directors deliberates validly only if at least half of the Directors are present. Board decisions are made by a majority of members present or represented. In the event of a tie vote, the vote of the Chairman of the Board of Directors is the decisive vote, in the event of the latter's absence, the vote of the Chairman of the meeting is not decisive.

In accordance with the Article L. 225-37 of the French Commercial Code and the internal rules of the Board of Directors, the Directors who participate in the deliberations of the Board by videoconference or telecommunications allowing their identification and guaranteeing their effective participation are deemed present for the calculation of the quorum and the majority. However, the use of this process is expressly excluded for the transactions referred to in Articles L. 232-1 and L. 233-16 of the French Commercial Code, namely the preparation of annual and consolidated financial statements and the management report.

An attendance register is kept and the minutes of the deliberations are drawn up in accordance with the law.

Representative of the Economic and Social Committee

In accordance with Article L. 2312-72 of the French Labour Code, a representative of the Company's Economic and Social Committee attends the meetings of the Board of Directors in an advisory capacity.

Observers *(Censeurs)*

In accordance with Article 13 of the Company's articles of association, the Board of Directors may appoint up to a maximum of three observers *(Censeurs)* for a two-year period. They are convened to the meetings of the Board of Directors and take part in deliberations in an advisory capacity. As of the date of this Document, the Company has not appointed any observer *(Censeur)*.

Rules and obligations applicable to Directors

i. Respect of social interest, duty of expression and diligence

The Director represents all the shareholders of the Company and must act in all circumstances in the corporate interest of the Company.

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.

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.

ii. Minimum number of shares to be held by members of the Board of Directors

In accordance with Article 8.5 of the Company's articles of association, each Director shall own at least 1 share. The Board's Internal Regulations provide that each Director be required to own at least 20,000 shares.

iii. Duty to report conflicts of interest

In accordance with the Board's Internal Rules and Regulations, each Director must inform the Board of 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.

To the Company's knowledge and as of the date of this Document:

- there is no family link between the Company's corporate officers;
- none of the corporate officers *(mandataires sociaux)* has been subject to any fraud conviction, bankruptcy, sequestration or liquidation process, or received any criminal charge and/or official public penalty from statutory or regulatory authorities during the past five years;
- none of them has been prevented by a tribunal 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;
- 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 between the Directors and corporate officers, and the Company or any of its subsidiaries, providing for specific benefits under this agreement.

iv. Market ethics

Directors are bound by a duty of care and due diligence, as well as an obligation to take special care with respect to any transactions involving the Company's shares or any financial instruments related to such shares. They must comply with regulations governing insider trading. In particular, they are required to comply with the applicable stock exchange regulations related to (i) the definition, use and disclosure of inside information, (ii) the provision of a list of persons closely associated with them, (iii) compliance with blackout periods, and (iv) the reporting of transactions involving the Company's shares. These rules are detailed in the Board's Internal Rules and Regulations which are available on the Company's website (www.cgg.com).

b) Evaluation of the operations of the Board of Directors and its Committees

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

Evaluation procedure 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 the 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, including 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, including 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
REPORTING 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 reporting by the Chair 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 reporting by the external consultant to each director

Results of the internal evaluation performed in 2021

In 2021, the Board of Directors carried out an internal evaluation under the supervision of the Chairman of the Appointment, Remuneration and Governance Committee with the support of the General Secretary and the Legal Department. The summary of the conclusions of this internal evaluation is shown in the following table.

2021 INTERNAL EVALUATION

POSITIVE FEEDBACK

- Increased involvement in the Group's strategy definition and implementation
- Diversity in the Board members' profiles
- Frequency of meetings of the Board and Committees
- Balance of meeting agendas with strategic issues and operational review
- Quality of content and discussions held during the Committee meetings and attendance and participation by members

ACTION PLAN FOR 2022

- Set a retroplanning in order to streamline the organization of meetings of the Board and its Committees, in particular with regard to the timeliness for the transmission of documents
- Increase involvement of the Investment Committee for upfront review of M&A projects
- Reinforce the monitoring of Board decisions by providing regular information on the impact and implementation of said decisions
- Set an onboarding program for new Directors to promote their induction and encourage them to voice their opinion
- Organize onsite visits when sanitary conditions will permit

4.1.3.3 Missions and works of the Board of Directors and its Committees in 2021

a) Missions of the Board of Directors and works over 2021

NUMBER OF MEMBERS

2021		2020
9	vs	9

PERCENTAGE OF INDEPENDENT MEMBERS

Including the Director representing the employees

2021		2020
78%	vs	78%

Excluding the Director representing the employees

2021		2020
87.5%	vs	87.5%

NUMBER OF MEETINGS

2021		2020
13	vs	8

AVERAGE ATTENDANCE RATE [(a)]

2021		2020
96.5%	vs	100%

(a) The individual attendance rates are detailed under section 4.1.3.4 of this Document.

MAIN MISSIONS AND WORKS CARRIED OUT OVER 2021 (NON-EXHAUSTIVE LIST)

Main missions	In accordance with Article L. 225-35 of the French Commercial Code, the Board of Directors determines the orientations of the Company's activity and ensures their implementation. Subject to the powers expressly granted to the General Meetings of Shareholders and within the limits of the corporate purpose, it takes up any question concerning the smooth running of the Company and settles by its deliberations the matters that concern it.
Main activities in 2021	**Governance** – convening of the General Meeting of May 12, 2021; – review of the qualification of Directors as independent; – annual review of the regulated agreements and periodic assessment of agreements relating to usual operations and entered into under normal conditions; – review 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 results of the internal evaluation of the Board of Directors' operations and adoption of an action plan for 2022 (see section 4.1.3.2.b) 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 (see below for more details); – one executive session, i.e a meeting held in the absence of the Chief Executive Officer, in accordance with AFEP-MEDEF Code recommendations. Main topics discussed were the performance and the succession plan of the Chief Executive Officer and of the Executive Leadership team.
	Remuneration – approval of the variable remuneration of the Chief Executive Officer for 2020, review of the remuneration components for the Chairman of the Board and the Chief Executive Officer for fiscal year 2021, and the method of allocation of Directors' fees for 2021; – review of the fulfillment of the performance conditions of the 2018 and 2019 stock option and performance share plans; – 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.
	Finance and strategy – approval of the 2020 annual and consolidated financial statements, review of the interim quarterly and half-year results for fiscal year 2021, approval of related press releases and the 2021 forecasts; – review and approval of the 2021 refinancing; – approval of the 2022 budget review; – review, approval and monitoring 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; – approval of the 2021-2024 Business Plan and Strategic Path Forward; – 4 strategy meetings during which the management team provided a detailed review of each business line activity with a particular focus on the development of Beyond the Core businesses.
	Others – review of the risk matrix; – review and monitoring of the actions taken by the Group against the Covid-19 pandemic in its offices and plants, in order to ensure compliance with authorities' regulations and restrictions, workers' protection and wellbeing, control of potential impact on operations, among others.

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 General 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 December 2021.

b) Missions of the Board Committees and works over 2021

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).

The works of the Committees are recorded in minutes. Each Committee reports to the Board on its proceedings after each meeting.

Individual attendance rates are provided for in section 4.1.3.4 of this Document.

Appointment, Remuneration and Governance Committee

The Chairman of the Board of Directors and the Chief Executive Officer are regularly involved in the works of this Committee, in particular those related to the appointment of Directors and with the exception of questions concerning them personally.

COMPOSITION AS OF THE DATE OF THIS DOCUMENT

- Colette LEWINER, Chairperson [a]
- Patrick CHOUPIN [b]
- Heidi PETERSEN [c]
- Mario RUSCEV [c]

NUMBER OF MEMBERS

2021		2020
4	vs	4

PERCENTAGE OF INDEPENDENT MEMBERS [d]

Including the Director representing the employees

2021		2020
75%	vs	75%

Excluding the Director representing the employees

2021		2020
100%	vs	100%

NUMBER OF MEETINGS

2021		2020
5	vs	7

AVERAGE ATTENDANCE RATE [e]

2021		2020
95%	vs	100%

(a) The Committee is chaired by an independent member in compliance with the AFEP-MEDEF Code.
(b) A Director representing the employees is a member of the Committee in compliance with the AFEP-MEDEF Code.
(c) Independent Director.
(d) The Company is compliant with the AFEP-MEDEF Code under which the Committee must be composed of a majority of independent Directors.
(e) The individual attendance rates are detailed under section 4.1.3.4 of this Document.

MAIN MISSIONS AND WORKS CARRIED OUT OVER 2021 (NON-EXHAUSTIVE LIST)

Main missions	The Appointment, Remuneration and Governance Committee is responsible for monitoring governance matters, notably the appointment and renewal of Board members and corporate officers, as well as matters involving their compensation, especially with respect to the AFEP-MEDEF Code on corporate governance. The Committee is also in charge of the review of the succession planning of Board members and corporate officers as well as the Executive Leadership team, the gender equality and equal opportunity policies, including the diversity policy, the assessment of the functioning of the Board and its Committees. The missions of the Appointment, Remuneration and Governance Committee are detailed in the Board of Directors' Internal Rules and Regulations available on the Company's internet website (www.cgg.com).
Main activities in 2021	– review of the independence of the Directors and of the Directors' terms of office and renewals for 2021 ; – implementation and follow up of the internal evaluation process for the Board of Directors and its Committees for 2021; – annual review of the succession plan for the Chief Executive Officer and the members of the Executive Leadership team; – review of the report on the Group Policy on equal opportunity for and equal treatment of employees, including the diversity policy and objectives for feminization of governance bodies; – review and implementation of the remuneration policy applicable to corporate officers for 2021 ; implementation of this remuneration policy in 2021; – discussions based on feedback received following meetings held with proxy advisors ; – proposal of the Chief Executive Officer's performance evaluation and results on her variable remuneration relating to 2020 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 2021 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) for 2021; – 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 2021.

Investment Committee

COMPOSITION AS OF THE DATE OF THIS DOCUMENT

- Helen LEE BOUYGUES, Chairperson [(a)]
- Michael DALY [(a)]
- Anne-France LACLIDE-DROUIN [(a)]
- Mario RUSCEV [(a)]

NUMBER OF MEMBERS		
4	vs	4
2021		2020

PERCENTAGE OF INDEPENDENT MEMBERS		
100%	vs	100%
2021		2020

NUMBER OF MEETINGS		
3	vs	4
2021		2020

AVERAGE ATTENDANCE RATE [(e)]		
91.66%	vs	97.75%
2021		2020

(a) Independent Director.
(b) The individual attendance rates are detailed under section 4.1.3.4 of this Document.

MAIN MISSIONS AND WORKS CARRIED OUT OVER 2021 (NON-EXHAUSTIVE LIST)

Main missions	The Investment Committee is responsible for reviewing and regularly monitoring the investment expenditure budget, as well as merger & acquisition transactions, and making recommendations to the Chief Executive Officer. In particular, the main tasks of the Committee are to examine in particular: – individual proposed and committed capital projects over US$10 million; – authorizations for expenditures over US$100 million; – M&A projects of US$5 million. The missions of the Investment Committee are detailed in the Board of Directors' Internal Rules and Regulations available on the Company's internet website (www.cgg.com).
Main activities in 2021	– review of the Group's investment strategy for 2021; – review of M&A projects; – 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 2022.

HSE/Sustainable Development Committee

COMPOSITION AS OF THE DATE OF THIS DOCUMENT

- Michael DALY, Chairperson [(a)]
- Patrick CHOUPIN [(b)]
- Heidi PETERSEN [(a)]

NUMBER OF MEMBERS

3 (2021) vs 3 (2020)

PERCENTAGE OF INDEPENDENT MEMBERS

Including the Director representing the employees

66.67% (2021) vs 66.67% (2020)

Excluding the Director representing the employees

100% (2021) vs 100% (2020)

NUMBER OF MEETINGS

3 (2021) vs 3 (2020)

AVERAGE ATTENDANCE RATE [(c)]

100% (2021) vs 100% (2020)

(a) Independent Director.
(b) Director representing the employees.
(c) The individual attendance rates are detailed under section 4.1.3.4 of this Document.

MAIN MISSIONS AND WORKS CARRIED OUT OVER 2021 (NON-EXHAUSTIVE LIST)

Main missions	The HSE/Sustainable Development Committee assists the Board of Directors in its oversight of the Group's Health, Safety, Security and Environment (HSE) and Sustainable Development (SD) policies, conduct and culture. Its main missions are: – make recommendations on the development of a strategic approach to Health, Safety, Security and Environment (HSE) & Sustainable Development (SD); – monitor and review the performance of CGG's HSE & SD systems and programs and compliance with applicable laws; – review the high rated HSE/DD operational risks such as high potential incidents(HPI) and the controls put in place to manage these risks. The missions of the HSE/Sustainable Development Committee are detailed in the Board of Directors' Internal Rules and Regulations available on the Company's internet website (www.cgg.com).
Main activities in 2021	– 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; – review of the Group's performance in terms of carbon emissions; – review of the Statement of non-financial perormance of the 2020 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 Sercel HSE training campaign and analysis of impact; – 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 with regard to the evolution of ESG statutory reporting and initiatives and performance perspective for 2021.

Audit and Risk Management Committee

COMPOSITION AS OF THE DATE OF THIS DOCUMENT

- Anne-France LACLIDE-DROUIN, Chairperson [a]
- Helen LEE BOUYGUES [a]
- Colette LEWINER [a]

	2021		2020
NUMBER OF MEMBERS	3	vs	3
PERCENTAGE OF INDEPENDENT MEMBERS	100%	vs	100%
NUMBER OF MEETINGS	7	vs	8
AVERAGE ATTENDANCE RATE [e]	100%	vs	100%

(a) Independent Director.
(b) The individual attendance rates are detailed under section 4.1.3.4 of this Document.

All the members of the Audit and Risk Management Committee are all Independent Directors with special competencies in financial or accounting matters or legal supervision as requested for at least one of its members by Article L. 823-19 of the French Commercial Code. They were chosen for their recognized skills and expertise in financial, accounting, or internal control, Internal Audit and risk management. Their professional backgrounds are described in more detail in section 4.1.3.1.f). With a 100% independence rate, the Company complies with the recommendation of the AFEP-MEDEF Code, according to which the Board must be composed of two thirds or more Independent Directors.

The following persons attend the Committee meetings: the relevant members of the Executive Leadership team, the Group Chief Financial Officer, the EVP Group General Counsel, the SVP Group Controller and Chief Accounting Officer, the Group Internal Audit Director who presents an update on significant missions at least twice a year. Sometimes the Chairman of the Board of Directors and the Chief Executive Officer attend the Committee meetings. The Audit and Risk Management Committee invites the Statutory Auditors to attend each of its meetings and meets them once a year, without the presence of the Company's senior management.

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.

MAIN MISSIONS AND WORKS CARRIED OUT OVER 2021 (NON-EXHAUSTIVE LIST)

Main missions	The Audit and Risk Management Committee is responsible for monitoring issues relating to the preparation and control of the Company's accounting and financial information. Its main missions are: – examining the draft corporate and consolidated financial statements, annual and half-yearly and draft press releases; – monitoring the effectiveness of internal control, Internal Audit and risk management systems as well as compliance policies; and – monitoring the term of office, duties and independence of the Statutory Auditors. The missions of the Audit and Risk Management Committee are detailed in the Board of Directors' Internal Regulations available on the Company's internet website (www.cgg.com).
Main activities in 2021	– review of the annual consolidated financial statements for 2020 (statutory and consolidated accounts, and in particular the impairment tests on assets and goodwill, segment classification into Cash Generating Units (CGUs), 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 2021; – 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 2020 Universal Registration Document (annual report); – review of the 2021 forecasts; – meeting with external auditors without General Management being present (overview of the audit work performed for the closing of the 2020 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;

Main activities in 2021 (continued)	– 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 2021 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 2021 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;

4.1.3.4 Attendance during Board and Committee meetings in 2021

The table below summarizes detailed information concerning the individual attendance of Directors at meetings of the Board of Directors and its Committees during fiscal year 2021:

	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 2021		**13**		**7**		**5**		**3**		**3**
Philippe SALLE	13/13	100%		n.a.		n.a.		n.a.		n.a.
Sophie ZURQUIYAH	13/13	100%		n.a.		n.a.		n.a.		n.a.
Patrick CHOUPIN [(a)] Director representing the employees since May 12, 2021	8/8	100%		n.a.	3/3	100%		n.a.	2/2	100%
Michael DALY	12/13	92%		n.a.		n.a.	2/3	66%	3/3	100%
Patrice GUILLAUME [(b)] Director representing the employees until May 12, 2021	5/5	100%		n.a.	2/2	100%		n.a.	1/1	100%
Anne-France LACLIDE-DROUIN	13/13	100%	7/7	100%		N/A	3/3	100%		n.a.
Helen LEE BOUYGUES	12/13	92%	7/7	100%		N/A	3/3	100%		n.a.
Colette LEWINER	13/13	100%	7/7	100%	5/5	100%		n.a.		n.a.
Heidi PETERSEN	13/13	100%		n.a.	4/5	80%		n.a.	3/3	100%
Mario RUSCEV	11/13	85%		n.a.	5/5	100%	3/3	100%	n.a.	11/13
TOTAL ATTENDANCE RATE OF DIRECTORS IN 2021		**96.5%**		**100%**		**95%**		**91.6%**		**100%**

(a) Patrick CHOUPIN is a Director representing the employees elected on Aril 6, 2021 by the Group Committee, in accordance with Article 8 of the Company's articles of association in replacement of Patrice GUILLAUME. His attendance rate at the Committees was calculated prorata temporis as from his effective date of function.

(b) Patrice GUILLAUME was Director representing the employees until May 12, 2021, date from which he was replaced by Patrick CHOUPIN. Therefore, his attendance rate at the Committees was calculated prorata temporis.

4.1.4 Review of the agreements which may be entered into between corporate officers 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, in accordance with Article L. 225-39 of the French Commercial Code, prior approval is not required for agreements if they relate to usual operations and if they are entered into under normal conditions or for agreements concluded between two companies, one of which holds, directly or indirectly, the entire capital of the other. Article L. 22-10-12 of the French Commercial Code requires however, 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 adopted an Internal Charter applicable to the Group in that respect since March 5, 2020. 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).

The latest annual assessment on the agreements relating to usual operations and entered into under normal conditions was reviewed by the Board of Directors on March 3, 2022.

4.1.5 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 2021

The list of transactions entered into in the course of 2021 between the Company and companies or subsidiaries having common Directors or common corporate officers is reflected in the Statutory Auditors' special report on regulated agreements in section 4.1.6 of this Document.

4.1.6 Statutory auditors' special report on regulated agreements

Year ended December 31, 2021

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 Annual General Meeting 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 R. 225-31 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 R. 225-31 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 2021

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 R. 225-30 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 2021 amounted to €750 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 2021 amounted to USD 29,277.

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 2021 amounted to €11,261.

Collective defined contribution scheme applicable 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 2021 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.

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).

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

Paris-La-Défense, March 11, 2022

Mazars	ERNST & YOUNG et Autres
Jean-Louis Simon	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 French Commercial Code.

As of the date of this report, the Company's corporate officers are Philippe SALLE, Chairman of the Board of Directors and 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 Corporate Governance Code of Listed Corporations (hereinafter "the AFEP-MEDEF Code"), "executive corporate officers" shall mean the Chief Executive Officer. 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

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 the 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 AFEP-MEDEF Code recommendation 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 of 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 executive 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 this Document for more details).

The Company has implemented, at Group level, a short-term (one year) variable compensation policy which is broken down into various annual variable remuneration programs. In particular, the Global Performance Incentive Plan (GPIP) applies to employees in support functions, to employees whose scope is global or cross-functional for several product lines, as well as to company managers. This same program applies to the executive leadership team as well as the Chief Executive Officer (executive corporate officer). The financial portion of the GPIP policy is based on financial objectives related to the business, 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.

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.

Implementation of the remuneration policy and role of the Appointment, Remuneration and Governance Committee

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 4.2.1.1.a) of this Document.

The Appointment, Remuneration and Governance Committee meets regularly to verify that the remuneration policy adopted by the General Meeting is correctly applied.

The composition and tasks of the Appointment, Remuneration and Governance Committee in determining, reviewing and implementing the remuneration policy are defined in section 4.1.3.3.b) of this Document and in the Board's Internal Rules and Regulations.

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.

b) Application of the remuneration policy

Principle

The remuneration policy is submitted to the approval of the ordinary General Meeting each year. This vote is commonly called "ex ante vote" because it is valid for the financial year during which the General Meeting is held. In the event the General Meeting does not approve the resolution, the Directors' remuneration would be determined in accordance with the remuneration awarded for the previous financial year or, in the absence of remuneration awarded for the former financial year, in accordance with the existing practices within the Company.

Appointment of new corporate officers

The principles, criteria and elements of compensation provided for in the remuneration policy are applicable to any corporate officer appointed during the financial year.

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 replaced corporate officer.

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.

As for the remuneration policy approved by the General Meeting held on May 12, 2021 for the 2021 financial year, it is proposed to maintain for the 2022 financial year the possibility of departing from the remuneration policy on the objectives relating to the annual variable remuneration of the Chief Executive Officer in 2022 in the event of exceptional circumstancies linked to the crisis generated by the Covid-19 pandemic.

(1) For more information about the independence of Directors, please refer to section 4.1.3.1.c) of this Document.

In order to take into account the exceptional situation linked to the extended duration of the Covid-19 crisis over the year 2022 and its unforeseeable impacts on the Company, the Board of Directors may, for the financial year 2022 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. 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

A dialogue with the main shareholders and the voting advisory firms was initiated to inform them of plans for the evolution of the Company's governance and corporate officer remuneration policy for financial year 2022 to bring together as much as possible the stakeholders' various expectations on all these subjects in line with the Company's interests. During these exchanges, the Company called to mind the major principles of its remuneration policy applicable to corporate officers and this policy's compliance with the recommendations of the AFEP-MEDEF Code.

This dialogue allowed the Company to take notice of the reasons and criteria that led certain shareholders, at the General Meeting on May 12, 2021, to vote against the resolution approving the remuneration policy applicable to the Chief Executive Officer for financial year 2021 (approved by 74.39%). The Company thus heard the main shareholders and voting advisory firms, who did not offer any notable differences of opinion except for one shareholder that explained in particular that it voted against the resolution because its internal voting policy is more restrictive than CGG's practice on the principles of severance pay for the Chief Executive Officer. The Company called to mind on this point that the rules determining severance pay for the Chief Executive Officer were established in accordance with the recommendations of the AFEP-MEDEF Code and market practice (for more information, see section 4.2.1.2 b)xi of this Document).

Thus, to the extent that it complies with the recommendations of the AFEP-MEDEF Code, the Company intends to maintain the principles of its remuneration policy applicable to the Chief Executive Officer for financial year 2022.

d) Changes in remuneration policy

Principles of the remuneration policy applicable to Corporate Officers proposed for the 2022 financial year remain aligned with the ones applicable for 2021. The remuneration policy for the Chairman of the Board remains identical for 2022. The remuneration policy for the Directors is subject to some adjustments as detailed in section 4.2.1.2.c).

The remuneration policy for the Chief Executive Officer is amended as follows:

- Proposal to increase the Chief Executive Officer's annual fixed remuneration (detailed in section 4.2.1.2.b)ii of this Document);
- Changes to the long term compensation plans:
  - proposal to integrate Environmental, Social and Governance (ESG) performance criteria into the long-term compensation plan in line with market practice in France and in line with investors and stakeholders' expectations (detailed in section 4.2.1.2.b)viii of this Document),
  - proposal to modify the comparator of the relative stock market performance criterion as well as the threshold for triggering the achievement of this same performance criterion of the Chief Executive Officer's stock options plan (detailed in section 4.2.1.2.b)viii of this Document).

4.2.1.2 Information relating to each corporate officer

a) Remuneration policy applicable in 2022 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.

In accordance with Article L. 22-10-8 of the Commercial Code, this remuneration policy will be submitted for approval by the General Meeting to be held to approve the financial statements for the financial year ending December 31, 2021.

The Chairman of the Board of Directors' functions are described in section 4.1.3.2.a) of this Document and are currently held by Philippe Salle, whose biography is presented in section 4.1.3.1.f) of this Document.

The Chairman of the Board's term of office is identical to that of the other directors (i.e. four years) and the Chairman of the Board term of office is aligned with the director's term of office.

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. Annual fixed remuneration for the office of Chairman of the Board of Directors

The Chairman of the Board of Directors may receive a fixed annual remuneration.

For the 2022 financial year, the annual fixed remuneration of Philippe SALLE in his capacity of Chairman of the Board of Directors is maintained at €170,000 gross on an annual basis, in accordance with the decision of the Board of Directors dated March 3, 2022, following the recommendation of the Appointment, Remuneration and Governance Committee.

iii. Annual fixed remuneration for the office of Director

The Chairman of the Board of Directors may receive remuneration related to his office as director, the amount of which is defined in the remuneration policy applicable to directors in 2022 presented in section 4.2.1.2.c) of this Document.

In accordance with Article L. 22-10-8 of the French Commercial Code, this remuneration policy will be will be submitted for approval by the General Meeting to be held to approve the financial statements for the financial year ending December 31, 2021.

For the 2022 financial year, following the recommendation of the Appointment, Remuneration and Governance Committee, and subject to the approval of the 2022 General Meeting, it will be proposed to maintain for the Chairman of the Board of Directors, an annual fixed remuneration of €70,000 for his office as director.

iv. Other short-term remuneration components

Social protection plans

The Chairman of the Board may benefit from the social protection plans set up for the Group's employees.

Consequently, the Chairman may benefit from an insurance plan covering death and disability risks and may also benefit from medical coverage.

For the 2022 financial year, Philippe SALLE will not benefit from such plans

Benefits in kind

The Chairman of the Board may receive benefits in kind linked to the allocation of a company car.

For the 2022 financial year, as in 2021, Philippe SALLE will not benefit from a company car.

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 receive:

- 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 2022 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 based on panels of comparable companies.

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 financial year ending December 31, 2021.

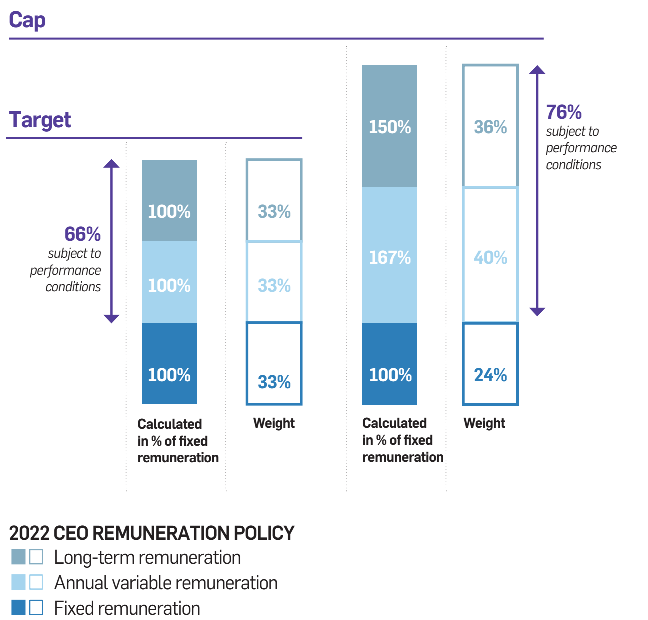
The position of Chief Executive Officer is described in section 4.1.2.1 of this Document and is currently held by Sophie ZURQUIYAH, whose biography is presented in section 4.1.3.1.f). Her term of office took effect at the end of the General Meeting of April 26, 2018 for a period of four years, i.e. until the end of the Ordinary General Meeting called to approve the financial statements for the financial year ending on December 31, 2021. Sophie ZURQUIYAH also combines her term of office as Chief Executive Officer with that of director of the Company, the terms of which are aligned (see section 4.1.2.1.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):

2022 CEO REMUNERATION POLICY



Details of the breakdown of each element of remuneration are set out in the following sections.

ii. Fixed remuneration

In accordance with the AFEP-MEDEF Code's recommendations, the Chief Executive Officer's remuneration, including its fixed portion, is reviewed annually by the Appointment, Remuneration and Governance Committee. The annual fixed remuneration is in principle only updated at relatively long intervals and the company has not opted for an annual change. In the event of a significant increase, the reasons for this increase are explained.

To determine the annual fixed remuneration of the Group's Chief Executive Officer, the Board of directors relied on a market study carried out by an independent firm, which resulted in a reference panel made up of 80% of the companies in the CAC Mid 60 index (mainly excluding those generating more than ten billion euros in revenue as well as financial and insurance companies).

The annual fixed remuneration of the Chief Executive Officer is currently positioned slightly below median (-5%) of this comparison panel, used to benchmark its positioning on the French market. It has remained unchanged since the appointment of Sophie ZURQUIYAH in April 2018.

The fixed compensation serves as a reference to determine the percentage of annual variable compensation and the valuation of the long-term compensation. Its amount is paid monthly.

For fiscal year 2022, following the recommendation of the Appointment, Remuneration & Governance Committee, the Board of Directors meeting of March 3, 2022 decided to include in the compensation policy applicable to the Chief Executive Officer for financial year 2022, submitted upon approval by the General Meeting, an 8% increase in the annual fixed remuneration of Sophie ZURQUIYAH, thus increasing her fixed remuneration from €630,000 to €680,400.

This increase, after four years of unchanged fixed remuneration, reflects on the one hand the desire of the Board of Directors to recognize the performance of its Chief Executive Officer in the definition and implementation of the strategic plan, the reorganization and restructuring of the Group as well as in the renegotiation of the debt. Her considerable efforts have made it possible to initiate the transformation of the company focusing on a technological model, asset light, resilient and agile through cycles. On the other hand, this proposal also illustrates the desire of the Board of Directors to retain and motivate its Chief Executive Officer for the years to come in order to carry out the new strategic plan established for the next 3 years. The Board of Directors considers that an increase in the fixed compensation of its Chief Executive Officer, after four years of maintaining the same, would ensure its relative competitiveness and would represent a moderate change in the face of the projects accomplished and the challenges ahead. Following this increase, Sophie ZURQUIYAH's annual fixed remuneration and short-term variable compensation would be positioned at the median (+3%) of the reference market, while her long-term compensation (granted and vested since 2018) remains well below the market.

iii. Annual variable remuneration

Methods of determination

The Chief Executive Officer is eligible to participate in the GPIP short term incentive program (described in section 4.2.1.1.a) of this Document).

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 (extra-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.

As an incentive to overperform on quantifiable criteria, the annual variable remuneration program allows for the payment of amounts in excess of the target remuneration. This mechanism does not apply to 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.

Performance criteria evaluation method

The performance evaluation 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 2022 will be subject to the approval of the *ex-post* vote by the General Meeting called in 2023 to approve the financial statements for the financial year 2022. 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.

Objectives applicable to the annual variable remuneration in 2022

For the 2022 financial year, during the meeting held on March 3, 2022, 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 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:

- definition and implementation of the **Group strategic and financial plan** towards 2024. It includes among others: progress in the structuring of new initiatives in connection with the energy transition and digital transformation;
- the achievement of **commercial and operational objectives** with a strong focus on customer relations as well as technical leadership and technological differenciation of the company;
- the **company organization and its employees** targeting talents, and key successions' management, employee engagement, and company attractiveness through an appealing employee value proposition;
- the company's performance in terms of **Environmental and Social responsability and Governance**, and the consolidation and development of new initiatives related to the energy transition. This area includes environment, health & safety, ethics, diversity and inclusion objectives;

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 2022 financial year breaks down as follows:

	Target		Maximum	
Indicator	**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 turnover	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	10.00%	10.00%	10.00%	6.00%
Business and Operations performance management	10.00%	10.00%	10.00%	6.00%
Organization and human resources management	3.33%	3.33%	3.33%	2.00%
ESG/HSE/Sustainable Development	10.00%	10.00%	10.00%	6.00%
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 to the Directors

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 French 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 plans

The Chief Executive Officer may benefit from the social protection plans set up for the Group's employees.

Consequently, the Chief Executive Officer may benefit from an insurance plan covering death and disability risks.

For the 2022 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 plan 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 payments;
- 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 the year 2022 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.

For the 2022 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 2022 at:

- a set monthly fee of €33.40 at the expense of the beneficiary and €33.40 at the expense of the Company;
- on top of which premiums are paid proportionally to earnings: tranches A and B: up to 400% of the PASS: 0.52% at the expense of the beneficiary and 0.52% at the expense of the company.

Premiums are paid on the beneficiary's gross annual remuneration.

Premium amount and associated coverage are reviewed yearly, without necessarily being modified.

The above insurance contracts can be terminated by following standard legal procedure.

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 2022 financial year, Sophie ZURQUIYAH will benefit, as in 2021, from the social protection plans applicable to the Group's employees, from an international medical insurance susbscribed by CGG Services (U.S.) Inc. of which the annual amount payable by the Company is estimated at €28,993 and from a company car which may not give rise to a benefit in kind in excess of €11,880.

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 corporate 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 corporate 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.

As for the remuneration policy approved by the General Meeting held on May 12, 2021 for the 2021 financial year, it has been proposed for the 2022 financial year to maintain the requirements to provide detailed justifications 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 resulting from the allocations that the Chief Executive Officer must keep until the end of 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 retained 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 2022 financial year

For the 2022 financial year, subject to the approval of the 2022 General Meeting, the Board of Directors intends to maintain the same long-term remuneration policy applicable to corporate officers as in 2021 based on a mix of stock options and performance shares; while integrating new performance criteria in line with the expectations of the various stakeholders and the company's strategy. These grants will be subject to a vesting period of at least three years and to demanding performance conditions.

The performance conditions precisely defined by the Board of Directors will include:

For the stock options plan: a condition of relative stock market performance of the Group compared to a panel of peers, which will be composed of competitors of CGG mainly operating in the field of oil exploration and related fiels, defined by the board of Directors. Work to define this panel is in progress and the details of the panel will be published in the ex post vote. On this criterion, the threshold to trigger the acquisition is 100% of the median growth of the comparison panel which allows the definitive acquisition of 75% of the options under this condition.

For free share allocation and stock option plans:

- financial criteria linked to the group's long-term budgetary objectives: these may include, in particular but not limited to, objectives in terms of EBITDA, ratio of net debt to EBITDAs, revenue and/or or the group's operating profit;
- an Environmental, Social and Governance performance condition built around different families of criteria which may include:
  - Social: including but not limited to objectives of diversity and commitment of the group's employees,
  - Safety: including but not limited to the rate of incidents,
  - Environmental: including but not limited to demanding objectives in terms of reducing greenhouse gas emissions, increasing energy efficiency (Power Usage Efficiency) and the level of use of renewable energy.

For these last two criteria, threshold to trigger the vesting is 100% achievement of the objectives which allows the definitive acquisition of 100% of the options and shares under these conditions.

The maximum vesting rate for each performance criteria family may not exceed 100% of the share of the criteria family. Thus, the maximum vesting rate may not exceed 100% of the total allocation.

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.

As for the remuneration policy approved by the General Meeting held on May 12, 2021 for the 2021 financial year, a modification to the remuneration policy is proposed for the 2022 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 2021, the Chief Executive Officer's allocation is in the low end of the first distribution quartile of the Group's reference market.

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 plan 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 plan may be liquidated, at the earliest, when the beneficiary has liquidated his pension rights under the general social security scheme.

The above plan can be terminated by following standard legal procedure.

For the 2022 financial year, Sophie ZURQUIYAH will benefit from the above-mentioned defined contribution pension plan. The estimated amount for the 2022 financial 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 common right legislation concerning remuneration for unemployment when he/she loses his/her job. The Board of Directors may therefore authorize the Company's entering into a specific unemployment guarantee for the Chief Executive Officer's benefit.

For the 2022 financial year, Sophie ZURQUIYAH will benefit from individual unemployment insurance. The amount to be borne by the Company 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 beginning of Sophie ZURQUIYAH's four-year term of office as Chief Executive Officer, also approved, for the duration of this term of office, the terms and conditions of the benefits granted to 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 meeting 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:

- 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 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 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 commitments.

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 the CGG group.

In consideration for this commitment for a term defined when the agreement is entered into, 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 French Commercial Code and the articles of the same Code applicable to "listed" companies (Articles L. 22-10-1 *et seq.*), the signing of a non-compete commitment between the Company and 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 Sophie ZURQUIYAH has participated within the CGG group.

