Inventing the future

Universal Registration Document 2019

INCLUDING THE ANNUAL FINANCIAL REPORT

Air Liquide

Content

2019 UNIVERSAL REGISTRATION DOCUMENT

Including the annual Financial Report

AUTORITÉ DES MARCHÉS FINANCIERS

AMF

This Universal Registration Document has been filed on March 3, 2020 with the AMF, as competent authority under Regulation (EU) 2017/1129, without prior approval pursuant to Article 9 of the said regulation.

The Universal Registration Document may be used for the purposes of an offer to the public of securities or admission of securities to trading on a regulated market if completed by a securities note and, if applicable, a summary and any amendments to the Universal Registration Document. The whole is approved by the AMF in accordance with Regulation (EU) 2017/1129.

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This document is a non-binding "free" translation from French into English and has no legal value other than an informative one. Should there be any difference between the French and the English version, only the text in French language shall be deemed authentic and considered as expressing the exact information published by Air Liquide.

A financial and technical glossary is provided at the end of the document – pages 374 to 377.

INTERVIEW WITH BENOÎT POTIER,

CHAIRMAN AND CHIEF EXECUTIVE OFFICER

What are your thoughts about this past year?

I'm very proud. 2019 was a landmark year for many reasons. We combined a significant improvement in performance with a high level of investments to serve our customers and strengthen our efficiency, and the implementation of a robust climate action plan.

More generally, some new and fine achievements were made in all our business lines. In Large Industries, numerous long-term contracts were signed, notably in the United States, with for example Methanex and GCGV, and also Shell in Canada and the Philippines. In our Industrial Merchant activity, I can mention the acquisition of Tech Air by our American subsidiary Airgas and the launch of Qlixbi, a new-generation welding solution. In Healthcare, several acquisitions in home healthcare were completed in Europe. In Electronics, major contracts were signed, especially in Asia. Significant progress was also made in our major markets, with the development of biomethane, for example, and Turbo-Brayton advanced technology, which is helping reduce CO_2 emissions from maritime transportation. 2019 was also a key year for deploying hydrogen mobility, with the signature of new partnerships in Asia and our pursued investments worldwide.

In addition, we renewed our organization. The Group's Executive Committee was reinforced with four new members: it is now younger, more international and more gender-balanced, with a wealth of different profiles and skills. Their energy and diversity of perspectives clearly offer new strengths for the future!

I would like to thank our 67,000 employees in 80 countries, who commit day after day to the success of our Group. It is their energy that has enabled us to successfully pursue our objectives this year.

Could you tell us more about Air Liquide's financial performance in 2019?

In 2019, our Group posted a 4.3% increase in revenues to reach 21,920 million euros, and a 6.1% [a] increase in net profit, at 2.2 billion euros. On a comparable basis, all Gas & Services activities [b], which account for 96% of Group revenue, progressed over the year, with particularly dynamic Electronics and Healthcare. Geographically, every region grew [c], notably the Europe and Asia-Pacific regions.

Overall, and despite the expected global economic slowdown observed in the fourth quarter of 2019, the Group delivered robust results, confirming the relevance of its economic model and strategy. The improvement in our operating margin reflects the dynamic management of both pricing and product mix, of the asset portfolio, as well as efficiencies reaching 433 million euros. In a context where industrial opportunities remain high, the Group's investment decisions rose sharply, to 3.7 billion euros. The year's performance is in line with all our NEOS program targets and Climate objectives.

(a) 6.1% published growth in net income (Group share)/11.1% like-for-like growth in recurring net profit (Group share).

(b) On a comparable basis, excluding currency, energy and significant scope impacts.

(c) Excluding currency, energy and significant scope impacts.

What is your view today on the customer-centric transformation strategy you introduced in 2016?

This strategy continues to bear fruit. The satisfaction of our 3.7 million customers and patients is what drives all our action. To continually serve them better, we make a priority of ensuring a very high level of reliability, safety and competitivity. We've successfully pursued our continuous improvement approach, notably through the Voice of the Customer program, which collects and analyzes customer opinions worldwide. The digitization of our business lines is also helping us to offer customers increasingly personalized solutions and more agile interactions. Overall, digital technology is increasingly integrated into our offering, processes and work methods.

This progress was recognized in the 2019 eCAC40 Awards, where we were ranked first [a] among French companies for digital transformation, compared with 16th in 2015. This is a fine achievement.

What action has been carried out since announcing the sector's most ambitious Climate objectives at the end of 2018?

We're aiming to reduce our carbon intensity by 30% by 2025, compared to our 2015 emissions. To achieve this goal, we've introduced a global approach with action in three complementary areas: within our company, with our customers and for a low-carbon society. Since early 2019, a number of tangible projects have supported this ambition. I would like to mention three that are particularly innovative: our participation in the Northern Lights project for the development of offshore CO_2 capture and storage on the Norwegian continental shelf, and the partnerships with our customers thyssenkrupp Steel and ArcelorMittal to reduce carbon emissions from their steel production.

In hydrogen, we've set up new partnerships with major clients like Sinopec in China to develop hydrogen mobility. We've also started building the world's largest membrane-based electrolyzer in Canada to produce carbon-free hydrogen. In my view, hydrogen is a critical solution to the challenges of the energy transition and clean transportation. A growing number of global stakeholders are moving in this direction, particularly as part of the Hydrogen Council, which I have been co-chairing for the past two years and which now has more than 80 members. In this Council, we're committed to accelerating the technological and economic progress already made, through our ambitions and investments. A good example is the deployment of 120 charging stations designed and installed worldwide.

> **"In my view, hydrogen is a critical solution** to the challenges of the energy transition."

These examples also demonstrate the Group's capacity for innovation. What progress have you made in this area?

In 2019, we continued to reinforce our open innovation approach, focused on energy transition, the environment, health and digital transformation. We finalized the deployment of our five Innovation Campuses worldwide, a connected network open to our innovation partners (universities, technology institutes, customers and start-ups). For example, since June 2019, the brand-new Paris Innovation Campus has housed Accelair, our deep tech start-up accelerator for disruptive technologies. In addition, the Air Liquide Scientific Challenge continued to reinforce our cooperation with the academic community. In 2019, we named three winners who will benefit from a partnership with the Group to develop new market-oriented technologies as part of their projects.

How do you see the near future for Air Liquide?

My priorities are employee safety, sustained competitivity and of course innovation, which is essential for developing new solutions and ways of working in a constantly changing world. I'm confident in the Group's future and our employees' commitment to continuing on the path of profitable, regular and responsible growth for the benefit of industry, health and a sustainable society.

(a) e-CAC 40 Awards, Les Echos, October 2019.

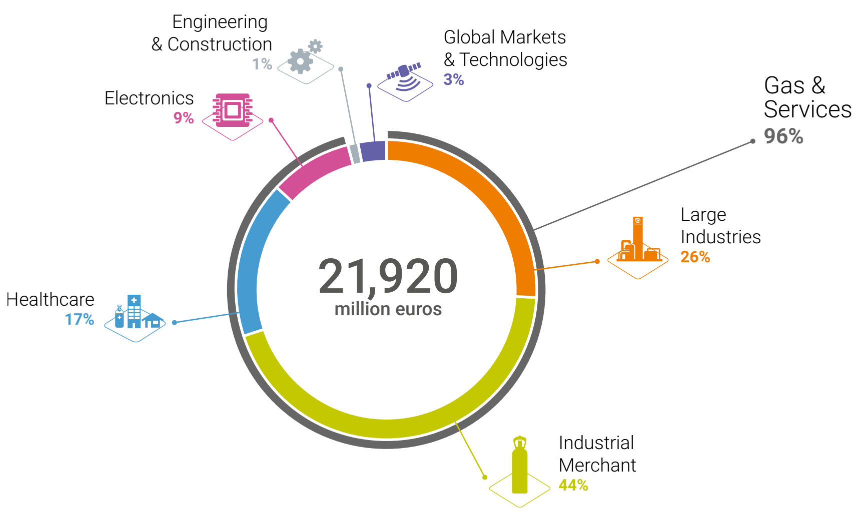
A GLOBAL PRESENCE

Present in
80
COUNTRIES

~67,000
employees

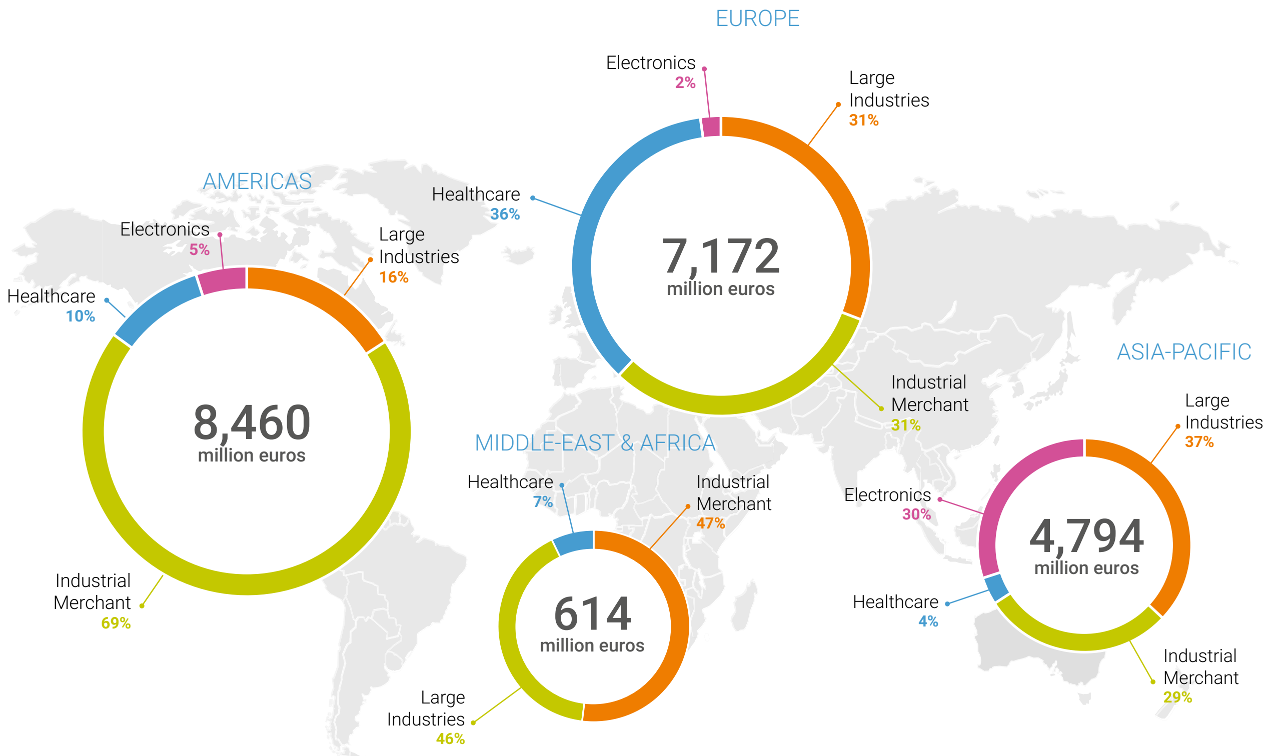
A world leader
in gas, technologies
and services
for Industry
and Health

2019 GROUP REVENUE BY ACTIVITY



28% of revenue for Gas & Services for Industry [(a)] realized in developing economies

2019 GROUP REVENUE BY REGION AND BY ACTIVITY, FOR GAS & SERVICES (G&S)



(a) Gas & Services for Industry (GSI): Large Industries, Industrial Merchant, Electronics.

A WIDE RANGE OF MARKETS AND A STRONG BUSINESS MODEL

KEY ELEMENTS BY BUSINESS LINE [a]

LARGE INDUSTRIES

26% of Group Revenues
5,628 million euros
+2% on average over 5 years

- High capital intensity
- Customers in metals, chemicals, refining and energy
- Industrial basin and pipeline network strategy
- Long term contracts (15 years) with minimum volumes covered by take-or-pay clauses, and prices indexed on costs, including on energy cost
- Synergies with other business lines

INDUSTRIAL MERCHANT

44% of Group Revenues
9,755 million euros
+14% on average over 5 years

- Technological solutions adapted to customers' businesses
- More than 2 million customers
- Importance of logistics
- High number of applications and end-markets

HEALTHCARE

17% of Group Revenues
3,693 million euros
+8% on average over 5 years

- Gases, equipment, and services at home, in hospitals, and medical practices
- 1.7 million patients
- Geographical density
- Operations relying on remote patient monitoring and sophisticated IT systems

ELECTRONICS

9% of Group Revenues
1,964 million euros
+10% on average over 5 years

- Technological solutions with ultra high purity gases and advanced materials
- Long-term contracts for nitrogen, with minimum volumes covered by take-or-pay clauses, and indexation on energy costs
- Concentration of the activity in Asia

ENGINEERING & CONSTRUCTION

1% of Group Revenues
328 million euros in third party sales

Design and construction of plants and equipment, for the Group and third party customers.

GLOBAL MARKETS & TECHNOLOGIES

3% of Group Revenues
552 million euros

Development and supply of technological solutions for the energy transition and deep tech markets

(a) Published data.

CONSTANT EVOLUTION FOR MORE THAN 100 YEARS

1902

ORIGIN

Air Liquide was born of innovation and began with the encounter between two men: Georges Claude, inventor of an industrial process for the production of oxygen from liquid air, and Paul Delorme, a visionary entrepreneur.

1913

LISTING ON THE STOCK EXCHANGE

The critical role played by shareholders became evident in the first years of the Company's development. Listed on the Paris Stock Exchange in 1913, the share celebrated its hundredth-year of listing in 2013.

1952

THE CRYOGENIC REVOLUTION

Storing gas in liquid form in cryogenic tanks allows vast quantities to be transported by road or rail within a radius of approximately 200-250 km from the production site.

1960

PIPELINE NETWORK STRATEGY

Air Liquide adopted a network strategy for the first time, linking its gas production units to one another. The Group increased its production capacity to meet soaring demand from large industries.

1985

A NEW MARKET: ELECTRONICS

In Japan, the Group began to supply ultra-high purity gases to the semi-conductor industry.

1995

EXTENDED OFFERING: HYDROGEN AND STEAM

In addition to oxygen and nitrogen, Air Liquide extended its offering to hydrogen and steam. The Group gets involved to protect the environment and to provide more competitive energy.

HEALTHCARE

Originally an oxygen supplier to hospitals, Air Liquide became a specialist in the healthcare sector. The Group launched its Home Healthcare business and set up a dedicated network of specialized teams.

2016

AIRGAS ACQUISITION BY AIR LIQUIDE

This acquisition enabled the Group to be integrated on the whole value chain of the American market, combining Air Liquide's production capacities with Airgas' distribution channels.

2018

ENERGY TRANSITION AND CLIMATE OBJECTIVES

On November 30, 2018, Air Liquide announced its Climate Objectives, in particular a 30% reduction in its carbon intensity between 2015 and 2025, with a global approach that includes its assets, its customers, and ecosystems.

2019

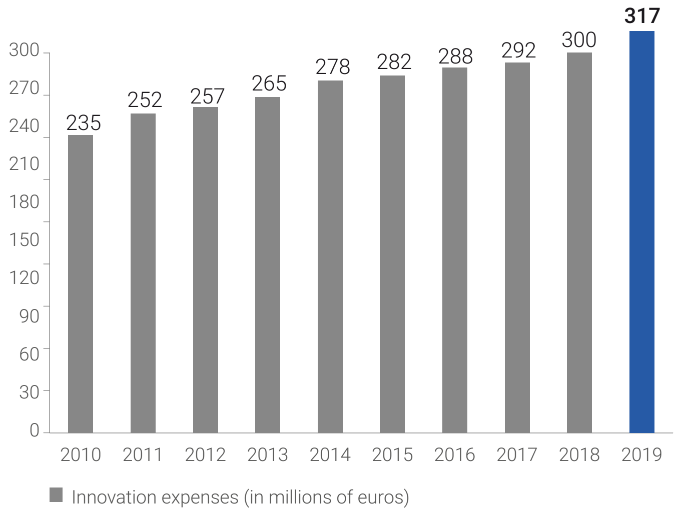
INCREASING IMPORTANCE OF NEW HYDROGEN MARKETS

Air Liquide invested in new hydrogen markets at large scale: production using electrolysis in Canada, hydrogen liquefaction for a station network in California, and a first project where coal is replaced with hydrogen to produce low-carbon steel in Germany.