In consideration for this commitment for a period of 18 months from the date of Sophie ZURQUIYAH's departure from the Group, she 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 the notice date, to which is added the annual average variable remuneration due over the previous three financial years before the date of departure or the date of notice (if applicable).

xiii. Indemnity for starting the position

The Board of Directors may, if applicable grant an indemnity for starting the 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.

xiv. Remuneration allocated for the office of Director

The Chief Executive Officer does not receive any compensation in the event of the accumulation of a directorship in accordance with the remuneration policy applicable to directors in 2022 presented in section 4.2.1.2.c) of this Document.

For the 2022 financial year, Sophie ZURQUIYAH will not receive any compensation for her directorship.

c) Remuneration policy applicable to Directors in 2022

a. Directors

The composition of the Board of Directors as well as information relating to the beginning of office, renewal and end of individual terms of office of each director, are presented in the summary table in section 4.1.3.1 of this Document.

The Directors are appointed for a four-year term in accordance with the Company's articles of association.

b. Allocation rules applicable to the Directors' remuneration

i. Maximum annual remuneration for Directors proposed at the General Meeting

The General Meeting held on June 16, 2020 approved an amount of €550,000 of as aggregate annual remuneration of the Directors. This total maximum remuneration remains unchanged for 2022 financial year in the absence of a new decision of the General Meeting.

ii. General distribution rules

The total amount of Directors' fees, as approved by the General Meeting, is divided into a fixed component based on 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 in accordance with the AFEP-MEDEF Code's recommendation (21.1).

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 pro rata 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:

- a fixed remuneration in his capacity as Director, as well as a travel indemnity (if applicable), as set out in the table below; and
- a fixed remuneration in his capacity as Chairman of the Board of Directors as described in section 4.2.1.2.a) of this Document.

Chief Executive Officer

The Chief Executive Officer, who would also be a Director of the Company, does not receive any Directors' fees nor travel indemnity. The various remuneration components of the Chief Executive Officer are as described in section 4.2.1.2.b) of this Document.

Director representing the employees

The Director representing the employees, appointed pursuant to Article 8 of the Company's articles of association, does not receive any remuneration pursuant to his office as Director nor travel indemnity. He receives a salary pursuant to the employment agreement he entered into with the Company or any of its affiliates.

c. Amounts to be applied in 2022

For the 2022 financial 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 in 2022, 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 FINANCIAL YEAR) BASED ON THE FUNCTION

	Fixed remuneration
Chairman of the Board	€70,000
Director (a)	€10,500
Chairman of the Audit and Risk Management Committee (a)	€12,000
Member of the Audit and Risk Management Committee (a)	€6,000
Chairman of any Board Committee other than the Audit and Risk Management Committee (a)	€6,000
Member of any Board Committee other than the Audit and Risk Management Committee (a)	€3,000

(a) Chief Executive Officer, Director representing the employees and the Chairman of the Board of Directors excluded.

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 ATTENDANCE AT BOARD AND BOARD COMMITTEE MEETINGS [(a)]

	Variable remuneration
Attendance at an ordinary Board meeting[(b)]	€3,600
Attendance at an ordinary Board Committee meeting	€2,000
Attendance at an exceptional Board meeting[(c)]	€1,800
Attendance at an exceptional Board Committee meeting	€1,000
Attendance at a Board Committee follow-up call[(d)]	€0
Attendance at a Board Committee meeting as a guest	€0

(a) Chief Executive Officer, Director representing the employees and Chairman of the Board of Directors excluded.
(b) An ordinary meeting is a meeting that was scheduled in the annual calendar as approved by the Board during the previous financial year. Strategy meetings scheduled in the annual calendar are considered as ordinary meetings.
(c) An exceptional meeting is a meeting that was not scheduled in the annual calendar as approved by the Board during the previous financial year. It is convened in principle in order to obtain Board's approval or Board Committee's recommendation of the Committee on specific matters.
(d) A Board Committee follow-up call aims to keep the Directors informed of subjects dealt with during the ordinary or exceptional Board Committee meetings.

Compared to the remuneration policy approved by the General Meeting held on May 12, 2021, and applicable to the financial year 2021, the policy has been revised for 2022 as follows :

- reallocation of the respective proportion of fixed and variable remuneration to align with market practice, i.e. one-third fixed & two-thirds variable, resulting in:
  - an increase of the fixed remuneration part (except for the Chairman of the Board of Directors, whose fixed remuneration remains unchanged) and;
  - a slight rounding up of the variable fee per meeting.

The above changes in the weight of the remuneration elements of the policy shall have no impact on the total annual envelope, which continues to be capped at €550,000 and remains unchanged since 2020.

TRAVEL INDEMNITY, IRRESPECTIVE OF THE DIRECTOR'S NATIONALITY [(a)]

	Travel indemnity
Intercontinental travel	€2,000
Travel within the same continent	€500

(a) Chief Executive Officer and the Director representing the employees excluded.

This travel indemnity will apply to any travel for a Board meeting.

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 2022

Director and Chairman of the Board of Diretors

For the 2022 financial year, 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 described above.

Director and Chief Executive Officer

For the 2022 financial year, 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 described above.

Director representing the employees

For the 2022 financial year, in accordance with the remuneration policy applicable to corporate officers described above, Patrick CHOUPIN 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 Sercel, a wholly owned subsidiary of the Company.

Other non-executive Directors

For the 2022 financial year and pursuant to their respective office as Director, Michael DALY, Anne-France LACLIDE-DROUIN, Helen LEE BOUYGUES, Colette LEWINER, Heidi PETERSEN and Mario RUSCEV will benefit from a remuneration in accordance with the remuneration policy applicable to corporate officers described above.

4.2.2 Global remuneration of corporate officers in 2021

4.2.2.1 Information relating to each corporate officer

A. Total annual remuneration of the Chairman of the Board of Directors for the 2021 financial year

a. Consideration of the last vote of the General Meeting

The General Meeting on May 12, 2021 approved resolution no. 9 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 financial year ended December 31, 2020.

In light of this positive vote, the Company has maintained, in 2022, the practices applied to the remuneration of corporate officers in 2021 (notably remuneration policy and information). The proposed adjustments listed in section 4.2.1.1.d) of this Document will be submitted to the vote during the 2022 General Meeting.

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, and exceptional remuneration and all benefits of all kinds attributable to the Chairman of the Board of Directors approved by the General Meeting held on May 12, 2021 and applicable for the 2021 financial year.

For the 2021 financial year, the Company did not depart from nor make any exception to 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 Philippe SALLE for 2020 and 2021 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:

	2020	2021	2020-2021 variation
Philippe SALLE, Chairman of the Board of Directors	€170,000	€170,000	0%

The fixed remuneration of the Chairman of the Board of Directors on an annual basis remained unchanged compared to 2020.

ii. Annual fixed remuneration allocated to Directors

In accordance with the remuneration policy applicable to the Board of Directors as approved by the General Meeting on May 12, 2021, Philippe SALLE received a remuneration amounting to €72,000 for financial year 2021 (including €2,000 of travel indemnity) for his office as director. The fixed amount of €70,000 remained unchanged compared to 2020.

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 in the Article L. 22-10-14 of the aforementioned Code has not been suspended.

iii. Other short-term remuneration elements

Social protection schemes

The Board of Directors, at its meeting on April 26, 2018, authorized, in accordance with the procedure applicable to regulated greements 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 plan of the Group applicable to all employees, to Philippe SALLE, Chairman of the Board of Directors. For 2021, the amount corresponding to the expense borne by the Company under this plan represents €750 for Philippe SALLE.

This commitment was ratified by the General Meeting held on May 15, 2019.

Benefits in kind

Philippe SALLE did not benefit from any benefit in kind (including company car) during 2021 financial year.

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 elements 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 disclosure of 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 the gross fiscal remuneration (rémunération brute fiscale) as defined in Article L. 136 et seq. of the French Social Security Code, including the following main elements paid in 2021:

- fixed remuneration;
- variable remuneration;
- exceptional remuneration;
- profit-sharing and participation;
- benefits in kind;
- employer contributions paid in respect of defined contribution plans paid in respect of the financial year 2021.

The options and performance shares vested during the 2021[1] financial year and valued under IFRS 2 have been added to the gross fiscal remuneration.

In the interest of consistency, employees' remuneration considers the same following items paid in 2021:

- fixed remuneration;
- variable remuneration;
- exceptional remuneration;
- profit-sharing and participation;
- benefits in kind;
- employer contributions paid in respect of defined contribution plans paid in respect of the financial year 2021.

The options and performance shares vested during the 2021[1] financial year and valued under IFRS 2 have been added to the gross fiscal remuneration.

The above principles have been applied in the same way as in 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.

	2017	2018 [(a)]	2019 [(b)]	2020	2021
Remuneration of the Chairman of the Board of Directors *(in €)*					
Rémi Dorval [(a)]	170,810	170,810	n.a.	n.a.	n.a.
Philippe Salle	n.a.	n.a.	240,000	240,000	240,000
(evolution compared to the previous financial year)	*(4.1)%*	*0.0%*	*40.5%*	*0.0%*	*0.0%*
Ratio gross salary of the Chairman/median gross salary employees of the Group in France	3.3	3.1	4.6	4.8	4.6
(evolution compared to the previous financial year)	*(5.6)%*	*(6.6)%*	*47.9%*	*4.1%*	(4.2)%
Ratio gross salary of the Chairman/average gross salary employees of the Group in France	2.8	2.7	3.8	4.0	4,0
(evolution compared to the previous financial year)	*(5.8)%*	*(5.7)%*	*41.7%*	*6.7%*	(1.1)%
Ratio gross salary of the Chairman/median gross salary of CGG SA employees [(b)]	2.0	2.0	0.7	1.1	0.9
(evolution compared to the previous financial year)	*(10.1)%*	*(1.1)%*	*(62.0)%*	*49.0%*	(17.1)%
Ratio gross salary of the Chairman/average gross salary of CGG SA employees [(b)]	1.0	0.9	0.8	0.9	1.0
(evolution compared to the previous financial year)	*(5.4)%*	*(7.4)%*	*(14.8)%*	*18.3%*	5.3%
Company's performance					
Segment EBITDA *(in MUS$)* (IFRS restated 2017-2021)	434	556	721	360	344

(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 the one paid for the position.

(1) For the sake of precision, only options ("Options") and shares subject to performance conditions ("Performance shares") definitively vested during the year have been valued. As such, this equity/pay ratio does not include Options and Performance Shares which have not yet definitively vested due to the application of the various vesting periods, or have not definitively vested due to the non-achievement of the performance conditions governing their definitive award. This methodology differs from that used to calculate the equity ratio published in April 2020, which considered all of the Options and Performance Shares initially granted, thus representing a valuation of potential benefits that may not ultimately vest.

B. Total annual remuneration of the Chief Executive Officer for the 2021 financial year

a. Consideration of the last vote of the General Meeting

The General Meeting held on May 12, 2021 approved resolution no. 9 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 financial year ended December 31, 2020.

In light of this positive vote, the Company has maintained, in 2022, the practices applied to the remuneration of corporate officers in 2021 (notably remuneration policy and information). The proposed adjustments listed in section 4.2.1.1.d) of this Document will be submitted to the vote during the 2022 General Meeting.

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, and exceptional remuneration and all benefits of all kind attributable to the Chief Executive Officer approved by the General Meeting held on May 12, 2021 and applicable for the 2021 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 2021 financial year, the Company did not depart from nor make any exception to from the procedure for implementing the remuneration policy.

c. Total remuneration and benefits of any kind

i. Fixed remuneration

The below table presents the fixed remuneration of the Chief Executive Officer and how it has changed:

	2020	2021	2020-2021 variation
Sophie ZURQUIYAH, Chief Executive Officer	€630,000	€630,000	0%

The fixed remuneration of the Chief Executive Officer on an annual basis remained unchanged compared to 2020.

ii. Annual variable remuneration

The annual variable remuneration of 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 financial year 2021,** the structure of the variable remuneration (performance criteria and conditions of achievement) of Sophie ZURQUIYAH was determined by the Board of Directors at its meeting held on March 4, 2021.

Details of the structure of the objectives set and their level of achievement noted by the Board of Directors' meeting on March 3, 2022, are set out below.

I. The quantifiable criteria (financial objectives), based on the achievement of the Group's budgetary objectives, are as follows:

- Net Cash Flow 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 a 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 financial year 2021,** 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 90.20% 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 targeted on:

A. Management of the Group's strategic plans (40% weighting on the extra-financial portion)

40% of the qualitative objectives relate to the implementation of the Group's strategic and financial plan as well as the preparation of the 2024 group strategic plan. These are specific objectives, managed through indicators whose detailed criteria are confidential. They include criteria related to the refinancing of the group's debt, the transformation and new technological positioning of the group as well as objectives related to the development of the 2024 new strategic plan for the Group.

→ **For financial year 2021**, the objectives relating to the management of the group's strategic plans were 100% achieved. The performance assessment is based on the following main achievements: the continued implementation of the CGG 2021 strategy and the definition of the 2022-2024 group strategic plan, the acceleration of the transformation towards a more technological positioning through new initiatives and their communication *via* a new brand positioning and finally the refinancing of the Group's debt.

B. Organization and management of Human Resources (weighting of 20% of the extra-financial portion)

20% of extra-financial objectives relate to organizational effectiveness, talent management, succession plans and diversity and inclusion in the company. This objective includes the deployment of a global diversity and inclusion plan with the objective, among other things, of feminizing the technical and managerial employee population. It also includes the management of talents and key successions and the continued simplification and streamlining of the Group's organization.

→ **For financial year 2021**, the objectives relating to human resources and the Group's organization were 100% achieved. Performance is assessed based on the following main achievements: the company rolled out its diversity and inclusion program, and increased the percentage of women in the highest positions, in line with the commitment taken by the company. All employees have been made aware of this initiative and concrete actions have been implemented globally. Successions for key positions have been prepared and some of them successfully deployed in 2021. The implementation of the plan to simplify the organization of the company, particularly with regard to the support functions structure, has been finalized. Talent management and succession plan processes were carried out during the year and presented to the Board of Directors with a strong focus on female promotion.

C. Group operational performance (20% weighting of the extra-financial part)

20% of the extra-financial objectives relate to maintaining the Group's operational performance through the consolidation and development of relationships with the most important customers and the continued development of the Group's positioning as an undisputed technical leader in Geoscience and Equipment.

→ **For the financial year 2021,** the objectives relating to the Group's operational performance were 100% achieved. The performance evaluation is based on the following main achievements: the Chief Executive Officer continued to maintain and develop special relationships with the Group's main customers by meeting regularly with their top managers. In 2021, customer feedback remained just as positive on the quality of the work carried out and on the group's position as a leader in many areas compared to its peers. In 2021, many projects were assigned to CGG thanks to the exceptional work delivered by the teams, which enabled CGG's market share to increase during the year in different sectors. New technological advances have been marketed such as the new GPR-300 marine node or the Full-Waveform Image.

D. HSE and Sustainable Development (weighting of 20% of the extra-financial part):

20% of the qualitative objectives pertain to maintaining the Group's performance with regard to the Health, Safety, Environment and Sustainable Development policies related to its activity. The group aims to progress towards the development of revenue lines linked to sustainable development and the energy transition within its industry. In addition, the objective is also to work on its data centers' efficiency in order to reduce its carbon footprint and its greenhouse gas emissions.

→ **For the financial year 2021,** the objectives relating to Health, Safety, Environment and Sustainable Development policies were 100% achieved. The Company's position in terms of Health and Safety progressed during the year with a remarkable performance: no major incident is to be regretted in 2021. The group continued the implementation of an environmental policy in line with the energy transition with the reduction of its emissions in 2021 and major investments that will allow the continuation of this dynamic in the future. Finally, the group progressed the structuring and development of new activities that are sources of future income in connection with the energy transition.

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 the 2021 financial year,** 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 financial year 2021 is 123.53% of the target. In accordance with the applicable policy, this rate was applied to Sophie ZURQUIYAH's annual variable remuneration target to determine the amount to be paid in respect of financial year 2021. As a reminder, this rate was 33.33% for 2020.

	Target		Maximum		2021 Achievement 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%**	**135.28%**	**90.20%**	**73.02%**
Group net cash flow	16.67%	16.67%	33.33%	20.00%	107.32%	17.89%	14.48%
EBITDA free assets	16.67%	16.67%	33.33%	20.00%	146.58%	24.43%	19.78%
Group external turnover	16.67%	16.67%	33.33%	20.00%	104.97%	17.50%	14.17%
Operating income	16.67%	16.67%	33.33%	20.00%	182.23%	30.38%	24.59%
Non Financial objectives	**33.33%**	**33.33%**	**33.33%**	**20.00%**	**100.00%**	**33.33%**	**26.98%**
Strategic plan management	13.32%	13.32%	13.32%	8.00%	100.00%	13.32%	10.78%
Organization and Human Resources Management	6.67%	6.67%	6.67%	4.00%	100.00%	6.67%	5.40%
Group operational performance	6.67%	6.67%	6.67%	4.00%	100.00%	6.67%	5.40%
HSE/Sustainable Development	6.67%	6.67%	6.67%	4.00%	100.00%	6.67%	5.40%
CRITERIA TOTAL	**100.00%**	**100.00%**	**166.67%**	**100.00%**	**N.A.**	**123.53%**	**100.00%**

With regard to the fulfilment of the above criteria, the Board of Directors meeting on March 3, 2022 decided on the amount of annual variable remuneration for Sophie ZURQUIYAH at €778,260.

As a reminder, this amount was €210,000 for 2020 financial year, which represents a 271% increase 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 Sophie ZURQUIYAH.

iii. Exceptional remuneration

Sophie ZURQUIYAH did not receive any exceptional remuneration for the 2021 financial year.

iv. Remuneration allocated to Directors

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 plan of the Group applicable to all employees, to Sophie ZURQUIYAH, Chief Executive Officer. This commitment was ratified by the Combined General Meeting held on May 15, 2019. For 2021, the amount corresponding to the expense borne by the Company under this plan represents €4,502 for 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 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 €24,628 for 2021. This commitment was ratified by the Combined General Meeting held on May 15, 2019.

Benefits in kind

Sophie ZURQUIYAH benefited from a company car during the 2021 financial year. The valued amount of the benefit is €9,600.

vi. Multi-annal variable remuneration

Sophie ZURQUIYAH did not receive any multi-annual variable cash remuneration for the 2021 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 threefold 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 to this system.

2021 allocation and performance conditions for previous plans evaluated in 2021

In 2021, 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 2021 has been set at 52% 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).

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.

I. STOCK OPTIONS

A. Grant of stock options to the Chief Executive Officer under the terms of the plan dated June 24, 2021

- Performance conditions

  The Board of Directors meeting held on June 24, 2021 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 2024 (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[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 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 financial years 2021, 2022 and 2023, 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 financial year 2023, 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 beneficiary to 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 24, 2021, 1,910,920 options were allocated to 218 beneficiaries within the Group, including 330,000 stock options to the Chief Executive Officer. The exercise price of these options is €0.91, 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 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 vesting of performance shares and the exercise of vested stock-options 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 (AMF), 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 notes that the exercise of options by 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 section 4.1.3.2.a)) of this Document).

- Stock-options exercised in financial year 2021 by the Chief Executive Officer

  No stock-option was exercised during the financial year 2021.

B. Status of performance conditions fulfilment for previous plans

- Rate of fulfilment of the performance criteria of the 2018 stock options plans

  In 2021, the Board of Directors noted that the performance condition had not been achieved on the third 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 third tranche by the members of the Executive Leadership Team and the corporate officers. The achievement of the performance conditions will be assessed again in June 2022, in accordance with the plan's rules.

  In 2021, the Board of Directors noted that the performance conditions of the first tranche (25%) and second tranche (25%) of this plan, that matured respectively in June 2019 and June 2020, have been reassessed in accordance with the plan's rules. Performance conditions have 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 2022, in accordance with the plan's rules.

  The exercise price of these options is €2.15 for the June 27, 2018 grant and €1.39 for the December 11, 2018 grant.

- Rate of fulfilment of the performance criteria of the 2019 option plan

  In 2021, the Board of Directors noted that the performance condition had not been achieved on the first tranche (50%) of the option plan allocated on June 27, 2019 for the members of the Executive Leadership team. Consequently, no option was acquired under this first tranche by the members of the Executive Leadership team. The achievement of the performance conditions of the second tranche will be assessed in June 2022, in accordance with the plan's rules for the Executive Leadership team.

  The performance conditions pertaining to the 2019 plan for the Chief Executive Officier are appraised over a three-year period and will be assessed in June 2022.

  The exercise price of these options is €1.52 for the June 27, 2019 grant.

- Rate of fulfilment of the performance criteria of the 2020 option plan

  The performance conditions pertaining to the 2020 plan for the Executive Leadership team and the Corporate Officers are appraised over a three-year period and will be assessed in June 2023.

  The exercise price of these options is €1.10 for the June 25, 2020 grant.

C. Summary of Stock-options granted or acquired by the Chief executive Officer during the 2021 financial year

	Main conditions of stock options plans						Information regarding the reported financial year					
							Opening balance	During the Year		Closing balance		
Name of the Chief Executive Officer	**Grant date**	**Performance period**	**Vesting date**	**End of holding period** (a)	**Exercise period**	**Exercise price**	**Stock options awarded at the beginning of the year**	**Stock options awarded**	**Stock options vested**	**Stock options subject to perfor-mance conditions**	**Stock options awarded and unvested**	**Stock options subject to a holding period**(a)
Sophie ZURQUIYAH *Chief Executive Officer*	06.24.2021	3 years	06.25.2024	n.a.	06.24.2029	€0.91	0	330,000	0	330,000	330,000	n.a.
	06.25.2020	3 years	06.26.2023	n.a.	06.25.2028	€1.10	360,000	0	0	360,000	360,000	n.a.
	06.27.2019	3 years	06.28.2022	n.a.	06.27.2027	€1.52	360,000	0	0	360,000	360,000	n.a.
	06.27.2018	1 year	06.28.2019	n.a.	06.27.2026	€2.15	183,139	0	0	183,139	183,139	n.a.
		2 years	06.28.2020	n.a.			183,139	0	0	183,139	183,139	n.a.
		3 years	06.28.2021	n.a.			183,139	0	0	183,139	183,139	n.a.
		4 years	06.28.2022	n.a.			183,141	0	0	183,141	183,141	n.a.
TOTAL							**1,452,558**	**330,000**	**0**	**1,782,558**	**1,782,558**	**N.A.**

(a) Considering the vesting period, no holding period has been set by the Board of Directors.

II. PERFORMANCE SHARES

A. Grant of performance shares to the Chief Executive Officer under the terms of the plan dated the June 24, 2021

- Performance conditions

  On June 24, 2021, the Board of Directors maintained the same performance conditions as for the 2020 performance share plan. The acquisition of the shares is subject to a condition of presence in June 2024 (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 2021, 2022 and 2023 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 2023 (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 vesting of shares on the date on which such achievement is acknowledged by the Board.

  On June 24, 2021, the Board of Directors decided to allocate 2,427,905 performance shares subject to performance conditions to 218 beneficiaries within the Group, including 280,000 performance shares allocated to the Chief Executive Officer.

  These shares subject to the fulfillment of performance conditions will be acquired in June 2024 for the Chief Executive Officer and the Executive Leadership team. The acquisition period is set at the later of the two following dates: June 24, 2024 or the date of the General Meeting to approve the 2023 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 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, Sophie ZURQUIYAH committed 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. Statement of performance condition fulfilment for previous performance share plans

- Rate of fulfilment of the performance criteria of the 2018 Performance share plan

  In 2021, the Board of Directors noted that the performance condition had not been achieved on the second tranche (50%) of the performance share plans allocated on June 27, 2018 and on December 11, 2018 for all the beneficiaries of this plan. Consequently, no option was acquired under this second tranche by the members of the Executive Leadership team and the corporate officers.

- Rate of fulfilment of the performance criteria of the 2019 Performance share plan

  In 2021, the Board of Directors confirmed that the performance conditions on the first tranche (50%) of performance share plan allocated on June 27, 2019 were partially achieved for all beneficiaries excepting the corporate officers. Consequently, 31.72% of the performance shares of this first tranche were acquired by the members of the Executive Leadership team.

  The performance conditions pertaining to the 2019 plan for the Chief Executive Officer and to the second tranche of the 2019 plan for all other beneficiaries will be assessed in June 2022.

C. Summary of Performance shares granted or vested for the Chief Executive Officer during the 2021 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	Grant date	Performance period	Vesting date	End of holding period [(a)]	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[(a)]
Sophie ZURQUIYAH	06.24.2021	3 years	06.24.2024	n.a.	0	280,000	0	280,000	280,000	n.a.
Chief Executive Officer	06.25.2020	3 years	06.25.2023	n.a.	220,000	0	0	220,000	220,000	n.a.
	06.27.2019	3 years	06.27.2022	n.a.	220,000	0	0	220,000	220,000	n.a.
	06.27.2018	2 years	06.27.2020	n.a.	0	0	0	0	0	n.a.
		3 years	06.27.2021	n.a.	78,750	0	0	0	0	n.a.
TOTAL					**518,750**	**280,000**	**0**	**720,000**	**720,000**	**N.A.**

(a) Considering the vesting period, no holding period has been set by the Board of Directors.

III. PERFORMANCE UNITS

A. Grant of performance units to the Chief Executive Officer during the 2021 financial year

- Performance units granted to the Chief Executive Officer during the 2021 financial year

  No performance unit was granted to the Chief Executive Officer during the 2021 financial year.

- Performance units permanently acquired by the Chief Executive Officer during the 2021 financial year

  No performance unit was permanently acquired by the Chief Executive Officer during the 2021 financial year.

B. Statement of performance condition fulfilment for previous performance unit plans

No previous performance unit plan was in progress for the year 2021.

viii. Supplementary pension plans

Defined contribution pension plan (Article 83 of the CGI (Code général des impôts [General Tax Code]))

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 these executives.

This plan 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 2021, the amount corresponding to the expense borne by the Company under this plan represents €12,341 for Sophie ZURQUIYAH.

Alternative pension plan

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 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 2021. This insurance provides for the payment of a maximum percentage of 14.36% of Sophie ZURQUIYAH's target remuneration in 2021 (i.e. €180,998) over a period of 12 months.

x. Contractual terminaion indemnity in the event of departure from the Group and non-compete commitment

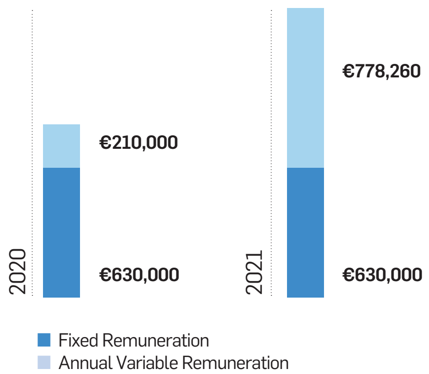
Sophie ZURQUIYAH benefits from a contractual termination indemnity in case of departure from the Group and a non-compete commitment, the details of which are presented in section 4.2.1.2.b) of this Document.

d. Remuneration paid by a company within the scope of consolidation

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 Sophie ZURQUIYAH (fixed + variable) increased by 68% full-time equivalent from 2020 to 2021.



The gross remuneration amounts paid by the Company and the controlled companies to Sophie ZURQUIYAH for the 2020 and 2021 financial years are presented in the table below.

For the 2021 financial year, Sophie ZURQUIYAH's remuneration structure consisted of fixed remuneration (€630,000 gross on an annual basis), variable remuneration (€778,260 gross on an annual basis), and benefits in kind (€20,861 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 Chief executive Officer, 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 disclosure of 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 the gross fiscal remuneration (rémunération brute fiscale) as defined in Article L. 136 *et seq.* of the French Social Security Code, including the following main elements paid in 2021:

- fixed remuneration;
- variable remuneration;
- exceptional remuneration;
- profit-sharing and participation;
- benefits in kind;
- employer contributions paid in respect of defined contribution plans paid in respect of the financial year 2021.

The options and performance shares vested during the 2021[(1)] financial year and valued under IFRS 2 have been added to the gross fiscal remuneration.

Insuring consistency, employees' remuneration considers the same following items into account:

- fixed remuneration;
- variable remuneration;
- exceptional remuneration;
- profit-sharing and participation;
- benefits in kind;
- employer contributions paid in respect of defined contribution plans paid in respect of the financial year 2021.

The options and performance shares vested during the 2021[(1)] financial year and valued under IFRS 2 have been added to the gross fiscal remuneration.

The above principles have been applied in the same way for previous years.

(1) For the sake of precision, only options ("Options") and shares subject to performance conditions ("Performance shares") definitively vested during the year have been valued. As such, this equity/pay ratio does not include Options and Performance Shares which have not yet definitively vested due to the application of the various vesting periods, or have not definitively vested due to the non-achievement of the performance conditions governing their definitive award. This methodology differs from that used to calculate the equity ratio published in April 2020, which considered all of the Options and Performance Shares initially granted, thus representing a valuation of potential benefits that may not ultimately vest.

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.

	2017	2018 [(a)]	2019 [(b)]	2020	2021
Remuneration of the Chief Executive Officer *(in €)*					
Jean-Georges Malcor [(a)]	1,037,865	1,569,828	n.a.	n.a.	n.a.
Sophie Zurquiyah [(b)]	n.a.	n.a.	1,512,729	1,681,940	860,861
(evolution compared to the previous fiscal year)	*(8.4)%*	*51.3%*	*(3.6)%*	*11.2%*	(48.8)%
Ratio gross salary CEO/median gross salary employees of the Group in France	20.2	28.5	28.9	33.5	16.4
(evolution compared to the previous fiscal year)	*(9.9)%*	*41.2%*	*1.4%*	*15.7%*	(51.0)%
Ratio gross salary CEO/average gross salary employees of the Group in France	17.1	24.4	23.7	28.2	14.3
(evolution compared to the previous fiscal year)	*(10.0)%*	*42.7%*	*(2.8)%*	*18.7%*	(49.4)%
Ratio gross salary CEO/median gross salary CGG SA employees [(c)]	12.0	18.0	4.7	7.8	3.3
(evolution compared to the previous fiscal year)	*(14.1)%*	*49.7%*	*(73.9)%*	*65.7%*	(57.6)%
Ratio gross salary CEO/average gross salary CGG SA employees [(c)]	6.1	8.6	5.0	6.6	3.5
(evolution compared to the previous fiscal year)	*(9.6)%*	*40.0%*	*(41.6)%*	*31.5%*	(46.1)%
Company's performance					
Segment EBITDA *(in MUS$)* (IFRS restated 2017-2021)	434	556	721	360	344

(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.

The evolution of the equity ratio between the level of remuneration of the Chief Executive Officer and the average and median remuneration of the employees between 2020 and 2021 is essentially to be explained by the difference in achievement of the financial target of the short-term incentive plans for the year 2019 and 2020, paid in 2020 and 2021 respectively. The impact is all the more significant for the remuneration of the Chief Executive Officer for whom the financial component represents 2/3 of the short-term incentive.

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 the one paid for the position.

C. Total annual remuneration of Directors for the 2021 fiscal year

On May 12, 2021, 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 May 12, 2021 approved resolution no. 9 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, 2020.

In light of this positive vote, the Company has maintained, in 2022, the practices applied to the remuneration of corporate officers in 2021 (notably remuneration policy and information). The proposed adjustments listed in section 4.2.1.2.c) of this Document will be submitted to the vote during the 2022 General Meeting.

b. Compliance of the remuneration paid with the remuneration policy

The remuneration allocated to the Directors for the 2021 fiscal year complies with the remuneration policy applicable to the Board of Directors as approved by the General Meeting held on May 12, 2021.

For the 2021 financial year, the Company did not deviate nor derogate from the remuneration policy.

The aggregate remuneration allocated to the Directors for 2021 amounted to €481,515 paid in February 2022 (see section 4.2.2.2.d) of this Document for more details).

c. Total remuneration and benefits of any kind

Remuneration components

i. General distribution rules

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 BOARD OF DIRECTORS

The Chairman of the Board received in 2021:

- in his capacity as Director: a fixed amount of Directors' fees, as well as travel indemnity (if applicable as set out in the table below; and
- in his capacity as Chairman of the Board: a fixed remuneration, as described in section 4.2.1.2.a) of this 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 2021, 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 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.

iii. Amounts applicable to 2021

For 2021, the rules set by the Board of Directors for the calculation of the remuneration to be paid to the Directors, on 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	€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.

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 pursuant to his employment agreement, Directors do not receive any remuneration paid by any 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 pursuant to his employment agreement, Directors receive only fixed elements, 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 2021 fiscal year

The remuneration paid to the Non-Executive Directors for the 2021 fiscal year is presented on page section 4.2.2.2.D of this 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 2020 and 2021 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

	2020 financial year	2021 financial year
Philippe SALLE, Chairman of the Board of Directors		
TOTAL REMUNERATION DUE FOR THE FINANCIAL YEAR (DETAILED IN ONE OF THE TABLES BELOW)	**€240,000.00**	**€242,000.00**
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)	**€860,861.00**	**€1,429,121.00**
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)]	€147,600.00	€95,700.00
Valuation of the performance shares allocated during the financial year (detailed in one of the tables below) [(a)]	€228,800.00	€232,400.00
TOTAL POTENTIAL DEFERRED REMUNERATION RIGHTS SUBJECT TO THE FUTURE RESULTS OF THE COMPANY	**€376,400.00**	**€328,100.00**

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 vesting of these elements of remuneration are on the one hand subject to the fulfilment of performance conditions (there can therefore be no vesting 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 grant that does not correspond to a remuneration received by beneficiaries during the financial year of grant.

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 Philippe SALLE, Chairman of the Board of Directors

The gross remuneration amounts paid by the Company and the controlled companies to Philippe SALLE for the 2020 and 2021 financial years are shown in the table below.

For the 2021 financial year, 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).

	2020		2021	
Philippe SALLE	**Amounts due**	**Amounts paid**	**Amounts due**	**Amounts paid**
Chairman of the Board of Directors as of April 26, 2018				
Fixed remuneration	€170,000	€170,000	€170,000	€170,000
Annual variable remuneration	n.a.	n.a.	n.a.	n.a.
Multi-annual variable remuneration	n.a.	n.a.	n.a.	n.a.
Exceptional remuneration	n.a.	n.a.	n.a.	n.a.
Remuneration allocated to Directors	€70,000 (a)	€70,500 (b)	€72,000 (c)	€70,000 (a)
Benefits in kind	n.a.	n.a.	n.a.	n.a.
TOTAL	**€240,000**	**€240,500**	**€242,000**	**€240,000**

Table 2 of the 2009–16 Financial Markets Authority Recommendation.

(a) Paid in February 2021 for the 2020 financial year.
(b) Paid in February 2020 for the 2019 financial year (including €500 of travel indemnity).
(c) Paid in February 2022, for the 2021 financial year (including €2,000 of travel indemnity).

C. Summary table of the remuneration for Sophie ZURQUIYAH, Chief Executive Officer

	2020		2021	
Sophie ZURQUIYAH	**Amounts due**	**Amounts paid**	**Amounts due**	**Amounts paid**
Chief Executive Officer as of April 26, 2018				
Fixed remuneration	€630,000	€630,000	€630,000	€630,000
Annual variable remuneration	€210,000 (a)	€948,780 (b)	€778,260 (d)	€210,000
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	€20,861 (c)	€20,861 (c)	€20,861 (e)	€20,861 (e)
TOTAL	**€860,861**	**€1,599,641**	**€1,429,121**	**€860,861**

Table 2 of the 2009–16 Financial Markets Authority Recommendation.

(a) Variable portion of the remuneration due for 2020 financial year for the corporate office of Sophie ZURQUIYAH as Chief Executive Officer paid in 2021, after approval of the 2020 financial statements by the General Meeting held on May 12, 2021, 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 2019 financial year for the corporate office of Sophie ZURQUIYAH as Chief Executive Officer paid in 2020, after approval of the 2018 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.
(c) 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 the unemployment insurance subscribed with the GSC for 2020 in the amount of €11,261.
(d) Variable portion of the remuneration due for 2021 financial year for the corporate office of Sophie ZURQUIYAH as Chief Executive Officer will be paid in 2022, after approval of the 2021 financial statements by the General Meeting to be convened to approve the financial statements for the year ended December 31, 2021, in accordance with the provisions of Articles L. 225-100 and L. 22-10-34, II of the French Commercial Code.
(e) 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 the unemployment insurance subscribed with the GSC for 2021 in the amount of €11,261.
• No multi-annual remuneration mechanism was implemented during the 2020 and 2021 financial years.

D. Remuneration paid to Non-Executive Directors

Directors	Amount paid for fiscal year 2020 (in €)	Amount paid for fiscal year 2021 (in €)
Philippe SALLE		
Directors' fees	70,000	72,000[(a)]
Other remuneration	140,000	140,000
Patrick CHOUPIN Director representing the employees since May 12, 2021[(b)]		
Directors' fees	n.a.	n.a.
Other remuneration	n.a.	n.a.
Michael DALY		
Directors' fees	62,950	59,410
Other remuneration	n.a.	n.a.
Patrice GUILLAUME Director representing the employees until May 12, 2021[(b)]		
Directors' fees	n.a.	n.a.
Other remuneration	n.a.	n.a.
Anne-France LACLIDE-DROUIN		
Directors' fees	77,650	76,120
Other remuneration	n.a.	n.a.
Helen LEE BOUYGUES		
Directors' fees	75,800	71,335
Other remuneration	n.a.	n.a.
Colette LEWINER		
Directors' fees	81,550	76,690
Other remuneration	n.a.	n.a.
Heidi PETERSEN		
Directors' fees	66,700	62,765
Other remuneration	n.a.	n.a.
Mario RUSCEV		
Directors' fees	61,600	63,195[(c)]
Other remuneration	n.a.	n.a.
TOTAL PAID FOR REMUNERATION AS DIRECTORS (OTHER REMUNERATION EXCLUDED)	**496,250**	**481,515**

Table 3 of the AMF Recommendation no. 2009-16.

(a) including 2,000 € of travel indemnity.

(b) The Director representing the employees does not receive any remuneration for his mandate in accordance with the remuneration policy applicable to the Directors for 2021 financial year as defined under section 4.2.1.2.f) of this Document. He receives a remuneration for his employment agreement, which is not related to the performance of his Director's mandate and therefore is not disclosed in this table.

(c) including 4,000 € of travel indemnity.

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 2021 fiscal year

The Chief Executive Officer was allocated, within the framework of the plans implemented by the Company during the 2021 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	06.24.2021	Stock options	€95,700	330,000 0.046%*	€0.91	06.25.2024 to 06.24.2029 inclusive

Table 4 of the 2009-16 Financial Markets Authority Recommendation.

(a) Allocation subject to performance conditions 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 2024 (i.e. three years from the grant date), 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^{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 2021, 2022 and 2023, 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 2023, 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 beneficiary to 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 section 4.2.2.1.B.c) 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 2021

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
Allocation of June 24, 2021 (Exercice price: €0.91)	TSR: relative evolution of CGG share price/PHLX Oil Service Sector℠ (OSX℠) index	50%	The relative evolution of the CGG share price shall be equal to the relative evolution of the PHLX Oil Service Sector℠ (OSX℠) index, calculated over the vesting period, i.e. between June 25, 2021 and June 24, 2024.	80% achievement gives rise to 50% attribution	100% achievement gives rise to 100% attribution	100%	to be assessed in 2024
	Free EBITDA objective	25%	Achievement of an objective of cumulative Free EBITDA set by the Board of Directors, for years 2021, 2022 and 2023.		100%		to be assessed after the closing of the accounts for the year 2023.
	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 2023.		100%		to be assessed after the closing of the accounts for the year 2023.
TOTAL FINANCIAL YEAR 2021		**100%**					

F. Stock-options exercised by the Executive Officers in the course of the 2021 fiscal year

Name of the executive officer	Date of the plan	Number of stock-options exercised in 2019	Subscription price*
Sophie ZURQUIYAH Chief Executive Officer	06.24.2013	n.a.	€193.27
	06.26.2014	0	€107.66
	06.25.2015	0	€62.92
	06.23.2016	0	€8.52
	06.27.2018	n.a.	€2.15
	06.27.2019	n.a.	€1.52
	06.25.2020	n.a.	€1.10
	06.24.2021	n.a.	€0.91
TOTAL		**0**	

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 2021 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 2021 financial year, the performance shares shown 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	06.24.2021	280,000 0.039%*	€232.400	06.24.2024 [(a)]	06.24.2024 [(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, 2023 could have been held before June 24, 2024. If it cannot be held on this date, the final acquisition date will be that of the meeting of the 2024 Annual General Meeting.

(b) No holding 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 Sophie ZURQUIYAH is subject to a condition of presence in June 2024 (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 2021, 2022 and 2023, 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 2023, 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 section 4.2.2.1.B.c) of this Document.

SUMMARY TABLE OF THE PERFORMANCE CONDITIONS APPLICABLE TO THE PERFORMANCE SHARES PLAN GRANTED TO THE CHIEF EXECUTIVE OFFICER IN FISCAL YEAR 2021

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
Allocation of June 24, 2021	Free EBITDA objective	50%	Achievement of an objective of cumulative Free EBITDA set by the Board of Directors, for years 2021, 2022 and 2023.		100%		to be assessed after the closing of the accounts for the year 2023.
	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 2023.		100%		to be assessed after the closing of the accounts for the year 2023.
TOTAL FISCAL YEAR 2021		**100%**					

H. History of Performance shares which became available as of December 31, 2021

Name of the executive officer	Date of the plan	Number of performance shares which became available in the 2021 fiscal year	Acquisition conditions
Sophie ZURQUIYAH Chief Executive Officer	06.27.2018	0	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
	06.24.2021	n.a.	Free EBITDA Average net debt over EBITDAs ratio
TOTAL		**0**	

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, 2021

	2013 plan	2014 plan	2015 plan	2016 plan	2018 plan	2018 plan	2019 plan	2020 plan	2021 Plan	Total
Date of the General Meeting	05.03.2013	05.03.2013	05.29.2015	05.29.2015	04.26.2018	04.26.2018	04.26.2018 [8]	06.16.2020	06.16.2020	
Date of the Board of Directors' meeting	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	06.24.2021	
Number of beneficiaries	672	752	749	683	530	4	247	240	218	
Total number of shares that can be subscribed [3]	1,642,574	1,655,843	1,769,890	6,658,848	6,544,389	671,171	2,353,520	2,268,512	1,910,920	25,475,667
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]	*120,000 [a]*	*60,000 [b]*	*79,500 [c]*	*444,000 [d]*	*732,558 [e]*	*n.a.*	*360,000 [f]*	*360,000*	*330,000*	*2,486,058*
Start date of options exercise	06.25.2015	06.27.2016	06.26.2017	06.24.2018	06.28.2019	06.28.2019	**For CEO:** 06.28.2022 **For other beneficiaries:** 06.28.2021	**For CEO and Executive leadership team:** 06.26.2023 **For other benefi-ciaries:** 06.26.2022	**For CEO and Executive leadership team:** 06.25.2024 **For other beneficiaries:** 06.25.2023	
Expiration date	06.24.2021	06.26.2022	06.25.2023	06.23.24	06.27.2026	06.27.2026	06.27.2027	06.25.2028	06.24.2029	
Subscription price *(in €)* [1] [2] [4]	193.27	107.66	62.92	8.52	2.15	1.39	1.52	1.10	0.91	
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)	- 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 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)	**For CEO and 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 Dec. 31, 2021 [4]	0	0	0	0	2,038	0	0	0	0	2,038
Cumulated number of stock-options which were cancelled or lapsed as of Dec. 31, 2021 [4]	614,401	436,804	184,011	260,994	1,508,908	100,677	578,080	34,480	5,700	3,724,055
Remaining stock-options as of Dec. 31, 2021 [4]	0	75,861	75,891	234,319	5,033,443	570,494	1,775,440	2,234,032	1,905,220	11,904,700

4

	2013 plan	2014 plan	2015 plan	2016 plan	2018 plan	2018 plan	2019 plan	2020 plan	2021 Plan	Total
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.*
Sophie ZURQUIYAH [(7)]	*0*	*359*	*475*	*4,428*	*622,674*	*n.a.*	*360,000*	*360,000*	*330,000*	*1,677,936*

(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 considering 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 of the allocation date) – see section 4.2.2.1.B.c) of this 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 2013 plan is subject to performance conditions which have not been met for each of the three batches in 2015, 2016 and 2017.

(b) 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.

(c) 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.

(d) 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.

(e) 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, 2020 and 2021 for the first three batches.

(f) For the senior executive officer and members of the Executive Leadership team, this 2019 plan is subject to performance conditions which have not been met in 2021 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 2021

	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	747,000	€0.91	06.24.2021
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 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 24, 2021, decided to allocate performance shares as detailed in the table below.

<table>
<tr><th>(Article L. 225-97-1 of the French Commercial Code)</th><th colspan="5">Information about performance shares</th></tr>
<tr><td>Date of General Meeting</td><td>04.26.2018</td><td>04.26.2018 [(a)]</td><td>04.26.2018</td><td>06.16.2020</td><td>06.16.2020</td></tr>
<tr><td>Date of Board of Director's resolution</td><td>06.27.2018</td><td>12.11.2018 [(a)]</td><td>06.27.2019 [(b)]</td><td>06.25.2020</td><td>06.24.2021</td></tr>
<tr><td>Total number of performance shares allocated, of which the number allocated to:</td><td>3,108,217</td><td>132,821</td><td>2,047,720</td><td>1,953,148</td><td>2,427,905</td></tr>
<tr><td>Sophie ZURQUIYAH, Chief Executive Officer</td><td>157,500</td><td>n.a.</td><td>220,000</td><td>220,000</td><td>280,000</td></tr>
<tr><td>Date of acquisition of performance shares (for Chief Executive Officer)</td><td>Acquisition in 2 batches:
– 06.27.2020: 50% of the performance shares allocated;
– 06.27.2021: 50% of the performance shares allocated.</td><td>n.a.</td><td>Acquisition in 1 batch:
– 06.27.2022: 100% of the performance shares allocated.</td><td>Acquisition in 1 batch:
– 06.25.2023: 100% of the performance shares allocated.</td><td>Acquisition in 1 batch:
– 06.24.2024: 100% of the performance shares allocated.</td></tr>
<tr><td>Date of acquisition of performance shares (Members of the Executive Leadership team)</td><td rowspan="2">Acquisition in 2 batches:
– 06.27.2020: 50% of the performance shares allocated;
– 06.27.2021: 50% of the performance shares allocated.</td><td>Acquisition in 2 batches:
– 12.11.2020: 50% of the performance shares allocated;
– 06.27.2021: 50% of the performance shares allocated.</td><td rowspan="2">Acquisition in 2 batches:
– 06.27.2021: 50% of the performance shares allocated;
– 06.27.2022: 50% of the performance shares allocated.</td><td>Acquisition in 1 batch:
– 06.25.2023: 100% of the performance shares allocated.</td><td>Acquisition in 1 batch:
– 06.24.2024: 100% of the performance shares allocated.</td></tr>
<tr><td>Date of acquisition of performance shares (other beneficiaries)</td><td>n.a.</td><td>Acquisition in 2 batches:
– 06.25.2022: 50% of the performance shares allocated;
– 06.25.2023: 50% of the performance shares allocated.</td><td>Acquisition in 2 batches:
– 06.24.2023: 50% of the performance shares allocated;
– 06.24.2024: 50% of the performance shares allocated</td></tr>
<tr><td>Date of the end of the retaining period</td><td>n.a. [(c)]</td><td>n.a. [(c)]</td><td>n.a. [(c)]</td><td>n.a. [(c)]</td><td>n.a. [(c)]</td></tr>
<tr><td>Performance conditions</td><td>Free EBITDA and Average Net Debt over EBITDAs ratio</td><td>Free EBITDA and Average Net Debt over EBITDAs ratio</td><td>Free EBITDA and Average Net Debt over EBITDAs ratio</td><td>Free EBITDA and Average Net Debt over EBITDAs ratio</td><td>Free EBITDA and Average Net Debt over EBITDAs ratio</td></tr>
<tr><td>Number of performance shares acquired as of December 31, 2021</td><td>1,357,341</td><td>66,412</td><td>265,380</td><td>0</td><td>0</td></tr>
<tr><td>Cumulative number of performance shares cancelled or lapsed as of December 31, 2021</td><td>1,750,876</td><td>66,409</td><td>690,120</td><td>43,100</td><td>9,000</td></tr>
<tr><td>Performance shares remaining at the end of the financial year as of December 31, 2021</td><td>0</td><td>0</td><td>1,092,220</td><td>1,910,048</td><td>2,418,905</td></tr>
</table>

Table 10 of the 2009–16 Financial Markets Authority Recommendation.

(a) Allocation subject to the terms and conditions of the performance shares plan of June 27, 2018, except for the first batch's vesting date.

(b) In addition, 40,000 shares granted on January 6, 2020 to an employee under the terms and conditions of the performance shares plan adopted June 27, 2019 are included in this column, except for the first batch's vesting 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 section

No performance share plan had been implemented between the 2012 and 2018 financial years.

L. Summary Table as of December 31, 2021

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: 2025		X		X		X		X
Sophie ZURQUIYAH *Chief Executive Officer and Director* First appointment: 2018 End of term of office: 2022[(a)]		X	X [(b)]		X [(c)]		X [(d)]	

Table 11 of the 2009–16 Financial Markets Authority Recommendation.

(a) Renewal as Director will be proposed at the 2022 General Meeting.

(b) The details of the supplementary pension plan are in section 4.2.2.1.B of this 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 2021, the amount corresponding to the expense borne by the Company under this scheme represents €12,341 for Sophie ZURQUIYAH.

(c) The details of the indemnities due owing to departure from the Group are in section 4.2.2.1.B of this Document.

(d) The details of the indemnities due for non-compete commitments are in section 4.2.2.1.B of this Document.

4.2.3 Remuneration elements paid or allocated for 2021 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 2021 financial year to executive corporate officers, presented below, will be submitted to the vote of the shareholders, by separate resolutions for each person concerned, at the 2022 General Meeting.

A. Remuneration elements paid or allocated for 2021 financial year to 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	In accordance with the 2021 remuneration policy applicable to the Chairman of the Board of Directors approved by the Shareholders' meeting of May 12, 2021, Philippe Salle received a fixed annual remuneration of €170,000 for his duties as Chairman of the Board of Directors (unchanged since 2018).
Annual variable remuneration	Not applicable	Not applicable	Philippe SALLE does not receive any variable remuneration.
Deferred variable remuneration	Not applicable	Not applicable	Philippe SALLE does not receive any deferred variable remuneration.
Multi-annual variable remuneration (cash)	Not applicable	Not applicable	Philippe SALLE does not receive any multi-annual variable remuneration.
Exceptional remuneration	Not applicable	Not applicable	Philippe SALLE does not receive any exceptional remuneration.

Remuneration elements put to the vote	Amounts paid for the Year-End	Amount allocated for the Year-End or Accounting valuation	Information
Stock options, performance shares, and any other long-term remuneration element	Not applicable	Not applicable	Philippe SALLE does not receive any allocation of stock options or performance shares.
Remuneration allocated to Directors	€70,000 (for 2020 fiscal year)	€72,000 (for 2021 fiscal year)	On April 26, 2018, the Board of Directors decided that Philippe 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 remuneration policy applicable to the Board of Directors approved by the Shareholders' meeting of May 12, 2021, Philippe SALLE received, for the year 2021, a fixed amount of €72,000, including €2,000 of travel indemnity.
Valuation of benefits of any kind	Not applicable	Not applicable	Philippe SALLE does not benefit from any benefit in kind.
Severance pay	Not applicable	Not applicable	Philippe SALLE is not entitled to any severance pay.
Non-compete indemnity	Not applicable	Not applicable	Philippe SALLE is not entitled to any non-compete indemnity.
General Benefits plan	Not applicable	€750	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 to Philippe 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 2021, the amount corresponding to the expense borne by the Company under this plan represents €750 for Philippe SALLE.
Supplementary pension plan	Not applicable	Not applicable	Philippe SALLE does not benefit from a supplementary pension plan.

B. Remuneration elements paid or allocated for 2021 financial year to 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 Sophie 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 2021.
Annual variable remuneration *(Payment of the annual variable remuneration is subject to approval by the 2022 General Meeting under the conditions provided for in Article L. 22-10-34, II of the French Commercial Code)*	€210,000 (for 2020 fiscal year)	€778,260 (for 2021 fiscal year)	Sophie 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 meeting of March 4, 2021. **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: – strategic plans management (40% weighting); – Group organization and human resources management (20% weighting); – Group's operational performance (20% weighting); – HSE/Sustainable development (20% weighting). On the basis of fulfilling the above qualitative and quantifiable criteria and the financial statements for the year 2021, and upon recommendation of the Appointment, Remuneration and Governance Committee, the Board of Directors, at its meeting of March 3, 2022, set this variable remuneration at €778,260. This payment corresponds to an overall fulfilment rate of 123.53% 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 Sophie ZURQUIYAH). Payment of this remuneration will be subject to the approval by the 2022 General Meeting.
Deferred variable remuneration	Not applicable	Not applicable	Sophie ZURQUIYAH does not receive any deferred variable remuneration.
Exceptional remuneration	Not applicable	Not applicable	Sophie ZURQUIYAH did not receive any exceptional remuneration in 2021.
Remuneration allocated to Directors	Not applicable	Not applicable	Sophie ZURQUIYAH does not receive any remuneration allocated to Directors.

Remuneration elements put to the vote	Amounts paid for the Year-End	Amount allocated for the Year-End or Accounting valuation	Information
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 Sophie ZURQUIYAH of the general compulsory benefits plan of the Group applicable to all employees. This commitment was ratified by the General Meeting of May 15, 2019 For 2021, the amount corresponding to the expense borne by the Company under this scheme represents €4,502 for Sophie ZURQUIYAH.
International medical insurance	Not applicable	€24,628	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 Sophie ZURQUIYAH. This commitment was ratified by the General Meeting of May 15, 2019 For 2021, the amount corresponding to the expense borne by the Company under this contract is €24,628 (US$29,277 converted in euros on the basis of an average conversation rate for the year 2021 of 0,8412).
Valuation of benefits in kind (company car)	Not applicable	€9,600	The Board of Directors, at its meeting of April 26, 2018, decided that for her duties as Chief Executive Officer, Sophie 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.
Valuation of benefits of any kind (unemployment insurance)	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, authorized the conclusion of an individual unemployment insurance plan with the GSC for the benefit of Sophie ZURQUIYAH. This guarantee provides for the payment of a maximum percentage of 14.36% of Sophie ZURQUIYAH's target remuneration in 2021 (i.e. €180,998) over a period of 12 months. This commitment was ratified by the General Meeting of May 15, 2019
Remuneration allocated to Directors	Not applicable	Not applicable	Sophie ZURQUIYAH does not receive any remuneration allocated to the Directors.
Multi-annual variable remuneration (cash)	Not applicable	Not applicable	No multi-annual variable remuneration plan was implemented by the Company during the 2021 financial year.

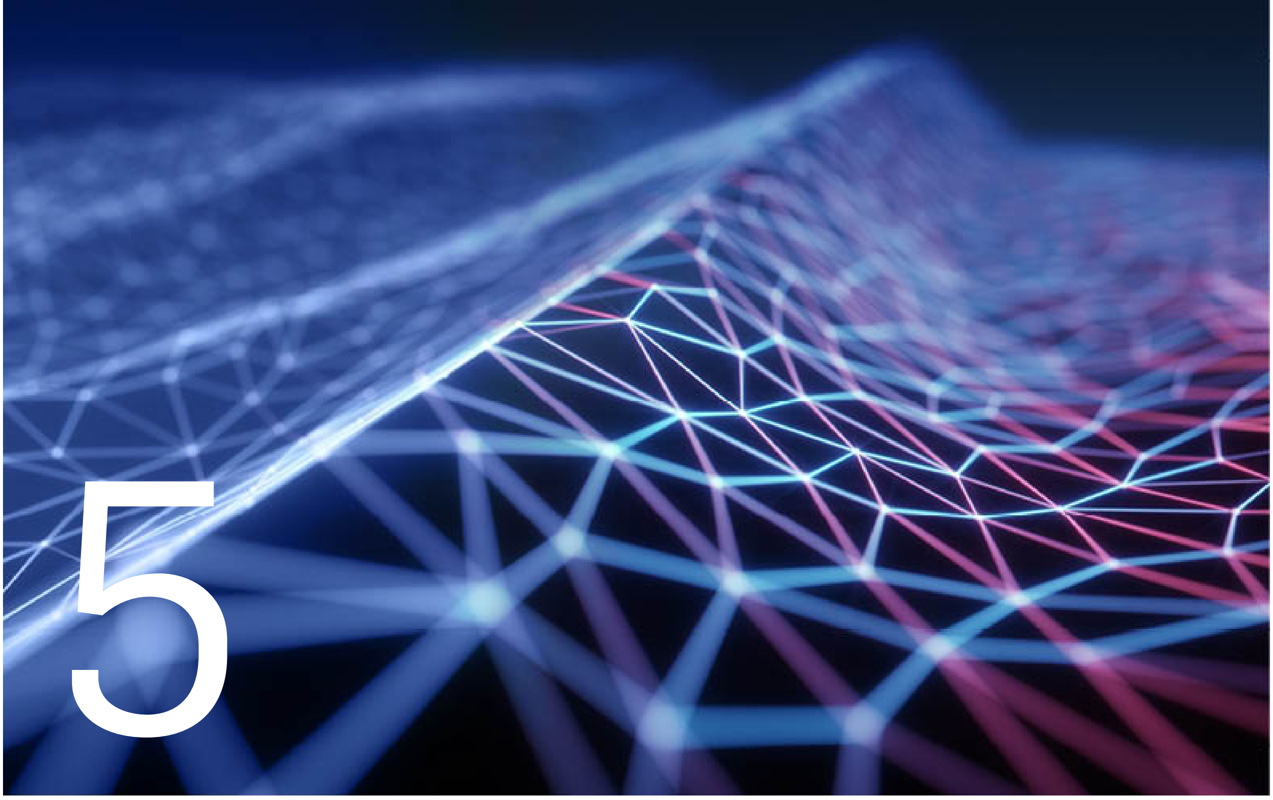
Remuneration elements put to the vote	Amounts paid for the Year-End	Amount allocated for the Year-End or Accounting valuation	Information

Stock options, performance shares, and any other long-term remuneration element
(Valuation according to the method used for the consolidated accounts for the 2021 financial year)
		Stock options: €95,700	During its meeting of June 24, 2021, and on the basis of the 17th resolution of the General Meeting held on June 16, 2020, the Board of Directors allocated 330,000 stock options to Sophie ZURQUIYAH, i.e. 0.046% 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 2024 (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 conditions 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 €0.91, 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 section 4.2.2.1.B of this Document.

		Performance shares: €232,400	During its meeting of June 24, 2021, 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 Sophie 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 2024 (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 2023 (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 section 4.2.2.1.B of this Document.

Remuneration elements put to the vote	Amounts paid for the Year-End	Amount allocated for the Year-End or Accounting valuation	Information
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, authorized the extension to Sophie 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 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 2021, the amount corresponding to the expense borne by the Company under this plan represents €12,341 for Sophie ZURQUIYAH. This commitment was ratified by the General Meeting of May 15, 2019
Contractual termination indemnity	No amount paid to Sophie ZURQUIYAH for the 2021 financial year	No amount allocated to Sophie ZURQUIYAH for the 2021 financial year	The Board of Directors meeting on April 26, 2018, following the appointment of office by 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 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: 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 characterized 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 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.

Remuneration elements put to the vote	Amounts paid for the Year-End	Amount allocated for the Year-End or Accounting valuation	Information
			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 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 to 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 signed 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 Sophie ZURQUIYAH for the 2021 financial year	No amount allocated to Sophie ZURQUIYAH for the 2021 financial year	Sophei 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 Sophie 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.



OPERATING AND FINANCIAL REVIEW

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.

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.

Beyond the core, we leveraged on our technologies and expertise to address the fast growing markets of Digital Sciences and Energy Transition.

In Digital Sciences, we focused on our long-standing leadership in digital technology, especially as applied to geoscience, to develop an integrated expert solution including the hardware platform, middleware and sofware services that are required to cost effectively support advanced cloud-based High-Performance Computing (HPC) workflows and data transformation services. In this platform, we notably propose data, algorithm and software as a service (DaaS/SaaS) on our CGG cloud.

In the Energy Transition, we propose services and technologies dedicated to Carbon Capture Utilization and Storage (CCUS), Geothermal, Environmental Sciences and Minerals and Mining. CCUS, which represents a substantial submarket, is one of the key enablers to reduce carbon footprint. Many energy companies are planning significant CCUS projects and increasingly incorporate this technology in their development. Low carbon energy, such as hydrogen, will also require long term storage and monitoring. To be successful, these new businesses require a detailed understanding of the subsurface, domain where CGG excels, through its advanced geoscience and digital science technologies and its global earth data library.

Equipment

This operating segment comprises our manufacturing and sales activities for geophysical equipment used for data seismic acquisition, both on land and marine. Additionally, its unique portfolio of industry leading sensor technology allows to bring the benefits of its advanced sensor technology to the fast growing Monitoring and Observation market, from structural health monitoring (SHM) to monitoring solutions for energy transition (CCUS notably) and environment. The Equipment segment carries out its activities through our subsidiary Sercel.

Please refer to section 1.1.4 for a discussion about our beyond the core activities.

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;
- 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

With the strengthened macro-environment, the demand for oil and gas continued its strong recovery in 2021, leading to a full recovery in oil and gas prices. Many observers believe they will remain high going forward. Indeed, the development of renewable energy will be a long process and will require significant investments. Oil and, especially, gas will remain thus at the core of the energy mix during all the energy transition journey to meet the increasing worlwide energy demand and finance the progressive transformation of the portofolio of energy companies.

While it is still difficult to predict the energy outlook, we anticipate, in line with recent industry analyses, the E&P sector to enter into a positive upcycle from 2022 onwards with market recovery expected to further accelerate in 2023, supported notably by the resumption of licensing rounds in core mature basins. After two years of underinvestment, we expect our clients to keep on focusing on increasing production from existing reservoirs and on near field exploration. We believe that we are fundamentally well positioned in these domains with our high-end technologies as key enablers to increase the effectiveness of our clients' projects, while meeting their ESG objectives.

Beyond the core, we developed in 2021 a range of new technologies and solutions, leveraging on our expertise and long-time leading capabilities, to adress current market trends and accompany our traditional and new client base in their energy transition challenges. These Beyond the Core new businesses adressing the fast expanding markets of Digital Sciences, Energy Transition and Monitoring and Observation solutions are expected to contribute significantly to the growth of the activities of the Group in the coming years. These Beyond the Core new businesses amounted for about 5% of our operating revenues in 2021.

After a soft first half of the year 2021, due to delays mostly affecting our Multi-Client activity, the expected rebound materialized in the second half of the year. We confirmed the anticipated trends of *(i)* gradual recovery in Geoscience activity, *(ii)* sustained demand for our data library located in the world's most active basins and *(iii)* a pick-up in Equipment deliveries. We extended our leadership and technology differentiation and reinforced our market share, which puts us in an advantageous position as demand for our products and services continues to increase.

The Group pursued the implementation of restructuring measures in continuing operations to adjust to the new baseline. These measures have negatively impacted the statement of cash flows by US$18 million in 2021.

The Group benefited from government incentives in certain countries where it operates, triggering a positive cash impact of US$5 million in the period, including deferrals of tax and social contributions.

Impairment, non-recurring and restructuring items

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.

In 2021, in continuing operations, the Group recorded a non-recurring net charge of US$125 million in its statement of operations, with (i) US$132 million of impairment loss including US$102 million loss of goodwill for our Multi-Client CGU, US$21 million loss on our multi-client library and US$10 million loss on the net book value of our buildings subject to IFRS 16, and (ii) US$7 million gain of non-recurring cash costs including US$4 million gain on severance costs provisonned in 2020 and US$3 million gain on tangible asset proceeds mainly.

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 2021 consolidated annual 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, 2021.

Our significant accounting policies are fully described in note 1 to our 2021 consolidated annual financial statements.

5

5.1.1 Significant events, acquisitions and divestures

Year 2021 was still impacted by the difficult health situation. The roll-out of the vaccination has supported the progressive economic recovery. In this context CGG recorded the following significant events in 2021:

- on January 12, 2021, CGG accepted Rasmussengruppen's binding offer to buy all the Shearwater shares owned by CGG group;
- on April 1, 2021, CGG completed the settlement of tender offer and redemption of Existing Notes and issued New Senior Secured Notes due 2027;
- on June 30, 2021, CGG sold its Multi-Physics business to Xcalibur;
- on October 1, 2021, CGG finalized the sale of its GeoSoftware activity to Topicus and Vela Software;
- on December 31, 2021, CGG has completed the sale of the physical storage and associated services of its Smart Data Solutions business to OASIS and Access.

Please refer to Note 2 to our 2021 consolidated annual financial statements for further details on 2021 significant events.

5.1.2 Twelve months ended December 31, 2021 compared to twelve months ended December 31, 2020

Unless otherwise specified, comparisons made in this section are between the twelve months ended December 31, 2021 and the twelve months ended December 31, 2020. References to 2021 correspond to the twelve months ended December 31, 2021 and references to 2020 correspond to the twelve months ended December 31, 2020.

Operating revenues

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

	Year ended December 31,						Increase/(Decrease)	
	2021			2020 (restated)			2021 vs. 2020	
In millions of US$	Segment Figures	IFRS 15 adjustment	As reported	Segment Figures	IFRS 15 adjustment	As reported	Segment Figures	As reported
Geoscience	309.5	-	309.5	328.3	-	328.3	(6)%	(6)%
Multi-Client Data	276.2	120.8	397.0	339.7	(69.2)	270.5	(19)%	47%
GGR Revenues	**585.7**	**120.8**	**706.5**	**668.0**	**(69.2)**	**598.8**	**(12)%**	**18%**
Equipment Revenues	**356.5**	**-**	**356.5**	**290.7**	**-**	**290.7**	**23%**	**23%**
Eliminated revenues and others	(0.8)	-	(0.8)	(3.5)	-	(3.5)	(77)%	(77)%
TOTAL OPERATING REVENUES	**941.4**	**120.8**	**1,062.2**	**955.2**	**(69.2)**	**886.0**	**(1)%**	**20%**

Our consolidated operating revenues as reported, following the application of IFRS 15, increased by 20% to US$1,062 million in 2021 from US$886 million in 2020. The moderate decline in Geoscience revenue was more than compensated by the increase in Multi-Client Data and Equipment revenues.

Before IFRS 15 adjustments, our consolidated operating revenues decreased by 1% to US$941 million in 2021 from US$955 million in 2020, with Equipment segment largely offsetting declines in other business lines. The respective contributions from the Group's businesses to our segment operating revenues were 62% from GGR and 38% from Equipment.

GGR

Operating revenues as reported from our GGR segment increased by 18% to US$707 million in 2021 compared to US$599 million in 2020. Before IFRS 15 adjustments, GGR segment revenues decreased by 12% to US$586 million from US$668 million in 2020. The main drivers regarding the change in operating revenues are detailed below.

Geoscience

Operating revenues as reported from Geoscience was down 6% year-on-year to US$309 million in 2021 from US$328 million in 2020. After decreasing due to market conditions and reaching an inflection point in the first quarter, the activity grew in the second quarter and confirmed its recovery in the second half of the year, driven by a global increase in demand for best resolution imaging of the subsurface.

The market remains solid worldwide driven by our client's focus on near-field exploration, production optimization and increasing interest in new fields development.

Multi-Client Data

Multi-Client Data revenues as reported increased by 47% to US$397 million in 2021 compared to US$271 million in 2020, with major delivery in October 2021 of marine Nebula area A program offshore Brazil started in 2019. Before IFRS 15 adjustments, Multi-Client Data segment revenues decreased by 19% to US$276 million from US$340 million in 2020.

Prefunding revenues as reported strongly increased by 89% to US$271 million in 2021 from US$144 million in 2020. Excluding IFRS 15 adjustment, prefunding revenue of our multi-client projects reached US$150 million, down 29% from US$213 million in 2020, commensurate with the reduction in our multi-client cash capex at US$168 million from US$239 million in 2020, with two marine streamer programs, one in Brazil and one in the Norwegian North Sea as well as five reprocessing projects. The cash-prefunding rate was at 89% as in 2020.

After-sales revenues remained stable at US$126 million in 2021 compared to US$127 million in 2020.

Equipment

Total revenues for our Equipment segment (including internal and external sales) strongly increased by 23% to US$357 million in 2021 from US$291 million in 2020 mainly driven by the high level of Marine equipment sales (GPR nodes).

External revenues for our Equipment segment increased by 24% to US$356 million in 2021 from US$287 million in 2020. Internal sales represented less than 1% of total revenues in 2021 compared to 1% in 2020:

- Land equipment sales represented 63% of total revenues in 2021, compared to 74% in 2020, up 3% year-on-year however. Land equipment sales were US$223 million in 2021 from US$216 million in 2020 as we delivered recording systems and vibrators in various geographies (China, Russia and North Africa) and for large mega-crews in Saudi Arabia.
- Marine equipment sales represented 28% of total revenues in 2021 compared to 17% in 2020, a 102% increase in sales to US$101 million in 2021 from US$50 million in 2020. During the year, Sercel delivered on schedule 18,000 GPR300 nodes for the shallow water seismic acquisition market in the Middle East region.
- Downhole equipment sales remain stable at US$15 million in 2021 compared to US$14 million in 2020.
- Non-oil & gas sales strongly increase by 55% to US$17 million in 2021 from US$11 million in 2020 with the first commercial project for a S-scan rail track monitoring solution.

Operating expenses

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

	Year ended December 31,				Increase/(Decrease)	
	2021		2020 (restated)		2021 vs. 2020	
In millions of US$	Segment Figures	As reported	Segment Figures	As reported	Segment Figures	As reported
Operating revenues	941.4	1,062.2	955.2	886.0	(1)%	20%
Costs of Operations	(755.9)	(853.2)	(787.3)	(726.5)	(4)%	17%
% of operating revenues	*(80)%*	*(80)%*	*(82)%*	*(82)%*		
Gross Margin	**186.3**	**209.8**	**168.6**	**160.2**	**10%**	**31%**
% of operating revenues	*20%*	*20%*	*18%*	*18%*		
Research and Development	(17.0)	(17.0)	(18.6)	(18.6)	(9)%	(9)%
% of operating revenues	*(2)%*	*(2)%*	*(2)%*	*(2)%*		
Marketing and Selling	(29.9)	(29.9)	(32.5)	(32.5)	(8)%	(8)%
% of operating revenues	*(3)%*	*(3)%*	*(3)%*	*(4)%*		
General and Administrative	(62.9)	(62.9)	(67.9)	(67.9)	(7)%	(7)%
% of operating revenues	*(7)%*	*(6)%*	*(7)%*	*(8)%*		
Other incomes (expenses)	(125.1)	(123.2)	(214.5)	(214.5)	(42)%	(43)%
Operating income	**(48.7)**	**(23.2)**	**(164.9)**	**(173.3)**	**(71)%**	**(87)%**
% of operating revenues	*(5)%*	*(2)%*	*(17)%*	*(20)%*		

As a percentage of operating revenues as reported, cost of operations as reported decreased slightly to 80% in 2021 from 82% in 2020. Excluding IFRS 15 adjustments, segment cost of operations, as a percentage of the segment operating revenues, was also 80% in 2021 from 82% in 2020.

Excluding impairment loss, the amortization cost of our multi-client library as reported corresponded to 66% of the Multi-Client Data revenues as reported in 2021 compared to 68% in 2020. Excluding impairment loss and IFRS 15 adjustments, the segment amortization cost of our multi-client library decreased to 59% of the Multi-Client Data segment revenues in 2021 compared to 72% in 2020, mainly due to a more favorable sales mix.

Gross profit as reported increased by 31% to US$210 million in 2021 from US$160 million in 2020, representing 20% and 18% of operating revenues, respectively, as a result of the factors discussed above. Segment gross profit was US$186 million in 2021, representing 20% of segment operating revenues compared to 18% in 2020.

Research and development costs decreased by 9% in 2021 compared to 2020, mainly as a consequence of cost reduction measures and sale of our GeoSoftware business.

Marketing and selling expenses and general and administrative expenses decreased in 2021 by 8% and 7% respectively compared to 2020, mainly due to the impact of support cost reduction measures, despite the less favorable foreign exchange rate environment (the average exchange rate was set as US$1.19 per euro in 2021 compared to US$1.14 per euro in 2020).

Other expenses of US$123 million in 2021 were mainly composed of US$102 million impairment loss of goodwill for our Multi-Client CGU associated with US$21 million of impairment loss on offshore multi-client library.

Operating income

Operating income as reported amounted to a US$23 million loss in 2021 as a result of the factors described above, compared to a loss of US$173 million in 2020. Excluding IFRS 15 adjustments, segment operating income was a loss of US$49 million in 2021 compared to a loss of US$165 million in 2020.

Segment operating income from our GGR segment was a loss of US$21 million in 2021 as activity recovery was partly compensated by impairment losses in respect of goodwill and the offshore data library of our Multi-Client CGU. This result is to be compared with a loss of US$130 million in 2020, strongly impacted by charges booked to reduce the Group's cost structure and including US$98 million of data library impairment loss.