AN INNOVATIVE COMPANY

INNOVATION EXPENSES

INNOVATION EXPENSES SINCE 2010 (10 YEARS)

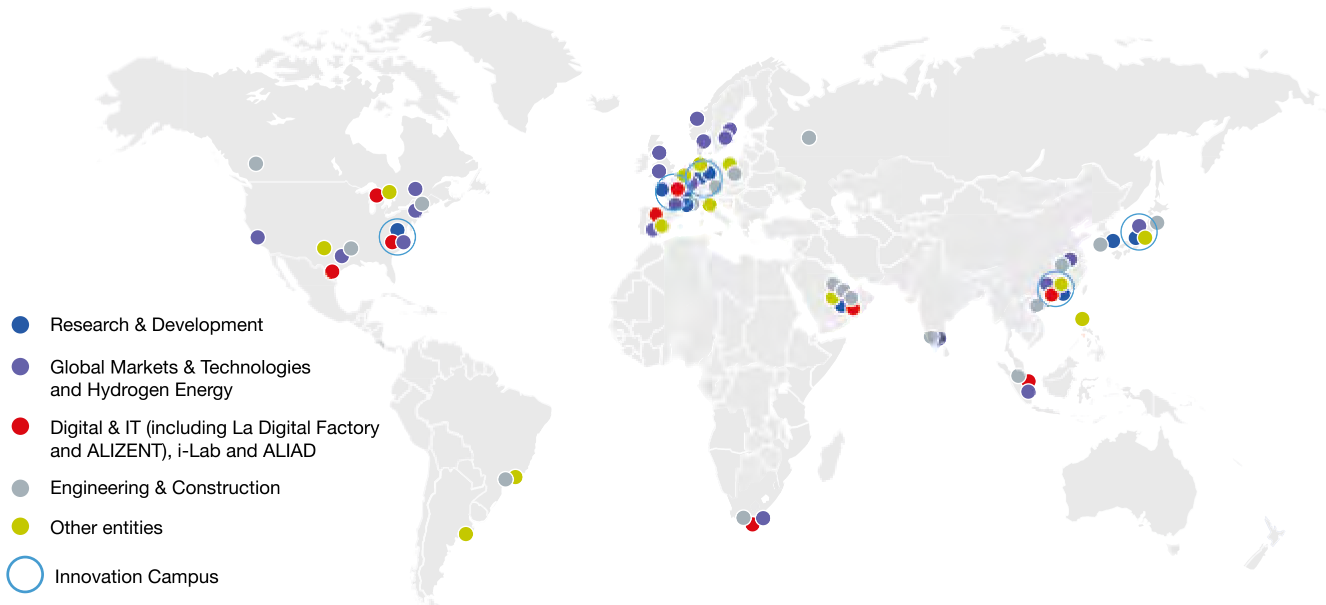


330
new patents filed in 2019

More than 300
industrial and scientific partnerships and collaborations with start-ups

A GLOBAL INNOVATION ECOSYSTEM

4,300
employees in entities dedicated or contributing to innovation



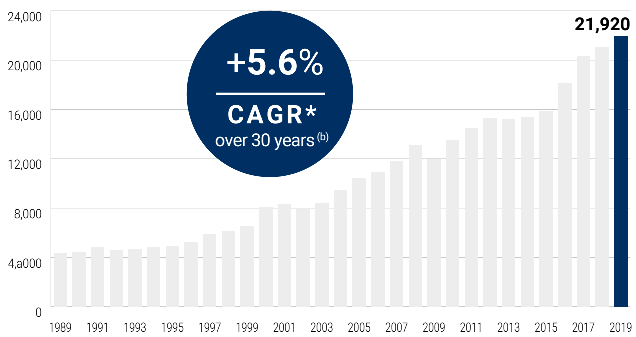
REGULAR AND SUSTAINED PERFORMANCE

Created in
1902

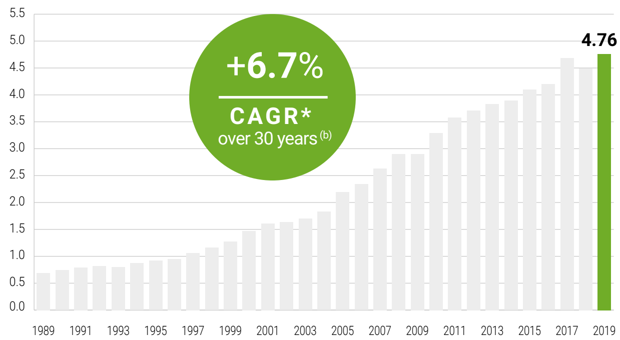
19.1%
2019 Gas & Services Operating Margin / Revenue

CONSISTENT PERFORMANCE OVER 30 YEARS

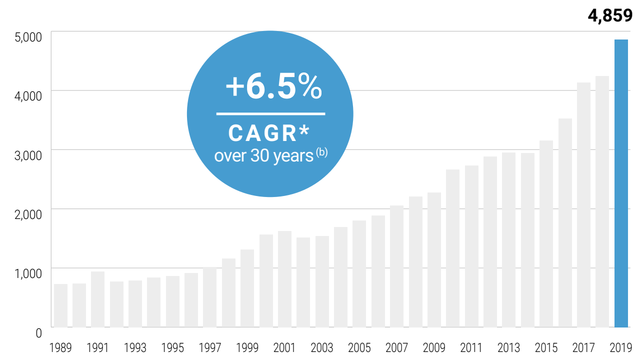
REVENUE
(in million euros)



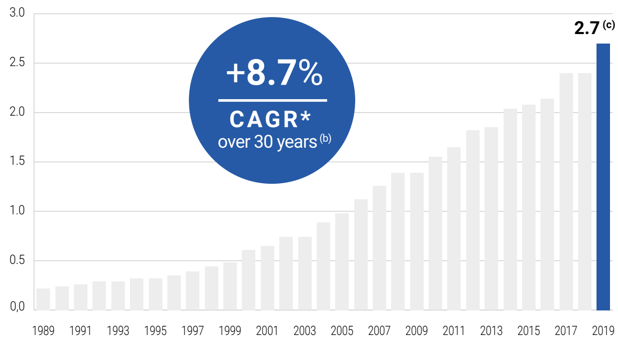
EPS (a)
(in euros)



CASHFLOW
(in million euros)



DIVIDEND (a)
(in euros per share)



* *Compound Annual Growth Rate.*

(a) *Adjusted for the 2-for-1 share split in 2007, for attributions of free shares and for a factor of 0.974 reflecting the value of the rights of the capital increase completed in October 2016.*

(b) *Calculated according to prevailing accounting rules over 30 years.*

(c) *Dividend 2019 subject to the approval of shareholders during the General Meeting on May 5, 2020.*

TSR
Total Shareholder Return
for a single registered share

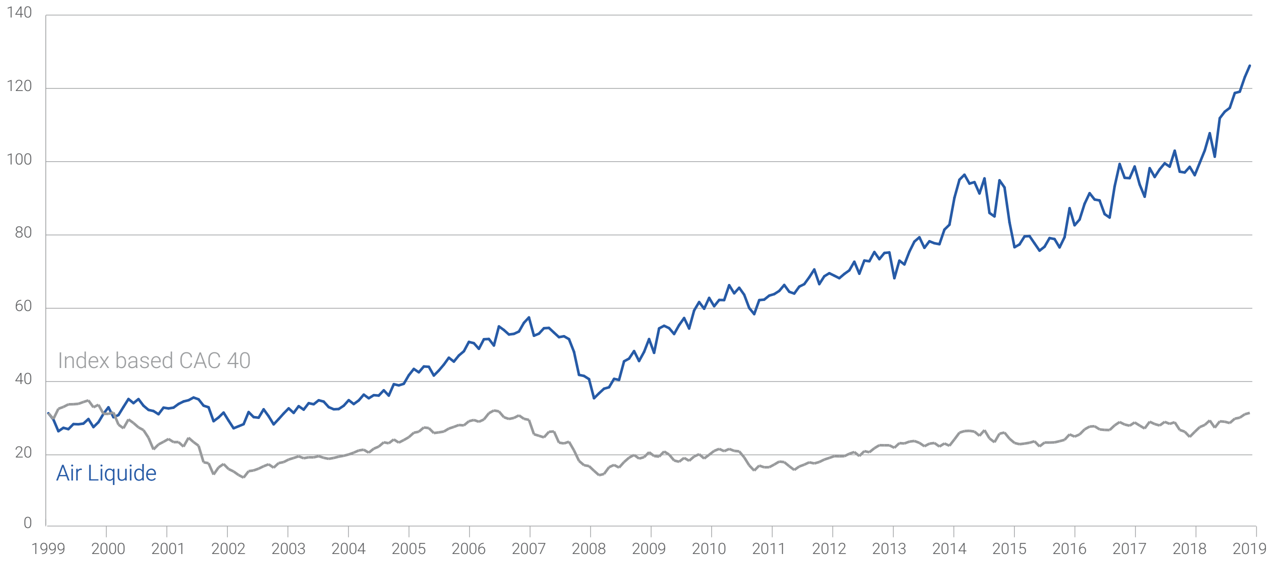
+12.0%
over 5 years (d)

+12.6%
over 10 years (e)

(d) *At December 31, 2019, for an invested capital since December 31, 2014.*

(e) *At December 31, 2019, for an invested capital since December 31, 2009.*

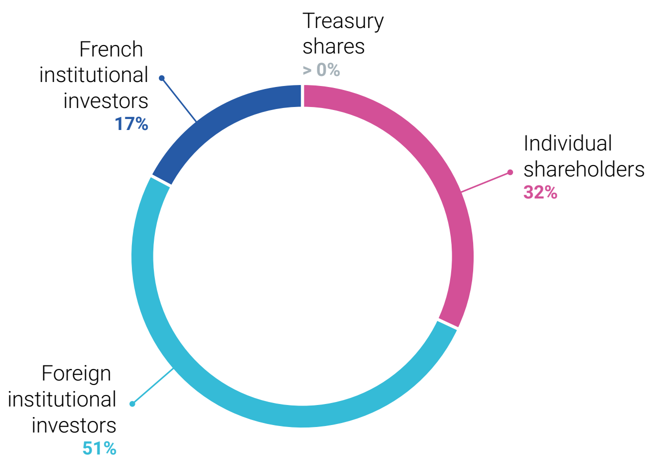
STOCK MARKET PERFORMANCE



	2015	2016	2017	2018	2019
Market Capitalization at December 31 *(in million euros)*	35,672	41,085	45,003	46,571	59,706
Adjusted closing share price [(a)] *(in euros)*					
high	*99.53*	*87.64*	*101.32*	*104.68*	*126.90*
low	*78.44*	*71.41*	*82.19*	*89.04*	*93.09*
At December 31	83.44	87.31	95.50	98.59	126.20
Net earnings [(b)] – EPS *(in euros)*	4.1	4.2	4.68	4.49	4.76
Net Dividend per share [(b)] – DPS *(in euros)*	2.08	2.14	2.40	2,40	2.70 [(c)]
Pay ratio	52.5%	56.0%	52.8%	55.1%	58%
Dividend yield	2.5%	2.5%	2.5%	2.4%	2.1%
Ex-dividend date	May 23, 2016	May 15, 2017	May 28, 2018	May 20, 2019	May 11, 2020

(a) *Adjusted following current Euronext regulation.*
(b) *Data adjusted for attribution of free shares and capital increase.*
(c) *Dividend 2019 subject to the approval of shareholders during the General Meeting on May 5, 2020.*

SHARE OWNERSHIP BREAKDOWN AT DECEMBER 31, 2019



PREREQUISITES TO ACTION

SAFETY

One ambition

Zero accidents

ETHICS

A dedicated program

Integrity and transparency

ETHICALL
You call, we act.

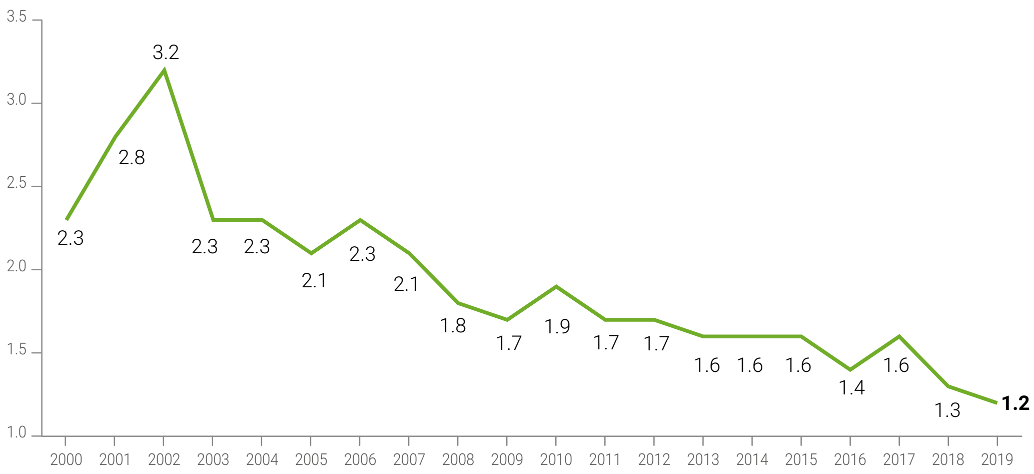
RESPECT OF HUMAN RIGHTS

A global approach

THE GLOBAL COMPACT
WE SUPPORT

Responsible Care®
OUR COMMITMENT TO SUSTAINABILITY

FREQUENCY OF ACCIDENTS [(a)] [(b)]



(a) Number of lost-time accidents with at least one lost day per million hours worked by Group employees.
(b) Including Airgas since 2017.

A GLOBAL CLIMATE APPROACH

CLIMATE OBJECTIVES

Taking Actions

Assets

In our company to reduce the carbon intensity of our assets

Customers

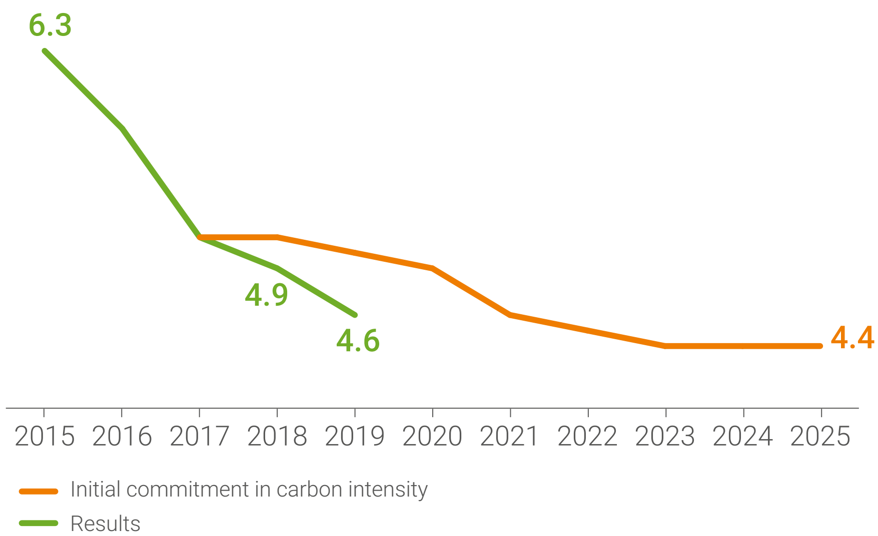
With our customers for a sustainable industry

Ecosystems

For the planet by taking part in the emergence of a low-carbon society

OBJECTIVE AND KPI

Reduce our carbon intensity[(a)] by **30%** by 2025, based on 2015 emissions



(a) In kg CO_2 equivalent/euro of operating income recurring before depreciation and amortization at 2015 exchange rate and excluding IFRS16 for greenhouse gas emissions scopes 1 and 2.