Segment operating income from our Equipment segment was a positive US$5 million in 2021, marking the arrival of the equipment market recovery, after the loss of US$11 million in 2020, which reflected the drop in the equipment market triggered by the pandemic.

Financial income and expenses

Net cost of financial debt in 2021 was US$121 million, compared to US$134 million in 2020, benefiting from more attractive interest rate and eliminating capitalized interest obligations thanks to issuance of new Senior Secured Notes due 2027.

Other financial income and expenses amounted to a loss of US$42 million in 2021, mainly related to the refinancing costs and including US$26 million of transaction fees and US$14 million of call premium for anticipated reimbursement of the Existing First Lien notes. (*Please refer to note 23 to our 2021 consolidated annual financial statements.)* In 2020, other financial income and expenses were a loss of US$39 million, including US$47 million of loss on fair value re-measurement related to other financial assets and liabilities linked to the Marine Acquisition exit transaction.

Income taxes

Income taxes as reported amounted to an income of US$4 million in 2021, including current income tax expense of US$8 million and deferred tax profit of US$12 million mainly resulting from deferred tax asset remeasurement of US$13 million in United Kingdom. This compares to an expense of US$29 million in 2020.

Please refer to note 24 of our 2021 consolidated annual financial statements

Net Income from continuing operations

Net income from continuing operations as reported was a loss of US$182 million in 2021 compared to a loss of US$408 million in 2020 as a result of the factors discussed above.

Net Income from discontinued operations

Operating revenues for Contractual Data Acquisition decreased by 53% to US$19 million in 2021 from US$39 million in 2020, with the sale of Multi-Physics business on June 30, 2021.

Net income from discontinued operations amounted to a gain of US$2 million in 2021 compared to a loss of US$29 million in 2020 which was mainly due to our gradual exit from this segment as part of our CGG 2021 Plan. *Please refer to note 5 to our 2021 consolidated annual financial statements.*

Net income

Net income as reported was a loss of US$180 million in 2021 compared to a loss of US$437 million in 2020.

Statutory financial statements of CGG SA

The turnover of CGG SA amounted to €29 million in 2021, compared to €17 million in 2020, up by €12 million thanks to an optimized contribution of the subsidiaries to the expenses borne by the parent company.

Operating income posted a loss of €30 million in 2021, compared to €17 million in 2020. Operating income was strongly impacted in 2021 by €22 million in debt refinancing costs (recognized in operating expenses under French accounting standards).

The 2021 financial result showed a profit of €250 million compared to a loss of €929 million in 2020 mainly linked to *(i)* dividends received from subsidiaries for €232 million, *(ii)* a reversal of a provision of €484 million following the sale of shares in CGG Marine Resources Norge AS, *(iii)* a reversal of provisions of €33 million following the sale of Shearwater shares and *(iv)* the constitution of a provision allowance on shares of subsidiaries in the amount of €433 million. Interest expenses and income are up compared to last year. They relate to the company's net financial debt. Since the refinancing carried out in April 2021, all the Group's debt is now issued by CGG SA.

Exceptional income and expenses for 2021 amounted to €(514) million corresponding mainly to the net disposal of CGG Marine Resources Norge AS for €(481) million and the net disposal of Shearwater GS for €(47) million (we received €22 million against a net book value of €(69) million).

Net income tax was a credit of €4 million in 2021 because of French tax group benefits, compared to a tax credit of €7 million in 2020.

Net income was a loss of €291 million compared to a net loss of €1,076 million in 2020, resulting from the above factors.

The shareholders' equity as of December 31, 2021 amounted to €0.5 billion including the net loss for the period, compared to €0.8 billion as of December 31, 2020.

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 the restructuring costs and other expenses of the “CGG 2021 Plan” as well as our debt service obligations.

With the refinancing completed on April 1, 2021, we do not have any major debt repayment scheduled before 2027, the maturity date of our new 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, 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.

Going concern assumptions

As of December 31, 2021, 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:

	Year ended December 31,	
In millions of US$	**2021**	**2020 (restated)**
Net cash before changes in working capital	421.6	299.5
Change in working capital	(84.9)	(35.2)
NET CASH PROVIDED BY OPERATING ACTIVITIES	**336.7**	**264.3**

Before changes in working capital, net cash as reported provided by operating activities in 2021 was US$422 million compared to US$300 million in 2020, mainly due to the increase in activity. Changes in working capital had a negative effect of US$85 million in 2021. This change mainly resulted from our multi-client survey delivery cycle and, to a lesser extent the year-end sales in Geoscience, and was partially compensated by the good cash collection stream, mostly due to our Equipment segment deliveries, and reduction in inventories. Excluding IFRS 15 adjustments, changes in working capital had a positive impact on cash from operating activities of US$36 million.

Net cash provided by operating activities was US$337 million in 2021 compared to US$264 million in 2020.

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, 2021	2020 (restated)
Net cash used in investing activities	**138.8**	**289.6**
Of which		
Industrial capital expenditures	*29.0*	*23.2*
Capitalized development costs	*29.6*	*40.9*
Multi-client Data	*168.3*	*239.0*
Proceeds and Acquisitions	(89.3)	-

The net cash used in investing activities decreased to net amount of US$139 million in 2021 compared to US$290 million in 2020. Excluding the sale of our Smart Data Solutions and GeoSoftware businesses for respective cash inflows less cost to sell of US$11 million and US$82 million, the net cash used in investing activities was mainly impacted by the decrease of Multi-Client Data investments (US$71 million). In 2021, we conducted two marine streamer programs, one in the Norwegian North Sea and one in Brazil, as well as five reprocessing projects.

As of December 31, 2021, the net book value of our multi-client data library as reported was US$393 million compared to US$492 million as of December 31, 2020. Excluding IFRS 15 adjustments, the segment net book value of our multi-client data library was US$283 million as of December 31, 2021, compared to US$285 million as of December 31, 2020.

Financing activities

Net cash used by financing activities was US$218 million in 2021 compared to a net cash used of US$148 million in 2020, the variation was mainly associated to the net cash outflow related to the refinancing of our Existing First Lien and Existing Second Lien Notes (excluding accrued interests to the date of refinancing).

Please refer to note 2 to our 2021 consolidated annual financial statements

Net cash flows from discontinued operations

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

In millions of US$	Year ended December 31, 2021	2020 (restated)
Net cash flow incurred by discontinued operations	(35.0)	(72.5)

Please refer to note 5 to our 2021 consolidated annual financial statements for more information.

Net financial debt

Net financial debt as of December 31, 2021 was US$989 million compared to US$1,004 million as of December 31, 2020. The ratio of net financial debt to equity was 103% as of December 31, 2021 compared to 90% as of December 31, 2020.

"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, 2021 and December 31, 2020:

	Year ended December 31,	
In millions of US$	**2021**	**2020 (restated)**
Bank overdrafts	-	0.2
Current portion of financial debt	90.3	58.6
Financial debt	1,218.1	1,330.3
Gross financial debt	**1,308.4**	**1,389.1**
Less cash and cash equivalents	(319.2)	(385.4)
NET FINANCIAL DEBT	**989.2**	**1,003.7**

Cash and cash equivalents included trapped cash amounting to US$37 million as at December 31, 2021, compared to US$49 million as at December 31, 2020. 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 (unaudited)

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 because it captures the contribution to our results of the significant businesses that we manage through our joint ventures.

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 from continuing operations for the periods indicated:

	Year ended December 31, 2021		
In millions of US$	Segment Figures	IFRS 15 adjustments	As reported
EBITDAs	**344.1**	**120.8**	**464.9**
Depreciation and amortization	(225.7)	-	(225.7)
Multi-client surveys impairment and amortization	(186.2)	(95.3)	(281.5)
Depreciation and amortization capitalized to Multi-client surveys	17.3	-	17.3
Share-based compensation expenses	1.8	-	1.8
Operating income	**(48.7)**	**25.5**	**(23.2)**
Share of (income) loss in companies accounted for under equity method	0.1	-	0.1
EBIT	**(48.6)**	**25.5**	**(23.1)**
Cost of financial debt, net	(120.5)		(120.5)
Other financial income (loss)	(42.4)		(42.4)
Total income taxes	4.4		4.4
NET INCOME FROM CONTINUING OPERATIONS	**(207.0)**	**25.5**	**(181.6)**

	Year ended December 31, 2020 (restated)		
In millions of US$	Segment Figures	IFRS 15 adjustments	As reported
EBITDAs	**360.1**	**(69.2)**	**290.9**
Depreciation and amortization	(193.5)	-	(193.5)
Multi-client surveys impairment and amortization	(345.6)	60.8	(284.8)
Depreciation and amortization capitalized to Multi-client surveys	18.1	-	18.1
Share-based compensation expenses	(4.0)	-	(4.0)
Operating income	**(164.9)**	**(8.4)**	**(173.3)**
Share of (income) loss in companies accounted for under equity method	(31.8)	-	(31.8)
EBIT	**(196.7)**	**(8.4)**	**(205.1)**
Cost of financial debt, net	(134.1)	-	(134.1)
Other financial income (loss)	(39.4)	-	(39.4)
Total income taxes	(29.3)	-	(29.3)
NET INCOME FROM CONTINUING OPERATIONS	**(399.5)**	**(8.4)**	**(407.9)**

In millions of US$	Year ended December 31, 2021 Segment Figures	IFRS 15 adjustments	As reported
GGR	334.4	120.8	455.2
Equipment	40.4		40.4
Non-Operated Resources	-		-
Eliminations and other	(30.7)		(30.7)
EBITDAs	**344.1**	**120.8**	**464.9**

In millions of US$	Year ended December 31, 2020 (restated) 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	(22.0)		(22.0)
EBITDAs	**360.1**	**(69.2)**	**290.9**

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 inflows of US$19 million in 2021 compared to outflows of US$247 million in 2020. Net cash flow before net cash flow incurred by Discontinued Operations represented inflows of US$54 million in 2021, compared to outflows of US$174 million in 2020.

In millions of US$	Year ended December 31, 2021 2021	2020 (restated)
Net cash flow provided by operating activities	336.7	264.3
Total capital expenditures (including variation of fixed assets suppliers, excluding Multi-client surveys)	(58.6)	(64.1)
Investments in Multi-client surveys, net cash	(168.3)	(239.0)
Proceeds from disposals of tangible and intangible assets	3.7	0.5
Acquisition of investments, net of cash & cash equivalents acquired	(2.0)	(0.4)
Proceeds from divestment of activities and sale of financial assets	89.3	-
Variation in subsidies for capital expenditures	0.3	-
Lease repayments	(57.0)	(55.5)
Financial expenses paid	(89.8)	(80.2)
Net cash flow before net cash flows incurred by Discontinued Operations	**54.3**	**(174.4)**
Net cash flows incurred by Discontinued Operations	(35.0)	(72.5)
NET CASH FLOW	**19.3**	**(246.9)**

Contractual obligations, commitments and contingencies

The following table sets forth our future cash obligations (not discounted) as of December 31, 2021:

In millions of US$	Payments due by period Less than 1 year	1-3 years	4-5 years	After 5 years	Total
Long-term debt obligations:					
Financial debt	-	0.5	0.9	1,163.9	1,165.3
Other long-term obligations (cash interest)	96.9	193.8	191.5	43.8	526.0
Total Long-term debt obligations	**96.9**	**194.3**	**192.4**	**1,207.7**	**1,691.3**
Lease obligations	75.1	46.2	7.3	6.6	135.2
TOTAL CONTRACTUAL CASH OBLIGATIONS [(a) (b)]	**172.0**	**240.5**	**199.7**	**1,214.3**	**1,826.5**

(a) Payments in other currencies are converted into US dollar at December 31, 2021 exchange rates.
(b) These amounts are principal amounts and do not include any accrued interest.

Please refer to note 17 for more information, including a discussion of our Capacity Agreement (and the Idle Vessel Compensation arrangements thereunder) and our Step-In Agreements.

Capacity Agreement and Idle Vessels Compensation

On January 8, 2020, CGG and Shearwater signed a Capacity Agreement, which is a marine data acquisition service contract, under the terms of which, as indicated in note 2 to our 2021 consolidated annual financial statements, 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$(22) million. At December 31, 2021 the residual commitment in respect of Idle Vessel Compensation through to the end of the five-year period was US$(66) million.

Step-In Agreements

As indicated in note 17 to our 2021 consolidated annual financial statements, 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 17, 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$28 million all the Shearwater shares held by CGG SA, including those acquired through Eidesvik exercising its put option.

Please refer to note 2, and note 14 to our 2021 consolidated annual 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 2021 consolidated annual 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 Brazilian reais, Chinese yuan, Norwegian kroner, British pounds, Canadian dollars, and Australian dollars.

As of December 31, 2021, we estimate our net annual recurring expenses in euros at the Group level to be approximately €180 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 and our shareholders' equity by approximately US$18 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 2021 consolidated annual financial statements.

Interest rates

Since the refinancing exercise in 2021, CGG Group's sources of financing have consisted largely of secured bonds at fixed interest rates. Only our US$100 million revolving credit facility and our financial assets are subject to variable interest rates. As a result, the Group's financial expenses are exposed to limited interest rate risk.

For more information about our variable interest rate exposure, please refer to note 14 to our 2021 consolidated annual 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

Our turnover is mainly denominated in US dollars, representing respectively 66% in 2021 and 68% in 2020 of our total turnover and to a significantly lesser extent in euro, Brazilian reais, Chinese yuan, British pounds, Norwegian kroner, Australian dollars and Canadian dollars.

Most of our expenses in 2021 were paid in US dollars, euro, Brazilian reais and Chinese yuan, British pounds, Norwegian kroner.

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 euros, due to personnel costs payable in euros 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 euros.

Since the 2021 refinancing, a large portion of the group indebtedness is denominated in euros. As of December 31, 2021 and 2020, our total outstanding debt (without giving effect to the adoption of IFRS 16) denominated in US dollars was US$509 million and US$752 million, respectively, representing 43% and 62% of our total financial debt outstanding at such dates.

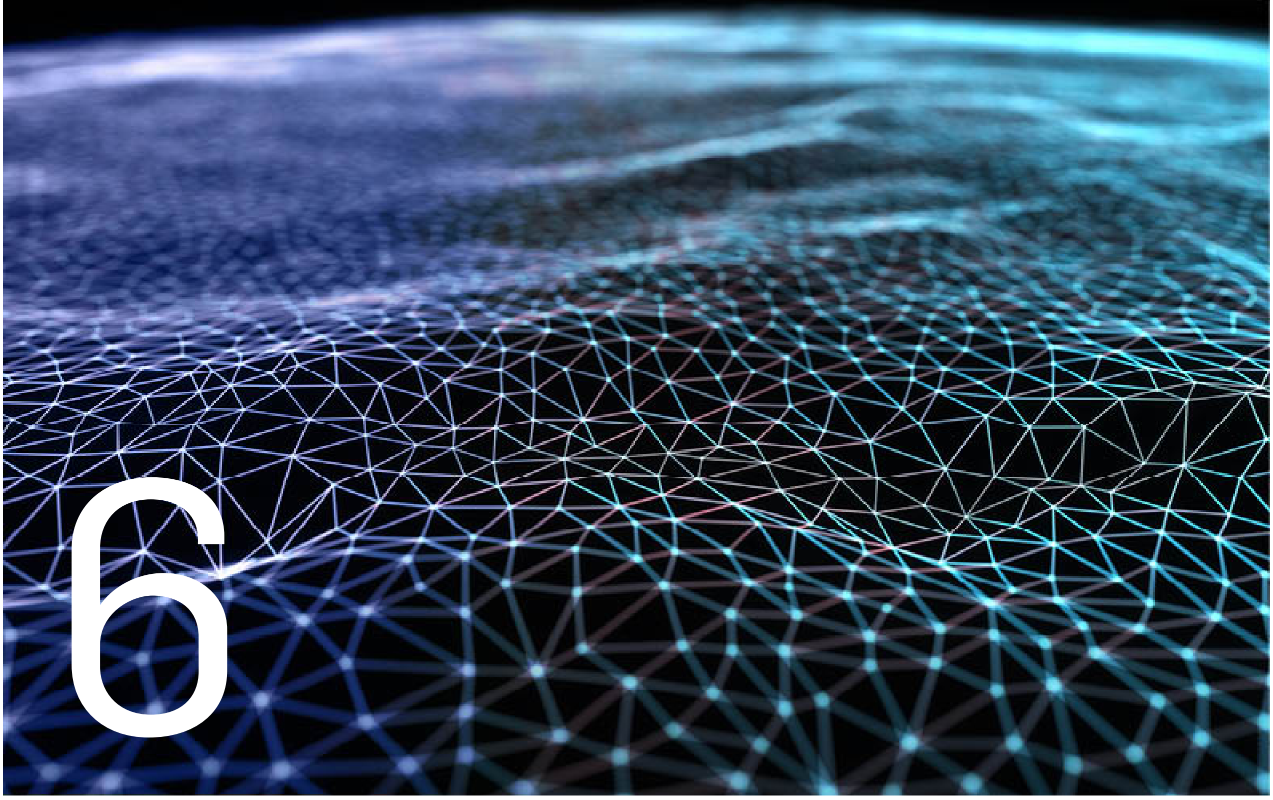
As of December 31, 2021, forward contracts were outstanding for the US dollar equivalent of US$70.6 million (of which US$31.3 million were applied), of which US$21.0 million were against the euro, €12.8 million were against the Chinese yuan, €1,4 million were against the British pound, and US$33.4 million were against the Brazilian reais.

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 the euro, €1.6 million were against the Chinese yuan, and US$17.5 million were against the 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**
2021					
Non-current assets	2,188.0	1,402.9	283.1	(1,992.1)	1,881.9
Financial debt	1,219.6	93.3	14.3	(18.8)	1,308.4
Cash and cash equivalents	191.9	72.7	54.6	-	319.2
Dividends paid to CGG SA	-	97.4	170.4	(267.8)	-
Operating revenues	34.5	684.0	356.6	(12.9)	1,062.2
Operating income	(634.8)	(220.5)	6.2	825.9	(23.2)
Net income (loss) from continuing operations	(334.7)	(293.5)	11.0	435.7	(181.6)
Total equity	825.2	641.5	753.3	(1,213.6)	1,006.4
Personnel	14	1,937	1,361	-	3,312
2020					
Non-current assets	3,198.9	2,727.6	287.9	(4,068.1)	2,146.3
Financial debt	623.0	892.1	11.7	(138.0)	1,388.8
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)	(320.1)	(9.1)	312.6	(173.3)
Net income (loss) from continuing operations	127.7	(500.3)	(2.1)	(33.2)	(407.9)
Total equity	2,743.3	1,442.1	864.7	(3,885.5)	1,164.6
Personnel	17	2,444	1,429	-	3,890



2021 FINANCIAL STATEMENTS - FINANCIAL INFORMATION ON THE COMPANY'S ASSETS, FINANCIAL POSITON AND RESULTS

6.1 2020-2021 CGG CONSOLIDATED FINANCIAL STATEMENTS

6.1.1 Consolidated statement of operations

		Year	
In millions of US$	**Notes**	**2021**	**2020 Restated [b]**
Operating revenues	18, 19	1,062.2	886.0
Other income from ordinary activities		0.8	0.7
Total income from ordinary activities		**1,063.0**	**886.7**
Cost of operations		(853.2)	(726.5)
Gross profit		**209.8**	**160.2**
Research and development expenses – net	20	(17.0)	(18.6)
Marketing and selling expenses		(29.9)	(32.5)
General and administrative expenses		(62.9)	(67.9)
Other revenues (expenses) – net	21	(123.2)	(214.5)
Operating income	**19**	**(23.2)**	**(173.3)**
Cost of financial debt – gross		(121.5)	(136.3)
Income from cash and cash equivalents		1.0	2.2
Cost of financial debt – net	**22**	**(120.5)**	**(134.1)**
Other financial income (loss)	23	(42.4)	(39.4)
Income (loss) before income taxes and share of income (loss) from companies accounted for under the equity method		**(186.1)**	**(346.8)**
Income taxes	24	4.4	(29.3)
Net income (loss) before share of net income (loss) from companies accounted for under the equity method		**(181.7)**	**(376.1)**
Net income (loss) from companies accounted for under the equity method	8	0.1	(31.8)
Net income (loss) from continuing operations		**(181.6)**	**(407.9)**
Net income (loss) from discontinued operations [a]	5	1.6	(28.9)
Consolidated net income (loss)		**(180.0)**	**(436.8)**
Attributable to:			
Owners of CGG	$	(180.5)	(440.5)
Non-controlling interests	$	0.5	3.7
Weighted average number of shares outstanding	29	711,526,474	710,739,746
Weighted average number of shares outstanding adjusted for dilutive potential ordinary shares	29	711,526,474	710,739,746
Net income (loss) per share			
- Base	$	(0.25)	(0.62)
- Diluted	$	(0.25)	(0.62)
Net income (loss) from continuing operations per share			
- Base	$	(0.25)	(0.58)
- Diluted	$	(0.25)	(0.58)
Net income (loss) from discontinued operations per share [a]			
- Base	$	-	(0.04)
- Diluted	$	-	(0.04)

(a) *See note 5 for more information regarding the impact of IFRS 5 "Non-current assets held for sale and discontinued operations".*

(b) *In accordance with IFRS 5 "Non-current Assets Held for Sale and Discontinued Operations", financial information was restated to present comparative amounts for each period presented following the reclassification of our stake in a joint-venture to continuing operations. See notes 2 and 5.*

The accompanying notes are an integral part of the consolidated financial statements.

Consolidated statement of comprehensive income (loss)

In millions of US$	Year 2021 [a]	Year 2020 [a] Restated [b]
Net income (loss) from consolidated statement of operations	**(180.0)**	**(436.8)**
Other comprehensive income to be reclassified in profit (loss) in subsequent period:		
Net gain (loss) on cash flow hedges	(0.1)	-
Variation in translation adjustments	(25.8)	20.3
Net other comprehensive income to be reclassified in profit (loss) in subsequent period (1)	**(25.9)**	**20.3**
Other comprehensive income not to be classified in profit (loss) in subsequent period:		
Net gain (loss) on actuarial changes on pension plan	8.7	(6.8)
Net other comprehensive income not to be reclassified in profit (loss) in subsequent period (2)	**8.7**	**(6.8)**
Total other comprehensive income (loss) for the period, net of taxes (1)+(2)	**(17.2)**	**13.5**
Total comprehensive income (loss) for the period	**(197.2)**	**(423.3)**
Attributable to:		
Owners of CGG	(198.7)	(429.7)
Non-controlling interests	1.5	6.4

(a) Including other comprehensive income related to discontinued operations which is not material.

(b) In accordance with IFRS 5 "Non-current Assets Held for Sale and Discontinued Operations", financial information was restated to present comparative amounts for each period presented following the reclassification of our stake in a joint-venture to continuing operations. See notes 2 and 5.

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	12.31.2021	12.31.2020 Restated [c]
ASSETS			
Cash and cash equivalents	28	319.2	385.4
Trade accounts and notes receivable, net	3, 18	350.7	325.0
Inventories and work-in-progress, net	4	197.3	237.8
Income tax assets		68.7	84.6
Other current financial assets, net	2, 7, 14	1.7	13.7
Other current assets, net	4	105.1	92.0
Assets held for sale, net [a]	5	-	92.7
Total current assets		**1,042.7**	**1,231.2**
Deferred tax assets	24	19.6	10.3
Investments and other financial assets, net	7	17.8	13.6
Investments in companies accounted for under the equity method	8	28.1	28.6
Property plant & equipment, net	9	212.1	268.1
Intangible assets, net	10	520.7	639.2
Goodwill, net	11	1,083.6	1,186.5
Total non-current assets		**1,881.9**	**2,146.3**
TOTAL ASSETS		**2,924.6**	**3,377.5**
LIABILITIES AND EQUITY			
Bank overdrafts	13	-	0.2
Financial debt – current portion	13	90.3	58.6
Trade accounts and notes payable		76.4	96.7
Accrued payroll costs		105.4	106.6
Income taxes payable		30.4	56.8
Advance billings to customers		27.1	19.5
Provisions – current portion	16	18.2	52.7
Other current financial liabilities	14	19.2	34.4
Other current liabilities	12	218.2	278.4
Liabilities associated with non-current assets held for sale [a]	5	-	13.0
Total current liabilities		**585.2**	**716.9**
Deferred tax liabilities	24	14.1	16.3
Provisions – non-current portion	16	30.6	51.8
Financial debt – non-current portion	13	1,218.1	1,330.3
Other non-current financial liabilities	14	37.4	53.2
Other non-current liabilities	12	32.8	44.4
Total non-current liabilities		**1,333.0**	**1,496.0**
Common stock [b]	15	8.7	8.7
Additional paid-in capital		464.1	1,687.1
Retained earnings		570.0	(480.6)
Other Reserves		5.0	(37.3)
Treasury shares		(20.1)	(20.1)
Cumulative income and expense recognized directly in equity		(0.8)	(0.7)
Cumulative translation adjustments		(64.2)	(37.4)
Equity attributable to owners of CGG SA		**962.7**	**1,119.7**
Non-controlling interests		43.7	44.9
Total Equity		**1,006.4**	**1,164.6**
TOTAL LIABILITIES AND EQUITY		**2,924.6**	**3,377.5**

(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: 1,191,470,305 shares authorized and 711,663,925 shares with a nominal value of €0.01 outstanding at December 31, 2021.*
(c) *In accordance with IFRS 5 "Non-current Assets Held for Sale and Discontinued Operations", financial information was restated to present comparative amounts for each period presented following the reclassification of our stake in a joint-venture to continuing operations. See notes 2 and 5.*

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 2021	2020 Restated [b]
OPERATING ACTIVITIES			
Consolidated net income (loss)	1, 19	**(180.0)**	(436.8)
Less: Net income (loss) from discontinued operations	5	(1.6)	28.9
Net income (loss) from continuing operations		**(181.6)**	**(407.9)**
Depreciation, amortization and impairment	1, 19, 28	225.7	193.5
Impairment and amortization of Multi-Client surveys	1, 10, 28	281.5	284.8
Amortization and depreciation of Multi-Client surveys, capitalized	10	(17.3)	(18.1)
Variance on provisions		(37.7)	15.9
Share-based compensation expenses		(1.8)	4.0
Net (gain) loss on disposal of fixed and financial assets		(2.7)	0.5
Share of (income) loss in companies recognized under equity method		(0.1)	31.8
Dividends received from companies accounted for under the equity method		-	-
Other non-cash items		42.4	39.3
Net cash flow including net cost of financial debt and income tax		**308.4**	**143.8**
Less: Cost of financial debt		120.5	134.1
Less: Income tax expense (gain)		(4.4)	29.3
Net cash flow excluding net cost of financial debt and income tax		**424.5**	**307.2**
Income tax paid		(2.9)	(7.7)
Net cash flow before changes in working capital		**421.6**	**299.5**
Changes in working capital		(84.9)	(35.2)
– Change in trade accounts and notes receivable		(97.3)	39.0
– Change in inventories and work-in-progress		28.8	(25.9)
– Change in other current assets		3.2	(2.8)
– Change in trade accounts and notes payable		(23.4)	(1.6)
– Change in other current liabilities		3.8	(43.9)
Net cash flow from operating activities		**336.7**	**264.3**
INVESTING ACTIVITIES			
Total capital expenditures (tangible and intangible assets) net of variation of fixed assets suppliers and excluding Multi-Client surveys)	9	(58.6)	(64.1)
Investments in Multi-Client surveys	10	(168.3)	(239.0)
Proceeds from disposals of tangible and intangible assets		3.7	0.5
Acquisition of investments, net of cash & cash equivalents acquired	8	(2.0)	(0.4)
Proceeds from divestment of activities and sale of financial assets	2, 28	89.3	-
Variation in subsidies for capital expenditures		0.3	-
Variation in other non-current financial assets	28	(3.2)	13.4
Net cash-flow used in investing activities		**(138.8)**	**(289.6)**

In millions of US$	Notes	Year 2021	2020 Restated [b]
FINANCING ACTIVITIES			
Repayment of long-term debt	2, 13, 28	(1,227.5)	(5.2)
Total issuance of long-term debt	2, 13, 28	1,162.3	-
Lease repayments	13, 28	(57.0)	(55.5)
Change in short-term loans		(0.2)	0.1
Financial expenses paid	13, 28	(89.8)	(80.2)
Loan granted	5	(1.8)	-
Dividends paid and share capital reimbursements			
– to owners of CGG		-	-
– to non-controlling interests of integrated companies		(3.6)	(7.2)
Net cash-flow from (used in) financing activities		**(217.6)**	**(148.0)**
Effect of exchange rate changes on cash		(10.5)	20.7
Net cash flows incurred by discontinued operations [a]	**5**	**(36.0)**	**(72.5)**
Net increase (decrease) in cash and cash equivalents		**(66.2)**	**(225.1)**
Cash and cash equivalents at beginning of year		385.4	610.5
Cash and cash equivalents at end of period		319.2	385.4

(a) See note 5 for more information regarding the impact of IFRS 5 "Non-current assets held for sale and discontinued operations".

(b) In accordance with IFRS 5 "Non-current Assets Held for Sale and Discontinued Operations", financial information was restated to present comparative amounts for each period presented following the reclassification of our stake in a joint-venture to continuing operations. See notes 2 and 5.

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 [(b)]	Other Reserves	Treasury shares	Income and expense recognized directly in equity	Cumulative translation adjustment	CGG SA - Equity attributable to owners of CGG SA	Non-controlling interests	Total Equity
Balance at January 1, 2020 Restated [(a)]	**709,956,358**	**8.7**	**3,184.7**	**(1,532.4)**	**(23.5)**	**(20.1)**	**(0.7)**	**(56.3)**	**1,560.4**	**45.7**	**1,606.1**
Net gain (loss) on actuarial changes on pension plans (1)				(6.8)					(6.8)		(6.8)
Net gain (loss) on cash flow hedges (2)											-
Net gain (loss) on 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)				(440.5)					(440.5)	3.7	(436.8)
Comprehensive income (1)+(2)+(3)+(4)		**-**	**-**	**(447.3)**	**-**	**-**	**-**	**17.6**	**(429.7)**	**6.4**	**(423.3)**
Exercise ofwarrants	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
Year ended 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**

(a) In accordance with IFRS 5 "Non-current Assets Held for Sale and Discontinued Operations", financial information was restated to present comparative amounts for each period presented.

(b) Following the reclassification of Argas from non-current assets held for sale to continuing operations, it resulted in a negative impact of US$1.3 million in the equity at the opening and US$1.3 million of positive impact in the net income of the year

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-controlling interests	Total Equity
Balance at January 1, 2021	**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**
Net gain (loss) on actuarial changes on pension plans (1)				8.7					8.7		8.7
Net gain (loss) on cash flow hedges (2)							(0.1)		(0.1)		(0.1)
Net gain (loss) on translation adjustments (3)								(26.8)	(26.8)	1.0	(25.8)
Other comprehensive income (1)+(2)+(3)		**-**	**-**	**8.7**	**-**	**-**	**(0.1)**	**(26.8)**	**(18.2)**	**1.0**	**(17.2)**
Net income (4)				(180.5)					(180.5)	0.5	(180.0)
Comprehensive income (1)+(2)+(3)+(4)		**-**	**-**	**(171.8)**	**-**	**-**	**(0.1)**	**(26.8)**	**(198.7)**	**1.5**	**(197.2)**
Exercise ofwarrants	6,162								0.0		0.0
Dividends									0.0	(3.6)	(3.6)
Cost of share-based payment	265,380			(0.6)					(0.6)		(0.6)
Transfer to retained earnings of the parent company			(1,223.0)	1,223.0					0.0		0.0
Variation in translation adjustments generated by the parent company					42.3				42.3		42.3
Changes in consolidation scope and other									0.0	0.9	0.9
Year ended December 31, 2021	**711,663 ,925**	**8.7**	**464.1**	**570.0**	**5.0**	**(20.1)**	**(0.8)**	**(64.2)**	**962.7**	**43.7**	**1,006.4**

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 S.A. ("the Company"), along with its subsidiaries (together, the "Group") is a global geoscience technology leader. Employing around 3,300 people worldwide, CGG provides a comprehensive range of data, products, services and solutions that support our clients to more efficiently and responsibly solve complex natural resource, environmental and infrastructure challenges.

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, 2021 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, 2021.

The consolidated financial statements for the year ending December 31, 2021 were authorized for issue by the Board of Directors on March 3, 2022 and will be submitted to the 2022 General Meeting 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, 2020, except for the first-time adoption of the following standards, amendments, and interpretations:

- amendments to IFRS 9, IAS 39, IFRS 7, IFRS 4 and IFRS 16: Interest Rate Benchmark Reform – Phase 2;
- proposed amendments to IFRS 16 Leases: "Covid-19 Related Rent Concessions beyond 30 June 2021".

These newly-adopted standards and interpretations have no impact on the consolidated financial statements.

The Group has not applied the following Standards, Amendments, and Interpretations adopted by the European Union at the date of issuance of these consolidated financial statements:

- Amendments to IFRS 3 Business Combinations; IAS 16 Property, Plant and Equipment; IAS 37 Provisions, Contingent Liabilities and Contingent Assets as well as Annual Improvements.

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 IAS 1 "Presentation of Financial Statements" and IFRS Practice Statement 2: Disclosure of Accounting policies;
- amendments to IAS 8 "Accounting policies, Changes in Accounting Estimates and Errors: Definition of Accounting Estimates";
- amendments to IAS 12 "Income Taxes": Deferred Tax related to Assets and Liabilities arising from a Single Transaction.

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.

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 2021, gain in respect of discontinued operations of US$1.6 million. *See note 5*	At December 31, 2021, all of the Contractual Data businesses have been sold or wind down, with the exception of the interest in the Argas joint venture in Saudi Arabia reclassified as continuing operations. *See notes 2 and 5*	Net cash flows incurred of US$(36.0) million of which US$(8.4) million was severance cash outflows and US$(21.9) million was cash outflows in respect of Idle Vessel Compensation, presented under discontinued operations in 2021. *See note 5*
Continuing operations **Divestment of activities and assets** Sale of GeoSoftware and Smart Data Solutions activities	In 2021, the net result from continuing operations was impacted by US$1.8 million due to the divestment of GeoSoftware and by US$(1.4) million for the sale of Smart Data Solutions. *See note 2*	At December 31, 2021, a net receivable of US$3.7 million from the sale of GeoSoftware and US$1.3 million from the sale of the Smart Data Solutions business. *See notes 2 and 5*	A net cash inflows respectively of US$81.6 million for the sale of GeoSoftware and US$10.2 million for the sale of Smart Data Solutions businesses. *See notes 5 and 28*
Continuing operations Refinancing	In 2021, the net result from continuing operations was impacted by US$(13.8) million of call premium and US$(25.9) million of transactions costs. *See note 23*	At December 31, 2021, gross financial debt was US$(1.3) billion. *See note 13*	Net proceed resulting from the refinancing was a net cash outflow of US$(96.7) million. *See note 2*
Continuing operations Segment figures	In 2021, Segment Revenue of US$941.4 million. Segment Operating Income of US$(48.7) million. Segment EBITDAs of US$344.1 million. *See note 19*	At December 31, 2021, the capital employed were US$1.5 billion and US$0.6 billion respectively for our GGR and Equipment segments. *See note 19*	Segment EBITDAs of US$344.1 million. Capital expenditures from continuing operations of US$(226.9) million. *See note 19*
Continuing operations Redundancy costs and Impairment	In 2021, the net result from continuing operations included a loss of US$(129.4) million, broken down into US$4.0 million of severance costs and US$(133.4) million of impairment. *See notes 2 and 21*	US$(2.5) million in respect of the redundancy provision. *See note 16*	Net cash flows of US$(17.9) million in respect of redundancy plan. *See note 2*

1.3 Consequences on IFRIC decisions

IFRIC May 2021 "Attributing Benefit to Periods of Service"

In April 2021, the IFRS Interpretation Committee sent the IAS Board a proposal to modify the way of calculating the obligations relating to certain defined benefit plans. The IASB validated this agenda decision in early June 2021 and concluded that IAS 19 already allowed this interpretation.

The impact is not material.

IFRIC March 2021 "Configuration or Customisation Costs in a Cloud Computing Arrangement"

The IFRS Interpretation Committee has clarified the recognition of configuration and customization costs for software used in SaaS arrangement, in accordance with IAS 38.

This decision has no impact on the Group's accounts.