A STRENGTHEN DIALOG WITH STAKEHOLDERS

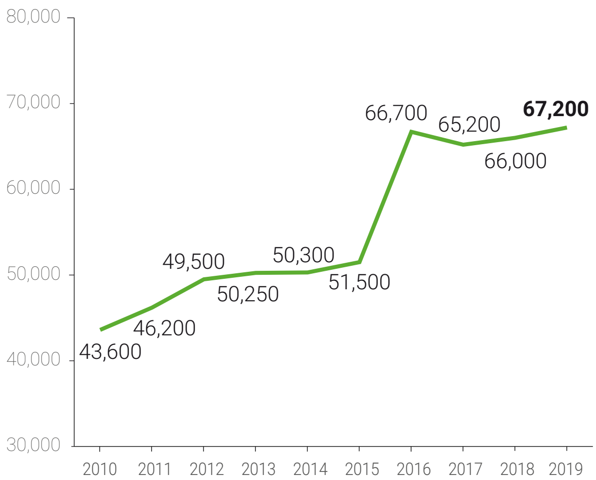
EMPLOYEES

Objectives and KPIs

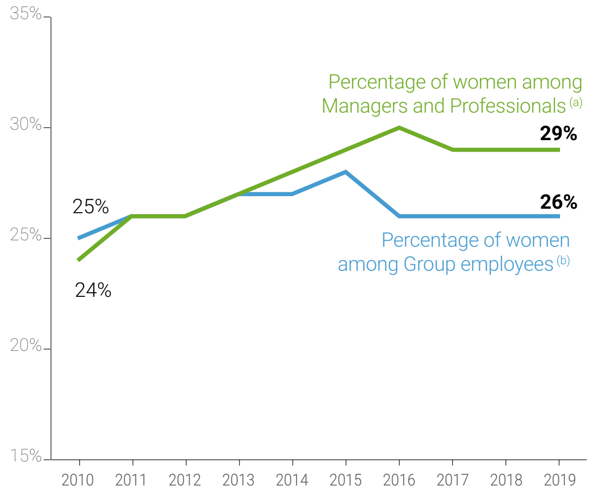
Increase the number of women among managers and professionals to **35%** and

Hire **33%** of recent graduates among managers and professionals by 2025

GROUP HEADCOUNT SINCE 2010



PERCENTAGE OF WOMEN AMONG MANAGERS AND PROFESSIONALS SINCE 2010



THE CLIENTS

100,000

customer/patient returns collected since 2017

88%

satisfied or very satisfied Air Liquide customers (c)

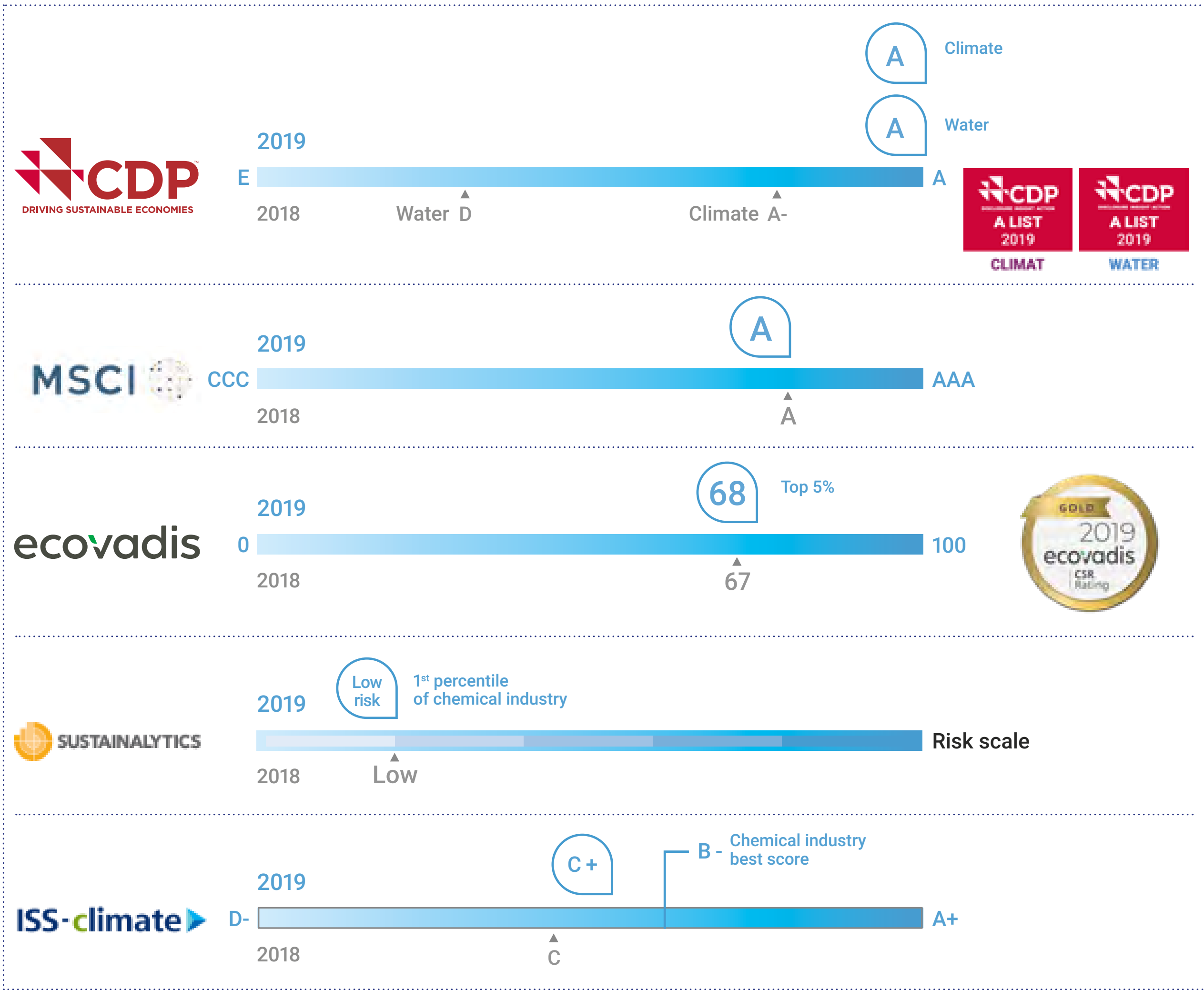
Fondation Air Liquide

Several hundreds of employees involved

More than 360 projects in around 52 countries for more than 10 years

(a) Including Airgas since 2017.
(b) Including Airgas since 2016.
(c) Based on customer satisfaction survey feedback (85% in 2018).

A COMPANY REWARDED
FOR ITS EXTRA-FINANCIAL PERFORMANCE



March 2019
"Best Value Chain Engagement" award from EcoVadis.

November 2019
"Victoire des Leaders du Capital Humain" in the "CSR Policy" category.

May 2019
"Best Overall Sustainable Purchasing Program" by the Sustainable Purchasing Leadership Council (SPLC).

November 2019
Responsible Investment award given by more than 100,000 Boursorama members at the Investor Awards ceremony.

September 2019
"Best Responsible Purchaser" award from Handeco.

1

INTEGRATED MANAGEMENT REPORT

HISTORY OF THE AIR LIQUIDE GROUP

Air Liquide, a world leader in gases, technologies and services for industry and health, has been building its leadership since 1902.

1902

ORIGIN

Air Liquide was born of innovation and began with the encounter between two men: Georges Claude, inventor of an industrial process for the production of oxygen from liquid air, and Paul Delorme, a visionary entrepreneur.

1906

FIRST INTERNATIONAL DEVELOPMENTS

Gas, by its very nature, is difficult to transport and thus local production is required. This was one of the reasons why Air Liquide set its sites internationally early on, building numerous production units abroad. Development was rapid in Europe (1906), Japan (1907), Canada (1911) and the United States (1916).

1913

LISTING ON THE STOCK EXCHANGE

The critical role played by shareholders became evident in the first years of the Company's development. Listed on the Paris Stock Exchange in 1913, the share celebrated its hundredth-year of listing in 2013. Air Liquide has endeavored to forge a strong and privileged relationship with its shareholders based on exceptional stock market performance, with an average annual increase in its share price over the 100 years to 2013 of +11.9%.

1952-1960

THE CRYOGENIC REVOLUTION

Storing gas in liquid form in cryogenic tanks allows vast quantities to be transported by road or rail within a radius of approximately 200-250 km from the production site.

PIPELINE NETWORK STRATEGY

By delivering gas to several customers through pipelines, Air Liquide adopted a network strategy for the first time, linking its gas production units to one another. The Group increased its production capacity to meet soaring demand from large industries: firstly, for oxygen in the steel industry, and secondly, for nitrogen in chemicals. This marked the start-up of the Large Industries business.

1962

SPACE INDUSTRY

Convinced of the industrial potential of cryogenics, Jean Delorme, Chairman & CEO of Air Liquide, decided to create a research center near Grenoble dedicated to these technologies. The first applications were rapidly integrated in the space industry. Air Liquide has been a partner of the space adventure for 65 years.

1970

A TRADITION OF INVENTIONS

The Claude Delorme Research Center, located on the Saclay plateau and now called the Innovation Campus Paris, was created. The research center's work is focused on enhancing gas production technologies and their applications. It is evidence of the Group's desire to better understand the industrial processes of its customers and develop new gas applications to better satisfy their requirements. Today, the Group also has Innovation Campuses in Europe, North America and Asia.

1985-1986

A NEW MARKET: ELECTRONICS

In Japan, the Group began to supply ultra-high purity gases to the semi-conductor industry: this involves carrier gases, mainly nitrogen, used to transport the specialty gases and keep the chip production tools inert, and specialty gases that are used directly in the manufacturing of semi-conductors. In 1987, Air Liquide inaugurated the Tsukuba Research Center in Japan, which is dedicated to the electronics industry.

MAJOR ACQUISITION

The Group acquired Big Three in the United States, a Large Industries business along the Gulf Coast.

1995

EXTENDED OFFERING: HYDROGEN AND STEAM

In addition to oxygen and nitrogen, Air Liquide extended its offering to hydrogen and steam. To ensure the success of this new offering, the Group used its business model, which is behind the success of its air gas business, and deployed from the beginning a basin strategy based on a pipeline network, providing customers with flexibility, distribution reliability and service quality at the best price.

HEALTHCARE

Originally an oxygen supplier to hospitals, Air Liquide became a specialist in the healthcare sector. The Group launched its Home Healthcare business and set up a dedicated network of specialist teams. Medical gases were progressively classified as drugs and manufacturers were required to file market authorizations. The Group also launched research programs in therapeutic gases, used for resuscitation and pain relief.

2000

INTERNATIONAL EXPANSION

The Group invested massively in China in the early 2000s; the country has been a major growth market for industrial gases and Air Liquide entered into numerous air gas contracts.

The Group acquired part of Messer Griesheim activities in Germany, the United Kingdom and the United States.

2007-2009

ORGANIZATION BY BUSINESS LINE

The Air Liquide growth drivers for the coming decades are based on changing lifestyles: industrial growth of developing economies, increasing energy needs and environmental challenges, healthcare and high technology. To capture this growth, the Group created a new organizational structure based on four World Business Lines. They combine the technical and operational expertise which are specific to each of the businesses of the Group – Large Industries, Industrial Merchant, Healthcare and Electronics – and centralize the specific market expertise.

Conscious of the strategic dimension of Engineering & Construction capabilities, the Group acquired Lurgi in 2007. This company provides Air Liquide with major proprietary technologies, notably hydrogen and carbon monoxide production units, adding to the Group's historical competencies in cryogenics.

RESILIENCE IN AN UNPRECEDENTED CRISIS

Affected by a global economic crisis of unprecedented magnitude, the Group focused its efforts on the management of its cash, costs, and investments (capital expenditures). Having tested the solidity of its long-term contracts, Air Liquide demonstrated the relevance of its business model. In a context of global recession, the Group showed itself to be an exception, posting a stable net profit while preserving the strength of its balance sheet.

2013-2015

NEW INITIATIVES IN THE INNOVATION FIELD – HYDROGEN ENERGY

Innovation is central to Air Liquide's strategy. In 2013, Air Liquide launched two initiatives to promote open innovation: i-Lab (innovation Lab) and ALIAD, the Group's capital venture entity to take minority investments in innovative technology start-ups. In 2014, the Group decided on new investments such as the modernization of the Research Center near Versailles, on the Saclay plateau, the creation of a center for the development and industrialization of gas cylinders for industry and healthcare, and the launch of a technical center of excellence for cryogenic production technologies.

In addition, on a worldwide scale, Air Liquide actively contributes to the development of the hydrogen energy activity by supporting automotive manufacturers launching Fuel Cell Electric Vehicles on the market. Air Liquide contributes to the construction of hydrogen charging stations (United States, Japan, France, Germany, Belgium, Denmark, the Netherlands and Korea), the majority of which are generally accessible to the public.

2016

AIRGAS ACQUISITION BY AIR LIQUIDE

On May 23, 2016, Air Liquide completed the acquisition of the American company Airgas. This acquisition was complementary to the Group's businesses in the United States and enabled Air Liquide to be present across all market segments both upstream of and downstream to the US market; this integration has created significant value.

In addition to the 300 million US dollars of synergies targeted by the Group through this acquisition, Air Liquide believes that the Airgas model, in terms of products, digitization of businesses, and business model, may be applied outside the United States.

With this acquisition, Air Liquide strengthens its position in the United States, the largest industrial gas market worldwide. This market also enjoys the strongest growth among advanced economies.

THE LAUNCH OF THE NEW COMPANY PROGRAM 2016-2020: NEOS

The Group acquired a new dimension following the acquisition of Airgas and thus entered a new phase of its development. On July 6, 2016, Air Liquide published its new mid-term company program, NEOS, for the 2016-2020 period.

Air Liquide's strategy for profitable growth over the long-term is that of a customer-centric transformation. It is based on operational excellence and the quality of its investments, on open innovation and the network organization already implemented by the Group worldwide. Air Liquide's ambition is to be a leader in its industry, deliver long-term performance and contribute to sustainability.

CREATION OF THE GLOBAL MARKETS & TECHNOLOGIES BUSINESS

To step up the development of offerings in new markets, the Group created the Global Markets & Technologies business, responsible for developing new activities in the field of energy transition and the maritime sector, by leveraging technologies.

2017

REFOCUSING ON GAS & SERVICES BUSINESSES

Following the disposal of its Aqua Lung (diving) and Air Liquide Welding (welding) subsidiaries, Air Liquide focused on its Gas & Services businesses and the implementation of its NEOS company program. After these disposals, the share of Gas & Services revenue in Group sales increased to 90% in 2015 and 96% in 2018.

NEW VISUAL IDENTITY FOR THE GROUP

To mark its transformation, the Group created a new logo, the fifth since the Company was founded 115 years ago. This new visual identity, which embodies the change within Air Liquide, is that of a leading Group, expert and innovative, that is close to its stakeholders and open to the world.

2018

INAUGURATION OF THE INNOVATION CAMPUS PARIS

Air Liquide inaugurated its Innovation Campus Paris in the Paris-Saclay innovation Cluster, in the greater Paris region. This new Campus illustrates the Group's "open innovation" approach, especially on energy transition and the environment, healthcare and digital transformation. It includes the Group's largest, fully renovated, Research & Development center. In 2019, the Innovation Campus welcomed Accelair, Air Liquide Group's deep tech start-up accelerator.

ENERGY TRANSITION AND CLIMATE OBJECTIVES

For many years now, Air Liquide has been committed to sustainable growth aimed, in particular, at limiting its CO_2 emissions and those of its customers. On November 30, 2018, Air Liquide announced its Climate Objectives, in particular a 30% reduction in its carbon intensity between 2015 and 2025, with a global approach that includes its assets, its customers, and ecosystems. These objectives are the most ambitious in the sector and are in line with the NEOS company program.

In this respect, the Global Markets & Technologies activity is stepping up sales to energy transition-related markets, driven by the biomethane sector with the start-up of several production units in Europe and the United States, and by hydrogen energy with the commissioning of new hydrogen charging stations for mobility. Moreover, the Hydrogen Council, which was founded in 2017, brings together more than 60 global leaders in the energy, transport and industry sectors to promote hydrogen with a view to achieving climate change-related objectives, and has held a meeting in China for the first time.

2019

FINALIZATION OF THE INTEGRATION OF AIRGAS AND STRENGTHENING OF THE GROUP'S EFFICIENCY PROGRAM

At the beginning of 2019, Air Liquide reached its target of 300 million US dollars in synergies, thanks to the integration of Airgas, more than a year before initially planned. With the integration complete, Airgas joined the Group's efficiency program and contributes to increasing the annual target for efficiencies. This target was initially set at 300 million euros and was revised up, to more than 400 million euros, as of 2019. Moreover, a program aimed at promoting the sharing of the Airgas model has allowed close to 100 Group managers to immerse themselves in Airgas operations, to step up the sharing of its best practices with other Group regions.

INAUGURATION OF THE INNOVATION CAMPUS TOKYO

Air Liquide inaugurated its Innovation Campus Tokyo in Yokosuka, Japan, which completes its global network of Innovation Campuses in Europe (Paris and Frankfurt), the United States (Delaware) and Asia (Shanghai and Tokyo).

INCREASING IMPORTANCE OF NEW HYDROGEN MARKETS

Air Liquide acquired a stake in Canadian company Hydrogenics Corporation, a leader in electrolysis hydrogen production equipment, and announced the construction in Canada of the largest Proton Exchange Membrane (PEM) electrolyzer in the world, aimed at producing hydrogen using hydro-power for industry and mobility usages.

Air Liquide joined forces with its steel customers as part of a pioneering project to develop low-carbon steel production where hydrogen will be injected on a large scale to partially replace pulverized coal in the blast furnace, thus reducing emissions in the production process.