1.4 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	Trajectory and recovery outlook of E&P spending New businesses growth dynamic 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

1.5 Significant accounting principles

1. Basis of consolidation

Our consolidated financial statements include CGG SA and all its subsidiaries.

Subsidiaries are fully consolidated from the date of acquisition, being the date on which we obtain control. They continue to be consolidated until the date when such control ceases. Control is achieved when we are exposed or have rights to variable returns from our involvement with the investee and have the ability to affect those returns through our power over the investee. When we have less than a majority of the voting or similar rights of an investee, we consider all relevant facts and circumstances in assessing whether we have power over the investee, including contractual arrangements with the other holders or potential voting rights.

The financial statements of the subsidiaries are prepared for the same reporting period as the parent company, using consistent accounting policies. All intra-group balances, transactions, unrealized gains and losses resulting from intra-group transactions and dividends are eliminated in full.

Losses within a subsidiary are attributed to the non-controlling interest even if that results in a deficit balance. A change in the ownership interest of a subsidiary, without a loss of control, is accounted for as an equity transaction.

We use the equity method for investments classified as joint venture. A joint venture is a joint arrangement whereby the parties that have joint control of the arrangement have rights to the net assets of the arrangement. The Group effectively owns companies under joint arrangements under which control of the business is shared by virtue of a contractual agreement. Key financial and operational activities require the unanimous consent of the parties sharing control.

2. Foreign currencies

The Group's consolidated financial statements are presented in US dollars. This currency reflects the profile of our revenues, costs and cash flows, which are primarily generated in US dollars, thus providing the best representation of the Group's financial performance.

The functional currency is the currency in which the subsidiaries primarily conduct their business. The functional currency of most of our subsidiaries is the US dollar. Goodwill attributable to subsidiaries is accounted for in the functional currency of the applicable entities.

For the subsidiaries with a functional currency different to US dollar, the financial statements are translated to US dollars using the following method:

- year-end exchange rates are applied to the statement of financial position;
- average annual exchange rates are applied to consolidated statement of operations;
- adjustments resulting from this process are recorded in translation adjustments.

With respect to affiliates accounted for using the equity method, the effects of exchange rate changes on the net assets of the affiliates are recorded under translation adjustments in equity.

Transactions denominated in currencies other than the functional currency are recorded at the exchange rate prevailing on the date of the transaction. Monetary assets and liabilities denominated in foreign currencies are revalued at year-end exchange rates. Any resulting gains and losses are included directly in income. Unrealized exchange gains and losses arising from monetary assets and liabilities for which settlement in neither planned nor likely to occur in the foreseeable future are recorded in a separate component of shareholder's equity.

3. Business combinations

Business combinations are accounted for using the acquisition method. The cost of an acquisition is measured at the fair value of the consideration transferred at the acquisition date. Goodwill is measured as the difference between (i) the value of the consideration transferred, the amount of any non-controlling interest and, if applicable, the fair value of the previously-held equity interest, and (ii) the fair value of the identifiable assets acquired and liabilities assumed. For each business combination, we measure the non-controlling interest in the acquiree either at fair value or at the proportionate share in the recognized amounts of the acquiree's identifiable net assets. Acquisition costs incurred are expensed and included in administrative expenses.

After initial recognition, goodwill is measured at cost less any accumulated impairment losses. For the purposes of impairment testing, goodwill acquired in a business combination is allocated to each of the Group's cash-generating units (or group of cash generating units) that are expected to benefit from the combination, irrespective of whether other assets or liabilities of the acquiree are assigned to those units.

Where goodwill forms part of a cash-generating unit and part of the operation within that unit is disposed of, the goodwill associated with the operation disposed of is included in the carrying amount of the operation when determining the gain or loss on disposal of the operation. Goodwill disposed of in this circumstance is measured based on the relative values of the operation disposed of and the portion of the cash-generating unit retained.

4. Operating revenues

Revenues from contracts with customers are recognized using the five-step model of the IFRS 15 standard. The following provides a description of the main nature of our performance obligations broken down by business line, the timing of their satisfaction, and detail on the transaction prices and their allocations, if applicable.

GGR

Geoscience contracts

Under our Geoscience contracts, we process seismic data for a specific customer. These contracts may encompass one or several performance obligations. For each performance obligation, we recognize the revenues over time as the services are rendered. The measure of revenue recognized is based on the time spent over the total time expected to satisfy the performance obligation. The balance of revenue recognized that has not yet been invoiced to the clients is recorded as an unbilled revenue, i.e. as a contract asset. When the services have been invoiced but have not yet been rendered under the percentage of completion method, the Group recognizes deferred revenues, i.e. a contract liability.

We also recognize revenue related to the sale of software upon delivery of the software and of the access code/key as the case may be, to the client. Software maintenance revenues are recognized over the term of the contract. Where a contract provides for both the sale and maintenance of software, the price allocation is based on the stand-alone selling price of each service and the software revenue is recognized upon delivery, while the maintenance revenue is recognized over the term of the contract. In most cases, we issue only one invoice, issued upon license delivery, and the amount corresponding to maintenance is recorded as deferred revenues, i.e. as a contract liability, at invoicing.

We also provide geological consulting services or training for specific customers. We recognize the revenues over time as the services are rendered.

We provide licenses to use geological data to several clients. We recognize the revenue upon delivery of the data to the client.

In addition, we provide licenses to access dynamic geological databases for a specific duration. We recognize the revenue related to such licenses over the duration of the contract. In most cases, only one invoice is issued for such contracts at the beginning of the year and the total amount is recorded as deferred revenues, as a contract liability, at invoicing.

Multi-Client after sales contracts and prefunding contracts

Pursuant to our Multi-Client contracts, we provide non-exclusive licenses to use seismic processed data to several clients. We recognize the revenue upon delivery of the data to the client.

In certain cases, significant after sales agreements contain multiple deliverable elements, and the associated revenues are allocated to the various elements based on specific objective evidence of the stand-alone sale price for such elements, regardless of any separate allocations stated within the contract for each element.

In certain circumstances, revenues can also be recognized in respect of a performance obligation that has already been fulfilled in the past. This happens when a customer is already in possession of the license for certain data and either (i) the customer is taken-over by a competitor who does not yet have the license for such data (and is thus required to pay a transfer fee), or (ii) the customer involves another partner, not already having access to the licensed data, for the exploration of a block (farm-in, uplift). Revenues are then recognized when there is an agreement on the fee and, in the case of transfer fees, when the buyer notifies us that they will not return the data to the Group.

Equipment

We recognize revenues on equipment sales upon delivery to the customer, when control is transferred. When such contracts require a partial or total advance payment, such payments are recorded as advance billings to customers, as a contract liability.

Contractual Data Acquisition (classified as discontinued operations)

Pursuant the announcement of the new strategy for the Group in November 2018 and the ensuing actions undertaken, we have presented our contractual data acquisition operations in assets held for sale and discontinued operations, in accordance with IFRS 5.

Please refer to note 5 "Assets held for sale and discontinued operations".

5. Cost of net financial debt

Cost of net financial debt includes:

- the expenses related to long-term financial debt composed of bonds and other loans;
- interest expense on leases;
- other charges paid to financial institutions for financing operations;
- net income from cash and cash equivalents.

6. Income taxes and deferred taxes

Income taxes includes all tax based on taxable profit.

Deferred taxes are recognized on all temporary differences between the carrying value and the tax value of assets and liabilities, as well as on carry-forward losses. Deferred tax assets are recognized only when their recovery is considered as probable or when there are existing taxable temporary differences, of an appropriate type, that reverse in an appropriate period. When tax laws limit the extent to which unused tax losses can be recovered against future taxable profits in each year, the amount of deferred tax assets recognized from unused tax losses as a result of suitable existing taxable temporary differences is restricted as specified by the tax law.

Deferred tax assets and deferred tax liabilities are not discounted.

7. Intangible and tangible assets

In accordance with IAS 16 "Property, Plant and equipment" and IAS 38 "Intangible assets" only items for which cost can be reliably measured and for which the future economic benefits are likely to flow to us are recorded in our consolidated financial statements.

Property, plant and equipment

Property, plant and equipment are valued at historical cost less accumulated depreciation and impairment losses. Depreciation is generally calculated over the following useful lives:

- equipment and tools: 3 to 10 years;
- vehicles: 3 to 5 years;
- buildings for industrial use: 20 years;
- buildings for administrative and commercial use: 20 to 40 years.

Depreciation expense is determined using the straight-line method.

Residual value is excluded from our calculation of the depreciable amount. We segregate tangible assets into their separate components if there is a significant difference in their expected useful lives, and depreciate them accordingly.

Lease agreements

IFRS 16 standard requires that almost all leases be recognized on the consolidated statement of financial position, as the distinction between operating and finance leases is removed for lessees. Under the new standard, both a right-of-use asset (the right to use the leased asset) and an associated liability (corresponding to the minimum lease payments) must be recognized. The right-of-use asset is depreciated on a straight-line basis over the term of the lease. The lease liability, which is initially measured at the present value of lease payments over the term of the lease, is accreted using the interest rate implicit in the lease when that rate is easily determined, or at the incremental borrowing rate. The only exemptions are for short-term leases and leases of low-value assets, and the Group has decided to use them both. Moreover, initial direct costs were not taken into account for the measurement of the right-of-use asset at the date of first-time application from January 1, 2019, the date of first-time application of IFRS 16.

The lease term to be applied for the measurement of lease assets and liabilities is the length of time the lessee is reasonably certain to pursue the lease. For legal purposes, the tacit extension period constitutes an extension of the initial lease, and is used to determine the initial lease term to be recognized when the lessee can reasonably anticipate that it will be in their interest to use said extension and/or the lessor cannot then give notice of termination without incurring a substantial penalty. In this case, the date applied is that on which the lessee is reasonably certain to end the lease after an extension past the initial contractual term date. When an event or significant change in circumstances on the lessee side gives rise to a tacit extension that was not initially anticipated, the lease term is remeasured to reflect the additional time during which the lessee is reasonably certain to pursue the lease.

The assumptions applied to determine the term of the lease are aligned with those applied in respect of the amortization period for non-reusable fixtures.

Goodwill

Goodwill is determined according to IFRS 3 "Revised – Business Combinations". Goodwill is not amortized but subject to an impairment test at least once a year at the statement of financial position dates or when a triggering event occurs.

Multi-Client surveys

Multi-Client surveys consist of seismic surveys to be licensed to customers on a non-exclusive basis. All costs of data acquisition, processing and finalization of surveys are recognized as intangible assets. Multi-Client surveys are valued on the basis of capitalized costs less accumulated amortization, or at recoverable 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 recoverable 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 included 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 (loss) for the year attributable to ordinary equity holders of the Company by the weighted average number of ordinary shares outstanding during the year.

When the net income (loss) for the year is a profit, a 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

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 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 for a total cash consideration of US$27.6 million. The transaction was completed on January 18, 2021 (the "completion date") and CGG received payment on January 20, 2021.

Those transactions were considered in the valuation of the corresponding asset and liability in CGG's 2020 consolidated financial statements as (i) US$13.7 million for Shearwater shares (*see note 7*) and (ii) US$(16.1) million for the Eidesvik Put Option (*see note 14*), hence there is no impact in the statement of operations at the completion date.

Issuance of Senior Secured Notes and Completion of Conditions for Settlement of Tender Offer and Redemption of Existing Notes

CGG entered into a refinancing process during the first quarter of 2021 (the "refinancing") with the aims of (i) normalizing the capital structure, (ii) extending debt maturity to manage long term cash needs and (iii) benefiting from more attractive interest rate and eliminating capitalized (PIK) interest obligations.

On April 1, 2021, CGG issued US$500 million in aggregate principal amount of 8.75% Senior Secured Notes due 2027 and €585 million in aggregate principal amount of 7.75% Senior Secured Notes due 2027 (together, the "2027 Notes"). The 2027 Notes are guaranteed on a senior secured basis by certain subsidiaries of CGG SA.

On April 1, 2021 CGG entered into a US$100 million Super Senior Revolving Credit Facility Agreement ("RCF"), secured by the same security package as the 2027 Notes. Interests are calculated according to the SOFR rate increased by a 5% margin, revisable downward depending on the Group rating and greenhouse gas emission reduction targets.

The issuance of the 2027 Notes was a condition to:

- the purchase of any and all of the validly tendered and not withdrawn existing first lien senior secured notes due 2023 (the "Existing First Lien Notes") by way of a tender offer (the "Tender Offer") launched on March 15, 2021 and which expired on March 29, 2021;
- the redemption of all Existing First Lien Notes not purchased in the Tender Offer; and
- the redemption of all its second lien senior secured notes due 2024 (the "Existing Second Lien Notes").

That condition has been satisfied. The proceeds from the issuance have been used, together with cash on hand, to:

- settle the Tender Offer;
- satisfy and discharge on April 1, 2021 and subsequently redeem on May 1, 2021 in full the Existing First Lien Notes that were not repurchased in the Tender Offer;
- satisfy and discharge on April 1, 2021 and subsequently redeem on April 14, 2021 in full the Existing Second Lien Notes; and
- pay all fees and expenses in connection with the foregoing.

On April 1, 2021, the value of the 2027 Notes was US$1,185.9 million using the exchange rate of US$1.1725 per €1.00.

The net proceed resulting from the refinancing was a net cash outflow, estimated at US$(96.7) million using the exchange rate of US$1.1725 per €1.00, as per the flow of funds shown below:

In millions of US dollar	**Flow of funds**
2027 Notes proceeds	1,185.9
Existing First Lien Notes principal repayment	(628.3)
Existing Second Lien Notes (including principal resulting from payment-in-kind (“PIK”) interest) principal repayment	(585.3)
Accrued interest from Existing Notes until redemption	(29.3)
First Lien Notes Call premium	(13.8)
Transaction costs	(25.9)
NET PROCEEDS	**(96.7)**

The transaction costs arising from the refinancing as well as the call premium in relation to the early repayment of the Existing First Lien Notes have been expensed without any portion capitalized and booked in other financial income and loss (*see note 23).*

Following the completion of the refinancing, CGG benefits from a normalized capital structure and more flexibility, with:

- the extension of maturity to 2027;
- liquidity enhancement through the revolving credit facility of US$100 million, maturing in 2025;
- the possibility to redeem up to 10% of the outstanding principal amount per year at a price of 103% during the first 3 years;
- and the reduction of the cost of debt by approximately 30% on a yearly basis, due to the elimination of PIK interest, with a blended interest rate of 8.17% per annum.

The 2027 Notes and RCF share the same security package encompassing notably the US multi-client library, the shares of the main Sercel entities, the shares of significant GGR operating entities, and certain intercompany loans.

Market environment

With the strengthened macro-environment, the demand for oil and gas continued its strong recovery in 2021, leading to a full recovery in oil and gas prices. Many observers believe they will remain high going forward. Indeed, the development of renewable energy will be a long process and will require significant investments. Oil and, especially, gas will remain thus at the core of the energy mix during all the energy transition journey to meet the increasing worldwide energy demand and finance the progressive transformation of the portfolio of energy companies.

While it is still difficult to predict the energy outlook, we anticipate, in line with recent industry analyses, the E&P sector to enter into a positive upcycle from 2022 onwards with market recovery expected to further accelerate in 2023, supported notably by the resumption of licensing rounds in core mature basins. After two years of underinvestment, we expect our clients to keep on focusing on increasing production from existing reservoirs and on near field exploration. We believe that we are fundamentally well positioned in these domains with our high-end technologies as key enablers to increase the effectiveness of our clients’ projects, while meeting their ESG objectives.

Beyond the core, we developed in 2021 a range of new technologies and solutions, leveraging on our expertise and long-time leading capabilities, to adress current market trends and accompany our traditional and new client base in their energy transition challenges. These Beyond the Core new businesses addressing the fast expanding markets of Digital Sciences, Energy Transition and Monitoring and Observation solutions are expected to contribute significantly to the growth of the activities of the Group in the coming years.

After a soft first half of the year 2021, due to delays mostly affecting our Multi-Client activity, the expected rebound materialized in the second half of the year. We confirmed the anticipated trends of *(i)* gradual recovery in Geoscience activity, *(ii)* sustained demand for our data library located in the world’s most active basins and *(iii)* a pick-up in Equipment deliveries. We extended our leadership and technology differentiation and reinforced our market share, which puts us in an advantageous position as demand for our products and services continues to increase.

The Group pursued the implementation of restructuring measures in continuing operations to adjust to the new baseline. These measures have negatively impacted the statement of cash flows by US$17.9 million in 2021.

The Group benefited from government incentives in certain countries where it operates, triggering a positive cash impact of US$5.0 million in the period, including deferrals of tax and social contributions.

Exit from Contractual Data Acquisition business - CGG 2021 Plan

Sale of the Multi-Physics business

Effective June 30, 2021 the Multi-Physics business, excluding its processing and multi-client library, was sold to Xcalibur Group, following receipt of approvals by the competent regulatory authorities.

Reclassification of our stake in Argas joint venture to continuing operations

The sale dynamic has been disrupted by events beyond the Group's control over the past two years, with the health crisis, the fall in oil price and the sharp reduction in E&P expenditure.

The management of CGG remains committed to sell but, in the current context, the sale of our stake seems unlikely within 12 months.

The margin arising from the sale of Sercel equipment to Argas for the share held by CGG were eliminated in the consolidated accounts on the date of their purchase and then gradually reversed following the amortization plan of the equipment. These margins have been frozen since Q4 2018 following the reclassification of Argas to assets held for sale. These margins were then reassessed when we reclassify our investment in Argas to continuing operations.

The consequences of the reclassification to continuing operations on the opening of the equity of 2020 was US$(1.3) million. The net result from our stake and the margin from the sale of equipment amount to US$(3.4) million in 2021 and US$1.3 million in 2020.

Other divestures

Smart Data Solutions

On December 31, 2021, CGG has completed the sale of the physical storage assets and associated services of its Smart Data Solutions business to OASIS and Access.

The net proceeds amount to US$(1.4) million in the consolidated income statement. Cash inflow less cost to sell amounts to US$10.2 million in the consolidated cash flow statement. US$1.3 million of net receivable remains to be collected.

GeoSoftware

On October 1, 2021, the sale of CGG's GeoSoftware business to Topicus and Vela Software for the total cash consideration of US$95 million was completed, subject to certain closing adjustments, mainly related to working capital adjustments.

The net proceeds amount to US$1.8 million in our 2021 consolidated statement of operations. Cash inflow less cost to sell amounts to US$81.6 million in the consolidated cash flow statement. Pursuant the agreed adjustments, a net receivable of US$3.7 million remains to be collected in respect of the sale.

Litigation

The Company and/or its subsidiaries can be involved in disputes and proceedings arising in the normal course of their business. To the best of the Company's knowledge, there are no pending or impending administrative, judicial or arbitration procedures that are likely to have, or have had over the last twelve-month period, any significant impact on the Group's financial position or profitability.

Legal proceedings related to the Safeguard Plan

Certain holders of convertible bonds ("Oceanes") due 2019 and 2020 lodged an appeal against the judgement dated December 1, 2017 approving the Safeguard Plan. The Appeals Court of Paris confirmed this judgment in a ruling dated May 17, 2018. By ruling dated February 26, 2020, the French Supreme Court rejected the appeal lodged by certain Oceanes bondholders against the ruling of the Appeals Court of Paris, thus 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 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.

Third opposition to the decision issued by the Commercial Court of Paris

On December 22, 2020, Mr. Jean Gatty in his capacity as former representative of each of the two bodies of OCEANE bondholders and JG Capital Management (a management company of JG Partners, itself a former holder of the Oceanes) of which he is the director, filed three third-party appeals against the decision dated November 24, 2020 which had acknowledged the anticipated completion of CGG's Safeguard Plan.

Further to Mr. Jean Gatty's withdrawal of his judicial proceedings, the Commercial Court of Paris rejected the third-party appeal by ruling (which is now final) dated May 7, 2021.

Criminal complaints

Furthermore, on February 2, 2021, CGG was informed that JG Capital Management also filed a criminal complaint seeking to call into question again the terms of the CGG's financial restructuring approved in 2017 under CGG's Safeguard Plan. The Company reminds this point regarding the differential treatment of creditors holding high yield bonds and Oceanes has been debated at length before various courts in a wholly transparent fashion.

On April 29, 2021, CGG filed a complaint for slanderous denunciation in connection with the complaint filed by JG Capital Management.

Writ of summons (Assignation / Recours en Révision)

On March 29, 2021, JG Capital Management issued a writ of summons to CGG before the Commercial Court of Paris in order to try and obtain, through an appeal for modifying an existing judgement ("*recours en révision*"), the cancellation of the judgment dated December 1, 2017, which approved the CGG Safeguard Plan. As of the date of the signature of this Document, the corresponding judicial proceedings are still ongoing.

Other events

Cybersecurity Incident Involving Third Party Supplier

CGG was the victim of a cybersecurity incident during the first quarter of 2021. The standalone server that was cyberattacked had limited use within CGG and was not used to transfer or store personal or commercially sensitive information.

There has been no operational or financial impact.

CGG takes information security very seriously and is thoroughly investigating the incident in collaboration with CGG's external security partners, to document full details, and identify any potential areas to further reduce future risks.

NOTE 3 TRADE ACCOUNTS AND NOTES RECEIVABLE

Analysis of trade accounts and notes receivable is as follows:

In millions of US$	December 31, 2021	2020
Trade accounts and notes receivable, gross – current portion	337.5	299.1
Less: allowance for doubtful accounts – current portion	(32.4)	(36.2)
Trade accounts and notes receivable, net – current portion	**305.1**	**262.9**
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	45.6	61.3
TOTAL TRADE ACCOUNTS AND NOTES RECEIVABLE	**350.7**	**325.0**

Allowances for doubtful accounts only relate to overdue receivables at the closing date.

As of December 31, 2021, 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
2021	191.0	41.9	14.8	8.0	2.2	47.2	305.1
2020	200.8	11.7	3.8	4.3	0.9	42.2	263.7

Litigation

ONGC Arbitration proceedings in India

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.

On March 3, 2021, the Court ordered and ONGC made a deposit of INR 2,686,439,944.00 to the Bombay High Court. This sum equivalent to approximately 36 million US dollars at March 2021 exchange rate, was placed by ONGC in Indian rupees in a specific account open at Canara Bank. 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, 2021.

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

Factoring agreements

There were no factoring agreements at December 31, 2021 and 2020.

NOTE 4 INVENTORIES, WORK IN PROGRESS AND OTHER CURRENT ASSETS

In millions of US$	December 31, 2021			December 31, 2020		
	Gross value	Valuation Allowance	Net value	Gross value	Valuation Allowance	Net value
Consumables and spares parts	1.2	–	1.2	0.2	–	0.2
Raw materials and sub-assemblies	72.4	(14.4)	58.0	77.7	(16.9)	60.8
Work in progress	123.3	(17.7)	105.6	157.2	(27.4)	129.8
Finished goods	50.4	(17.9)	32.5	80.6	(33.6)	47.0
INVENTORIES AND WORK IN PROGRESS	**247.3**	**(50.0)**	**197.3**	**315.7**	**(77.9)**	**237.8**

Variation of inventories and work in progress

VARIATION OVER THE PERIOD

In millions of US$	December 31, 2021	December 31, 2020
Balance at beginning of period	**237.8**	**200.1**
Variations	(51.8)	(4.6)
Movements in valuation allowance [(a)]	23.0	25.5
Translation adjustments	(12.8)	16.8
Change in consolidation scope	–	–
Other [(b)]	1.1	–
BALANCE AT END OF PERIOD	**197.3**	**237.8**

(a) Mainly concerns reversals of provisions for scrapped inventories by the Equipment segment.
(b) Related to the reclassification of finished goods to asset under construction by the Equipment segment.

Other current assets

In millions of US$	December 31, 2021	December 31, 2020
Personnel and other tax assets	51.1	51.0
Fair value of financial instruments	2.4	1.1
Restricted cash	10.2	9.2
Prepaid expenses	13.8	16.8
Supplier prepayments	8.8	5.8
Other receivables	18.8	8.1
OTHER CURRENT ASSETS	**105.1**	**92.0**

NOTE 5 ASSETS HELD FOR SALE AND DISCONTINUED OPERATIONS

Exit from Contractual Data Acquisition business - CGG 2021 Plan

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.

Exit from Marine Data Acquisition business

On January 2020, we achieved a key milestone on our strategic roadmap with the closing of our strategic partnership with Shearwater in Marine Data Acquisition with the signature of the Capacity Agreement, and thus the exit of seismic vessel operations.

Exit from Land Data Acquisition

The Land Data Acquisition business was fully shut down in 2020 and the remaining assets were sold.

Divestment of Multi-Physics business

Effective June 30, 2021, the Multi-Physics business, except its processing and multi-client library, has been sold to Xcalibur Group, following receipt of approvals by the competent regulatory authorities.

On July 9, 2021, the agreed one-year maturity degressive over time facility for a maximal amount €2.5 million, guaranteed by assets, was drawn for €1.5 million. This facility has not been repaid as of December 31, 2021 and has been accounted in other current financial assets, net.

Divestment from Seabed Geosolutions BV

The full divestment from Seabed is effective on April 1, 2020.

Reclassification of our stake in Argas joint venture to continuing operations

The sale dynamic has been disrupted over the past two years by events beyond the Group's control, the health crisis, the fall in oil price and the sharp reduction in E&P expenditure.

The management of CGG remains committed to sell but, in the current context, the sale of our stake seems unlikely within 12 next months.

The margin arising from the sale of Sercel equipment to Argas for the share held by CGG were eliminated in the consolidated accounts on the date of their purchase and then gradually reversed following the amortization plan of the equipment. These margins have been frozen since Q4 2018 following the reclassification of Argas to assets held for sale. These margins were then reassessed when we reclassify our investment in Argas to continuing operations.

The consequences of the reclassification to continuing operations (i) in our statement of comprehensive income amount to US$(3.4) million in 2021 and US$1.3 million in 2020 and (ii) on the opening of the equity of 2020 for US$(1.3) million.

GeoSoftware

On October 1, 2021, the sale of CGG's GeoSoftware business to Topicus and Vela Software for the total cash consideration of US$95 million was completed, subject to certain closing adjustments, mainly related to working capital adjustments.

The net proceeds amount to US$1.8 million in our 2021 consolidated statement of operations. Cash inflow less cost to sell amounts to US$81.6 million in the consolidated cash flow statement. Pursuant the agreed adjustments, a net receivable of US$3.7 million remains to be collected in respect of the sale.

GeoSoftware activity does not meet the criteria of a major line of business under IFRS 5, therefore this is not presented as discontinued operations in the consolidated statements of operations and in the consolidated statements of cash flows (hence triggering no retrospective change in presentation).

Smart Data Solutions

On December 31, 2021, CGG has completed the sale of the physical storage assets and associated services of its Smart Data Solutions business to OASIS and Access.

The transaction includes seven dedicated storage and service facilities, each holding client collections of records and subsurface rock and fluid samples. Access has acquired the three North American sites and OASIS the four European sites. Access and OASIS have a history of collaboration and, for global clients, will work together to continue the global service delivery.

The net proceeds amount to US$(1.4) million in the consolidated income statement. Cash inflow less cost to sell amounts to US$10.2 million in the consolidated cash flow statement. US$1.3 million of net receivable remains to be collected.

This business was classified as "assets held for sale". As it does not meet the criteria of a major line of business under IFRS 5, it was not presented as discontinued operations in the consolidated statements of operations.

Disaggregation of assets and liabilities

The fair value measurement of assets held for sale is categorized within Level 3 of the fair value hierarchy.

	December 31, 2021	December 31, 2020 Restated*
Intangible assets, net	-	77.0
Property. plant & equipment, net	-	1.5
Trade accounts and notes receivable, net	-	13.0
Other current assets, net	-	1.0
Other non-current assets, net	-	0.2
ASSETS HELD FOR SALE, NET	**-**	**92.7**
Trade accounts and notes payable	-	(2.6)
Accrued payroll costs	-	(3.7)
Other current liabilities	-	(6.3)
Other non-current liabilities	-	(0.4)
LIABILITIES DIRECTLY ASSOCIATED WITH THE ASSETS CLASSIFIED AS HELD FOR SALE	**-**	**(13.0)**
ASSETS (LIABILITIES) HELD FOR SALE, NET	**-**	**79.7**

* *In accordance with IFRS 5 "Non-current Assets Held for Sale and Discontinued Operations", financial information was restated to present comparative amounts for each period presented. Our stake in Argas was reclassified to Investments in companies accounted for under the equity method.*

The decrease of US$79.7 million on the Assets (Liabilities) held for sale, net over the period encompasses the following items:

(i) US$(80.0) million related to the divestment of GeoSoftware (*see note 2*);

(ii) US$(0.5) million in relation with the sale of a land asset; and

(iii) US$0.7 million following the divestment of our Multi-Physics business (*see note 2*).

Net income (loss) from discontinued operations

In millions of US$	Year 2021	2020 Restated*
Operating revenues	18.6	39.3
Operating expenses	(20.1)	(52.1)
Other revenues (expenses) – net	3.0	(3.3)
Operating income	**1.5**	**(16.1)**
Interest expense on leases	-	(0.1)
Other financial income (loss)	(0.9)	(14.0)
Income taxes	1.0	1.3
Share of (income) loss in companies formerly accounted under equity method	-	-
NET INCOME (LOSS) FROM DISCONTINUED OPERATIONS	**1.6**	**(28.9)**

* *In accordance with IFRS 5 "Non-current Assets Held for Sale and Discontinued Operations", financial information was restated to present comparative amounts for each period presented. US$(33.6) million related to our stake in Argas joint venture were reclassified to continuing operations.*

For the financial year ended December 31, 2021, the net income from discontinued operations amounted to US$1.6 million and was impacted by the following items:

(i) US$1.9 million for the gain on the sale of our Multi-Physics business;

(ii) US$0.7 million related to ramp down costs;

(iii) US$(7.2) million of financial expenses in relation with the Idle Vessel Compensation of which US$(3.6) million of discount of the Idle Vessel Compensation as well as US$(3.6) million increase of the Idle Vessel Compensation following revised assumptions on Shearwater fleet utilization assumptions over the remaining commitment period of the Capacity Agreement, and

(iv) US$5.6 million of foreign exchange gain on a tax liability.

For the financial year ended December 31, 2020, the restructuring costs arising from CGG 2021 Plan amounted to US$(3.3) million, including US$(0.7) million of impairment losses on assets mainly coming from 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.

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, 2021	2020
Net cash flow from operating activities	(12.9)	(51.8)
Net cash flow used in investing activities	0.1	6.3
Net cash flow from financing activities	(22.2)	(27.0)
Impact of changes in consolidation scope	(1.0)	-
NET CASH FLOWS GENERATED BY DISCONTINUED OPERATIONS	**(36.0)**	**(72.5)**

In 2021, the net cash flow generated by discontinued operations included disbursements in respect of the CGG 2021 Plan for an amount of US$(33.3) million, of which US$(8.4) million was severance cash outflows and US$(21.9) million was cash outflows in respect of Idle Vessel Compensation.

In 2020, the net cash flow generated by discontinued operations included cash outflows 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.

NOTE 6 ASSETS VALUATION ALLOWANCE

In millions of US$	December 31, 2021					
	Balance at beginning of year	Additions	Deductions	Unused Deductions	Other [(a)]	Balance at end of period
Trade accounts and notes receivable	36.2	1.9	(5.3)	-	(0.4)	32.4
Inventories and work-in-progress	77.9	0.5	(23.5)	-	(4.9)	50.0
Tax assets	6.1	0.1	-	-	(0.1)	6.1
Other current assets	3.8	1.8	(0.4)	-	-	5.2
TOTAL ASSETS VALUATION ALLOWANCE	**124.0**	**4.3**	**(29.2)**	**-**	**(5.4)**	**93.7**

(a) Includes effects of translation adjustments and changes in the scope of consolidation.

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 curent 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.

NOTE 7 INVESTMENTS, OTHER NON-CURRENT AND CURRENT FINANCIAL ASSETS

In millions of US$	2021	2020
Non-consolidated investments [(a)]	0.9	0.9
Loans and advances	1.5	0.7
Deposits and other [(b)]	15.4	12.0
Investments and other financial assets	**17.8**	**13.6**
Non-consolidated Shearwater Shares [(c)]	-	13.7
Xcalibur Group Loan [(d)]	1.7	-
Other current financial assets	**1.7**	**13.7**
TOTAL INVESTMENTS, OTHER FINANCIAL ASSETS AND OTHER CURRENT FINANCIAL ASSETS	**19.5**	**27.3**

(a) Mainly shares in Interactive Network. No restriction or commitment exists between CGG and the non-consolidated investments.
(b) At December 31, 2021, the amount of pledged financial assets is US$15.2 million.
(c) Sale of non-consolidated Shearwater Shares to Rasmussengruppen on January 18, 2021 for a cash consideration of US$13.7 million (See note 2)
(d) Credit facility granted to Xcalibur Group (See note 5).

NOTE 8 INVESTMENTS IN COMPANIES ACCOUNTED FOR UNDER THE EQUITY METHOD

In millions of US$	Country/Head office	2021 % interest held	December 31, 2021	December 31, 2020 Restated*
GGR				
Reservoir Evaluation Services LLP	Kazakhstan/Almaty	49.0%	2.8	2.8
Versal AS	Norway/Oslo	33.3%	–	–
Equipment				
Autonomous Mobile Blast Paint Robot SAS [(a)]	France/Allevard	51.0%	–	0.5
Contractual Data Acquisition				
Argas	Saudi Arabia/Al-Khobar	49.0%	25.0	25.0
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			**28.1**	**28.6**

* *In accordance with IFRS 5 "Non-current Assets Held for Sale and Discontinued Operations", financial information was restated to present comparative amounts for each period presented. Our investments in Argas were reclassified in Investment in companies accounted for under the equity method.*

(a) *Effective 1st june 2021, Sercel Holding SAS acquired an additional 17% of shares in AMBPR and has the exclusive control of this company. Hence the AMBPR company, previously accounted for under equity method, is fully consolidated as of 31 december 2021.*

The joint-venture Versal AS (CGG, PGS and TGS) was set up on 11 June 2021 with the aim to offer a unified seismic data ecosystem giving access to three of the world's largest multi-client libraries via a single log-in.

As of 31 December 2021, CGG has no investments classified as assets held for sale. The investment in Argas, have been reclassified in continuing operations. *See note 2.*

The variation of "Investments in companies accounted for under the equity method" is as follows:

In millions of US$	December 31, 2021	December 31, 2020 Restated *
Balance at beginning of period	**28.6**	**46.9**
Change in consolidation scope	(0.7)	-
Investments made during the year	-	0.5
Share of income (loss)	0.1	(31.8)
Impairment	-	-
Dividends received during the period and return of capital [(a)]	-	13.0
Translation adjustments and other	0.1	-
BALANCE AT END OF PERIOD	**28.1**	**28.6**

* *In accordance with IFRS 5 "Non-current Assets Held for Sale and Discontinued Operations", financial information was restated to present comparative amounts for each period presented. Our investments in Argas were reclassified in Investment in companies accounted for under the equity method.*

(a) *Distribution of dividends from Argas was cancelled for US$13.0 million.*

In 2021, Autonomous Mobile Blast Paint Robot is fully consolidated.

In 2020, the Group invested US$0.5 million, after acquiring shares in Autonomous Mobile Blast Paint Robot.

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,					
	2021			2020		
In millions of US$	Gross	Accumulated depreciation	Net	Gross	Accumulated depreciation	Net
Land	5.7	-	5.7	6.8	-	6.8
Buildings [a]	153.8	(115.0)	38.8	161.4	(117.6)	43.8
Machinery & Equipment	276.4	(233.4)	43.0	290.9	(244.3)	46.6
Other tangible assets	110.2	(104.0)	6.2	132.3	(117.5)	14.8
Right-of-use assets [a]	254.9	(136.5)	118.4	294.2	(138.1)	156.1
– Property	197.9	(106.9)	91.0	214.5	(91.5)	123.0
– Machinery & Equipment	57.0	(29.6)	27.4	79.7	(46.6)	33.1
TOTAL PROPERTY, PLANT AND EQUIPMENT	**801.0**	**(588.9)**	**212.1**	**885.6**	**(617.5)**	**268.1**

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, 2021 and at December 31, 2020.

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, 2021 and at December 31, 2020.