On the West Coast of the United States, Air Liquide took a stake in FirstElement Fuel, a leading hydrogen station operator in California. Air Liquide will invest 150 million US dollars in the production and liquefaction of carbon-free hydrogen through the partial use of biomethane.

BUSINESS MODEL

1. Prerequisites to action: safety, ethics and the respect of human rights

SAFETY

One ambition

Zero accidents

ETHICS

A dedicated program

Integrity and transparency

ETHICALL
You call, we act.

RESPECT OF HUMAN RIGHTS

A global approach

THE GLOBAL COMPACT
WE SUPPORT

Responsible Care®
OUR COMMITMENT TO SUSTAINABILITY

1.1. SAFETY

Safety is an integral part of Air Liquide's operational excellence and culture. The Group is committed to efficiently and under all circumstances reducing the exposure of its employees, customers, subcontractors, suppliers and local communities to professional and industrial risks. Commitment to safety is total, visible and accompanied by unshakable vigilance. The health and safety of individuals risk is part of Vigilance Plan set out in Chapter 2, page 101.

Prevention, protection, early detection and rapid reaction are at the heart of the Group's concerns. This commitment is reiterated in the General Statement of Air Liquide's Principles of Action. These Principles are shared with all entities and are available on the Group's website (https://www.airliquide.com/group/groups-principles-action).

Each subsidiary is committed to achieving the "zero accidents" ambition as well as the objective of continuously improving its safety performance.

1.1.1. The safety of individuals

Safety is a collective commitment and the responsibility of each individual. Being aware of dangers and risks, applying the rules and taking care of others – all this contributes to reducing the risk of accidents and strengthening the Group's safety culture. Safety leadership training and workstation-based training courses are regularly organized. Air Liquide's managers encourage safety efforts, by demonstrating this commitment on site and awarding good practices.

Each individual working for Air Liquide, whether they are employees or subcontractors, must be aware of safety rules, comply with them and intervene each time there is a risk of hazardous behavior or conditions.

The Group has drawn up 12 "Life-Saving Rules" on which there is no compromise. Given their importance, non-compliance with one of these 12 rules by anyone working for Air Liquide can lead to a warning, or even sanctions.

Air Liquide uses subcontractors within the course of its business and pays particular care to the following:

- assessing the level of maturity and performance of safety measures before any sales commitment is made;
- integrating safety clauses in the contracts;
- a work structure with shared, comprehensive and detailed safety instructions;
- communicating Air Liquide's safety values and standards as well as the regulations in force that must be complied with;
- being as demanding and rigorous with subcontractors as we are with Group employees;
- supervising subcontractors' safety in the execution of services;
- safety reviews once the work is complete and sharing feedback.

1.1.2. Road safety

Concerning road safety, the Group has three main objectives:

- ensuring that rules laid down are efficiently applied across all subsidiaries;
- deploying new technologies which help drivers drive safely;
- sharing know-how between various Group subsidiaries.

According to region, context, current legislation and practices, all or some of the following measures are applied:

- the installation of onboard technologies such as cameras, which can detect driver fatigue and distractions, help change driving habits where necessary, and provide visibility of the vehicle's surroundings;
- increased exchanges on road safety both internally as well as with Air Liquide service providers and other organizations specialized in this subject, both locally and on an international scale. Air Liquide regularly organizes days to discuss and capitalize on transport safety with its partners;
- the organization of special events to recognize road safety performance and promote the sharing of good practices among subsidiaries;
- initiatives which lead to a change in behavior to implement a dynamic culture of road safety among Air Liquide employees and the employees of the Group's subcontractors.

1.1.3. Process safety

Process safety addresses risks relating to industrial facilities and products. This process draws on Air Liquide's Industrial Management System (IMS) and requires:

- the identification of specific industrial risks for each business;
- knowledge of scenarios and their potential consequences;
- the implementation of appropriate preventative and protective safety measures for each of these risks;
- the monitoring and analysis of risks relating to new technologies and events arising within the profession;
- feedback to facilitate learning, awareness-raising, the promotion of a safety culture and to improve prevention.

Since its launch 15 years ago, the IMS has significantly changed and improved the way in which industrial activities are managed. Thanks to employees' commitment to safety, respect for the environment and reliability, this system helps strive towards operational excellence. Its implementation is regularly assessed by specific IMS internal audits.

As the Group's businesses grow, so do the demands of its customers and their commitment to corporate societal responsibility, bringing with them new challenges and opportunities. Building on the experience acquired, a project was therefore launched in 2018 to adapt the IMS. While maintaining the strong fundamentals established since 2005, the protocol was simplified, roles and responsibilities made clearer and governance strengthened, making the IMS easier to apply to daily operations and thus even more efficient. New tools, some of which digital, have been made available to the operating entities. The roll-out to all of the Group's businesses will extend until 2021.

1.2. ETHICS

Integrity and transparency are the cornerstones of the Group's ethical approach. They govern behaviors and actions of all employees. These principles are broken down in a program based on a dedicated structure, codes and procedures, training tools and, finally, whistle-blowing and control systems.

The management of tax risks is described in Chapter 2 "Risk factors and control environment", page 93.

1.2.1. A dedicated structure

A dedicated organisation is being set up to support the management of the Ethical program:

- an Ethics Committee, composed of Air Liquide's various global functions (Human Resources, Legal, Group Control, Sustainable Development Departments, etc.) and Operation representatives validates the program's guidelines and priority actions and may, if necessary, make post-deviation sanction recommendations;
- the Group Control Department, which is responsible for Ethics, reports directly to one of the Group's Executive Vice Presidents;
- an Ethics Officer is responsible for providing advice and support to entities in the implementation of the Ethical program and in the treatment of fraud and deviations. This Officer also suggests improvements to the Ethical program by integrating strategic challenges, best practices, regulatory developments and annual action plans. He relies on a network of more than 50 ethics correspondents present in each of the Group's geographic regions and business lines.

1.2.2. Codes and procedures

Rules for ethics and conduct, which are shared and actively circulated among all Group employees through the BLUEBOOK, are set out in particular within the Code of Conduct and the Anti-Corruption Code of Conduct of each subsidiary. The rules are set out as operational or policy processes at either the Group or local level.

1.2.3. The key concepts of the Code of Conduct, the employees' Ethics Charter

Each Group subsidiary applies the key concepts of the Code of Conduct. This decentralized approach combines respect for local customs and regulations with the Air Liquide's ethical commitment. The subsidiaries thus embrace the Group's ethical principles by writing their own Codes of Conduct themselves in their working language.

Full details of these key concepts are available on the Group's website https://www.airliquide.com/group/code-conduct-key-concepts.

An e-learning module exists on the employee Code of Conduct which sets out the Group's ethics approach and presents key concepts through case scenarios. This module is mandatory and must be followed by all employees each year.

The Anti-Corruption Code of Conduct

Air Liquide's commitment, which is set out in the introduction to the Principles of Action, to prohibit all forms of corruption is supported by a major anti-corruption program. The Group has formalized an Anti-Corruption Code of Conduct. This Code has been made available to all entities and is available on the website at https://www.airliquide.com/group/ethics. This Code of Conduct provides a reminder of the anti-corruption laws and deals with relations with intermediaries, specific cases such as mergers, acquisitions and partnerships, types of payments requiring particular attention, as well as administrative and accounting traceability requirements and sanctions applicable in the event of non-compliance with this Code.

Moreover, the Group has a Supplier Code of Conduct which includes a chapter on the prevention of corruption.

An e-learning module also covers the Anti-Corruption Code of Conduct. It is primarily intended for those teams which are most exposed to corruption-related risks (sales, procurement, administrative management, and so on) and managers. For these employees, completing this training module is mandatory each year. It is supplemented by classroom-based training every three years.

Currently, these Anti-Corruption Codes of Conduct have been translated into more than 20 languages to ensure their appropriation by all employees.

1.2.4. Respect for competition law

Codes have been established in regard to proper behavior concerning respect for competition law, especially in Europe, the United States and Asia. The most important rules are also included in the employees' Local Codes of Conduct. For some of the Group's activities, Healthcare in particular, specific Codes of Conduct on competition law have also been developed.

Audits are jointly conducted on a regular basis by the Group's Internal Audit Departments and an external law firm. They carry out tests and interviews to identify and correct practices at risk or any deviations observed. Awareness-raising meetings on compliance with competition law are also held throughout the Group. Finally, an e-learning program was launched covering competition law-related practices and international principles.

1.2.5. The whistle-blowing system

The Group has a formal whistle-blowing system at all its entities, whereby employees can anonymously alert an independent external service provider of any deviations from the Code of Conduct of their entity. Employees can file this alert in their own language by telephone or through the provider's dedicated website. All reports are dealt with confidentially and as quickly as possible. The Group guarantees that any employee who reports something in good faith will not be sanctioned or any retaliatory measures will be taken. It also reiterates in the Code of Conduct that the processing of reports is supervised by the Ethics Officer.

This system is an alternative solution to the usual process for reporting incidents within the entities: through managers and the Human Resources teams. It helps to accelerate the processing of reports received, and thus to minimize their potential impact on individuals and the organization. Details of Ethicall reports are provided under the Vigilance Plan in Chapter 2 "Risk factors and control environment", page 104.

ETHICALL
You call, we act.

1.3. RESPECT FOR HUMAN RIGHTS

Air Liquide subscribes to the highest standards for the conduct of its business and its Chairman and Chief Executive Officer signes each year the United Nations Global Compact, an initiative in which the founding principles relate to Human Rights, international labor standards, the environment and the fight against corruption. This letter of commitment may be viewed on the Air Liquide and Global Compact websites.

Air Liquide also complies with the international rules of the International Labour Organization (ILO) in terms of labor law and follows guidelines for multi-national companies issued by the OECD. These Guidelines encourage the reasonable conduct of companies in terms of professional relationships, Human Rights, the environment, taxation, the publication of information, anti-corruption, the interest of consumers, science and technology, and competition.

Moreover, Air Liquide is a signatory of the Responsible Care® Global Charter of the International Council of Chemical Associations (ICCA) which aims to improve global performances in the chemical industry in terms of health, safety and the protection of the environment.

THE GLOBAL COMPACT
WE SUPPORT

Responsible Care®
OUR COMMITMENT TO SUSTAINABILITY

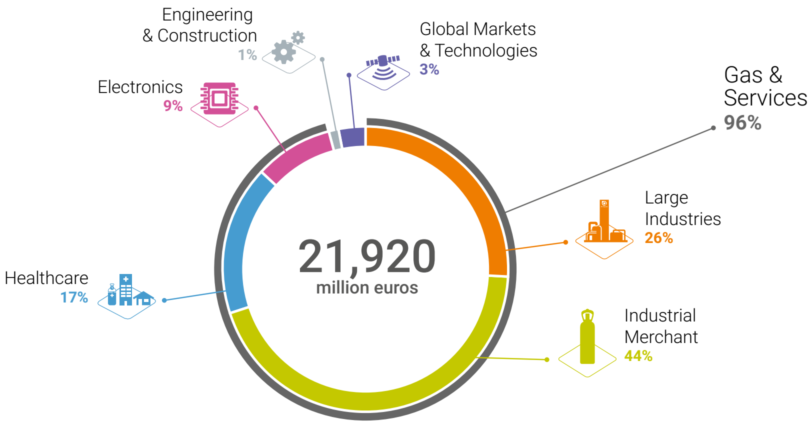
2. Description of activities

The Group classifies its activities as follows: Gas & Services, Engineering & Construction, Global Markets & Technologies, and all serve one unique business, that of industrial gases. The four business lines comprising the Gas & Services activities are closely tied by a strong industrial mindset where proximity is key. The diagram on page 23 illustrates the sharing of production or distribution assets between the different business lines for a given geographic region. This efficient industrial network and its proximity with its customers allow Air Liquide to:

- improve reliability;
- optimize energy consumption, costs and logistics flow;
- anticipate customers' needs;
- understand changes in the markets;
- and offer innovative solutions.

The synergies enjoyed by all of the Group's businesses are not limited to the industrial aspect, but also include scientific and technological expertise, the innovation approach, as well as Human Resources and financial and administrative management. The strong integration of the various World Business Lines thus allows the Group to create synergies, become stronger and to grow while creating long-term value.

2019 GROUP REVENUE BY ACTIVITY

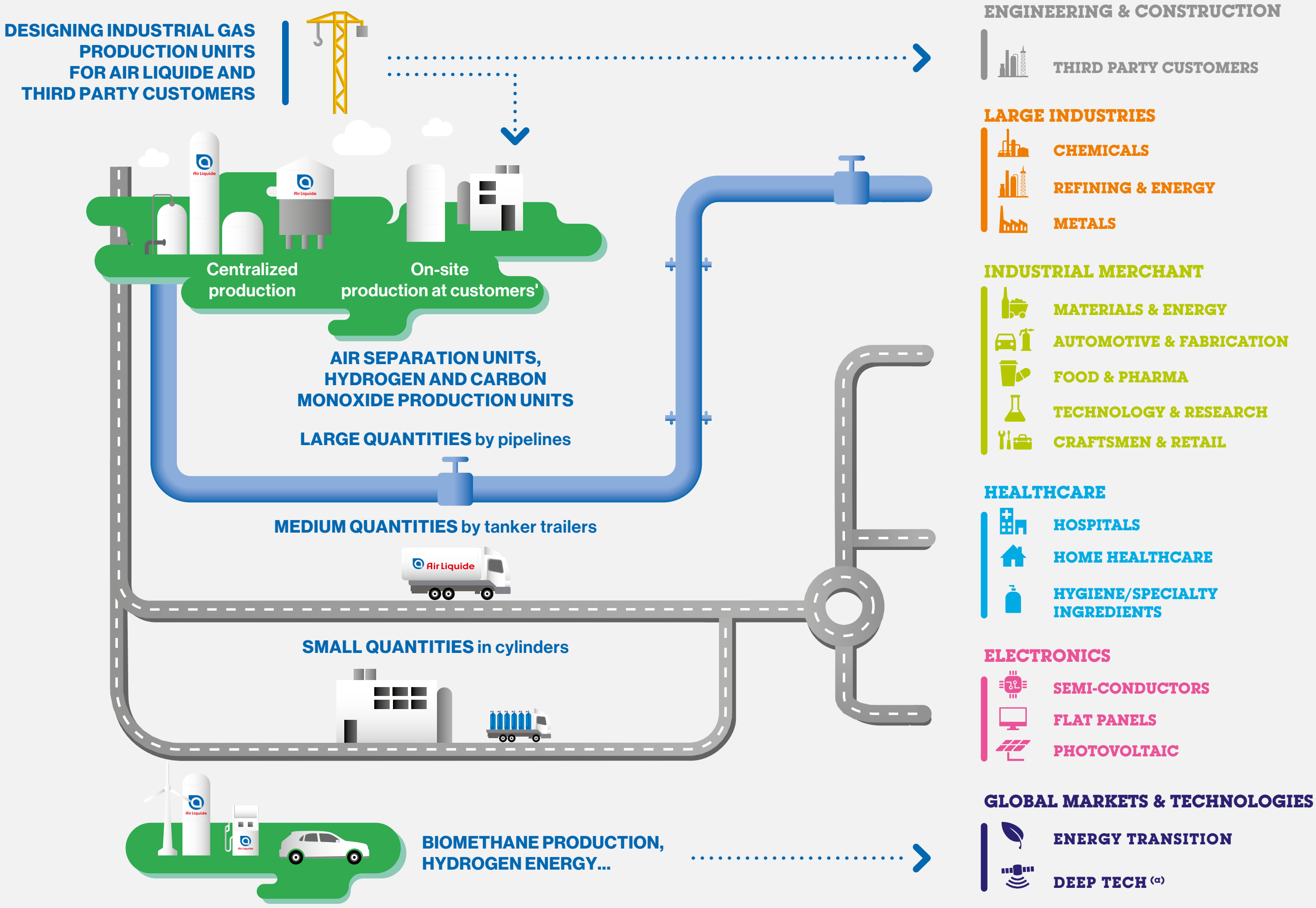


2.1. GAS & SERVICES

The Gas & Services business includes of four World Business Lines to better support changes and meet the needs of the various markets: Large Industries, Industrial Merchant, Healthcare, and Electronics.

Gas supply relies on local production in order to limit transport costs. Therefore, Air Liquide gas production units are located throughout the world and can supply many types of customers and industries with the relevant volumes and services required. Air Liquide's structure is made up of a base, in Paris, and four hubs: Americas, Europe, Asia Pacific and Middle East and Africa. These hubs draw on the Group's expertise and presence in these geographic regions.

- **Large Industries** supplies industrial gases by operating major production units. It serves customers in the metals, chemicals, refining and energy sectors where high gas volumes call for a dedicated plant or the development of a pipeline network. Large Industries also supplies the Group's other business lines with gases which are then packaged and delivered to their respective customers.
- **Industrial Merchant** supplies a wide range of different gases, application equipment and associated services. It serves industries and professionals that require smaller quantities than Large Industries customers. Gas can be distributed in bulk, in liquid form, or in cylinders, in gaseous form, for smaller quantities. Finally, small production units can be installed locally for customers with larger gas needs, or in remote areas.
- **Healthcare** supplies medical gases, hygiene products, equipment and services to hospitals and also directly to patients in their homes. It also produces and distributes healthcare specialty ingredients for the cosmetics, pharmaceutical and vaccine markets.
- **Electronics** supplies gases, materials (complex molecules) used in manufacturing processes, and services mainly used for the production of semi-conductors, but also for flat panels and photovoltaic panels.



(a) Disruptive technologies based on scientific breakthroughs of such a nature as to change the modes of design and production.

The strength of Air Liquide's model

Among the four Gas & Services World Business Lines, Large Industries and Healthcare are the two which are the least affected by economic cycles. They represent 45% of Gas & Services revenue. Industrial Merchant is impacted by local industrial production momentum and consumer demand, whereas Electronics is linked to the semi-conductor sector.

In Large Industries, the supply of gas is contracted for a duration of 15 years, or more for specific projects, and includes take-or-pay clauses which guarantee a minimum level of revenue.

Underlying trends for the Healthcare business (longer life expectancy, more sedentary lifestyles, urbanization) ensure growth in demand which is decorrelated from economic cycles.

Industrial Merchant benefits from the broad diversity of its markets, customers, and regions which is the result of strategic targeting and which reinforces the resilience of the business line.

The development of the semi-conductor industry with its numerous digital applications is the main source of sales growth in Electronics, an industry which is maturing.

The Group's capacity to innovate enables it to continuously improve its current offerings by integrating new technologies and new ways of working to boost operational excellence. Air Liquide therefore draws on its internal and external innovation ecosystems to develop differentiating solutions for its customers and patients and open up new markets. Innovation contributes to the Group's robustness.

In addition to the Gas & Services businesses, Global Markets & Technologies help place Air Liquide in a pioneering position in new markets and new business models relating to energy transition and deep tech, thus accelerating the learning curve on new social and environmental challenges, and opening up key opportunities for future growth.

Finally, the Engineering & Construction business line is responsible for the design and construction of plants and equipment to meet the various needs of the Group's business lines and third-party customers. Through its Engineering & Construction business line, the Group cultivates, shares and passes on its expertise from one generation to the next, ensuring both the continuity of its know-how and its continuous improvement thanks to the permanent integration of the latest technological advances and their adaptation to new markets.

Moreover, through its various World Business Lines, the Group serves more than 3.7 million customers and patients in a variety of industries and across a wide range of regions, which provides high resistance to economic cycles. These characteristics, which are inherent to the industrial and healthcare gas business, reinforce the strength of the business model.

LARGE INDUSTRIES

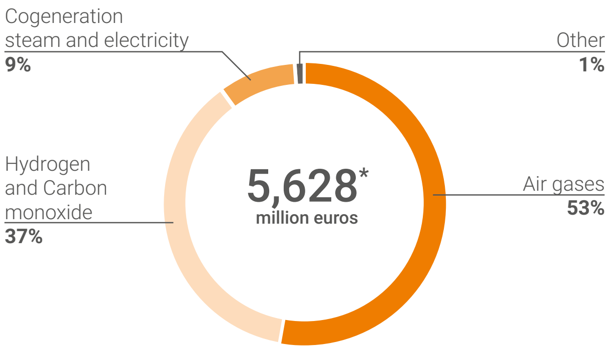
1. BUSINESS OVERVIEW, BUSINESS MODEL AND INDUSTRIAL PROCESSES

a. Business overview

The Large Industries business line supplies gas and energy solutions to customers in the metals, chemicals, refining and energy industries, which are essential for their own core businesses, to improve process efficiency and to make their plants more environmentally friendly. The Large Industries business line provides oxygen, nitrogen, argon, hydrogen and carbon monoxide through its plants and its pipeline network. The Group also operates cogeneration plants to supply customers with steam and electricity.

The world leader in this sector, Air Liquide benefits from dedicated in-house development and engineering teams, differentiating proprietary technologies and rigorous processes for selecting investments and carrying out projects. The largest Large Industries customers are looked after by key account managers who have in-depth knowledge of customers' businesses, as well as of their projects, industrial processes and global structure. This allows Large Industries to maintain close contact with its customers, thus improving the Group's responsiveness and competitiveness in terms of meeting their needs.

2019 LARGE INDUSTRIES REVENUE BY PRODUCT



* 27% of Gas & Services revenue.

b. Business model

The supply of gas is generally contracted for 15 years. For certain projects, this can be extended to 20 years and beyond. The signing of new contracts for new industrial customers' sites is a strong predictor of future growth. Within these contracts, the Group guarantees long-term service continuity and a high level of reliability with respect to the gas supply via a high-performing industrial solution. In return, long-term gas supply contracts include guaranteed minimum volumes through take-or-pay clauses, as well as the indexation to variable costs (mainly for electricity and natural gas) and to inflation.

The use of industrial gases is critical for the various industrial processes of Large Industries' customers. As any discontinuity in supply translates into an interruption of the customer's production operations, supply reliability and safety are crucial. However, although vital, gas supply generally represents a very small part of total production cost for the customer.

c. Large Industries industrial processes

The raw materials necessary for the production of industrial gases vary according to the type of gas and the location of the production unit. The production of oxygen and nitrogen requires air and a large quantity of electricity. Cogeneration units consume natural gas and water. Hydrogen and carbon monoxide production units mainly consume natural gas and little electricity. In 2019, the Group also launched the construction of the first electrolysis facilities that use water and electricity to produce hydrogen without releasing CO_2. The energy and capital intensity of these industrial processes is generally high.

Air gases production (ASU: Air Separation Unit)

An ASU compresses, liquefies and distills air in order to separate it into its different components: 78% nitrogen, 21% oxygen, 1% argon and rare gases (neon, krypton and xenon). Only certain large ASUs can produce rare gases. Electricity consumption is significant. A simplified diagram of an ASU operation is presented page 25.

Hydrogen and carbon monoxide production through steam reforming (SMR: Steam Methane Reformer)

By steam reforming natural gas, an SMR produces hydrogen and carbon monoxide. The most significant raw material is natural gas; electricity and water consumption is modest. A simplified diagram of a hydrogen unit's operation is presented page 25.

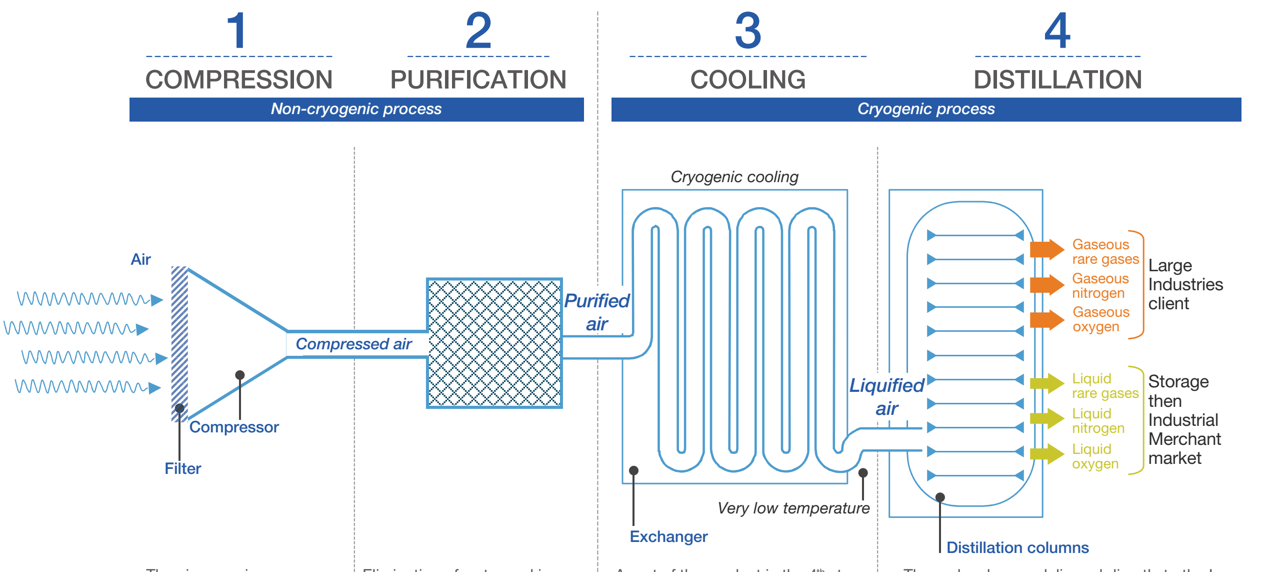
Hydrogen production through electrolysis

Hydrogen production through electrolysis is based on the dissociation of water molecules (H_2O) using electricity, to extract hydrogen and oxygen molecules. This process produces hydrogen without using or emitting carbon-based molecules. This process can be used to produce carbon-free hydrogen for industry and mobility, as well as for electricity storage.

Cogeneration

Cogeneration consists of simultaneously and efficiently producing electricity and steam generally by consuming natural gas and water. The electricity is used by the plant or supplied to the local network, while the steam is required for certain industrial processes.

SIMPLIFIED DIAGRAM OF AN AIR SEPARATION UNIT'S OPERATION



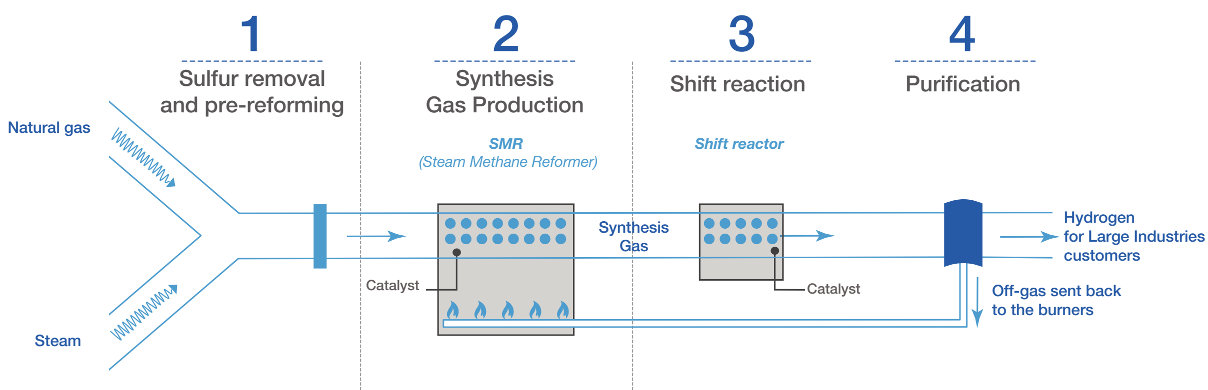
The air comprises:
- 78% nitrogen
- 21% oxygen
- 1% rare gases
(argon, neon, krypton, xenon)

Elimination of water and impure molecules (CO_2…) to avoid ice formation during cooling.

A part of the product in the 4th stage is reused to cool the air in the exchanger.

The molecules are delivered directly to the Large Industries clients through the pipelines or into the storage tanks to supply the Industrial Merchant bulk distribution or cylinder filling units.

SIMPLIFIED DIAGRAM OF A HYDROGEN UNIT'S OPERATION



Natural gas, composed mainly of methane (CH_4), contains heavier hydrocarbon molecules and quantities of sulfur, requiring removal.

Natural gas and steam react inside a furnace within catalyst filled tubes. Synthesis gas (syngas), composed mainly of hydrogen and carbon monoxide, is produced.

The syngas reacts with the steam to produce additional hydrogen. As it exits the reactor, the syngas is mainly composed of hydrogen and carbon dioxide.

Hydrogen is purified and delivered to customers. Other gas components, called off-gases, are sent to the furnace's burners (see section 2 – Synthesis Gas Production).

HOT SECTION | COLD SECTION

GAS SEPARATION TECHNOLOGIES FOR THE CAPTURE AND USE OF CO_2

Air Liquide's portfolio of technologies also includes separation and gas capture technologies. Based on cryogenic distillation, separation membranes and amine-based processing, these technologies are used to capture the carbon dioxide generated by Air Liquide's industrial processes and those of its customers. These solutions can be installed, for example, at hydrogen production units, syngas facilities and in the blast furnaces of steel mills. Captured carbon dioxide is then used in the customer's processes, such as the treatment of alkaline water, or by Industrial Merchant customers, who use it for example to produce carbonated beverages, package food in a protective atmosphere, or in welding gas mixtures.

2. LARGE INDUSTRIES KEY FIGURES

- 370 large Air Separation Units;
- 52 hydrogen and/or carbon monoxide production units;
- > 9,600 km of pipeline networks;
- 19 cogeneration plants.

3. CUSTOMERS AND MARKETS

The chemicals industry uses mainly oxygen, hydrogen and carbon monoxide in its manufacturing processes, as well as nitrogen to inert its installations.

The refining industry requires hydrogen to desulfurize fuels and crack heavy hydrocarbons. The demand for hydrogen is growing steadily due to more stringent legislation aimed at reducing emissions and the use of increasingly heavier hydrocarbons in fuel production.

In the **metals** industry, Air Liquide supplies large volumes of oxygen to steel producers notably, the use of which improves their energy performance and reduces significantly their CO_2 emissions. The majority of new projects are currently located in developing economies. As part of Air Liquide's aim to offer solutions to its customers that will help them reduce their emissions, the Group is also taking part in a pilot project, with one of its steelmaking customers, which consists of injecting hydrogen at large scale to partially replace pulverized coal in blast furnaces, thus reducing carbon dioxide emissions from the steel production process.

Numerous industries linked to energy or chemicals use large quantities of oxygen to transform coal, natural gas or liquid hydrocarbons into syngas for the production of chemical products, synfuel or electricity.

To meet customer requirements, the supply of large quantities of gas is critical. Air Liquide supplies its customers directly by pipelines from a dedicated plant or different plants linked by a network. Air Liquide has built its pipeline networks progressively over the last 40 years. With a total length of more than 9,600 kilometers (≈ 6,000 miles), these networks stretch, for example, across Northern Europe, from Rotterdam through to Dunkirk, and along the Gulf Coast in the United States from Lake Charles (Louisiana) to Corpus Christi (Texas) as well as along the Mississippi in Louisiana. Many other mid-size local networks have also been built in other significant and fast-developing industrial basins in Germany, Italy, Singapore and, more recently, China.

KEY POINTS

The **Large Industries** business line depends on long-term contracts (15 to 20 years) which include take-or-pay clauses, offer considerable visibility of future revenue and protection in the event of a significant fall in customer volume consumption (below the minimum take-or-pay level). Sales prices in Large Industries contracts are indexed, in particular, to energy costs and to inflation. The long investment cycle and high capital intensity require a solid balance sheet. The signing of new contracts is a strong predictor of future growth.

Air Liquide is developing a pipeline network strategy in the industrial basins in order to provide customers with greater supply reliability while optimizing operating costs. This strategy allows to mutualize production assets and generate savings, notably on energy, on the overall Air Liquide network as well as for its customers.

INDUSTRIAL MERCHANT

1. BUSINESS OVERVIEW, BUSINESS MODEL AND SUPPLY MODES

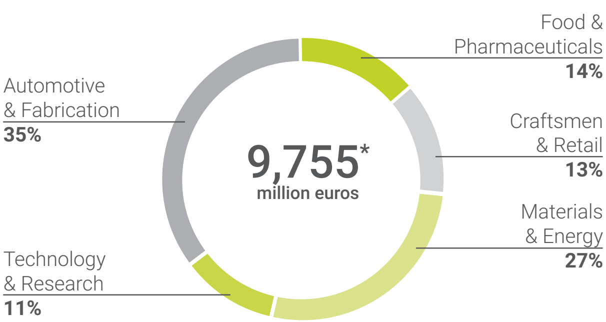
a. Business overview

The Industrial Merchant business line is, by its nature, a highly local business, which provides more than two million customers with industrial gases, equipment, hardgoods and associated services.

Industrial Merchant provides gas using the supply mode best adapted to customers' needs: either via a small on-site production unit for customers with major volume requirements, or in liquid form distributed by trucks for medium-scale quantities, or in cylinders for smaller volumes and use on building sites. Around 95% of Industrial Merchant's customer base is small customers who favor simplicity, flexibility and quality of service: they mainly order cylinder gas and hardgoods.