Variation over the period

	December 31	
In millions of US$	2021	2020
Balance at beginning of period	**268.1**	**300.0**
Acquisitions [a]	55.7	50.2
Depreciation [b]	(74.9)	(89.5)
Disposals	(0.8)	(1.5)
Translation adjustments	(9.6)	10.1
Change in consolidation scope	0.8	-
Impairment of assets [c]	(10.5)	(4.2)
Reclassification of tangible assets as “Assets held for sale”[d]	(14.1)	-
Other	(2.6)	3.0
BALANCE AT END OF PERIOD	**212.1**	**268.1**

(a) Including US$25.7 million additional right-of use assets in 2021, compared to US$29.0 million in 2020.
(b) Including US$46.0 million depreciations of right-of-use assets in 2021, compared to US$48.8 million in 2020.
(c) Including US$9.2 million depreciations related to impairment of right-of-use assets.
(d) Including US$13.2 million of assets related to Smart Data Solutions and US$1.0 million of land asset (see note 5).

Reconciliation of acquisitions with the consolidated statements of cash flows and capital expenditures in note 19

In millions of US$	December 31 2021	December 31 2020
Acquisitions of tangible assets, excluding leases	30.0	21.9
Capitalized development costs (*see notes 10 and 20*)	29.6	41.0
Acquisitions of other intangible assets, excluding Multi-Client surveys (*see note 10*)	0.1	1.1
Change in fixed asset suppliers	(0.8)	0.1
Reclassification of tangible assets in "Assets held for sale"	(0.3)	-
TOTAL PURCHASES OF TANGIBLE AND INTANGIBLE ASSETS ACCORDING TO CASH FLOW STATEMENT ("CAPITAL EXPENDITURES")	**58.6**	**64.1**

NOTE 10 INTANGIBLE ASSETS

	December 31					
	2021			2020		
In millions of US$	Gross	Accumulated depreciation	Net	Gross	Accumulated depreciation	Net
Multi-Client surveys - Marine	5,332.9	(4,975.9)	357.0	5,186.7	(4,776.3)	410.4
Multi-Client surveys - Land	813.6	(777.5)	36.1	811.8	(729.8)	82.0
Capitalized development costs	379.1	(289.1)	90.0	459.5	(350.8)	108.7
Software	79.2	(77.4)	1.8	92.0	(88.7)	3.3
Customer relationships	218.0	(189.9)	28.1	227.7	(194.0)	33.7
Other intangible assets	195.5	(187.8)	7.7	220.1	(219.0)	1.1
TOTAL INTANGIBLE ASSETS	**7,018.3**	**(6,497.6)**	**520.7**	**6,997.8**	**(6,358.6)**	**639.2**

Variation over the period

In millions of US$	December 31, 2021	December 31, 2020
Balance at beginning of period	**639.2**	**690.8**
Increase in Multi-Client surveys	185.6	257.1
Capitalized development costs	29.6	41.0
Other acquisitions	0.1	1.1
Amortization and impairment on Multi-Client surveys	(281.5)	(284.8)
Other depreciation [(a)]	(45.0)	(58.3)
Disposals	(1.1)	(0.2)
Translation adjustments	(6.4)	(6.2)
Reclassification of intangible assets as "Assets held for sale"	–	–
Other	0.2	(1.3)
BALANCE AT END OF PERIOD	**520.7**	**639.2**

(a) *Including a US$6.6 million impairment loss on customer relationships and trade name related to the GeoConsulting business in 2020.*

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 2021, "Amortization and impairment on Multi-Client surveys" included US$(21.2) million of impairment loss in the UK library and related to the downward revision of expected sales of one survey due to United Kingdom's currently unfavorable stance on oil exploration.

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 unfavorable stance on oil exploration (Ireland) in the context of significant cuts in E&P spending.

Sensitivity to changes in assumptions

An increase by 50 basis points of the discount rate would reduce by approximately US$(4) million the net present value of the expected sales of our multi-client library. It would trigger an impairment loss of about US$(0.3) million.

A reduction by 10% of the expected sales in 2023 and 2024 would reduce by approximately US$(31) million the net present value of expected sales. It would trigger an impairment loss of about US$(5) million.

Reconciliation of acquisitions with the consolidated statement of cash flows and capital expenditures in note 19

	December 31	
In millions of US$	**2021**	**2020**
Investments in Multi-Client surveys	185.6	257.1
Amortization & depreciation capitalized in Multi-Client surveys	(17.3)	(18.1)
INVESTMENT IN MULTI-CLIENT SURVEYS ACCORDINGTO CASH-FLOW STATEMENT	**168.3**	**239.0**

NOTE 11 GOODWILL

Goodwill is analyzed as follows:

Variation over the period

In millions of US$	**December 31, 2021**	**December 31, 2020**
Balance at beginning of period	**1,186.5**	**1,206.9**
Additions	-	-
Impairment	(101.8)(b)	(24.0)(a)
Translation adjustments	(1.1)	3.6
BALANCE AT END OF PERIOD	**1,083.6**	**1,186.5**

(a) *Impairment of goodwill in 2020 recognized in respect of GeoConsulting (CGU of GGR).*
(b) *Impairment of goodwill in 2021 recognized in respect of Multi-Client (CGU of GGR).*

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.

The information disclosed in this note corresponds to the estimated discounted cash flows at the balance sheet date and capital employed as at December 31, 2021.

The recoverable amount corresponds to the value in use of the assets, cash-generating units or group of cash-generating units, defined as the estimated discounted cash flows. 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.

Following the exit from Acquisition business and completion of the divestures of the GeoSoftware and the Physical Asset Storage and Services businesses, the Group's continuing operations are divided into three cash-generating units (CGU): Geoscience CGU (including CGUs Imaging and GeoConsulting pursuant the various divestures), Multi-Client CGU and Equipment CGU. Beyond the core, the Group leveraged on its existing assets and its long-time leading capabilities in high-performance cloud computing, digital and geoscience technologies, sophisticated algorithms, earth data library and sensor solutions to grow a portfolio of new businesses, aligned with current global market trends. These Beyond the Core (BTC) new businesses, rooted in the core capabilities, are integral part of the three CGUs.

The following table provides the breakdown of goodwill per segment:

In millions of US$	**December 31, 2021**	**December 31, 2020**
Multi-Client CGU	182.2	284.0
Geoscience CGU	724.0	724.0
GGR	**906.2**	**1,008.0**
Equipment	**177.4**	**178.5**
TOTAL	**1,083.6**	**1,186.5**

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.

Our financial projections are based on internal estimates in matters of expected operating conditions, market dynamics, commercial penetration of new technologies and change in competitive landscape, as well as external sources of information, such as the yearly budgets of oil and gas companies, various analyses and reports on E&P spending, forecasted activities for the group and outlook for the sector provided by sell side analysts of brokerage firms and investment banks.

The main factors influencing our activities are the level of E&P spending and its evolution, which itself depends on various other factors such as oil price and its volatility, but also the importance of fossil fuels within the energy mix and the transition trajectory to a low carbon world. Over the period 2022-2024, we factored a double digit growth in our activities, consistent with the forecasts of sector analysts.

The value in use is determined as follows:

- budgeted cash-flow for 2022 (Year 1) and forecasted perspectives for 2023-2024 (Year 2 and 3); the three years forming the explicit period;
- 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; the expected fading in the O&G activities in the long term being compensated by the strong dynamics of BTC new businesses, especially in the energy transition;
- differentiated discount rates we consider reflecting the weighted average cost of capital (WACC) of the segment concerned, factoring in the risk associated with the development of BTC new businesses:
  - 9.650% for the Equipment CGU (compared to 9.625% in 2020) corresponding to a pre-tax rate of 11.8%,
  - 9.525% for Geoscience and Multi-Client CGUs part of the GGR segment (compared to 9.375% in 2020) corresponding to a pre-tax rate of around 11.4%.

The WACC is calculated using the standard capital asset pricing model methodology (CAPM). We requested an independent firm to run this computation, factoring the uncertainty around the pace of the development of BTC activities in the 2021 impairment test. The net asset value (NAV) of each CGU is computed using pre-tax WACC, with 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 2021

While it remains difficult to predict the energy outlook, we believe, in line with recent sector analyses, that oil companies will significantly increase their spending in the coming years, after two years of underinvestment. In this context, oil and gas companies will remain focused on increasing production from existing reservoirs and on near field exploration. Thanks to our high-end and differentiated technologies, we believe that we are fundamentally well positioned to increase the effectiveness of their development projects, while meeting their ESG objectives.

Beyond the core, we leveraged on our assets and long-time leading capabilities to grow a portfolio of new businesses, aligned with current global market trends, to accompany our traditional and new client base in their energy transition challenges. These Beyond the Core new businesses, which have represented approximately 5% of total revenues in 2021, are expected to contribute significantly to the growth of the Group in the coming years and to represent half of its activity in the long term.

The financial projections are based on such growth paths.

For further information, please refer to notes 2 and 19.

GGR

After a soft first half of the year, the rebound materialized in the second half of the year for our GGR segment.

Our Geoscience activity gradually recovered in 2021, quarter after quarter, proving its resilience. It is expected to further increase with clients focusing on asset development and optimization and near-field exploration. Our unique expertise in high-end imaging and reservoir characterization will allow to address the fast expanding markets in Digital Sciences and Energy Transition. Compared to our forecasts at December 31, 2020, the future cash flows of our Geoscience CGU were revised upwards, supported by the BTC dynamics.

At December 31, 2021, the capital employed of the Geoscience CGU amounted to US$914 million at December 31, 2021 and included US$724 million in goodwill.

No impairment of goodwill was recognized for our Geoscience CGU at December 31, 2021.

The Multi-Client business suffered a lot from severe cuts and delays in spending in 2020 and 2021. After two years of lower than expected sales, we believe that we have reached the bottom and see the market dynamics more positively oriented with the resumption of licensing rounds in our key sedimentary basins. With our best-in-class library in producing and mature basins, we anticipate our Multi-Client business to capture the market recovery, further bolstered by assets' turnover expected to be active with the emergence of private equity backed players.

Leveraging on our high-end data library, we see CCUS and data platform solutions as additional growth levers positively complementing our offering in domains where our clients are expanding rapidly. To meet these expectations, from 2022 onwards, we will further intensify our investments not only in core domains but also to best support the longer-term energy transition goals of our clients. Compared to our forecasts at December 31, 2020 and based on 2020 and 2021 lower than expected multi-client sales, we revised downwards the near-term future cash flows of our Multi-Client CGU, which triggered impairment loss of our Multi-Client goodwill for US$102 million.

At December 31, 2021, the capital employed of the Multi-Client CGU amounted to US$534 million and included US$182 million in goodwill, net of the aforementioned impairment loss.

US$102 million impairment loss of goodwill was recognized for our Multi-Client CGU at December 31, 2021.

Equipment

We estimate that the worldwide demand for geophysical equipment increased by over 20% in 2021 compared with a 30% decrease in 2020. The equipment market is highly competitive and is characterized by continuous and rapid technological change to achieve high-resolution imaging. Thanks to our best in class products and technologies, the revenues of our Equipment segment are expected to increase fueled by its large installed base, its portfolio of new solutions and the development of BTC activities and diversification streams.

More specifically, for land equipment, we see opportunities for the latest generations of products, both for cable and wireless. On the marine equipment front, our new nodal seismic acquisition solutions is expected to further breakthrough, while the demand for streamers should progressively recover as current fleets are aging and their excess equipment inventories are shrinking. We anticipate the acceleration of the development of BTC activities such as structural health monitoring, earthworks monitoring and underwater acoustic solutions, by taking advantage of our unique portfolio of industry leading sensor technology. Compared to our forecasts at December 31, 2020, the future cash flows of our Equipment CGU were revsied upwards, strengthened by the BTC dynamics.

At December 31, 2021, the capital employed of our Equipment CGU amounted to US$537 million including US$177 million of goodwill.

No impairment of goodwill was recognized for our Equipment CGU at December 31, 2021.

In 2020

At December 31, 2020, the capital employed at the Multi-Client cash-generating unit amounted to US$629 million, including US$284 million in goodwill.

At December 31, 2020, the capital employed at the Geoscience cash-generating units amounted to US$895 million, including US$724 million in goodwill.

At December 31, 2020, the capital employed at the Equipment cash-generating unit amounted to US$599 million, including US$178 million in goodwill.

US$24 million impairment loss of goodwill was recognized in 2020 regarding GeoConsulting CGU.

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 CGU and, hence, the impairment test outcomes. The cyclical business profile of our operations can have an impact on the value in use, albeit to a lesser extent than the two previous factors. The structuring assumptions are the recovery in E&P spending as well as the growth of our BTC new businesses which are expected to represent half of the Group's activity in the long term. The cash flows generated in 2023 and 2024 as well as in the normative year could vary based on timing and breadth of these assumptions. The impacts on value in use coming from reasonably possible changes in 2023 and 2024 as well as in normative year are disclosed in the template below.

Changes in these assumptions have the following impact on value in use:

In millionsof US$	Goodwill	Difference between the CGUs' value in use and the carrying value of assets including goodwill	Sensitivity of cash flows in 2023-2024		Sensitivity to long-term growth rates		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	182.2	-	4	(4)	(56)	56	(35)	40	48	(42)
Geoscience CGU	724.0	286	(13)	13	(102)	102	(64)	73	89	(78)
Equipment CGU	177.4	225	(5)	5	(70)	70	(43)	49	60	(52)
TOTAL	**1,083.6**									

NOTE 12 OTHER CURRENT AND NON-CURRENT LIABILITIES

	December 31	
In millions of US$	**2021**	**2020 Restated ***
Value added tax and other taxes payable	40.1	33.1
Deferred revenues	148.8	226.3
Fair value of financial instruments (*see note 14*)	1.2	-
Off-Market Component [(a)]	13.8	13.9
Other current liabilities	14.3	5.1
OTHER CURRENT LIABILITIES	**218.2**	**278.4**

(a) Operating debt in respect of Capacity Agreement

* *In accordance with IFRS 5 "Non-current Assets Held for Sale and Discontinued Operations", financial information was restated to present comparative amounts for each period presented following the reclassification of our stake in a joint-venture to continuing operations. See notes 2 and 5.*

	December 31,	
In millions of US$	**2021**	**2020**
Research and development subsidies	0.5	0.2
Profit-sharing scheme	2.0	2.2
Off-Market Component [(a)]	30.1	42.0
Other non-current liabilities	0.2	-
OTHER NON-CURRENT LIABILITIES	**32.8**	**44.4**

(a) Operating debt in respect of Capacity Agreement

NOTE 13 FINANCIAL DEBT

Gross financial debt as of December 31, 2021 was US$1,308.4 million compared to US$1,389.1 million as of December 31, 2020.

Please refer to note 2 for information on the impact on financial debt refinancing completed on April 1, 2021.

The breakdown of our gross debt is as follows:

	December 31,					
	2021			2020		
In millions of US$	Current	Non-current	Total	Current	Non-current	Total
First lien senior secured notes due 2023	-	-	-	-	643.6	643.6
Second lien senior secured notes due 2024 (including PIK interest) [(a)]	-	-	-	-	577.2	577.2
2027 Notes	-	1,162.6	1,162.6	-	-	-
Bank loans and other loans	-	2.5	2.5	-	0.6	0.6
Lease liabilities	69.8	53.0	122.8	46.2	108.9	155.1
Sub-total	**69.8**	**1,218.1**	**1,287.9**	**46.2**	**1,330.3**	**1,376.5**
Accrued interests	20.5	-	20.5	12.4	-	12.4
Financial debt	**90.3**	**1,218.1**	**1,308.4**	**58.6**	**1,330.3**	**1,388.9**
Bank overdrafts	-	-	-	0.2	-	0.2
TOTAL	**90.3**	**1,218.1**	**1,308.4**	**58.8**	**1,330.3**	**1,389.1**

(a) PIK: payment-in-kind, capitalized interest included.

Changes in liabilities arising from financing activities

During the 2021 financial year, CGG issued (i) 8.75% Secured 2027 Bonds for a nominal amount of US$500 million and 7.75% Secured 2027 Bonds for a nominal amount of 585 million euros and (ii) use the net proceeds of these bonds to dispose of the Existing Bonds. *See note 2.*

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.

	December 31,	
In millions of US$	2021	2020
Balance at beginning of period	**1,389.1**	**1,326.0**
Decrease in long term debts	(1,227.5)	(5.2)
Increase in long-term debts	1,188.2	-
Lease repayments	(57.3)	(55.5)
Financial interests paid	(89.8)	(80.2)
Total Cash flows	**(186.4)**	**(140.9)**
Cost of financial debt, net	120.5	134.1
Call premium	13.8	-
Increase in lease liabilities	25.7	28.5
Translation adjustments	(50.8)	46.0
Other	(3.5)	(4.6)
BALANCE AT END OF PERIOD	**1,308.4**	**1,389.1**

Financial debt by financing sources

	Issuing date	Maturity	Nominal amount 12.31.2021 *(in millions of currency)*	Net balance 12.31.2021 *(in US$m)*	Interest rates
2027 Notes tranche USD	2021	2027	US$500.0	500.0	8.75%
2027 Notes tranche EUR	2021	2027	€585.0	662.6	7.75%
Sub-total 2027 Notes				**1,162.6**	
Other loans	–	–	–	2.5	-
Sub-total bank loans and other loans				**2.5**	
Sub-total lease liabilities				**122.8**	
TOTAL FINANCIAL DEBT, EXCLUDING ACCRUED INTERESTS AND BANK OVERDRAFTS				**1,287.9**	

Financial debt by currency

	December 31	
In millions of US$	**2021**	**2020**
USD	562.9	824.7
EUR	704.2	519.2
GBP	8.3	10.9
AUD	3.2	4.6
CAD	4.3	6.3
NOK	1.6	2.4
SGD	1.7	2.5
RUB	0.2	0.3
Other	1.5	5.6
TOTAL FINANCIAL DEBT, EXCLUDING ACCRUED INTERESTS AND BANK OVERDRAFTS	**1,287.9**	**1,376.5**

Financial debt by interest rate

	December 31	
In millions of US$	**2021**	**2020**
Variable rates (average effective rate December 31, 2021: nil, 2020: 12.86%)	-	577.2
Fixed rates (average effective rate at December 31, 2021: 7.94%, 2020: 7.67%)	1,287.9	799.3
TOTAL FINANCIAL DEBT, EXCLUDING ACCRUED INTERESTS AND BANK OVERDRAFTS	**1,287.9**	**1,376.5**

Variable interest rates are generally based on inter-bank offered rates of the related currency.

High Yield Bonds (US$500 million of 8.75% Senior Notes and €585 million of 7.75% Senior Notes, maturity 2027)

On April 1, 2021, CGG issued US$500 million in aggregate principal amount of 8.75% Senior Secured Notes due 2027 and €585 million in aggregate principal amount of 7.75% Senior Secured Notes due 2027 (together, the "2027 Notes").

These notes are listed on the Euro MTF of the Luxembourg Stock Exchange and are guaranteed on a senior secured basis by certain subsidiaries of CGG SA. The fair value measurement of the 2027 Notes is categorized within Level 1 of the fair value hierarchy.

The 2027 Notes do not include any financial "maintenance covenant". Nevertheless, they include limitations on incurrence of additional indebtedness, pledges, asset sales, issuances and sales of equity instruments, investments in minority owned companies and dividend payments.

The 2027 Notes were issued at a price of 100% of their principal amount.

The net proceeds from the issuance of the 2027 Notes were used, together with cash on hand, to:

(i) settle the Tender Offer;

(ii) satisfy and discharge on April 1, 2021 and subsequently redeem on May 1, 2021 in full the Existing First Lien Notes that were not repurchased in the Tender Offer;

(iii) satisfy and discharge on April 1, 2021 and subsequently redeem on April 14, 2021 in full the Existing Second Lien Notes; and

(iv) pay all fees and expenses in connection with the foregoing.

The 2027 Notes and the revolving credit facility share the same security package encompassing notably the US multi-client Library, the shares of the main Sercel entities (Sercel SAS and Sercel Inc.), the shares of significant GGR operating entities, and certain intercompany loans.

First lien secured notes due 2023

The first lien secured notes due 2023 were redeemed in full at the time of the refinancing. *Please refer to note 2.*

The first lien secured notes due 2023 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%.

Second Lien secured notes due 2024

The second lien secured notes due 2024 were redeemed in full at the time of the refinancing. *Please refer to note 2.*

The second lien secured notes represented due 2024 at issuance on February 21, 2018, a total principal amount of US$453.4 million (using an exchange rate of $1.2229 per €1.00).

These notes bore 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).

US$ 100 million Revolving Credit Facility

(In millions of US$)	Date	Maturity	Authorized amount	Used amount	Mobilized amount	Available amount
Revolving Credit Facility	2021	2025	100.0	–	–	100.0

On April 1, 2021 CGG entered into a US$100 million Super Senior Revolving Credit Facility Agreement with a 4.5 year maturity and secured by the same security package as the 2027 Notes. Interest rate is calculated according to SOFR rate increased by a 5% margin, downward revisable depending Group rating and greenhouse gas emission reduction targets.

Pursuant to the RCF agreement, if the drawing exceeds 40% of the facility, the Group is required to quarterly comply with a maximum ratio of total "Consolidated Senior Secured Net Leverage" to "Consolidated EBITDA" of 3.50:1 for each rolling 12-months period. These terms are defined in the aforementioned RCF agreement as follows:

- "Consolidated Senior Secured Net Leverage" is defined as Senior Secured Indebtedness less cash and cash equivalents.
- "Consolidated EBITDA" is computed on Segment figures and is defined as net income before interest, tax, depreciation, amortization and non-recurring items.

The revolving credit facility include some limitations on additional indebtedness subscriptions, pledges arrangements, asset sale, issuance and sale of equity instruments, investment in minority owned companies and dividends payments.

The 2027 Notes and RCF share the same security package encompassing notably the US multi-client Library, the shares of the main Sercel entities (Sercle SAS and Sercel Inc.), the shares of significant GGR operating entities, and certain intercompany loans.

Other loans

In October 2021, BPI granted to the Equipment division an innovation loan of €2 million at a preferential rate with a 7 year maturity and quarterly repayment in tranches of 0.1 million euros from March 2024 onward.

In October 2021, the BPI granted to the Equipment division an innovation loan of 2 million euros at a preferential rate with a 7 year maturity and quarterly repayment in tranches of 0.1 million euros from March 2024 onwards.

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.

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, the Australian dollar and the Malayzian ringgit.

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, 2021, we estimate our net annual recurring expenses in euros at the Group level to be approximately €180 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$18 million.

The following table shows our exchange rate exposure as at December 31, 2021:

	As at December 31, 2021					
	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)]	951.0	951.2	-	(0.2)	(6.5)	(6.7)
EUR [(b)]	65.0	56.1	-	8.9	-	8.9
US$ [(c)]	9.1	32.9	-	(23.8)	-	(23.8)
BRL [(d)]	8.3	-	-	8.3	-	8.3

(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, 2021, the euro-denominated component of our US$989 million in net financial debt came to €521 million, based on the closing exchange rate of US$1.1326 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$52 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, 2021, the Group had currency forward contracts for the US dollar equivalent of US$70.6 million (of which US$31.3 million were applied), of which US$21 million were against the euros, €12.8 million were against the Chinese yuan, €1.4 million were against the pound sterling, and US$33.4 million were against the Brazilian real.

Effects of forward exchange contracts on the financial statements:

In millions of US$	December 31, 2021	2020
Carrying value of forward exchange contracts (*see notes 4 and 12*)	1.2	1.1
Gains (losses) recognized in profit and loss (*see note 21*)	1.9	0.7
Gains (losses) recognized directly in equity	(0.1)	-

Interest rate risk management

Following the last refinancing exercise carried out in 2021, the Group is achieving its objective of having only fixed-rate debt for its financing, in order to avoid being subject to interest rate risk on variable rates. Changes in the monetary policy of the US federal Banks and European Central Bank, developments in the financial markets and changes in the perception of our credit quality may increase our cost of refinancing and therefore adversely affect our ability to refinance our debt, which may affect our business, liquidity, results of operations and financial conditions.

Interest rate sensitivity analysis

The following table shows our variable interest rate exposure by maturity as at December 31, 2021:

	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)	
12.31.2021 *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	60.4	78.0	69.8	-	(9.4)	78.0	-	-	(9.4)	78.0
1 to 2 years	-	-	41.9	-	(41.9)	-	-	-	(41.9)	-
3 to 5 years	-	-	6.0	-	(6.0)	-	-	-	(6.0)	-
More than 5 years	-	-	1,170.2	-	(1,170.2)	-	-	-	(1,170.2)	-
TOTAL	**60.4**	**78.0**	**1,287.9**	**-**	**(1,227.5)**	**78.0**	**-**	**-**	**(1,227.5)**	**78.0**

* *Excluding bank overdrafts and accrued interest.*

Since the last refinancing exercise, CGG Group's sources of financing have consisted of secured loans subject only to fixed interest rates. Only financial assets are subject to variable interest rates. As a result, the Group's financial expenses are exposed to a very limited interest rate risk.

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 6.1% and 6.0% of consolidated revenues in 2021. In 2020, they respectively contributed 8.7% and 6.8%.

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, 2021 are as follows:

In millions of US$	As at December 31, 2021						
	Fair value hierarchy [(a)]	**Carrying amount**	**Fair value**	**Fair value in income statement**	**Loans, receivables**	**Debt atamortized cost**	**Derivatives**
Non-consolidated investments	Level 3	0.9	0.9	0.9	-	-	-
Non-current financial assets	Level 3	16.9	16.9	-	16.9	-	-
Trade receivables	Level 3	350.7	350.7	-	350.7	-	-
Current financial assets	Level 3	1.7	1.7	1.7	-	-	-
TOTAL ASSETS		**370.2**	**370.2**	**2.6**	**367.6**	**-**	**-**
2027 Notes	Level 1	1,162.6	1,162.6	-	-	1,162.6	
Trade and other payables	Level 3	76.4	76.4	-	76.4	-	
Current and non-current financial liabilities	Level 2	56.6	56.6	-	-	56.6	
TOTAL LIABILITIES		**1,295.6**	**1,295.6**	**-**	**76.4**	**1,219.2**	

(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 2020, there was no change in the fair value hierarchy in 2021.

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, 2021:

- the **first lien senior secured notes due 2027** denominated in US dollars were traded at a discounted price of 98.75% of their nominal value;
- the **first lien senior secured notes due 2027** denominated in euros were traded at a discounted price of 99.13% of their nominal value.

Other current and non-current financial liabilities

	At December 31	
	2021	2020
Other current financial liabilities: *Idle Vessel Compensation*	19.2	18.3
Other current financial liabilities: *Eidesvik Put Option*	-	16.1
Other non-current financial liabilities: *Idle Vessel Compensation*	37.4	53.2
TOTAL	**56.6**	**87.6**

Idle Vessel Compensation

The Idle Vessel Compensation is a financial obligation linked to the Capacity Agreement, the contract for marine seismic data acquisition services between CGG and Shearwater until January 2025. The agreement provides compensation in the event of inactivity more than one of the premium 3D vessels in the Shearwater fleet, for a maximum of three vessels. Compensation for inactive vessels representing the present value of the related estimated disbursments, based on assumptions of use of the Shearwater fleet over the commitment period. Inactivity compensation is a debt at amortized cost.

The assumptions for the utilization of the Shearwater fleet over the remaining term were revised and resulted in an increase of the Idle Vessel Compensation of (3.6) million US dollars in 2021 based on a slightly deferral of the return of capacity, after an increase of (10.0) million US dollars in 2020 due to the drop in the price of oil price and reductions in E&P spending. *See note 5*

As of December 31, 2021, the total amount of the financial liability for Idle Vessel Compensation amounts to (56.6) million US dollars with a current portion of (19.2) million US dollars and a non-current at (37.4) million US dollars.

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 7.*

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, CGG sold Shearwater shares for US$13.9 million *(see note 2)*.

NOTE 15 SHARE CAPITAL AND STOCK OPTION PLANS

At December 31, 2021, CGG SA's share capital consisted of 711,663,925 ordinary shares with a nominal value of €0.01 each. At December 31, 2020, CGG SA's share capital consisted of 711,392,383 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 €506.0 million (US$573.1 million) at December 31, 2021. We did not pay any dividend during the years ended December 31, 2021 and 2020.

Share capital and warrants in 2021

Common stock operations during the 2021 fiscal year involved the exercise of warrants for 6,162 shares and stock options for 265,380 shares.

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.

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.

On June 24, 2021, the Board of Directors allocated:

- 330,000 options to the Chief Executive Officer. These have an exercise price of €0.91 and vest in one batch, in June 2024, subject to a performance condition relating to CGG's share price. The options have a term of eight years;
- 710,000 options to members of the Executive Leadership members. These have an exercise price of €0.91 and vest in one batch, in June 2024, subject to a performance condition relating to CGG's share price. The options have a term of eight years;
- 870,920 options to certain Group employees. These have an exercise price of €0.91 and vest in two batches, in June 2023 (for 50% of the options allocated) and June 2024 (for 50% of the options allocated). The options have a term of eight years.

Information related to options outstanding at December 31, 2021 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 26, 2014 to June 23, 2016	10,084,581	858,451	386,071	107.66-8.52	June 26, 2022 to June 23, 2024	5.8 to 29.8 months
June 28, 2018	6,544,389	6,544,389	5,033,443	2.15	June 28, 2026	53.9 months
December 11, 2018	671,171	671,171	570,494	1.39	June 28, 2026	53.9 months
June 27, 2019 & November 5, 2019	2,273,520	2,273,520	1,735,440	1.52	June 27, 2027	65.9 months
January 6, 2020	80,000	80,000	40,000	2.72	June 27, 2027	65.9 months
June 25, 2020	2,268,512	2,268,512	2,234,032	1.10	June 25, 2028	77.9 months
June 24, 2021	1,910,920	1,910,920	1,905,220	0.91	June 24, 2029	89.9 months
TOTAL	**23,833,093**	**14,606,963**	**11,904,700**			

(a) Options granted adjusted following 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 pricebefore 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 pricebefore 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, 2021 follows:

Weighted average exercise price in €	2021 Number of options	2021 Weighted average exercise price	2020 Number of options	2020 Weighted average exercise price
Options outstanding at beginning of year	**10,919,030**	**4.27**	**9,171,472**	**5.99**
Granted	1,910,920	0.91	2,348,512	1.16
Adjustments following the reverse split	-	-	-	-
Adjustments following the capital increase	-	-	-	-
Exercised	-	-	-	-
Forfeited	(925,250)	16.09	(600,954)	18.37
Option outstanding at year-end	**11,904,700**	**2.81**	**10,919,030**	**4.27**
Exercisable at year-end	5,337,214	4.65	3,409,535	10.10

The average price of the CGG share was €0.82 in 2021 and €1.02 in 2020.

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.

Allocation plan dated June 24, 2021

On June 24, 2021, the Board of Directors allocated:

- 280,000 performance shares to the Chief Executive Officer. The performance shares vest in one batch, in June 2024. The vesting period for the batch of these performance shares is due to end on the latest of the following two dates: June 24, 2024 or the date of the Annual Shareholders' Meeting convened to approve the financial statements for fiscal year 2023, and provided that the Board of Directors deems the performance conditions to have been fulfilled;
- 740,000 performance shares to the Chief Executive Officer and 1,407,905 performance shares to certain Group employees. The performance shares vest in two batches, in June 2023 (for 50% of the shares allocated) and June 2024 (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 24, 2024 or the date of the Annual Shareholders' Meeting convened to approve the financial statements for fiscal year 2023, provided that the Board of Directors deems the performance conditions set forth in the 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 24, 2024 or the date of the Annual Shareholders' Meeting convened to approve the financial statements for fiscal year 2023, 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, 2019,2020 and 2021 options plans and the 2018, 2019,2020 and 2021 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
June 2021 stock options plan	1,910,920	63%	(0.6)%	0.91	2.5	0.25	0.5

(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	15%	1.52	0
June 2020 performance units plan	1,953,148	100%	1.10	0
June 2021 performance units plan	2,427,905	100%	0.91	0

(a) Estimated.
(b) 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$	**2021**	**2020**	**2021**	**2020**
2018 stock options plan	0.5	0.7	0.2	0.3
2019 stock options plan	0.4	0.5	0.2	0.2
2020 stock options plan	0.4	0.2	0.2	0.1
2021 stock options plan	0.1	-	0.1	-
2018 performance units plans – paid in shares	(2.0)	0.9	(0.3)	0.1
2019 performance units plans – paid in shares	(2.0)	1.7	(0.7)	0.6
2020 performance units plans – paid in shares	1.0	0.5	0.4	0.2
2021 performance units plans – paid in shares	0.5	-	0.2	-
TOTAL EXPENSE FOR EQUITY-SETTLED TRANSACTIONS	**(1.1)**	**4.5**	**0.3**	**1.5**

NOTE 16 PROVISIONS

	December 31, 2021							
In millions of US$	**Balance at beginning of year**	**Addi-tions**	**Deductions (used)**	**Deductions (unused)**	**Other [(a)]**	**Balance at end of period**	**Short term**	**Long term**
Provisions for redundancy plan	4.2	0.5	(1.1)	(1.4)	(0.1)	2.1	2.1	–
Provision for other restructuring costs	1.9	–	(1.1)	(0.3)	–	0.5	0.5	–
Provisions for onerous contracts	0.9	–	–	(0.3)	(0.2)	0.4	–	0.4
Total CGG 2021 plan	**7.0**	**0.5**	**(2.2)**	**(2.0)**	**(0.3)**	**3.0**	**2.6**	**0.4**
Provisions for redundancy plan [(b)]	32.5	2.9	(24.8)	(7.7)	(0.4)	2.5	2.5	–
Provisions for pensions [(c)]	36.0	1.9	(4.4)	(3.4)	(12.6)	17.5	–	17.5
Provisions for customer guarantees	2.7	3.3	(2.9)	–	(0.3)	2.8	–	2.8
Other provisions for restructuring costs	1.6	–	(0.1)	(1.1)	(0.1)	0.3	0.3	–
Provisions for cash-settled share-based payment arrangements [(d)]	1.6	–	–	(1.2)	–	0.4	–	0.4
Other provisions for onerous contracts	0.8	–	(0.3)	–	–	0.5	0.3	0.2
Other provisions (other taxes and miscellaneous risks)	22.3	3.0	(2.1)	(0.5)	(0.9)	21.8	12.5	9.3
Total other provisions	**97.5**	**11.1**	**(34.6)**	**(13.9)**	**(14.3)**	**45.8**	**15.6**	**30.2**
TOTAL PROVISIONS	**104.5**	**11.6**	**(36.8)**	**(15.9)**	**(14.6)**	**48.8**	**18.2**	**30.6**

(a) Includes translation adjustments, change in consolidation scope (see note 2), reclassification and actuarial gains (losses).
(b) The unused deduction of US$7.7 million corresponds mainly to the revised assumptions of the redundancy costs of the employment protection scheme launched in 2020.
(c) The variance in provisions for pensions mainly concerns the UK including a payment to reduce the deficit and the remeasurement related to the changes in actuarial assumptions.
(d) Relating to social security costs.

Provision for restructuring costs

In 2021, the Group used US$(25.9) million of provision for redundancy costs and US$(1.2) million for other 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.

Provision for onerous contracts (current and non-current)

In 2021, the relative variation in provisions for onerous contracts is chiefly due to the refurbishment of unused facilities.

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.

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$(0.8) million and US$(8.9) million were paid in France in 2021 and 2002, respectively.