Thanks to its local presence and in-depth knowledge of its customers' industrial processes, Air Liquide collects a large amount of data. This data allows the Innovation teams to anticipate trends and develop new gas applications, new products or services which meet customers' needs, contributing to their operational efficiency and improving their experience.

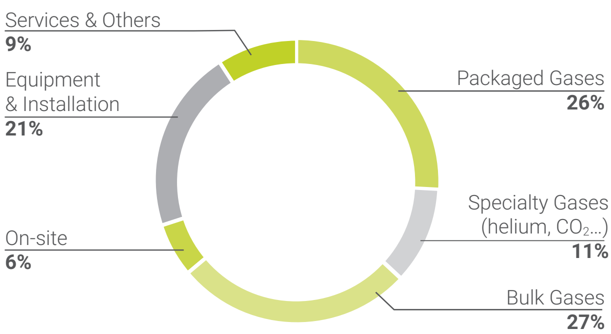
2019 INDUSTRIAL MERCHANT REVENUE BY END-MARKET



* 46% of Gas & Services revenue.

b. Business model

A large share of Industrial Merchant sales is covered by contracts with terms of up to five years for cylinders and liquid gas supply and up to 15 years for small on-site gas generators. These contracts generally include gas supply, the reliable and safe delivery of products and the provision by the Group of equipment at customers' sites, the provision of a service, as well as the indexation of the sales price to different variables such as inflation and fuel prices. The provision of cylinders or tanks at customers' sites is covered by a fixed month charge. The wide range of markets, customers and regions in which the Group is present reinforces the resilience of this business line.



The Industrial Merchant (IM) business line is integrated in the industrial basins and firmly **grounded in local economic life.** This local base is strengthened by economic constraints which limit the radius of gas distribution to some 250 kilometers around a production site. One of the strengths of Industrial Merchant is to be able to identify high potential areas and establish a site by developing synergies with Large Industries' network of plants or by investing in dedicated units. While permeating the local economy, the Industrial Merchant business line has expanded its operations internationally in more than 75 countries, thus strengthening the business line's resilience. This regional diversity is based on a strategy of targeted investments and the regular optimization of portfolios.

A permanent focus on geographic density within the industrial basins is a key success factor thanks to the synergies that this generates, in particular in terms of logistics. In addition to the business development of a basin, the acquisition of local distributors and their portfolio of customers also helps improve this density, in particular in markets that are still fairly fragmented such as in the United States and China.

c. Supply modes

On page 29, the drawing shows the different **supply modes** used in **Industrial Merchant**. Strong **operational discipline** is applied across the value chain (supply, packaging, distribution) and is an essential part of Air Liquide's integrated model. Coupled with new digital tools, this allows the Group to optimize the use of its resources in real time (plants, trucks, energy, etc.) to ensure the competitiveness of its products and services for customers. Air Liquide's quest for continuous improvement helps ensure the safety of its employees, customers and service providers and optimize their costs, while offering a first-class customer experience.

2. KEY FIGURES

- ~ 34,000 employees;
- ~ 20 million cylinders;
- ~ 10,000 trucks;
- ~ 52,000 cryogenic tanks at customers' sites;
- > 1,000 on-site generation units;
- ~ 1,500 filling centers and retail stores.

3. CUSTOMERS AND MARKETS

a. A customer-centric culture

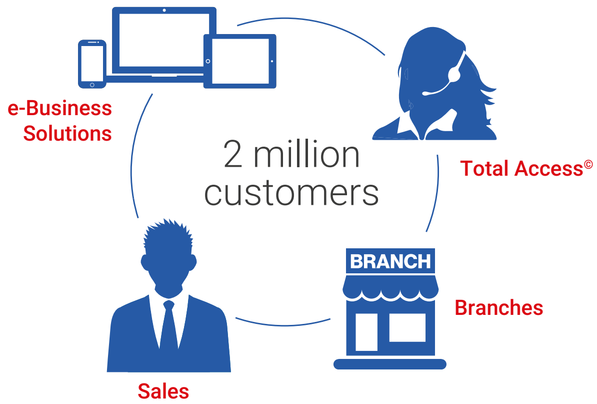
Customers and markets served by **Industrial Merchant** are presented in the drawing on page 29. Industrial Merchant customers vary greatly in terms of size, business and needs, but their common ground is their desire for products and services which facilitate daily life.

A WIDE RANGE OF MARKETS AND CUSTOMERS

The Group's ambition to provide a **first-class customer experience** requires listening to customers' needs, providing a varied and made-to-measure offering and an excellent quality of service. Air Liquide is therefore working on the rationalization and simplification of its processes to continuously improve the level of its service, focusing on the reliability of its equipment and deliveries and thus the overall efficiency of its supply chain.

Optionality in terms of both product and service offering as well as transactional channel is also a differentiating characteristic of the Industrial Merchant business line. The integration of Airgas has boosted this customer-centric culture within the Group, both in terms of the excellence of operational service and the multi-channel sales approach. Airgas' know-how in telesales, e-commerce and its ability to integrate all channels, is currently being transferred to certain Group subsidiaries.

A MULTI-CHANNEL SALES APPROACH



WORKING WITH CUSTOMERS TO CONTINUOUSLY IMPROVE OUR OFFERING

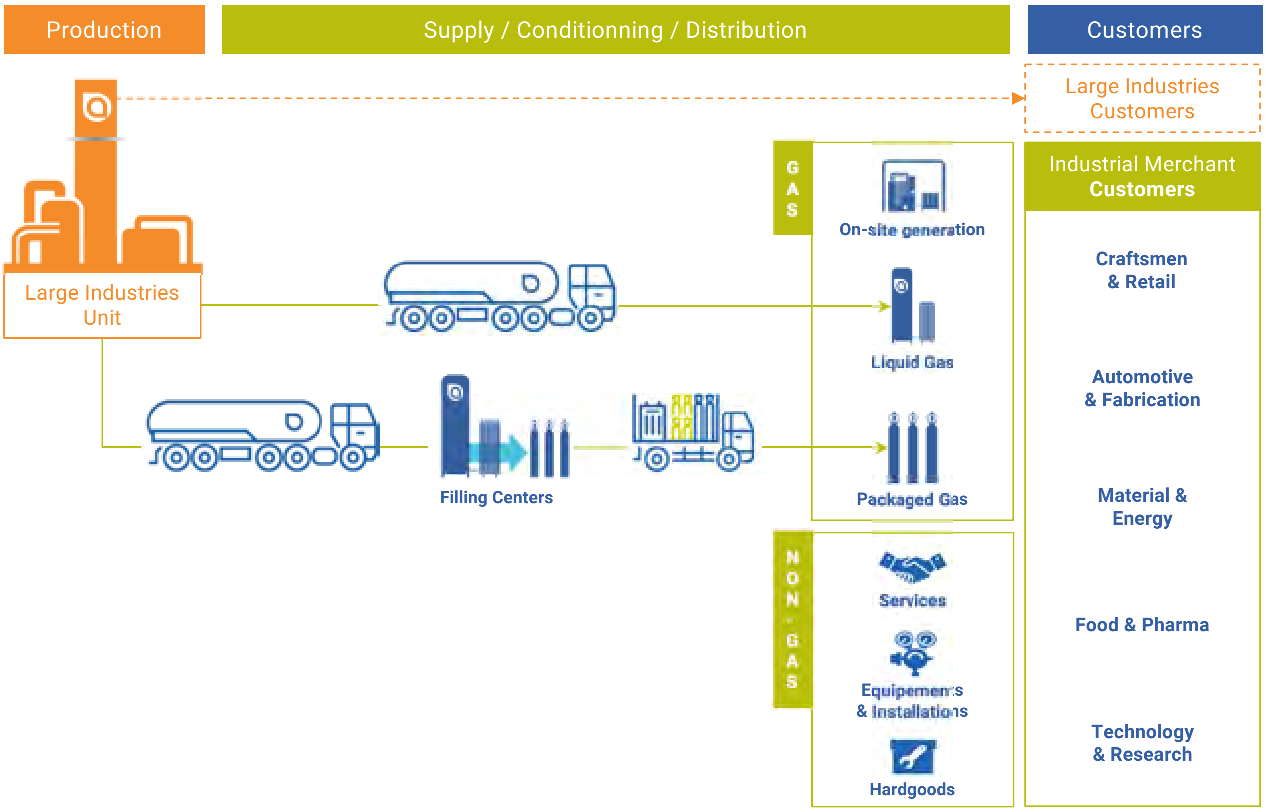
In addition to the supply of gas, gas application experts from the Industrial Merchant business line work in partnership with customers to improve the productivity of their industrial processes (combustion, cryogenics, the injection of gases into liquids, etc.), reduce their environmental footprint and identify new applications for industrial gases. In terms of the Group's cylinder gases offering, product usage is the key focus. The research and design teams work with customers to improve the comfort and ease of use of Air Liquide's products and services (safety, usability, mobility) for end users.

b. A strategic positioning on markets with optimized product portfolios

Thanks to their proximity to customers and the Group's presence in a large number of markets, the Industrial Merchant teams foster a large and in-depth knowledge of the latter and of their industrial processes. Moreover, Air Liquide collects a large amount of data from these markets and the economy in general. This allows the Group to identify major trends, assess growth prospects and anticipate future opportunities. By closely analyzing this market data and their value chains, the Group has developed a **selective approach and dynamic market management** to focus its resources on areas of higher potential growth.

The level of profitability of the Industrial Merchant business line varies according to product and supply mode. By **optimizing this product and customer mix,** the business increases its profitability, captures new volumes and diversifies its customer base.

SUPPLY MODES



MARKETS AND CUSTOMERS

	Craftsmen & Retail	Automotive & Fabrication	Technology & Research	Material & Energy	Food & Pharma
Description	Professionals and craftsmen, involved with metal fabrication, heating, construction and repair	Small to large companies that transform primary materials (metal) into finished products or advanced fabrications	Advanced technology industries (optoelectronics, electronics manufacturing, space), research centers and analytical labs	Industries engaged in activities from the extraction of ores and oil to the transformation of raw materials into added-value products	Companies engaged with food, beverage and pharmaceutical production and processing activities
Market trends	Need for simple and flexible products and services. Ease of the customer experience	Pressure on quality and prices of fabricated products Development of lightweight materials (composites) and new processes (additive manufacturing)	Digitalization Need for smarter products and services, more efficient and more reliable	Need for increased productivity Preservation of climate and natural resources	Global growing and aging population drives demand

KEY POINTS

The **Industrial Merchant** business line is, by its nature, a highly local business, which provides more than two million customers with industrial gases, equipment, hardgoods and associated services.

The diversity of markets, customers and regions is the result of strategic targeting and reinforces the resilience of the business line.

The balanced breakdown between markets related to industrial production and those more consumption-related, coupled with an Industrial Merchant business model which includes a share of fixed income from sales, strengthens the resilience of the business. Thus, more than 50% of Industrial Merchant sales are not dependent on the local industrial production of the countries in which the Group is present.

Thanks to the proximity to their customers and in-depth knowledge of their industrial processes, Industrial Merchant teams and their experts in gases applications develop new product or services offerings which are a major growth and performance driver.

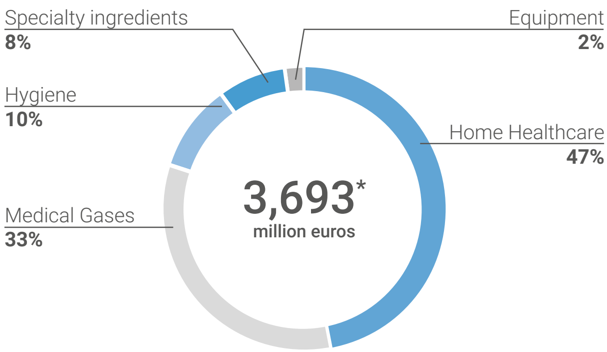
HEALTHCARE

1. BUSINESS OVERVIEW AND BUSINESS MODEL

a. Business overview

The Healthcare business line provides gases and medical products, specialty ingredients and services which support patients along the continuum of care, from the hospital to their home. The Group is committed, alongside patients, healthcare professionals and hospitals, to contributing to making the health system more efficient. Air Liquide is one of the world leaders in this constantly changing business sector and subject to both stringent regulatory requirements as well as to multiple stakeholders (patients, doctors, health authorities and payers).

2019 HEALTHCARE REVENUE BY ACTIVITY



* 18% of Gas & Services revenue.

b. Business model

The Healthcare activity, in particular Medical Gases, mainly relies on the gas production capacities of Large Industries and develops its own distribution logistics. Medical gases have a drug designation status which requires market authorization from the country's health authorities. They are subject to specific pharmaceutical traceability and are supplied in gas or liquid form by qualified personnel. The integration of the industrial and Healthcare activities has led to synergies and industrial efficiency.

2. KEY FIGURES

- ~ 16,500 employees;
- ~ 4 million cylinders;
- 35 countries worldwide;
- ~ 1,700,000 home healthcare patients;
- More than 15,000 hospitals and clinics.

3. CUSTOMERS AND MARKETS

Over the last 20 years, Air Liquide strengthened a leading healthcare role in Western Europe, Canada and Australia. The Group also has businesses in the United States (medical gases only), South America and certain Asian, African and Eastern European countries. It continues to grow in all regions, in particular according to the expansion of healthcare systems. As a result, some 70% of the Healthcare business line's sales are in Europe and more than 20% in the Americas.

The business line provides products and services in four areas:

- **Medical Gases:** Air Liquide provides medical gases to 15,000 hospitals and clinics. Among the main medical gases and their areas of application, Air Liquide provides: medical oxygen for respiratory diseases and intensive care units; medical nitrous oxide, a mixture of oxygen and nitrous oxide O_2/N_2O (KALINOX™) and xenon (LENOXe™) for anesthesia/analgesia; and nitrogen monoxide (KINOX™ and VasoKINOX™) for resuscitation.

  Air Liquide ensures compliance with the strictest safety and quality standards through the installation and maintenance of medical gases' distribution networks in hospitals and permanent inventory control.

  Air Liquide's medical gases and services are provided to certain specialists in the community or to new care facilities outside of the hospital.

- **Home Healthcare:** Air Liquide cares for more than 1.7 million patients in their homes suffering from chronic diseases. Once the diagnosis and treatment are established by a doctor, the long-term treatment requires patient education, on-going support, interventions by trained nurses or technicians and the implementation of therapies in the fields of respiratory, perfusion or other.

  Air Liquide has developed an offering beyond oxygen therapy and helps take care of patients suffering from chronic obstructive pulmonary disease, obstructive sleep apnea, chronic respiratory insufficiency, diabetes, pulmonary arterial hypertension, and Parkinson's disease, providing them with services for long-term follow-up care.

  Demographic and sociological factors such as an aging population and urbanization are contributing to the increase in the number of chronic diseases. Air Liquide's Home Healthcare business strives to meet these public health challenges as well as the growing constraints on health spending in advanced economies, by avoiding hospitalization and developing digital monitoring. In developing economies, Home Healthcare is growing in areas where health systems are being introduced.

- **Hygiene:** With its subsidiary Schülke, a leader in hospital disinfection, Air Liquide contributes to the fight against infections and pandemics through a wide range of products used in hospitals and private practice (dentists, family practitioners, etc.) or sold in pharmacies. Schülke also develops anti-bacterial products, mainly for the cosmetics industry but also for the general public. In 2019, the Group decided to consider the possible disposal of this business.
- **Healthcare Specialty Ingredients:** For over 70 years, through its subsidiary Seppic, Air Liquide has designed and developed innovative specialty ingredients for the healthcare sector, in particular adjuvants for vaccines, film-coating systems for the pharmaceutical industry as well as a complete range of eco-friendly thickeners, stabilizers, emulsifiers and active ingredients for the cosmetics market.

KEY POINTS

The **Healthcare** business line produces and distributes medical gases for hospitals and provides support and healthcare services for the care of patients at home. It operates in a constantly changing landscape and a strict regulatory framework. Medical expertise, quality of healthcare services, operational excellence and digital technologies are essential criteria that help offset the pricing pressures of healthcare systems, particularly in advanced economies.

Air Liquide has a unique position in that it is present along the continuum of care and connected to all stakeholders in the healthcare ecosystem (patients, healthcare professionals, hospitals, health authorities, payers) for the treatment of acute diseases (with medical gases in hospitals), the treatment of chronic diseases (with Home Healthcare) and in prevention/well-being (with Healthcare Specialty Ingredients).

Underlying trends such as aging populations and the escalating need for care due to the increase in chronic diseases, as well as the continuing expansion of healthcare systems in developing economies, makes the Healthcare activity a solid growth driver for the Group.

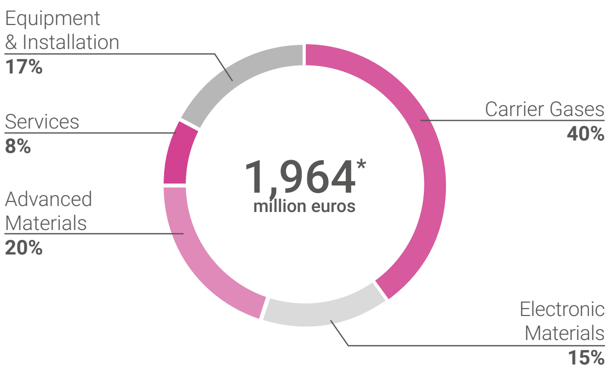
ELECTRONICS

1. BUSINESS OVERVIEW AND BUSINESS MODEL

a. Business overview

With its long-term vision, Air Liquide provides innovative solutions mainly to the semi-conductor market, and to the flat panel and photovoltaic markets. To do so, the Electronics business line leverages its expertise, global infrastructure and strategic proximity to key players in these sectors. Products manufactured by Electronics customers respond to increasingly challenging customer demands for improved mobility, connectivity, computing power and energy consumption. These technological advances are possible, thanks to the innovative materials and gases used in semi-conductor production.

2019 ELECTRONICS REVENUE BY PRODUCT



* 9% of Gas & Services revenue.

b. Business model

Air Liquide's Electronics business line is based near its customers' production facilities. Its business model is mainly based on long-term contracts for the supply of carrier gases, and constant innovation, in particular via the supply of new advanced materials that are necessary to meet the technological challenges of the sector's major players. The business line also supplies equipment for the distribution of gas and chemical products, and installs them at its customers' facilities.

2. KEY FIGURES

- ~3,850 employees
- ~50,000 cylinders of specialty materials delivered each year
- ~20,000 items of gas and chemical product distribution equipment installed

3. CUSTOMERS AND MARKETS

The Electronics business line provides a global service to the sector's main players. It is present in Asia (~74%), the Americas (~20%) and Europe (~6%). **Air Liquide is the market leader** in Electronics, in particular **in China.**

Products and services supplied include:

- **Carrier Gases:** carrier gases (primarily ultra-pure nitrogen) supplied by on-site facilities, are intended for the transport of molecules for chip manufacturing and to inert production installations. The need for an uninterrupted supply of ultra-pure carrier gases requires long-term commitments for up to 15 years from customers with the building of production units near their premises or even on the customer's site.
- **Electronic Materials:** Electronic Specialty Materials are used in semi-conductor, flat panel and photovoltaic cell manufacturing. Advanced Materials are key to the processes used in the manufacturing of more advanced chips. The acquisition of Voltaix in 2013 extended the Group's range of advanced deposition materials. The Group develops and markets offerings with strong added value, including the ALOHA™ and Voltaix™ offerings. The most sophisticated advanced materials are developed in partnership with our customers and their ecosystems. These materials are essential for the miniaturization and energy efficiency of the new generation of electronic chips.
- **Equipment & Installation:** the Electronics business line also supplies equipment for the distribution of gas and chemical products and installs them at its customers' facilities.
- **Services:** customers rely on Air Liquide's expertise for the daily management of gases and chemical products on their sites, as well as to provide cutting-edge analytical services to continuously improve their production processes.

KEY POINTS

The Group's **Electronics** business line covers four different categories:

- Carrier Gases with a business model based on long-term contracts including minimum volumes guaranteed by take-or-pay type clauses;
- Electronic Materials, with a high level of technical expertise and constant innovation;
- Equipment & Installation, relating to our customers' production plants;
- Services.

In a growing electronics sector, the mix of business specific to Air Liquide with its long-term contracts, offers a true competitive advantage.

2.2. ENGINEERING & CONSTRUCTION

To provide customers with the gases required for their industrial production, Air Liquide engineers have developed innovative proprietary technologies. The Group designs and constructs gas production units, from the feasibility study stage through to the delivery of the complete installation, for its own use or for sale to customers who prefer to insource their gas requirements. Air Liquide complies with the increasingly strict safety, reliability and competitiveness requirements of Air Separation Units and hydrogen units.

Since the acquisition of Lurgi in 2007, the Group has expanded its range of technological expertise. It possesses its own proprietary technologies (as developed by Lurgi over 50 years) to produce hydrogen and carbon monoxide through steam methane reforming. This acquisition also expanded the Group's offering of natural gas conversion technologies to produce syngas, synthetic natural gas, methanol, propylene, liquid fuels and biofuels. This expanded Engineering & Construction aptitude has assisted the Group's involvement, upstream of industrial gas production projects, as well as the development of its customer processes, thus boosting sales growth.

The majority of Air Liquide's Engineering & Construction business is geared toward industrial gas production technologies, and in particular the manufacture of air gas or hydrogen and carbon monoxide production units.

To cover all of the primary industrial markets and manage its production costs, the Engineering & Construction business has extensive geographical coverage with engineering centers and manufacturing workshops located mainly in North America, Europe, Asia and the Middle East.

The Group favors the development of its gas sales business over equipment sales. Nonetheless, Engineering & Construction has a strategic value for the Group, both internally and externally.

Internally, the Group benefits from the relevant engineering resources during the investment phase of the projects of its Gas & Services businesses. It provides a high level of expertise, crucial to the design of efficient units which specifically respond to the needs of the Group's Gas & Services customers. It provides support for the Group during site takeovers, by ensuring the appropriate assessment of the quality of assets purchased.

The Engineering & Construction business also serves third-party customers. Air Liquide designs and builds customized units which customers will own and operate. Also, this third-party customer business allows the Group to permanently assess the competitiveness of its own technologies and commercial offering. In particular, Air Liquide is able to forge close relations with customers who produce their own gas and better understand their industrial processes and investment projects. In certain cases, negotiations initially steered toward the sale of equipment were finalized by the signing of a long-term industrial gas supply contract. As part of this third-party customer business, the strategy consists of favoring research and equipment supply contracts and of not tolerating construction risks. Accordingly, Engineering & Construction's contribution to consolidated revenue (sales to third-party customers) can vary significantly from year to year.

In 2019, consolidated third-party Engineering & Construction sales totaled 328 million euros.

KEY POINTS

The **Engineering & Construction** business provides the Group with a genuine competitive edge, enabling it to offer turnkey solutions to its customers and to engage for its own purposes in a process of continuous improvement of industrial processes and reduction in the cost of its industrial assets.

Consolidated Engineering & Construction sales only reflect sales to third parties and do not include internal sales for the needs of the Group or the Gas & Services businesses.

2.3. GLOBAL MARKETS & TECHNOLOGIES

The Global Markets & Technologies (GM&T) World Business Unit delivers technological solutions (molecules, equipment and services) to support the rising markets of **energy transition,** mainly in transport, energy and waste valorization, as well as those related to **deep tech** (see page 23) in areas such as space exploration, aerospace and big science, to accelerate Air Liquide's **sustainable growth.**

To support the energy transition from production through to customer usage, GM&T sells environmentally-friendly solutions.

The GM&T WBU invests in **biomethane** production units and develops **multi-energy stations** to distribute bio Natural Gas Vehicle (NGV), nitrogen for refrigerated transport and hydrogen to support clean mobility and notably the roll-out of hydrogen energy. The WBU also operates biogas digesters which inject biomethane into the domestic grid, as well as multi-modal and gas, equipment and services for the **maritime industry.** These solutions rely on resource recovery and their use with a **circular economy approach.**

In **hydrogen,** Air Liquide masters the entire supply chain, from production to storage, and from distribution to the development of applications for end users, thus contributing to the wider use of hydrogen as a clean energy source, notably for mobility. To date, the Group has designed and installed 120 hydrogen stations worldwide and invests in the production of **carbon-free hydrogen** (see page 68).

To support the **deep tech** sector, GM&T designs and develops, with its customers and their ecosystems, disruptive technologies for the space exploration, aerospace and big science markets. Thanks to its patented technologies and its expertise in cryogenics, GM&T continues to break new scientific ground and open new markets.

GM&T employs 2,000 people world-wide and generated 2019 revenue of 552 million euros.

KEY POINTS

The **Global Markets & Technologies** WBU relies on disruptive proprietary technologies which allows it to open new deep tech markets and develop new business models in the field of energy transition, with a circular economy approach.

3. Description of the business model

Air Liquide's economic growth is accompanied by value creation for society and the environment to ensure the Group's long-term sustainability.

RESOURCES and STAKEHOLDERS

HUMAN CAPITAL AND STAKEHOLDERS

- 67,200 employees, with a range of profiles;
- 29% of women among managers and professionals;
- 4,300 employees contribute to innovation;
- Long-term shareholders, of which 420,000 are individual shareholders;
- Cooperation with 60,000 suppliers and more than 300 academic, industrial and start-up partnerships;
- Regular dialog with the authorities and local communities.

INDUSTRIAL CAPITAL

- 3.7 billion euros of investment decisions in 2019;
- More than 300 million euros per year in innovation expenses;
- Proprietary technologies and 11,000 patents;
- A strong presence in major industrial basins;
- More than 500 production units, 24 million cylinders, more than 10,000 trucks.

FINANCIAL CAPITAL

- Long-term customer contracts;
- Breakdown of share capital: 32% individual shareholders and 68% institutional shareholders;
- Strong balance sheet;
- "A" credit rating.

NATURAL CAPITAL

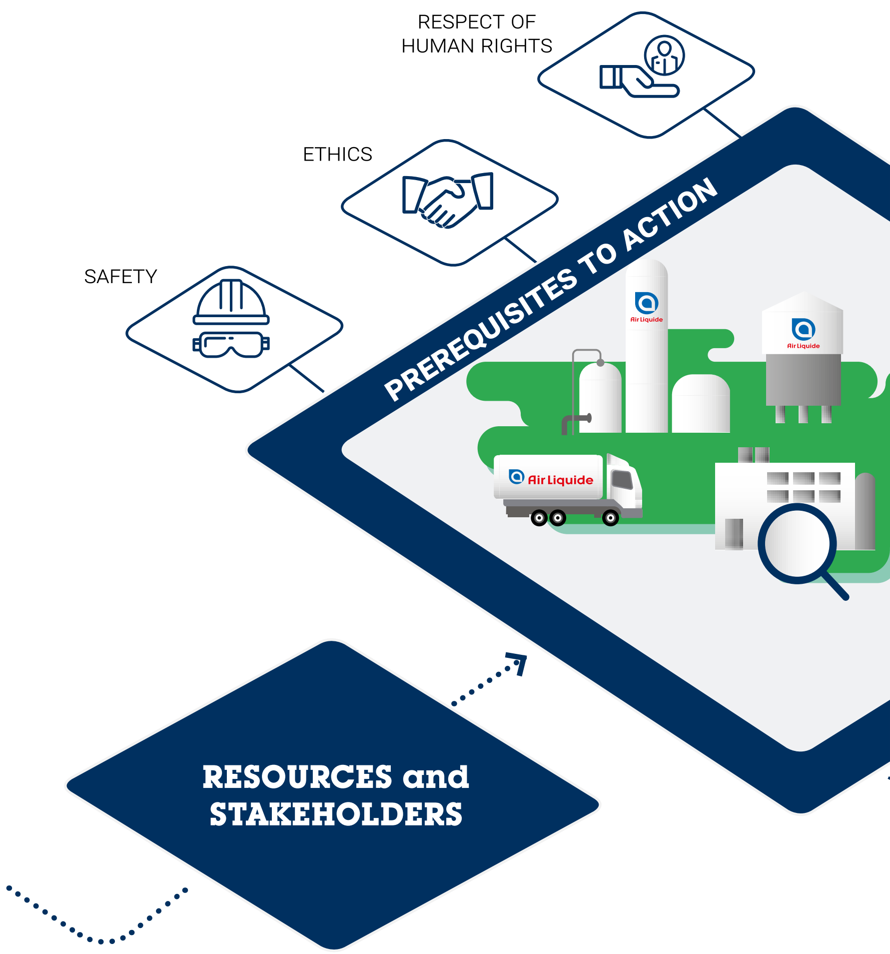
- 35.7 TWh of electricity of which 69% is low-carbon or renewable electricity;
- 94 millions of m³ of water consumed;
- 256,000 TJ of natural gas consumed.

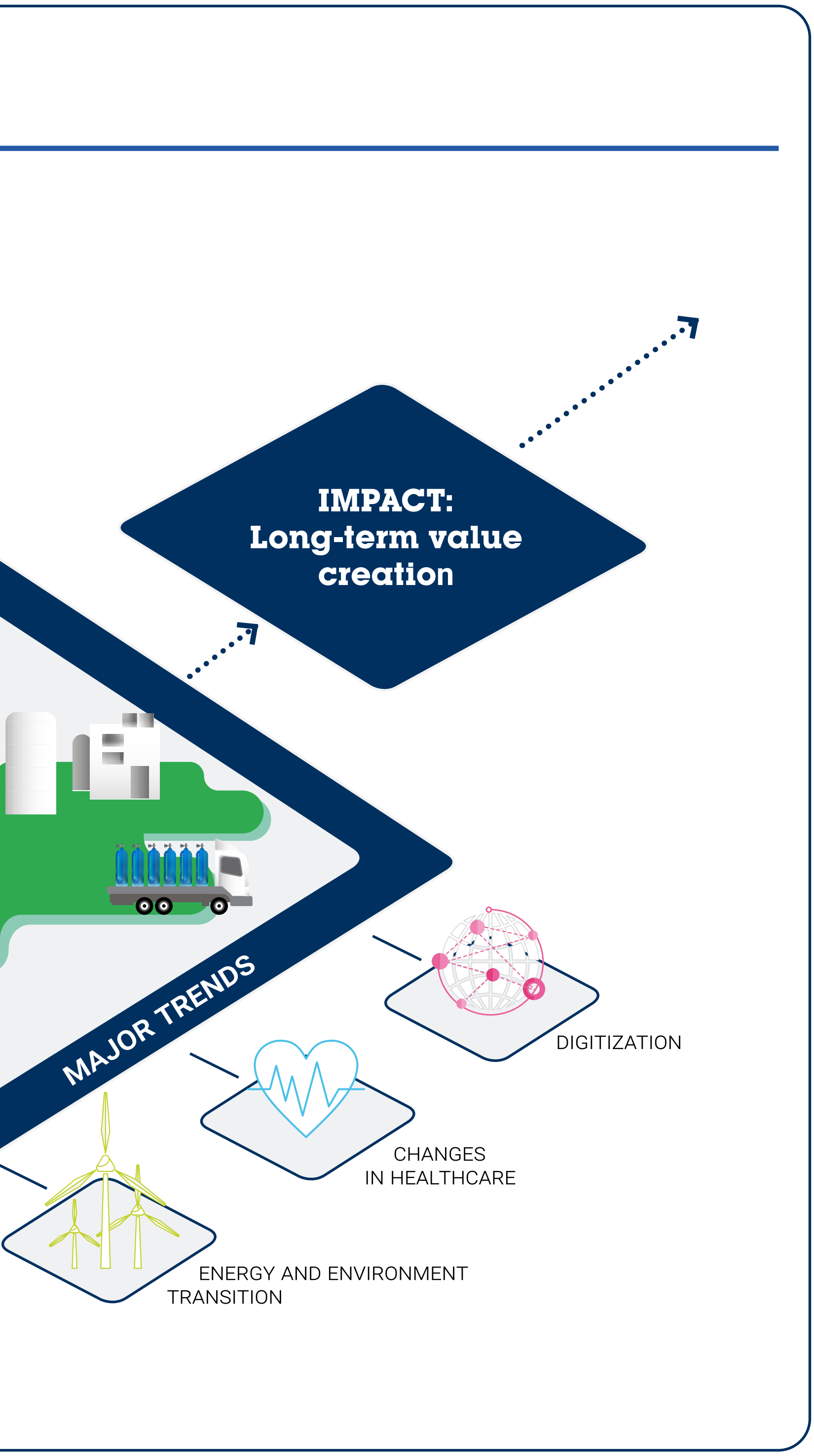
Data 2019

AIR LIQUIDE BUSINESS: gas, technologies and services for Industry and Health

The Group is a world leader in gas, technologies and services for industry and healthcare and supports the growth of nearly all economic sectors by drawing on its extensive scientific and technical expertise. Its offering includes:

- the production and valorization of molecules;
- the integration and marketing of proprietary technologies;
- the provision of related services and digital solutions.