The application of the IFRIC interpretation on certain defined benefit plans in France has been recognized in the statement of operations. *See note 1.3.*

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, 2021, the net liability for these plans amounted to US$17.5 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 2021 are provided below :

	December 31,	
In millions of US$	**2021**	**2020**
AMOUNTS RECOGNIZED IN THE STATEMENT OF FINANCIAL POSITION		
Present value of the obligation [(a)]	132.1	140.9
Fair value of plan assets	(114.6)	(104.9)
Deficit (surplus) of funded plans	**17.5**	**36.0**
Net liability (asset) recognized in the statement of financial position	**17.5**	**36.0**
AMOUNTS RECOGNIZED IN THE INCOME STATEMENT		
Service cost	1.5	1.5
Interest expense (income) for the financial year	0.2	0.5
Effects of curtailments/settlements	(0.1)	(4.1)
Payroll tax	(3.3)	-
Net expense (income) for the period	**(1.7)**	**(2.1)**
MOVEMENTS IN THE NET LIABILITY RECOGNIZED IN THE STATEMENT OF FINANCIAL POSITION		
Net Liability at January 1st	**36.0**	**40.0**
Expense as above	(1.7)	(2.1)
Actuarial gains (losses) recognized in other comprehensive income [(b)]	(11.0)	7.8
Contributions paid	(3.6)	(3.4)
Benefits paid by the Company	(0.8)	(8.9)
Consolidation scope entries, reclassifications and translation adjustments	(1.4)	2.6
Other	-	-
Net Liability at December 31	**17.5**	**36.0**
CHANGE IN DEFINED BENEFIT OBLIGATION		
Defined benefit obligation at January 1st	**141.0**	**135.5**
Payroll tax adjustment	-	-
Current service cost	1.5	1.5
Contributions paid	-	-
Interest Cost	1.6	2.3
Past service cost	(3.3)	-
Benefits paid from plan	(0.1)	(12.9)
Actuarial gains (losses) recognized in the other comprehensive income	(2.6)	12.7
Effects of curtailments/settlements	(2.9)	(4.1)
Consolidation scope entries, reclassifications and translation adjustments	(3.1)	6.0
Other	-	-
Obligation in respect of benefits accrued at December 31	**132.1**	**141.0**

In millions of US$	December 31, 2021	December 31, 2020
CHANGE IN PLAN ASSETS [c]		
Fair value of plan assets at January 1st	**104.9**	**95.5**
Interest income for the financial year	1.4	1.8
Contributions paid	3.6	10.5
Benefits paid from plan	(1.8)	(11.1)
Actuarial gains (losses) recognized in the other comprehensive income	8.2	4.9
Effects of curtailments/settlements	-	-
Consolidation scope entries, reclassifications and translation adjustments	(1.7)	3.3
Other	-	-
Obligation in respect of benefits accrued at December 31	**114.6**	**104.9**
KEY ASSUMPTIONS USED IN ESTIMATING THE GROUP'S RETIREMENT OBLIGATIONS ARE:		
Discount rate [d]	1.00%	0.50%
Average rate of increase in future compensation [e]	2.00%	2.00%

(a) In 2021, these commitments amount to US$132.1 million of which US$17.7 million for defined-benefit plans not covered by plan assets (US$22.3 million in 2020). The average duration of the defined-benefit pension plans was 19.0 years at December 31, 2021 (18.9 years at December 31, 2020).

(b) Other comprehensive income.

6

Cumulative actuarial losses recognized in other comprehensive income amounted to US$13.6 million at December 31, 2021.

Changes in the defined benefit obligation and fair value of plan assets are, as follows:

In millions of US$	December 31, 2021	December 31, 2020
Actuarial gains (losses) recognized in the other comprehensive income		
Experience adjustment	1.5	0.7
Actuarial changes arising from changes in demographic assumptions	(1.8)	0.7
Actuarial changes arising from changes in financial assumptions	(2.6)	11.3
Return on plan assets (excluding amounts included in net interest expense)	(8.1)	(4.9)
Sub-total included in the other comprehensive income	**(11.0)**	**7.8**

(c) Plan assets

The major categories of plan assets as a percentage of the fair value of total plan assets are as follows:

	December 31 2021	December 31 2020
Equity securitiesrom	42%	42%
Debt securities	21%	21%
Real estate	7%	7%
Other	30%	30%

(d) Discount rate

The discount rate applied by the Group for entities operating in the euro zone is 1.00% in 2021 (0.5% in 2020). The discount rate is determined by reference to the yield on private investment grade bonds (AA) isued in euro.

The discount rate used for the United Kingdom is 1.75% in 2021 (1.40% in 2020).

An increase of 25 basis point in the discount rate would decrease the defined-benefit plan obligation by US$5.7 million, and a decrease of the discount rate of 25 basis point would increase that obligation by US$6.1 million.

A variation of 25 basis point in the discount rate would have no material impact, less than US$0.3 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$0.5 million, and a 25 basis point decrease would reduce that obligation by US$0.5 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

	December 31	
In millions of US$	**2021**	**2020**
Long-term debt obligations	1,691.3	1,636.6
Lease obligations	135.2	139.9
TOTAL CONTRACTUAL OBLIGATIONS	**1,826.5**	**1,776.5**

The following table presents payments in future periods relating to contractual obligations as at December 31, 2021:

	Payments due by period				
In millions of US$	**Less than 1 year**	**2-3 years**	**4-5 years**	**After 5 years**	**Total**
Financial debt	-	0.5	0.9	1,163.9	1,165.3
Other long-term obligations (cash interests)	96.9	193.8	191.5	43.8	526.0
Total long-term debt obligations	**96.9**	**194.3**	**192.4**	**1,207.7**	**1,691.3**
Lease obligations	75.1	46.2	7.3	6.6	135.2
TOTAL CONTRACTUAL OBLIGATIONS [(a) (b)]	**172.0**	**240.5**	**199.7**	**1,214.3**	**1,826.5**

(a) Payments in other currencies are converted into US dollar at December 31, 2021 exchange rates.
(b) 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 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$(21.9) million. At December 31, 2021, the residual commitment in respect of Idle Vessel Compensation through to the end of the five-year period was US$(66.2) million.

Step-In Agreements

Following of our strategic partnership with Shearwater in Marine Data Acquisition and our exit from of seismic vessel operations, 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. 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.

Legal proceedings, claims and other contingencies

The Company and/or its subsidiaries can be involved in disputes and proceedings arising in the normal course of their business. To the best of the Company's knowledge, there are no pending or impending administrative, judicial or arbitration procedures that are likely to have, or have had over the last twelve-month period, any significant impact on the Group's financial position or profitability.

Guarantees

	December 31,	
In millions of US$	**2021**	**2020**
OPERATIONS		
Guarantees issued in favor of clients (guarantees issued by the Company to mainly support bids made at the subsidiaries level)	168.5	209.0
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)	30.9	5.3
FINANCING ACTIVITIES		
Guarantees issued in favor of banks (mainly to support credit facilities)	-	11.7
TOTAL	**199.4**	**226.0**

The maturity dates of the net guarantees and commitments are as follows:

	Maturity				
In millions of US$	**Less than 1 year**	**2-3 years**	**4-5 years**	**After 5 years**	**Total**
OPERATIONS					
Guarantees issued in favor of clients	56.5	71.9	39.9	0.2	168.5
Other guarantees and commitments issued	29.6	1.2	-	0.1	30.9
TOTAL	**86.1**	**73.1**	**39.9**	**0.3**	**199.4**

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, 2021:

	December 31, 2021			December 31, 2020		
In millions of US$	GGR	Equipment	Consolidated Total	GGR	Equipment	Consolidated Total
Multi-Client prefunding	271.0	-	271.0	143.7	-	143.7
Multi-Client after sales	126.0	-	126.0	126.8	-	126.8
Total Multi-Client	**397.0**	**-**	**397.0**	**270.5**	**-**	**270.5**
Geoscience	**309.5**	-	**309.5**	**328.3**	**-**	**328.3**
Equipment	**-**	**356.5**	**356.5**	**-**	**290.7**	**290.7**
Inter-segment revenues [a]	**-**	**(0.8)**	**(0.8)**	**-**	**(3.5)**	**(3.5)**
TOTAL OPERATING REVENUES	**706.5**	**355.7**	**1,062.2**	**598.8**	**287.2**	**886.0**

(a) Related 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$	2021		2020	
North America	170.1	16.0%	152.7	17.2%
Central and South Americas	232.3	21.9%	141.4	16.0%
Europe, Africa and Middle East	392.7	37.0%	409.9	46.3%
Asia Pacific	267.1	25.1%	182.0	20.5%
TOTAL OPERATING REVENUES	**1,062.2**	**100%**	**886.0**	**100%**

Analysis of operating revenues by category

In millions of US$	2021		2020	
Services rendered and royalties	600.0	56.4%	483.0	54.5%
Sales of goods	332.3	31.3%	268.9	30.4%
After sales on Multi-Client surveys	126.0	11.9%	126.8	14.3%
Leases	3.9	0.4%	7.3	0.8%
TOTAL OPERATING REVENUES	**1,062.2**	**100%**	**886.0**	**100%**

In 2021, the Group's two most significant customers accounted for 6.1% and 6.0% of the Group's consolidated revenues, compared with 8.7% and 6.8% in 2020.

Contracts balances

The contracts balances are presented below:

In millions of US$	Balance at December 31, 2021	Balance at December 31, 2020
Receivables	**305.1**	**263.7**
Unbilled revenue	45.6	61.3
Total contract assets	**45.6**	**61.3**
Advance billing	(14.5)	(6.5)
Deferred revenues	(148.8)	(226.5)
Total contract liabilities	**(163.2)**	**(233.0)**

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, 2021 from contract liability balances as at January 1, 2021 amount to US$235.6 million.

The revenues generated for the period ended December 31, 2021 from performance obligations satisfied (or partially satisfied) prior to January 1, 2021 amount to US$50.1 million.

The revenues generated during the period ended December 31, 2020 from contract liability balances as at January 1, 2020 amounted to US$169.5 million.

The revenues generated during the period ended December 31, 2020 from performance obligations satisfied (or partially satisfied) prior to January 1, 2020 amounted to US$54.4 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, 2021 amounts to US$472.3 million for continuing operations. Out of this amount, the Group expects to recognize US$314.6 million in 2022 and US$157.7 million in 2023 and beyond for continuing operations. These amounts include Multi-Client prefunding revenues recognized upon delivery. As of December 31, 2020, the aggregate amount of the transaction price allocated to the performance obligations that were unsatisfied or partially unsatisfied amounts to US$685.9 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.

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.

Beyond the core, we leveraged on our technologies and expertise to address the fast growing markets of Digital Sciences and Energy Transition.

In Digital Sciences, we focused on our long-standing leadership in digital technology, especially as applied to geoscience, to develop an integrated expert solution including the hardware platform, middleware and software services that are required to cost effectively support advanced cloud-based High-Performance Computing (HPC) workflows and data transformation services. In this platform, we notably propose data, algorithm and software as a service (DaaS/SaaS) on our CGG cloud.

In the Energy Transition, we propose services and technologies dedicated to Carbon Capture Utilization and Storage (CCUS), Geothermal, Environmental Sciences and Minerals and Mining. CCUS, which represents a substantial submarket, is one of the key enablers to reduce carbon footprint. Many energy companies are planning CCUS significant projects and increasingly incorporate such technologies in their development. Low carbon energy, such as hydrogen, will also require long term storage and monitoring. To be successful, these new businesses require a detailed understanding of the subsurface, domain where CGG excels, through its advanced geoscience and digital science technologies and its global earth data library.

Equipment

This operating segment comprises our manufacturing and sales activities for geophysical equipment used for data seismic acquisition, both on land and marine. Additionally, its unique portfolio of industry leading sensor technology allows to bring the benefits of its advanced sensor technology to the fast growing Monitoring and Observation market, from structural health monitoring (SHM) to monitoring solutions for energy transition (CCUS notably) and environment. 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.

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".

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.

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$, except for assets and capital employed in billions of US$	2021 GGR	Equipment	Eliminations and other [(b)]	Segment figures	IFRS 15 adjustments	Consolidated Total / IFRS figures
Revenues from unaffiliated customers	585.7	355.7	-	941.4	120.8	1,062.2
Inter-segment revenues		0.8	(0.8)	-	-	-
Operating revenues	**585.7**	**356.5**	**(0.8)**	**941.4**	**120.8**	**1,062.2**
Depreciation and amortization (excluding Multi-Client surveys)	(187.2)	(35.5)	(3.0)	(225.7)	-	(225.7)
Impairment and amortization of Multi-Client surveys	(186.2)	-	-	(186.2)	(95.3)	(281.5)
Operating income [(a)]	**(20.6)**	**5.2**	**(33.3)**	**(48.7)**	**25.5**	**(23.2)**
EBITDAs	334.4	40.4	(30.7)	344.1	120.8	464.9
Share of income from companies accounted for under the equity method	0.1	-	-	0.1	-	**0.1**
Earnings Before Interest and Tax	(20.5)	5.2	(33.3)	(48.6)	25.5	(23.1)
Capital expenditures (excluding Multi-Client surveys) [(c)]	30.5	27.7	0.4	58.6	-	58.6
Investments in Multi-Client surveys, net of cash	168.3	-	-	168.3	-	168.3
Capital employed [(d)]	**1.5**	**0.6**	**(0.1)**	**2.0**	-	**2.0**
TOTAL IDENTIFIABLE ASSETS	**1.9**	**0.6**	**0.1**	**2.6**	**-**	**2.6**

(a) Includes US$(101.8) million impairment loss on Multi-Client goodwill and US$(31.6) million for the impairment of other tangible and intangible assets at December 31, 2021.

(b) For the year ended December 31, 2021, "Eliminations and other" included US$(22.9) million of general corporate expenses.

(c) Capital expenditures included capitalized development costs of US$(29.6) million for the year ended December 31, 2021. "Eliminations and other" corresponds to the change in payables to fixed asset suppliers for the year ended December 31, 2021.

(d) Capital employed related to discontinued operations are included under the column "Eliminations and other".

In millions of US$, except for assets and capital employed in billions of US$	2020 Restated* 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)**	**(24.7)**	**(164.9)**	**(8.4)**	**(173.3)**
EBITDAs	**361.2**	**20.9**	**(22.0)**	**360.1**	**(69.2)**	**290.9**
Share of income from companies accounted for under the equity method	0.1	-	(31.9)	(31.8)	_	(31.8)
Earnings Before Interest and Tax [b]	**(129.5)**	**(10.6)**	**(56.6)**	**(196.7)**	**(8.4)**	**(205.1)**
Capital expenditures (excluding Multi-Client surveys) [d]	39.0	23.1	2.0	64.1	-	64.1
Investments in Multi-Client surveys, net 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**

* *In accordance with IFRS 5 "Non-current Assets Held for Sale and Discontinued Operations", financial information was restated to present comparative amounts for each period presented following the reclassification of our stake in a joint-venture to continuing operations. See notes 2 and 5.*

(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".*

NOTE 20 RESEARCH AND DEVELOPMENT COSTS

Research and development expenses break down as follows:

In millions of US$	December 31, 2021	2020
Research and development costs	(64.7)	(78.1)
Development costs capitalized	29.6	41.0
Research and development expensed	**(35.1)**	**(37.1)**
Government grants recognized in income	18.1	18.5
RESEARCH AND DEVELOPMENT COSTS – NET	**(17.0)**	**(18.6)**

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$	**2021**	**2020**
Impairment of assets	(131.8)	(171.1)
Restructuring costs	(27.5)	(14.8)
Change in restructuring reserves	31.5	(26.8)
Other restructuring expenses	-	-
Impairment and restructuring expenses – net	**(127.8)**	**(212.7)**
Other revenues (expense)	0.5	(2.0)
Exchange gains (losses) on hedging contracts	1.9	0.7
Gains (losses) on sales of assets	2.2	(0.5)
OTHER REVENUES (EXPENSES) – NET [(a)]	**(123.2)**	**(214.5)**

(a) Other revenues (expenses) – net excluding income (loss) on discontinued operations as explained in note 5.

Year ended December 31, 2021

In 2021, the other revenues (expenses) - net amounted to US$(123.2) million. It mainly encompasses:

- a US$(101.8) million goodwill impairment loss related to the goodwill affected to our multi-client CGU (*see note 11*);
- a US$(21.2) million non-recurring impairment loss on the Multi-Client data library. This non-recurring loss is related to the downward revision of expected sales of surveys due to the unfavorable development of the political context for exploration in the United Kingdom (*see note 10*);
- a US$1.8 million and US$(1.4) million of net proceeds respectively for the sale of GeoSoftware and Smart Data Solutions (see notes 2 and 5)
- a US$(10.5) million impairment loss on buildings right-of-use and related assets;
- a US$1.7 million gain on a sale of a building;
- a US$4.0 million cost on restructuring cost;
- a US$1.9 million gain on hedging instruments.

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.

NOTE 22 COST OF FINANCIAL DEBT

	December 31,	
In millions of US$	**2021**	**2020**
Current interest expenses related to financial debt	(113.1)	(126.4)
Interest expense on lease liabilities	(8.4)	(9.9)
Income from cash and cash equivalents	1.0	2.2
COST OF FINANCIAL DEBT, NET	**(120.5)**	**(134.1)**

NOTE 23 OTHER FINANCIAL INCOME (LOSS)

	December 31	
In millions of US$	**2021**	**2020**
Exchange gains (losses), net	(4.6)	7.8
Other financial income (loss), net	(37.8)	(47.2)
OTHER FINANCIAL INCOME (LOSS)	**(42.4)**	**(39.4)**

At December 31, 2021, the Other Financial Income (Loss) consist of a US$(42.4) million charge, including:

- a US$(25.9) million charge related to refinancing transaction costs (see note 2);
- a US$(13.8) million charge related to the prepayment premium of the existing senior notes (see note 2);
- a US$1.3 million dollar of interest income related to an R&D tax credit claim in the US; and
- a US$(4.6) million foreign exchange loss.

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 and 14*).

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.

	December 31,	
In millions of US$	**2021**	**2020 Restated***
FRANCE		
Current income tax expense	(8.2)	(12.3)
Adjustments on income tax recognized in the period for prior periods	0.2	2.5
Deferred taxes on temporary differences for the period	6.0	(24.0)
Deferred taxes recognized in the period for prior periods	6.4	4.5
TOTAL INCOME TAX BENEFIT (EXPENSE)	**4.4**	**(29.3)**

* *In accordance with IFRS 5 "Non-current Assets Held for Sale and Discontinued Operations", financial information was restated to present comparative amounts for each period presented following the reclassification of our stake in a joint-venture to continuing operations. See notes 2 and 5.*

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$	2021	2020 Restated*
Consolidated net income (loss) from continuing operations	**(181.6)**	**(407.9)**
Income taxes	**4.4**	**(29.3)**
Income (loss) from continuing operations before taxes	(186.0)	(378.6)
Net income (loss) from companies accounted for under the equity method	0.1	(31.8)
Theoretical tax basis	**(186.1)**	**(346.8)**
Enacted tax rate in France	28.41%	32.02%
Theoretical tax	**52.9**	**111.0**
TAX DIFFERENCES:		
Differences in tax rates between France and foreign countries [b]	(10.0)	(15.5)
Adjustments on the tax expense recognized in the period for prior periods	0.2	2.5
Adjustments on the deferred tax expense recognized in the period for prior periods	6.4	1.8
Valuation allowance on deferred tax assets previously recognized on losses on foreign entities	(7.3)	2.7
Other permanent differences (including withholding taxes)	(30.5)	(22.0)
Deferred tax unrecognized on losses of the period [a]	(14.7)	(128.4)
Deferred tax unrecognized on losses of prior periods	7.4	18.6
INCOME TAXES	**4.4**	**(29.3)**

* *In accordance with IFRS 5 "Non-current Assets Held for Sale and Discontinued Operations", financial information was restated to present comparative amounts for each period presented following the reclassification of our stake in a joint-venture to continuing operations. See notes 2 and 5.*

(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

In millions of US$	December 31, 2021	2020
Total deferred tax assets	**19.6**	**10.3**
Total deferred tax liabilities	**(14.1)**	**(16.3)**
TOTAL DEFERRED TAXES, NET	**5.5**	**(6.0)**

The net variation in deferred tax is mainly due to the reassement of deferred tax assets in the UK for US$13.5 million.

NET DEFERRED TAX ASSETS (LIABILITIES) BY NATURE

In millions of US$	December 31, 2021	2020
Non-deductible provisions (including provisions for pensions and profit sharing)	11.4	10.5
Tangible assets	13.1	10.9
Effects of translation adjustments not recognized in income statement	(4.1)	3.3
Multi-Client surveys (including deferred revenues)	(46.9)	(33.3)
Assets reassessed in purchase accounting of acquisitions	(17.6)	(27.4)
Development costs capitalized	(14.9)	(18.7)
Other deferred revenues	2.8	5.0
Research tax credits	20.6	20.3
Other	4.1	0.7
Total deferred tax assets net of deferred tax assets (liabilities) related to timing differences	**(31.5)**	**(28.7)**
Tax losses carried forward	37.0	22.7
TOTAL DEFERRED TAX ASSETS NET OF DEFERRED TAX (LIABILITIES)	**5.5**	**(6.0)**

DEFERRED TAX ASSETS (LIABILITIES) PER TAX GROUP AS AT DECEMBER 31, 2021

In millions of US$	France	Foreign countries	Total [(a)]
Net deferred tax assets (liabilities) related to timing differences	-	(31.5)	**(31.5)**
Deferred tax assets recognized on tax loss carried forward [(b)]	-	37.0	**37.0**
TOTAL	**-**	**5.5**	**5.5**

(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, 2021

In millions of US$	France	Foreign countries	Total
Losses scheduled to expire in 2022	–	–	–
Losses scheduled to expire in 2023 and thereafter	–	59.4	59.4
Losses available indefinitely	2,314.0	454.5	2,768.5
TOTAL	**2,314.0**	**513.9**	**2,827.9**

Tax audit and litigation

US

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. At the Appeals Conference in March 2021 the IRS agreed to settle for an overall 77% of the R&D credit. This results in an anticipated cash refund of $15M, including tax refund of $13M and interest of $2M, plus a deferred adjustment of $10M. As we have a reserve of $9M in the books already, we only need to true up for another $827K (before valuation allowance). Appeals team sent their final report to JCT end of April. Joint Committee completed their review in August 2021. In October 2021, we received the refunds for years 2007 to 2011, in an amount of $8M, comprised of $7M in principal and $1M in interest. The IRS informed us that the remaining $7M check would be mailed to us on December 27. As of December 31, 2021, the check had not been received yet.

Brazil

ISS disputes

The Municipality of Rio de Janeiro (hereafter "the Municipality") has assessed Veritas do Brasil Ltda services taxes (ISS) on MCDL revenues for 2001 to 2008 - which has been duly disputed. In the meanwhile, in June 2004, Veritas do Brasil Ltda has launched a declaratory to recognize that there is no ISS on multi-client licenses and requesting the refund for amounts unduly paid in the past for an amount of US$3.1 million.

Veritas do Brasil Ltda has obtained a final decision in its favor in the declaratory action in February 2014. Further to this decision, the tax foreclosure covering 2001 to May 2003 has been officially terminated in March 2015 and the tax assessment cancelled in January 2016.

In February 2016, the Municipality filed a Rescission Action in order to have the favorable decision from the declaratory action cancelled based on two arguments: i) on the merit of the refund and ii) on the refund approved. 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. After several actions from the Municipality of Rio a new judge has been appointed in April 2019. The case is still on-going. The Group considers that there is no proper ground for this action, but it can jeopardize the refund from the declaratory action as it is possible that judge requests Veritas do present proof of taking ISS burden or presenting an authorization from clients to receive such amounts both of which Veritas do not have at this point. Because of that, refund amounts are fully reserved (US$ 3.1 million).

With regards to the paperwork from the refund related to the declaratory action, paperwork is being discussed for a long time. In May 2021, judge decides to request issuance of the refund paperwork without the interest portion and requests that interest paperwork is issued only after ruling of the rescission action. In June 2021, paperwork related to principal plus monetary correction (US$ 1.7M) was issued while the paperwork related to the interest portion (US$ 1.4M) has been postponed due to such decision. In June 2021 Veritas filed an appeal to have paperwork from interest issued without waiting ruling on the rescission action. Ruling of such appeal is still pending.

For the years 2003-2008 (taxes at stake: US$9.5 million, 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. On November 8, 2021, we received notification that the assessment was fully cancelled based on the decision from declaratory action.

REFIS payments 2009

Veritas do Brasil 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 Brasil Ltda was notified of the first instance decision which was unfavorable to Veritas do Brasil Ltda . On July 24, 2019 Veritas do Brasil Ltda filed an appeal against the unfavorable decision. Considering that Veritas do Brasil Ltda has all proper documentation, the risk (US$2 million) is considered remote and is not reserved.

Withholding tax and CIDE disputes

Following a 2012 audit on year 2009, CGG do Brasil Participacoes Ltda was reassessed US$ 4.7 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 Brasil Participacoes Ltda filed a motion to clarify the decision. In November 2019, CGG do Brasil 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 ruling our special appeal. On June 5, 2020 CGG do Brasil Participacoes Ltda filed an appeal from this decision. On June 30, 2020, the special appeal was accepted for ruling. On December 14, 2021, counselors decided to take a step back and after a tie on the votes, they applied the Minerva vote (in theory extinguished in 2020) to decide that they would not accept the special appeal for ruling based on the facts that the divergent rulings presented were related to different services. Decision is pending publishing. After publishing, CGG do Brasil Participacoes Ltda will file a writ of mandamus to try reopening the administrative case based on the fact that the Minerva vote could not be applied and also based on the fact that there is no need for services mentioned in the divergent rulings to be equal, but just similar.

No provision is recognized as CGG do Brasil Participacoes Ltda considers the risk less likely than not to happen.

In 2016, a new audit was conducted for fiscal year 2013. CGG do Brasil Participacoes Ltda received tax reassessments on December 20, 2017 for amounts of US$10.4 million for withholding tax and US$6.9 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 Brasil Participacoes Ltda and the Brazilian Tax authorities appealed against such decisions.

In July 2019, the Taxpayers Council ruled the CIDE tax case against CGG do Brasil Participacoes Ltda. and the company filed a motion to clarify such decision. In November 2021, our motion to clarify in the CIDE tax case was ruled in our favor, but it did not change the merit of the second instance decision. We are waiting publishing of such decision in order to file a special appeal.

In October 2019, the Taxpayers Council ruled the withholding tax case in favor of CGG do Brasil Participacoes Ltda. On March 31, 2020, the Federal Public Attorney filed a special appeal against the second instance decision based on the decision 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 Brasil Participacoes Ltda has filed its counterarguments to the special appeal. CGG do Brasil Participacoes Ltda is waiting for the final decision of the TaxPayers Council.

No provision is recognized as CGG do Brasil Participacoes Ltda considers the risk less likely than not to happen.

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 Brasil Participacoes Ltda decided to pursue the same discussion regarding ISS included in the PIS/COFINS basis. CGG do Brasil 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$1.7 million. A Writ of mandamus was filed on July 20, 2020. On July 23, 2020, injunction was granted to start excluding ISS from PIS/COFINS basis suspending its liability (US$ 0.3 million has been excluded so far). 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 Brasil 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 our motion to clarify in our favor. On September 21, 2020, the Brazilan Tax Authorities appealed from such decision. CGG do Brasil Participacoes Ltda presented its counteraguments in November 2020. CGG do Brasil Participacoes Ltda is waiting for the decision.

No asset has been recognized so far as the Group believes Supreme Court can try to reduce the rights related to refunds.

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 Brasil Participacoes Ltda decided to pursue the same discussion regarding PIS/COFINS included in its own basis. CGG do Brasil 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$4.7 million. CGG do Brasil Participacoes Ltda filed a Writ of mandamus on July 21, 2020. On July 22, 2020, an injunction was granted to start excluding PIS/COFINS from its own basis suspending its liability. On July 27, 2020, the IRS appealed from the injunction decision and judge maintained our injunction in the same date. On September 18, 2020, a judge decided in favor of CGG do Brasil Participacoes Ltda allowing the exclusion of PIS/COFINS from its own basis and also the compensation of amounts unduly paid in the past 5 years with interest counting from undue payment. On September 21, 2020, tax authorities appeal from this decision. On October 01, 2020, CGG do Brasil Participacoes Ltda presented a motion to clarify asking the judge to say that we can both ask for a refund or compensate the amounts paid in the 5 years and to make it say that interest needs to be applied until compensation/refund. On October 07, 2020, the judge denied our motion to clarify saying he can opt for the refund or compensation in his decision and saying he already ruled about interest application in his decision. On October 22, 2020, CGG do Brasil Participacoes Ltda filed counterarguments to the IRS appeal and on October 28, CGG filed an appeal to first instance decision to discuss application of interest/right for compensation or refund. CGG do Brasil Participacoes Ltda. In March 2021, second instance decision was unfavorable to CGG. Starting from there, all amounts at stake for future exclusion of PIS/COFINS from their own basis are being deposited judicially (US$ 1.6 million of deposits so far). In August 2021, CGG filed appeals to Superior Court of Justice and Supreme Court.

No provision on the deposits is recognized as CGG do Brasil Participacoes Ltda considers the risk less likely than not to happen.

Also, no asset has been recognized so far as the Group believes Supreme Court can try to reduce the rights related to refunds.

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$8.3 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 of business and not on 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.

On 2021, several meetings between judges in charge were held without a final decision as of December 31, 2021.

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$15.6 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. Oral report occurred in August 2021.

No provision has been recognized, as the risk is considered as less likely than not to happen.

NOTE 25 PERSONNEL

The analysis of personnel (included discontinued operations) is as follows:

	Year ended December 31	
	2021	**2020**
Personnel employed under French contracts	949	1,050
Personnel employed under local contracts	2,363	2,840
TOTAL	**3,312**	**3,890**

The total cost of personnel employed was US$382 million in 2021 (or US$347 million excluding Contactual Data Acquisition, the CGG 2021 Plan, Smart Data Solutions and Geosoftware), US$427 million in 2020 (or US$390 million excluding Contactual Data Acquisition and the CGG 2021 Plan).

6

NOTE 26 KEY MANAGEMENT PERSONNEL COMPENSATION

The table below presents the director fees and the CEO compensation paid.

	Year ended December 31,	
in US$	**2021**	**2020**
Short-term employee benefits paid (a)	1,308,679	2,080,658
Directors' fees	486,822	484,241
Post-employment benefits – pension (b)	14,671	14,134
Share-based payments (c)	30,699	451,641

(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 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 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:

- 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 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 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

CGG Joint Ventures and Associates are mainly related to Land Data Acquisition.

The following table presents the transactions with our joint ventures and associates.

	December 31					
	2021			2020		
In millions of US$	Joint ventures [(a)]	Associates [(b)]	Total	Joint ventures [(a)]	Associates [(b)]	Total
Sales of geophysical equipment	–	37.2	37.2	-	23.1	23.1
Equipment rentals and services rendered	–	0.4	0.4	-	1.0	1.0
Operating Revenue	**-**	**37.6**	**37.6**	**-**	**24.1**	**24.1**
Costs of services rendered	(0.7)	–	(0.7)	(2.6)	(0.3)	(2.9)
Cost of operations	**(0.7)**	**-**	**(0.7)**	**(2.6)**	**(0.3)**	**(2.9)**
Other financial income (loss)	**-**	**-**	**-**	**-**	**(13.3)**	**(13.3)**
Trade accounts and notes receivable,including agency arrangements	1.6	2.3	3.9	2.3	21.9	24.2
Receivables and assets	**1.6**	**2.3**	**3.9**	**2.3**	**21.9**	**24.2**
Trade accounts and notes payable,including agency arrangements	–	0.9	0.9	-	0.9	0.9
Payables and liabilities	**-**	**0.9**	**0.9**	**-**	**0.9**	**0.9**

(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 process of liquidation.

(b) Mainly correspond to investments in Argas, a company accounted for under the equity method at our Land Data Acquisition business (see notes 2 and 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 2021 was US$421.6 million compared to US$299.5 million in 2020, due to the increase in activity. In this context. change in working capital had a negative effect of US$(84.9) million in 2021. This change mainly resulted from the multi-client survey delivery cycle and, to a lesser extent, to the year-end sales in Geoscience, and was partially compensated by the good cash collection stream, mostly due to our Equipment segment deliveries, and reduction in inventories.

Depreciation, amortization and impairment

In 2021, depreciation and amortization included a US$(133.4) million impairment loss including:

- US$(101.8) million impairment loss of our Multi-Client CGU goodwill;
- US$(21.2) million impairment loss on the Multi-Client data library;
- US$(10.5) million impairment losses on buildings right-of-use.

In 2020 depreciation and amortization included a US$(175.1) million of impairment loss including:

- US$(99.6) million impairment loss on the Multi-Client data library;
- US$(24.0) million impairment loss of our Geoconsulting CGU goodwill;
- US$(36.9) million impairment loss on Geosoftware business available for sale; and
- US$(14.6) million impairment losses on other tangible and intangible assets.

Net (gain) loss on disposal of fixed and financial assets

In 2021, the net gain (loss) on disposal of assets was US$2.7 million and notably encompasses the net proceeds from the sale of GeoSoftware and Smart Data Solutions respectively for US$1.8 million and US$(1.4) million.

Net cash flow from operating activities

Net cash provided by operating activities was US$336.6 million in 2021 compared to US$264.3 million in 2020.

Investing activities

The net cash used in investing activities was US$(138.8) million in 2021 compared to US$(289.6) million in 2020. The change was driven by:

- a decrease in Multi-client Data investments of US$70.7 million from 2020. We carried out two marine streamer programs, one in the Norwegian North Sea and one in Brazil as well as five reprocessing projects in 2021;
- a net proceed of US$91.8 million related to the sale of GeoSoftware and Smart Data Solutions *(see note 2 and 5)*;
- a net proceed from financial assets of US$(2.4) million which is attributable to a net cash outflow following the exercise of the put option by Eidesvik and subsequently the acquisition by Rasmussengruppen of all Shearwater shares owned by CGG (*see notes 2, 7 and 14*);
- the acquisition of shares of two companies through the Equipment segment for a net cash consideration of US$(1.9) million.

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 2021, net cash flow used by financing activities was mainly related to:

- US$(96.7) million of net proceed from the refinancing (*see note 2*);
  - US$(1,227.5) million of repayment of long-term debt composed of (a) US$(628.3) million of Existing First Lien Notes principal repayment, (b) US$(585.3) million of Existing Second Lien Notes principal repayment (including capitalized interest, and (c) US$(13.8) million of First Lien Call Premium,
  - US$1,159.8 million of total issuance of long-term debt made up of (a) US$1,185.9 million of 2027 Notes proceed and (b) US$(25.9) million of transaction costs,
  - US$(29.3) million of Accrued interest from Existing Notes until redemption included in Financial expenses paid of US$(89.8) million;
- an innovation loan received for US$2.0 million;
- lease repayments of US$(57.0) million;
- a loan granted to Xcalibur Group as part of the sale of Multi-Physics business for US$(1.8) million; and
- dividends paid to minority shareholders for US$(3.6) million.

In millions of US$	December 31, 2021	December 31, 2020
Property lease	(34.3)	(29.2)
Property formerly classified as financial lease	*(7.8)*	*(5.6)*
Other property	*(26.5)*	*(23.6)*
Machinery & equipment lease	(22.7)	(26.3)
Total cash flow for leases	**(57.0)**	**(55.5)**

Cash and cash equivalents

	Year ended December 31,	
In millions of US$	**2021**	**2020**
Cash and bank deposits	216.8	323.6
Cash equivalents and short-term deposits	102.4	61.8
TOTAL CASH AND CASH EQUIVALENTS	**319.2**	**385.4**

Cash and cash equivalents included trapped cash amounting to US$37.5 million as at December 31, 2021, compared to US$48.9 million as at December 31, 2020. 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 2021, cash equivalents and short-term deposits excludes US$25.6 million of cash pledged to fulfill certain collateral requirements. The cash pledged for more than one year is recorded for US$15.4 million in other financial assets (*see note 7*) and the cash pledged for less than one year is recorded for US$10.2 million in restricted cash (*see note 4).*

NOTE 29 EARNINGS PER SHARE

In millions of US$	Year 2021	2020 Restated*
Net income attributable to shareholders (a)	(180.5)	(440.5)
Effect of dilution		
Ordinary shares outstanding at the beginning of the year (b)	711,392,383	709,956,358
Weighted average number of ordinary shares outstanding during the period resulting from the exercise of stock options and delivery of performance shares (c)	159,087	808,384
Weighted average number of treasury shares (d)	(24,996)	(24,996)
Weighted average number of ordinary shares outstanding ((e) = (b) + (c) - (d))	**711,526,474**	**710,739,746**
Total dilutive potential shares from stock options	-	–
Total dilutive of potential shares from performance share plans	-	–
Total dilutive of potential shares from warrants	-	–
Dilutive weighted average number of shares outstanding adjusted when dilutive (f)	**711,526,474**	**710,739,746**
Earnings per share		
– **Basic (a)/(e)**	**(0.25)**	**(0.62)**
– **Diluted (a)/(f)**	**(0.25)**	**(0.62)**
Net income from continuing operations attributable to owners of the Group	(182.1)	(411.6)
– Earnings per share, basic	(0.25)	(0.58)
– Earnings per share, diluted	(0.25)	(0.58)
Net income from discontinued operations attributable to owners of the Group	1.6	(28.9)
– Earnings per share, basic	-	(0.04)
– Earnings per share, diluted	-	(0.04)

* *In accordance with IFRS 5 "Non-current Assets Held for Sale and Discontinued Operations", financial information was restated to present comparative amounts for each period presented following the reclassification of our stake in a joint-venture to continuing operations. See notes 2 and 5.*

NOTE 30 SUBSEQUENT EVENTS

CGG signed a binding offer for the sale and leaseback of its Headquarter Building

On 14 January 2022, CGG has signed a binding offer with Pramena Investment & Anacap Financial Partners for the sale, in the frame of sale and leaseback transaction, of its headquarter building Galileo located in Massy, France. The closing of this transaction is expected early Q2 2022 at the latest.

War in Ukraine

We are monitoring very closely the implications of war in Ukraine with the main objective of supporting our employees and evaluating its economic consequences. CGG has no operational presence in Ukraine. Its footprint on the ground in Russia is rather limited. In 2021, revenue generated from Russia represented around 4% of CGG Group revenue.

NOTE 31 LIST OF PRINCIPAL CONSOLIDATED SUBSIDIARIES AS AT DECEMBER 31, 2021

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
	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 Services (Canada) Inc.	Canada	100.0
	CGG Services (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, 2021.

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

The table below shows the fees from our external auditors and their affiliated companies paid by the Group:

	December 31,			
	2021		2020	
In thousands of US$	EY	Mazars	EY	Mazars
Audit fees	1,610	798	1,704	823
Audit-related fees	172	105	88	68
Tax fees	60	26	-	-
Other fees	-	1	-	57
TOTAL	**1,842**	**930**	**1,792**	**948**

Audit-related fees are mainly linked to refinancing and sustainability audits.

6.1.6 Statutory auditors' report on the consolidated financial statements

Year ended December 31, 2021

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 Annual General Meeting 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, 2021.

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, 2021 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 rules required by 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, 2021 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 the health emergency have had numerous consequences for companies, particularly on their operations and their financing, and have led to greater uncertainties on their future prospects. Some of these measures, such as travel restrictions and remote working, have also had an impact on the companies' internal organisation 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.

Valuation of goodwill

Key audit matter	Our response
As presented in note 11 to the consolidated financial statements as of December 31, 2021, the goodwill amounts to a net value of US$ 1,084m breaking down as follows: – Geoscience : US$ 724m; – Multi-clients : US$ 182m; – Equipment : US$ 177m. 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 used assumptions are described in note 11 to the consolidated financial statements. The determination of the recoverable amount of goodwill is very largely based on management judgment, in particular with regard to: – the future cash flows expected from the cash-generating units assessed, including normative cash flows that are used beyond the third year. These normative cash flows include flows from new businesses addressing the fast growing markets of Digital Science, Energy Transition and Monitoring and Observation Solutions; – the discount rates applied to the future cash flows; – the long-term growth rate retained for the cash flow projection. As indicated in note 11 to the consolidated financial statements, impairment losses were recorded in the amount of US$ 102m during the year ended December 31, 2021 on the Multi-Clients cash-generating unit. We considered the valuation of goodwill as a key audit matter, due to its importance in the accounts and the necessary management estimates and judgments, particularly in the context of energy transition.	Our procedures thus mainly consisted in: – obtaining an understanding of the methodology used by management to assess the recoverable amount of goodwill and examining the compliance with the applicable accounting standards; – assessing the consistency of the estimated future cash flows with the main underlying operating assumptions, from the 2022 budget and the outlook for the period 2023-2024, prepared by management and approved by the Board of Directors; – obtaining an understanding and examining the assumptions retained for the purpose of estimating normative cash flows, especially with regard to the outlook for the oil and gas market on the one hand, and the Digital Science, Energy Transition and Monitoring and Observation Solutions markets on the other hand; – performing a retrospective analysis of the cash flow estimates; – assessing the existence of any external information which could contradict management's assumptions. We have included valuation specialists in our team for the purpose, in particular, of assessing the discount rates and long-term growth rate retained by management and assess the appropriateness of the discount rates to the level of risk embedded in the cash flows. They independently determined acceptable rate ranges and examined the rates used by management in relation to those ranges. We have also examined the appropriateness of the information 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 especially with regard to the choice of variables and the assumptions of variations. We also verified the arithmetical accuracy of these expectations.

Valuation of multi-client surveys

Key audit matter	Our response
As presented in note 10 to the consolidated financial statements as of December 31, 2021, the carrying amount of the multi-client surveys totals US$ 393.1m. As presented in note 1.7 to the consolidated financial statements, The Group's multi-client surveys regroup seismic surveys for which non-exclusive licenses are granted to customers. All the costs of acquisition, processing and finalization of the surveys are recognized as intangible assets. The multi-client surveys are valued at the aggregate of those costs less accumulated amortization, or at their fair values if the latter is the lower. Management ensures, at least once a year and more frequently in the event of any indication of impairment, that the carrying amount of multi-client surveys does not exceed their recoverable amounts. The assessment of the recoverable amount of multi-client surveys is very largely based on management judgment, in particular with regard to the forecasting of future sales. In that respect, and as indicated in note 10, US$ 21.2m of impairment losses were recognized at the end of 2021. Given the elements described above, we considered measurement of the multi-client surveys as a key audit matter.	We have obtained an understanding of the methodology used by the Group's management to assess the recoverable amount of multi-client surveys and have examined its compliance with the applicable accounting standards. We have assessed the consistency of future sales forecasts: – in relation to the forecasts made by management as part of the impairment test for the previous year, by comparing actual sales with previous forecasts, – and with surveys' attractiveness for potential customers. We assessed the existence of external information that could contradict management's assumptions. When management judged that impairment should be recognized, we inquired management about the reasons for the impairment and assessed its consistency with our understanding of the market. We have also examined the appropriateness of the information 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 that are required by laws and regulations of the information relating to the Group given in the management report of the Board of Directors.

We have no matters to report as to their fair presentation and their consistency with the consolidated financial statements.

We attest that the consolidated non-financial statement required by Article L. 225-102-1 of the French Commercial Code (Code de commerce) is included in the 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 Officier and the Chief Financial Officier complies with the single electronic format defined in Commission Delegated Regulation (EU) No. 2019/815 of 17 December 2018. Regarding to consolidated financial statements, our work includes verifying that the tagging thereof complies with the format defined in the above mentioned regulation.

On the basis of our work, we conclude that the preparation 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, 2021, MAZARS and ERNST & YOUNG et Autres were in the nineteenth year and forty-fifth year of total uninterrupted engagement (out of which forty one 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 approved 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 11 2022

The statutory auditors

MAZARS	ERNST & YOUNG et Autres
Jean-Louis Simon	Claire Cesari-Walch

6.2 2020-2021 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, 2021, the parent company's trade payables totaled €19.9 million, which can be broken down as follows:

ARTICLE D. 441 L.-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	42					10
Total amount of invoices concerned, in millions of euros (incl. VAT)	18.9				1.0	1.0
Percentage of the total amount of invoices concerned	95.2%				4.8%	4.8%
(B) Invoices excluded from (A) that relate to unrecorded liabilities						
Number of excluded invoices	10					
Total amount of excluded invoices, in millions of euros (incl. VAT)	1.7					
(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, 2021, the parent company's trade receivables totaled €23.7 million, which can be broken down as follows:

ARTICLE D. 441 L.-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	47					4
Total amount of invoices concerned, in millions of euros (incl. VAT)	23.6	0.1				0.1
Percentage of the total amount of invoices concerned	99.6	0.4%				0.4%
(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 payent terms					

6.2.6 Financial results of CGG SA (group holding company) over the last five years

In €	2017	2018	2019	2020	2021
I. Financial position at year-end					
a) Capital stock	17,706,519	7,099,448	7,099,563	7,113,923	7,116,639
b) Number of shares outstanding	22,133,149	709,944,816	709,956,358	711,392,383	711,663,925
c) Maximal number of shares resulting from convertible bonds (see note below)	1,160,364	-	-	-	-
d) Total Equity	280,022,548	1,790,163,681	1,887,496,882	811,891,486	520,894,173
II. Earnings					
a) Sales net of sales tax	26,467,304	27,549,575	26,389,011	16,884,801	29,013,250
b) Earnings before taxes, employee profit sharing, depreciation and reserves	9,019,980	52,664,150	60,121,733	12,844,224	(377,765,039)
c) Employee profit sharing	-	-	-	-	-
d) Income taxes	(57,430,849)	250,482	(19,924,332)	(7,256,246)	(3,744,126)
e) Income after taxes, employee profit sharing, depreciation and reserves	(944,927,344)	(271,326,175)	97,295,002	(1,075,646,338)	(291,183,172)
f) Dividends	-	-	-	-	-
III. Earnings per share					
a) Earnings after taxes and profit sharing but before depreciation and reserves	3.00	0.07	0.11	0.03	(0.53)
b) Earnings after taxes, depreciation and reserves	(42.69)	(0.38)	0.14	(1.51)	(0.41)
c) Net dividend per share	-	-	-	-	-
IV. Personnel					
a) Average number of employees	32	27	22	18	14
b) Total payroll	8,923,393	8,229,076	8,263,169	5,515,555	5,402,078
c) Employee benefits (social security, etc.)	3,423,145	2,731,349	3,116,675	1,919,830	2,222,716

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

7.1 OWNERSHIP OF SHARE CAPITAL

7.1.1 Places where CGG securities are listed

The trading market for the Company's ordinary shares is Euronext Paris (Compartment C - SRD - ISIN code : FR0013181864 ; symbol "CGG"). Our ordinary shares will entitle their holders to all rights attached to them on January 1, 2021.

In addition:

- Senior Secured Notes due 2027 are listed on the Euro MTF market of the Luxembourg Stock Exchange; and
- the Warrants #1 and Warrants #2 are listed on Euronext Paris.

Following delisting of the American depositary shares (ADSs) from the New York Stock Exchange in 2018, 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.

7.1.2 Shareholding

Information on the share capital as at December 31, 2021

As at December 31, 2021, we had 1,037 shareholders in registered form.

As at December 31, 2021, our Directors held 588,461 shares and 20,156 ADSs, representing 609,617 voting rights, i.e. 0.08% of the share capital and 0.08% of the voting rights.

As at December 31, 2021, 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 0.00003% of the share capital and 0.00008% of the voting rights of CGG.

As at December 31, 2021, the Company held 24,996 of its own shares, acquired pursuant to the authorizations granted by the shareholders.

As at December 31, 2021	Number of shares	% of share capital	Number of theoretical voting rights	% of theoretical voting rights	Number of voting rights exercisable during General Meetings	% of voting rights exercisable during General Meetings
Contrarian Capital Management LLC [(a)]	65,633,491	9.22%	65,633,491	9.21%	65,633,491	9.21%
River & Mercantile [(b)]	56,703,102	7.97%	56,703,102	7.96%	56,703,102	7.96%
FCPE CGG Actionnariat [(c)]	273	0.00%	546	0.00%	546	0.00%
Public	589,302,063	82.81%	589,302,063	82.73%	589,302,063	82.73%
Treasury stock [(d)]	24,996	0.00%	24,996	0.00%	0	0.00%
TOTAL NUMBER OF SHARES OUTSTANDING AND VOTING RIGHTS	**711,663,925**	**100%**	**712,328,461**	**100%**	**712,303,465**	**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 June 4, 2021. However, in a letter to the Autorité des Marchés Financiers dated February 25, 2022, River & Mercantile declared that it crossed below on February 22, 2022, following the sale of CGG shares, the thresholds of 5 % of the capital and voting rights of the Company and that it held 14,282,168 CGG shares representing 2.01% of the capital and 2.00% of voting rights of the Company.

(c) As at December 31, 2021, the 273 shares held by FCPE CGG Actionnariat (all benefiting from double voting rights) represented 0,00003% of the capital and 0.00008% of the voting rights (theoretical and exercisable during General Meetings). For the sake of clarity of this table, they have been rounded to 0.00%.

(d) As at December 31, 2021, the 24,996 shares held by the Company represented 0.0035% of the capital and of the theoretical voting rights. These shares are deprived of voting rights for all General Meetings. The corresponding voting rights are reflected to provide theoretical voting rights only. For the sake of clarity of this table, they have been rounded to 0.00%.

Evolution of the share capital over the past three years

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 the closing of the last three financial years and as of February 28, 2022:

	February 28, 2022		December 31, 2021		December 31, 2020		December 31, 2019	
	% 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)]	9.22	9.21	9.22	9.21	9.23	9.22	9.24	9.24
FIL Limited [(b)]	5.21	5.21	-	-	-	-	-	-
River & Mercantile [(c)]	-	-	7.97	7.96	7.19	7.18	5.00	5.00
Boussard & Gavaudan [(d)]	-	-	-	-	7.02	7.02	6.05	6.05
Norges Bank [(e)]	-	-	-	-	-	-	5.16	5.16
Thunderbird Partners LLP [(f)]	-	-	-	-	7.02	7.02	5.72	5.71
Morgan Stanley [(g)]	-	-	-	-	-	-	5.39	5.39
UBS Group AG [(h)]	-	-	-	-	-	-	5.00	5.00
Treasury stock [(i)]	0.00	0,00	0.00	0,00	0.00	0.00	0.00	0.00
FCPE CGG Actionnariat [(j)]	0.00	0,00	0.00	0,00	0.00	0.00	0.00	0.00
Public	85.57	85.58	82.81	82.73	76.56	76.58	58.44	58.45
TOTAL	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
TOTAL NUMBER OF SHARES OUTSTANDING AND VOTING RIGHTS	**711,788,233**	**712,456,407**	**711,663,925**	**712,328,461**	**711,392,383**	**711,643,049**	**709,956,358**	**710,094,886**

(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) *In a letter to the Autorité des Marchés Financiers dated February 21, 2022, FIL Limited declared that it crossed above on February 15, 2022, following the purchase of CGG shares, the thresholds of 5 % of the capital and voting rights of the Company, and held 37,082,385 CGG shares representing as many voting rights, i.e. 5.21% of the capital and voting rights of the Company.*

(c) *In a letter to the Autorité des Marchés Financiers dated February 25, 2022, River & Mercantile declared that it crossed below on February 22, 2022, following the sale of CGG shares, the thresholds of 5 % of the capital and voting rights of the Company, and held 14,282,168 CGG shares representing 2.01% of the capital and 2.00% of voting rights of the Company.*

(d) *In a letter to the Autorité des Marchés Financiers dated July 1, 2021, Boussard & Gavaudan Partners Limited declared that it crossed, on June 25, 2021, indirectly below, through the intermediary of the companies of its group, which act on behalf of funds they manage, the thresholds of 5% of the capital and voting rights of the Company and indirectly held, on behalf of said funds, 34,440,145 CGG shares representing as many voting rights, i.e. 4.84% of the Company's capital and voting rights. This crossing of thresholds results from a sale of CGG shares on the market. The Company has been informed that as of November 2, 2021, Boussard & Gavaudan Partners Limited no longer holds any CGG shares.*

(e) *In a letter to the Autorité des Marchés Financiers dated January 13, 2021, Norges Bank declared that it crossed below on January 8, 2021, following the return of CGG shares held as collateral, the thresholds of 5 % of the capital and voting rights of the Company, and held 33,796,572 CGG shares representing as many voting rights, i.e. 4.75% of the capital and voting rights of the Company.*

(f) *In a letter to the Autorité des Marchés Financiers dated June 10, 2020, Thunderbird Partners LLP declared that it crossed below on June 9, 2020, the thresholds of 5% of the capital and voting rights of the Company and held for account of said funds, 35,038,781 CGG shares representing the same number of voting rights, i.e. 4.94% of the capital and 4.93% of the voting rights of the Company.*

(g) *In a letter to the Autorité des Marchés Financiers dated June 18, 2020, Morgan Stanley declared that it crossed below on June 12, 2020, indirectly through its subsidiaries, the thresholds of 5% of the capital and voting rights of the Company.*

(h) *In a letter to the Autorité des Marchés Financiers dated March 13, 2020, UBS Group AG declared that it crossed below on March 10, 2020, directly and indirectly, through the companies of its group, the thresholds of 5% of the capital and voting rights of the Company.*

(i) *As at December 31, 2021, the 24,996 shares held by the Company represented 0.0035% of the capital and of the theoretical voting rights. These shares are deprived of voting rights for all General Meetings. The corresponding voting rights are reflected to provide theoretical voting rights only. For the sake of clarity of this table, they have been rounded to 0.00%.*

(j) *As at December 31, 2021, the 273 shares held by FCPE CGG Actionnariat (all benefiting from double voting rights) represented 0,00003% of the capital and 0.00008% of the voting rights (theoretical and exercisable during General Meetings). For the sake of clarity of this table, they have been rounded to 0.00%*

(k) *Theoretical voting rights.*

To the best of the Company's knowledge and as of the date of this Document, based on the threshold crossing declarations made to the French Financial Markets Authority (*Autorité des Marchés Financiers*), no shareholder other than Contrarian Capital Management LLC and FIL Limited, holds a stake in the Company of more than 5% share capital or voting rights. For a detailed presentation of the legal threshold crossings in 2021, please refer to Section 7.4.5 of this Document.

To the best of the Company's knowledge and as of the date of this Document, there have been no other substantial changes in ownership of the Company's share capital over the past three years.

7.1.3 Transactions in the Company's shares carried out by persons exercising managerial responsibilities

Summary transactions disclosed 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 French Financial Markets Authority (AMF).

Name	Nature of the transaction	Date	Number of shares	Unit price	Amount of the transaction
No transaction to be disclosed for 2021 financial year					

Note: Pursuant to Article 223-23 of the General Regulation of the French Financial Markets Authority, the only 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.

7.2 DISTRIBUTION OF EARNINGS - DIVIDENDS

7.2.1 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, in the absence of a determination by the General Meeting, 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.

7.2.2 Dividends

The Company did not distribute any dividends over the past five years.

The Board of Directors is not considering proposing to distribute dividends at the next General Meeting based on 2021 results. The future dividend distribution policy will depend on the results achieved by the Company and its financial situation.

7.3 GENERAL INFORMATION ON THE COMPANY'S SHARE CAPITAL

7.3.1 Recent major events affecting the share capital

DETAILS OF CHANGES IN SHARE CAPITAL DURING THE PAST THREE YEARS AND SHARE CAPITAL AS AT DECEMBER 31, 2021

SHARE CAPITAL AS AT	Nominal value	Number of shares created	Amount of the capital variation	Number of cumulated shares	Total share capital
DECEMBER 31, 2021				**711,663,925**	**€7,116,639.25**
Exercise of warrants	€0.01	6,162	€61.62	-	-
Allocation of performance shares	€0.01	265,380	€2,653.80	-	-
DECEMBER 31, 2020				**711,392,383**	**€7,113,923.83**
Exercise of warrants	€0.01	12,272	€122.72	-	-
Allocation of performance shares	€0.01	1,423,753	€14,237.53	-	-
DECEMBER 31, 2019				**709,956,358**	**€7,099,563.58**
Exercise of warrants	€0.01	9,504	€95.04	-	-
Exercise of stock options	€0.01	2,038	€20.38	-	-

7.3.2 Dilutive instruments

As of December 31, 2021 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 E 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, 2021, 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.

	12.31.2021	Dilution %
Stock-options	11,904,700	1.67%
Performance shares	5,421,173	0.76%
Warrants #1	29,449,805	4.14%
Warrants #2	47,922,360	6.73%

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 and exercisable during financial year 2021:

	Warrants #1	Warrants #2
Number of warrants issued	22,133,149	71,932,731
Exercise ratio	3 Warrants #1 for 4 new shares	3 Warrants #2 for 2 new shares
Exercise price	€3.12 per new share	€4.02 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
Expiry date of the warrants	February 21, 2022[(b)]	February 21, 2023

(a) The 24,996 Warrants #1 allocated to the Company in connection with the treasury shares were cancelled.
(b) As at the date of this Document, Warrants #1 have expired.

- **Warrants #1:** warrants allocated to the shareholders of CGG;
- **Warrants #2:** warrants associated with new shares (ABSA), all of which were subscribed by holders of preferential subscription rights.

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.

7.3.3 Share buyback program

A. Share buyback program approved by the General Meeting held on May 12, 2021

At the General Meeting held on May 12, 2021, 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 ensure the facilitation 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); and
- 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;
- to 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 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 November 11, 2022.

As of the date of this Document, this share buyback program was not implemented.

As of December 31, 2021, the Company held 24,996 of its own shares.

B. Share buyback program proposed to the General Meeting to be held in 2022

A share buyback program will be submitted to the General Meeting to be held in 2022 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 facilitation 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;
- to 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.

7.3.4 Delegations of powers granted to the Board of Directors in force in the course of 2021

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 2021

	Resolution number – General Meeting	Period	Maximum authorized amount	Use of the authorization in 2021
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	06.24.2021: allocation of 1,910,920 stock-options, i.e. 0.269% of the share capital on 06.16.2020
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	06.24.2021: allocation of 2,427,905 performance shares, i.e. 0.342% of the share capital on 06.16.2020
SHARE CAPITAL INCREASES				
By incorporation of reserves, profits, premiums or other	16th – GM 05.12.2021	26 months	€711,394 [(a)], i.e. 10% of the Company's share capital as of the date of convening of the General Meeting	None
With preferential subscription right	17th – GM 05.12.2021	26 months	€3,556,968 [(b)], 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 other than the ones referred to in Article L. 411-2 of the French Monetary and Financial Code	18th – GM 05.12.2021	26 months	€711,394 [(a)], 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 public offerings referred to in Article L. 411-2 1° of the French Monetary and Financial Code	19th – GM 05.12.2021	26 months	€711,394 [(a)], i.e. 10% of the Company's share capital as of the date of convening of the General Meeting	None

	Authorizations in force in 2021			
	Resolution number – General Meeting	**Period**	**Maximum authorized amount**	**Use of the authorization in 2021**
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	21st – GM 05.12.2021	26 months	15% of the initial issue	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)]	22nd – GM 05.12.2021	26 months	2% of the Company's share capital as of the date of the General Meeting	None
In consideration of contributions in kind	23rd – GM 05.12.2021	26 months	€711,394 [(a)], i.e. 10% of the Company's share capital as of the date of convening of the General Meeting	None
SHARE BUY-BACK PROGRAM				
Share repurchase*	15th – GM 05.12.2021	18 months	10% of the share capital Maximum amount: €4.02 per share	None
CAPITAL REDUCTIONS				
Share cancellation	24th – GM 05.12.2021	26 months	10% of the share capital	None

(a) To be deducted from the aggregate ceiling of €3,556,967,51 set forth in the 17th resolution of the General Meeting held on May 12, 2021 (see (b) below).
(b) Aggregate ceiling for share capital increases, any operations considered, with the exception of stock-options and performance shares allocations.
(c) Category of persons under Article L. 225-138 of the French Commercial Code.
** Renewal proposed at the the 2022 General Meeting.*

7.3.5 Securities not giving access to the share capital

Secured bonds due 2027

On April 1, 2021, CGG SA issued 2027 secured bonds at 8.75% for a nominal amount of 500 million US dollars and 2027 secured bonds at 7.75% for a nominal amount of 585 million euros (together , the "2027 Bonds"). In connection with the issuance of these notes, CGG SA, as issuer, 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 1, 2021 (for more information on the 2027 Bonds, please refer to Note 2 and 13 of our 2021 Consolidated Financial Statements).

7.4 GENERAL INFORMATION ON THE COMPANY'S GENERAL MEETINGS

7.4.1 Convening (Articles 14.2 and 14.3 of the articles of association)

The General Meeting is convened and makes decisions 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.

7.4.2 Conditions to attend and vote at General Meetings (Article 14.6 of the 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 the articles of association.

The General Meeting is composed of all the shareholders, whatever the number of shares they hold.

Shareholders may participate in General Meetings in accordance with the terms and conditions provided for by the regulations in force.

7.4.3 Double voting rights (Article 14.6 of the 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.

7.4.4 Threshold crossings to be notified to the Company (Article 7.2 of the articles of association)

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 the 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.

7.4.5 Legal threshold crossings in 2021 and as of the date of this Document

The table below shows all the legal threshold crossings reported during fiscal year 2021 and as of the date of this Document.

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 River & Mercantile						
02.25.22	02.22.22	5%	Below	14,282,168	2.01	2.00
By FIL Limited						
02.21.22	02.15.22	5%	Above	37,082,385	5.21	5.21
By BlackRock Inc.						
03.26.21	03.25.21	5%	Below	35,162,372	4.94	4.94
03.23.21	03.19.21	5%	Above	37,838,316	5.32	5.32
03.19.21	03.18.21	5%	Below	31,964,758	4.49	4.49
03.18.21	03.17.21	5%	Above	36,022,921	5.06	5.06
By Norges Bank						
01.13.21	01.08.21	5%	Below	33,796,572	4.75	4.75
01.12.21	01.07.21	5%	Above	37,341,358	5.25	5.25

7.4.6 *Titres au porteur identifiables* (Article 7.1 of the articles of association)

The Company may avail itself of the legal procedure known as *titres au porteur identifiables*, according to which the Company is entitled to request Euroclear France to disclose the name, nationality, address and the number of shares held by holders of those of the Company's securities which have, or which may in the future acquire, voting rights.

7.4.7 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 the Company's articles of association when crossing the threshold of 1% of the share capital or the voting rights.

7.4.8 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.

7.4.9 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 Company's articles of association, 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 has been complied with.

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 rights and share transfers. The Company is not aware of any agreement in application of 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 7.1.2 and 7.1.3 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 employee 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, 2021, 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 the articles of association

The rules applicable to the appointment and replacement of Board of Directors' members are described in Article 14 of the articles of association. The rules applicable to the modification of articles of association 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

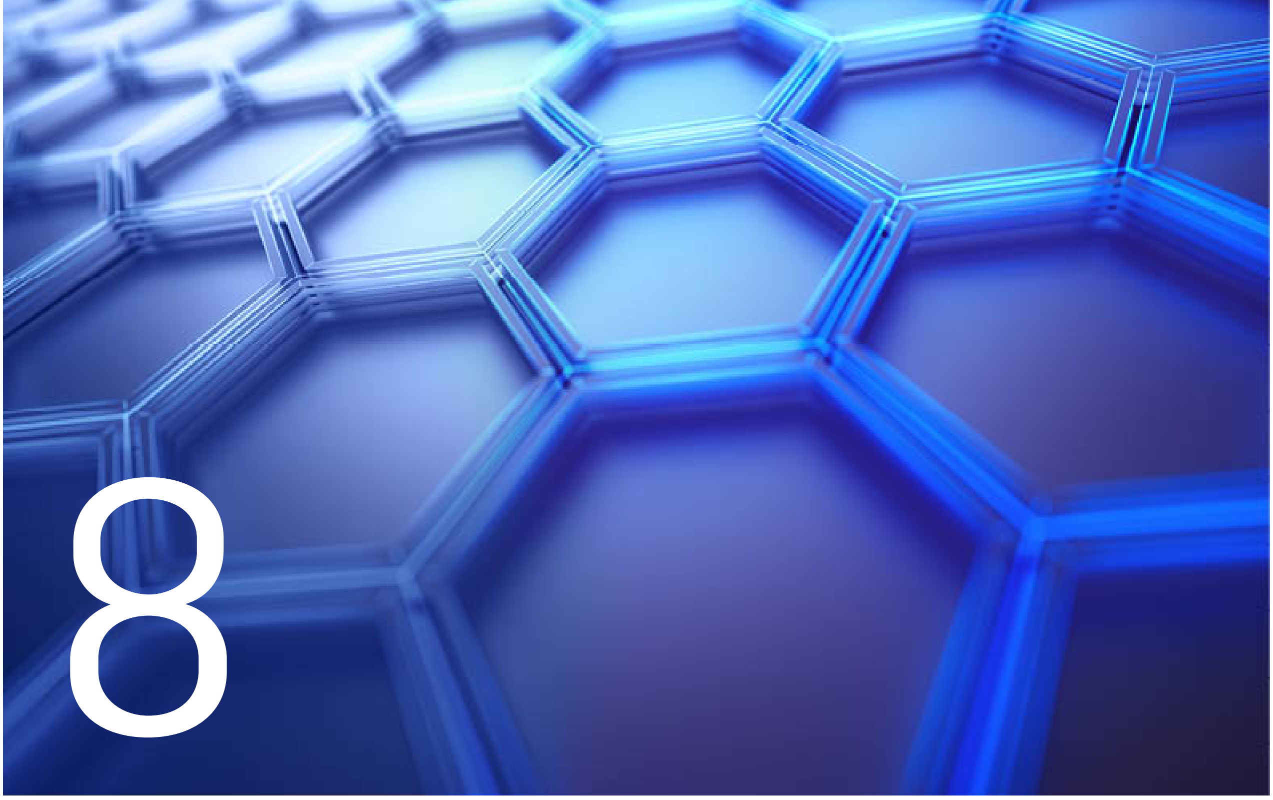
The Board of Directors does not have any specific power likely to have an influence in case of a take-over bid. The delegations of competence currently in force (presented under section 7.3.4 of this Document) cannot be used by the Board of Directors in case of a take-over bid.

Agreements entered into by the Company and modified or terminated in the event of change of control over the Company

The indentures governing the Company's outstanding senior notes and certain of its 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 corporate officers or employees who resign or who are dismissed without cause or 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)xi. of this Document with respect to the Company's corporate officers, we inform you that certain executives of the Group benefit from a protection letter providing for 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 of the concerned persons.



ADDITIONAL INFORMATION

8.1 INFORMATION ABOUT 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 969 202 241 RCS Évry.

APE code: 7490B

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 identifying, assessing, understanding and/or solving the Earth's natural resource, environmental and infrastructure challenges, through different techniques, including but not limited to the data, technology, services and equipment that are required to understand and monitor these challenges, in any and 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 Vessels Compensation and off-market component

On January 8, 2020, the Capacity Agreement between CGG and Shearwater became effective. The main terms and conditions of the agreement are set out in section 1.1.3.1 "Exit of Contractual Data Acquisition business" of this Document.

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 CGG's financial statement of position unless a trigger event 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 April 1, 2021 and are reported here for information:

- secured bonds due in 2027 issued by CGG SA (for more information, please refer to Note 2 and 13 of the consolidated accounts);
- a super senior revolving credit agreement due in 2025 signed by CGG SA (for more information, please refer to Note 2 and 13 of the consolidated accounts).

8.3 RELATED PARTY TRANSACTIONS

Please refer to note 27 to the 2021 consolidated financial statements in section 6.1 of this Document for more details.

8.4 STATUTORY AUDITORS

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 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

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 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 THIS UNIVERSAL REGISTRATION DOCUMENT

Name and function of persons responsible

Sophie ZURQUIYAH, Chief Executive Officer

Yuri BAIDOUKOV, Chief Financial Officer

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 cross-reference table presented in section 8.7.2 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 on March 11, 2022

Sophie ZURQUIYAH	Yuri BAIDOUKOV
Chief Executive Officer	Chief Financial Officer

8.7 CROSS-REFERENCE TABLES

8.7.1 Cross-reference 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
1-2 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
5-1-1 Nature of operations	1.2.1 1.2.2 6.1.5 Note 19
5-1-2 New products and services	1.1.4 1.2.1 1.2.2
5-2 Principal markets	1.1 1.1.1 1.2 1.2.1 1.2.2 6.1.5 Note 19
5-3 Important events	1.1.3 6.1.5 Note 2 6.2.4 Note 2 (in French only)

	Section of the Universal Registration Document
5-4 Strategy and objectives	1.1 3.2 3.3 3.4 3.5
5-5 Dependence on patents, licenses, contracts and manufacturing processes	2.2.2 3.4.3
5-6 Statement regarding competitive position	1.2.1 1.2.2
5-7 Investments	1.4 6.1.5 Notes 7 & 8
5-7-1 Material investments	1.4 6.1.5 Notes 7 & 8
5-7-2 Material investments in progress or pending	1.4 6.1.5 Notes 7 & 8
5-7-3 Information on joint ventures and associates	1.2.2 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	3.5
6- Organizational structure	
6-1 Brief description of the Group	1.1 1.6 5.1.1
6-2 List of significant subsidiaries	1.6.1 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 5.1.3 6.1 6.2
7-1-2 Indication of future development and activities in the field of research and development	1.3 3.4.1 3.4.3 6.1.5 Note 20 6.2.4 Note 1 (in French only)
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 5.1.2
7-2-2 Reasons for material changes in net sales or revenues	n.a.

	Section of the Universal Registration Document
8- Capital resources	
8-1 Information concerning 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 5.1.3 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	1.1.4 1.7 6.1.5 Note 30 6.2.4 Note 24 (in French only)
10-2 Events likely to have a material effect on prospects	1.1.3 1.7 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
12- Administrative, management and supervisory bodies and senior management	
12-1 Information about members	4.1.2.1 4.1.2.2 4.1.3
12-2 Conflicts of interest	4.1.3 4.1.6 4.2.1.1
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)

	Section of the Universal Registration Document
14- Board practices	
14-1 Date of expiration of terms of office	4.1.3.1
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	4.1.3.3. b
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	7.1.2
16-2 Existence of different voting rights	7.4.3 7.4.8 6.1.5 Note 15
16-3 Direct or indirect control	7.4.7
16-4 Arrangements the operation of which may result in a change in control	7.4.9
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	5.1.1 6.1.5 Notes 1 and 19 6.2.4 Note 1 (in French only)
18-1-4 Change of accounting framework	n.a.
18-1-5 Balance sheet, income statement, change in equity, cash flow statement, accounting methods and explanatory notes	5.1.3 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.

	Section of the Universal Registration Document
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	3.9
18-3-3 Unaudited financial information	n.a.
18-4 Pro forma financial information	n.a.
18-5 Dividend policy	2.2.6.2 7.2.1
18-5-1 Description of the policy on dividend distributions and any restrictions	2.2.6.2 7.2.1
18-5-2 Amount of the dividend per share	6.2.4 Note 7 7.2.2
18-6 Legal and arbitration proceedings	1.1.3.3 2.2.2.3 2.4 6.1.5 Notes 2, 3, 17 and 24 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	7.1.2 7.3
19-1-1 Amount of subscribed capital, number of shares issued and fully paid and par value per share, number of shares outstanding	7.1.2 7.3 6.1.5 Note 15 6.2.4 Note 7 (in French only)
19-1-2 Information about shares not representing capital	7.3.5
19-1-3 Number, carrying amount and face value of shares held by the Company	7.1.2 7.3.3
19-1-4 Convertible securities, exchangeable securities or securities with warrants	6.1.5 Note 15 6.2.4 Note 7 (in French only) 7.1.2 7.3.2
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) 7.3.1
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) 7.3.2
19-1-7 History of share capital	7.1.2 7.3.1
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	7.4.3 7.4.9
19-2-3 Provisions having the effect of delaying, deferring or preventing a change in control	7.4.9
20- Material contracts	8.2
21- Documents available	8.5

8.7.2 Cross-reference 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
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	1.6.1
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	1.7
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 / 2.2.1.5 / 2.2.6.1
Exposure to price risk, credit risk, liquidity and cash-flow risks	2.2.5
Internal control and risk management procedures	2.1
Anti-corruption measures	2.2.6.2 / 2.2.6.3 / 3.3.1
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.
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	4.1.4
Delegations of authority currently in force relating to capital increase and use of these delegations during the last financial year	7.5.4
Conditions for shareholders' participation at the General Meeting or related provisions of the articles of association	7.6.2
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	7.4.4
– 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	7.4.9
– Owners of any securities conferring special rights of control and description of these securities	7.4.9
– Control procedure provided in the event of potential employee shareholdings with control rights not exercised by the latter	7.4.9

	Section of the Universal Registration Document
– Agreements between shareholders of which the Company is aware and which may give rise to restrictions on share transfers	7.4.9
– Rules governing the appointment and replacement of Board members and the amendment of the articles of association	7.4.9
– Powers of the Board of Directors and in particular – concerning the issuance or buyback of shares	7.4.9
– 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	7.4.9
– 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	7.4.9
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)	4.1.5 / 4.1.6
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	7.1.2
Share buyback programs	7.3.3
Employee share ownership in the Company on the last day of the fiscal year	7.1.2
Grant to and retention by corporate officers of performance shares and/or stock option	4.2.2.1 B.c.vii
Transactions on the Company's shares by the corporate officers or their close relatives	7.1.3
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	5.1.3 (section Statutory financial statements of CGG SA)/7.2.2
Information on suppliers and customers payment terms	6.2.5
STATEMENT OF NON FINANCIAL PERFORMANCE	3 / See cross-reference table below
MISCELLANEOUS	
Terms of office of Statutory Auditors	8.4
Litigation and arbitration	2.4

8.7.3 Cross-reference 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 cross-reference table above
Report on corporate governance	See cross-reference table above
Statement of the persons assuming responsibility for the annual financial report	8.6
Statutory 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 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 3.8
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 withdrawal from Acquisition activities has significantly reduced the impact of the Company's activities on climate change. Risks related to energy transition and market transformation are dealt with in 2.2.1.4. Our environmental performance in 3.5 and since this year the European green taxonomy in 3.6.
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
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 ndependent third party on non-financial statement	3.9

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

A French Société Anonyme with a share capital of €7,116,702

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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 2021 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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