IMPACT: Long-term value creation

COMPANY

- Priority given to the safety of employees, customers, subcontractors and suppliers;
- Reliability of production and deliveries;
- Support for more than 2 million industrial customers worldwide;
- Introduction of the "Voice of Customer" program in 60 countries;
- The Healthcare business, with 1.7 million patients cared for in their homes and service provided to 15,000 hospitals;
- More than 325 critical suppliers assessed based on their environment, social, business ethics and procurement policies;
- Local growth: present in 80 countries, dense territorial coverage;
- Air Liquide Foundation projects.

ENVIRONMENT

- > 40% of sales are related to solutions to protect life and the environment;
- 27% of carbon intensity reduction compared to 2015 (Climate Objectives: reducing the Group's carbon intensity by 30% between 2015 and 2025);
- 69% of electricity consumed by the Group is low-carbon or renewable;
- 12.3 million tons of CO_2 avoided by the Group's customers, thanks to Air Liquide solutions;
- Over 9,600 km of pipelines, reducing road transport;
- 81 members in the Hydrogen Council for a low-carbon society.

LONG-TERM SUSTAINABILITY

- Revenue: 5.6% [(a)] compound annual growth rate (CAGR) over 30 years;
- Adjusted net earnings [(b)] per share: +6.7% [(a)] compound annual growth rate (CAGR) over 30 years;
- Adjusted dividend [(b)] per share: 8.7% [(a)] compound annual growth rate (CAGR) over 30 years;
- 30th free share attribution in 2019;
- Five Chairmen & CEOs since 1902;
- Employee loyalty: 93% loyalty rate among managers and professionals [(c)].

(a) Data calculated according to prevailing accounting rules over 30 years.
(b) Adjusted for the 2-for-1 share split in 2007, for attributions of free shares and for the capital increase completed in October 2016.
(c) Rate calculated based on resignations.

4. Competition

At a global level, the industrial gases industry comprises three main players: Air Liquide and Linde Plc (Ireland), co-market leaders with sales in excess of 20 billion euros each, and Air Products (United States) with revenue which is more than two times lower. Linde Plc is the new entity following the merger of equals between two global players, Linde AG (Germany) and Praxair (United States), which was completed in October 2018. There are also a number of global and regional players, such as Taiyo Nippon Sanso (Japan), Messer (Germany), Yingde (China), Air Water (Japan) and Hangzhou Oxygen Plant Group (China). Finally, numerous smaller-sized players are also present in local markets.

In Large Industries, the customer can choose between self-production and over-the-fence gas supply. Self-production is estimated to account for 80% of hydrogen production and 60% of oxygen production globally, although with significant geographical disparities. Companies self-producing gas represent an important market share for the Group to address. In this respect, the potential to convert self-production into over-the-fence supply represents a major growth opportunity for the Large Industries business. The level of self-production varies strongly depending upon the geographic region, type of industry or local culture. In advanced economies, the supply of oxygen is largely over-the-fence, while the supply of hydrogen for refining remains primarily in-house. In developing economies, while relatively new, over-the-fence supply is accelerating significantly. Air Liquide, the world leader in Large Industries, is in competition with the other major global players and local players.

Industrial Merchant is a local business: transport costs limit the operating area to within 200 to 250 km of a production unit, except for high value-added gases such as argon and helium. This market, which is highly diversified due to the size and activity of its customers, thus includes numerous small and medium-sized local competitors, either ensuring gas production and distribution, or solely distributing gas.

In Healthcare, most gas industry players also supply hospitals with medical oxygen, but few are present in the treatment of chronic diseases at home. In Home Healthcare, Air Liquide is number one in Europe, whereas Linde Plc has a larger presence in the United States. This market remains fragmented in almost all regions with a multitude of small companies and associations. This fragmentation provides bolt-on acquisition opportunities.

Finally, in Electronics, five companies play a major role: Air Liquide, Linde Plc, Merck KGaA (Germany), Air Products and Taiyo Nippon Sanso. Air Liquide is the leader in this industry.

In Engineering & Construction, Air Liquide also competes with industrial gas players. In “cold” technologies used for air gas separation, the main competitors are Linde Plc, Hangzhou Hangyang (China), Kaifeng (China) and Air Products. Chinese competitors are gaining ground due to strong demand in their country. In “hot” technologies used for producing hydrogen and the chemical conversion of syngas, the largest competitors are Technip (France), Haldor Topsoe (Denmark) and Linde Plc.

Global Markets & Technologies is growing worldwide, on markets with a strong technological dimension as well as on new promising markets such as those relating to energy transition and the climate (for example, hydrogen energy). The competitive landscape varies greatly from market to market, with companies of various sizes: from multinationals to start-ups.

STRATEGY

1. Ambition and strategic pillars

Air Liquide is a world leader in gases, technologies and services for industry and health. Its ambition is economic and societal. The Group thus strives to be a leader in its industry, deliver long-term performance and contribute to sustainability.

BEING A LEADER IN ITS INDUSTRY

The Group aims to outperform its market growth by excelling in customer experience. To do so, safety and reliability of its products are a priority. Being a leader also means adopting a pioneering role and constantly innovating, in particular in the three main fields of energy transition and the climate, changes in healthcare, and the digital transformation.This innovation contributes to operational excellence and drives the development of new technologies, new expertise and helps open new markets, in particular that of hydrogen energy.

DELIVER LONG-TERM PERFORMANCE

For more than 30 years, Air Liquide has posted strong performances which has driven its long-term growth outlook. This performance is due to the nature of the industrial gases market, which enjoys steady growth, our investments, and the strength of Air Liquide's business model. It is also based on cornerstones including operational excellence, the capacity to innovate, and the permanent optimization of its business portfolio.

AIR LIQUIDE'S PERFORMANCE OVER 30 YEARS

- **Revenue:** +5.6% on average per year.
- **Cash flow from operating activities** before changes in working capital: +6.5% on average per year.
- **Net profit:** +6.7% on average per year.
- **Earnings per share** [(a)]**:** +6.7% on average per year.
- **Dividend per share** [(a) (b)]**:** +8.7% on average per year.
- **Safety – Reduction in the accident frequency rate:** -5.8% on average per year.
- **Number of employees:** +3% on average per year.

(a) Adjusted for the two-for-one share split in 2007, for free share attributions and for a factor of 0.974 reflecting the value of the preferential subscription rights of the capital increase completed in October 2016.

(b) Dividend 2019, subject to the approval of the General Meeting on May 5, 2020.

CONTRIBUTE TO SUSTAINABILITY

Air Liquide's performance and its sustainability commitment go hand in hand. This commitment is key for both motivating the Group's teams, nurturing the long-term trust of stakeholders and the Company's long-term sustainability.

All of the Group's businesses are rolled out in a way that contributes to major environmental and societal challenges, providing industrial, transportation and healthcare solutions. These challenges, such as the climate and air quality, are growth drivers for Air Liquide. The Group is a responsible industry player, and at the end of 2018 committed to reducing the carbon intensity of its operations.

Air Liquide contributes through its business and its commitment to reach certain Sustainable Development Goals (SDGs) introduced by the UN to eradicate poverty, protect the planet and guarantee prosperity for all by 2030. To illustrate this contribution, environmental and societal achievements are associated with the relevant SDGs in the performance section of this report.

The Group's strategy is customer-centric. It aims to deliver profitable and responsible growth over the long term and is based on four cornerstones:

- **operational excellence,** to boost customer experience and supported by reinforced competitiveness and the digitalization of our operations;
- **the quality of its investments,** which is in line with the Group's business profile and targeting, as a priority, the most promising markets and technologies;
- **open innovation,** in both core business and disruptive technologies, by fostering external partnerships (customers, academic partners, start-ups, etc.) to contribute to operational excellence and to create new offers;
- **a network-based structure,** which provides agility and efficiency, supported by the use of collaborative digital tools.

2. NEOS company program and mid-term objectives

The NEOS company program, for the 2016-2020 period, provides a framework to build a Group which is sustainably more efficient, more connected to its stakeholders and more innovative. This program has two sets of objectives.

2.1. FINANCIAL OBJECTIVES

The financial aims of the NEOS company program for the 2016-2020 period are based on:

(a) Including Airgas scope effect in 2017 corresponding to a +2% CAGR.
(b) Over the 2017-2020 period.

The initial 300 million-US dollar target of cumulated synergies related to Airgas was reached in the first quarter of 2019.

The strong investment momentum in our customers' main markets led to an increase in investment opportunities for the Group and in the number of new long-term contracts signed. In this favorable environment for future growth and to ensure reaching the NEOS target of a ROCE in excess of 10% by 2021-2022, the Group has significantly strengthened its efficiency program. **As of 2019, the annual target for efficiencies is therefore set at more than 400 million euros.**

2.2. ENVIRONMENTAL AND SOCIETAL OBJECTIVES

The NEOS company program includes Sustainable Development objectives which support the Group's strategy and contribute to its long-term performance.

ENVIRONMENT AND SOCIETY OBJECTIVES

To reduce carbon intensity [a] by **30%** by 2025 based on its 2015 emission levels.

35% of women among Group managers and professionals;

33% of young graduates among managers and professional recruitments by 2025.

(a) In kg CO_2 equivalent/euro of operating income recurring before depreciation and amortization at 2015 exchange rate and excluding IFRS16 for greenhouse gas emissions scopes 1 and 2.

2.2.1. Preventing global warming and improving air quality

The ACE approach

As part of its global approach to the climate, Air Liquide has set the most ambitious objectives in its sector. Known as **ACE,** these objectives break down as follows:

Assets (A)

Within its activities, including production, distribution and services, **Air Liquide is committed to reducing its carbon intensity** (a) **by 30% by 2025, based on its 2015 emission levels.**

Customers (C)

With its customers, the Group is also committed to a sustainable industry by promoting low-carbon solutions. Air Liquide already offers technologies such as oxy-combustion, which allows its customers to reduce their emissions of CO_2 and pollutants. The Group is continuously innovating and developing new solutions, such as CO_2 capture and valorization and the injection of hydrogen into the blast furnaces of its steel customers.

Ecosystems (E)

With ecosystems, via an active dialog with all players (public authorities, industrial partners, NGOs, etc.), Air Liquide is contributing to the development of a low-carbon society, notably by developing biomethane for industry and transport and promoting hydrogen which, in both terms of mobility and energy, will play a key role in the fight against climate change and energy transition.

CLIMATE AND INVESTMENT DECISIONS

For all its major projects, Air Liquide includes an internal carbon price of 50 euros per ton of CO_2 in its investment decision process. This is a value that Air Liquide voluntarily sets for itself to assess the economic cost of greenhouse gases emissions. The analysis of investments with this internal carbon price ensures the robustness and sustainability of the customer project: for major projects, the potential costs associated with a possible tax on CO_2 emissions from Group's assets are reflected in the price of industrial gases and paid by the customer. This analysis also makes it possible to validate the relevance and viability of the investment solution planned by Air Liquide and to propose low-carbon technological solutions, whenever possible.

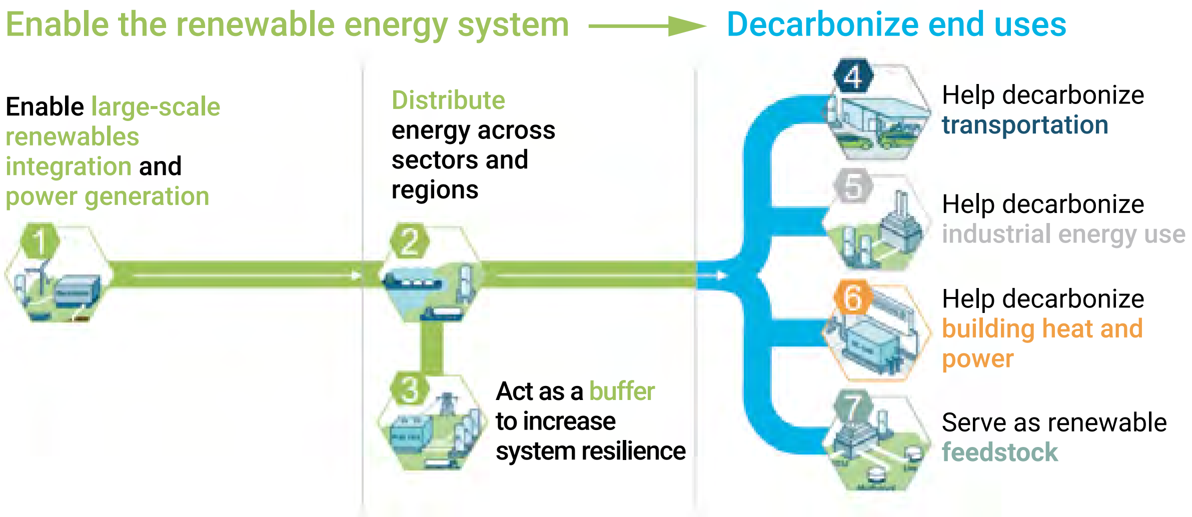
(a) *In kg CO_2 equivalent/euro of operating income recurring before depreciation and amortization at 2015 exchange rate and excluding IFRS16 for greenhouse gas emissions scopes 1 and 2.*

Climate scenarios

In order to understand and adapt its business activities to changes in the market, Air Liquide makes use of medium- and long-term scenarios.

The Hydrogen Council's "scaling up" scenario

Air Liquide, as a founding member of the Hydrogen Council, took part in the drafting of the scenario published by this Council on the potential of hydrogen in the field of industry, transport and energy, as presented below:



The scenario, dubbed "scaling up", valued the hydrogen market at 2,500 billion US dollars by 2050 and at 6 Gt the possible annual reduction of CO_2 emissions.

"Scaling up" is a scenario built on the use of the hydrogen molecule as a clean energy carrier. The Group then applied the same approach to assess market opportunities for its other businesses.

Scenarios for Air Liquide's main markets

Drawing on this initial scenario focused on the hydrogen molecule, the Group then explored the use of scenarios to analyze the impact that CO_2 emissions constraints could have on its main industrial gases markets. The following scenarios were analyzed through to 2050:

- the IEA's "Reference Technology Scenario (RTS)" which takes into account commitments taken by the various states during COP 21;
- the IEA's "2°C Scenario" (2DS) which is based on the conditions required (energy consumption, efficiency, CO_2 capture) to maintain the rise in the planet's temperature to 2°C compared with the pre-industrial era.

These scenarios are considered to be international benchmarks and are often used to model energy projections as a basis for companies making strategic decisions. However, it should be noted that the RTS is not compatible with the Earth's limitations or the Climate Objectives of the Paris Agreement. The 2DS, which relies on the same physical flows as the RTS, integrates very optimistic energy efficiency and carbon capture and storage (CCS) projections.

For this reason, Air Liquide, in partnership with a firm of experts, has developed a third scenario which includes lower energy efficiency and CCS volume projections, which adds an additional constraint to our markets.

The study focused in particular on the following markets: steel, glass, refining, petrochemicals, health, electronics, agrifood, beverages. This initial study enabled Air Liquide to familiarize itself with the process and highlighted the Group's resilience, thanks to the sector and regional diversity of its markets. This process provides food for thought for the Group in its current strategic considerations in terms of energy transition challenges and will be fine-tuned in the months ahead to help draw more precise conclusions on the various markets.

2.2.2. Strengthening dialog with stakeholders

For Air Liquide, strengthen dialog with Group employees, customers and patients, shareholders, suppliers, local communities and the public sphere is a strategic objective which contributes directly to the responsible growth that the Group seeks to implement. Through these ongoing discussions, the Group is committed to take into account their issues, identify priority development issues and share its ambition to contribute to a more sustainable world.

The main initiatives with stakeholders for 2019 are presented in the Performance section - Environment and society (page 69).

The Group's relationship with its stakeholders and their governing principles are set out in greater detail in Chapter 5 (page 297).

3. Strategy governance

3.1. ORGANIZATION

Various internal structures contribute to the definition and implementation of the Group's strategy. Their roles are presented in Chapter 2 "Risk factors and control environment", page 85.

SIC meetings (Strategic Investment Committee) are chaired by the Chairman and CEO in order to periodically review the Group's strategy, major investments and policies. The Executive Committee meets on a regular basis to review the strategy and its implementation.

Moreover, monthly meetings of the Group Performance Steering Committee are held to establish investment budgets and the action plans to undertake or amend in order to achieve the annual or multi-annual objectives.

Finally, investments are validated through the Resources and Investment Committees (RIC), the operation of which is described on page 43 of this Chapter.

Taking environmental and societal challenges into account are also an integral part of the Group's strategy. The Sustainable Development Department, which reports to an Executive Vice President, thus contributes to the development of the strategy and defines the specific measures to be included in the NEOS company program. Moreover, this Executive Vice President takes part in the above-mentioned meetings and contributes their sustainable development vision.

3.2. INVESTMENT PROCESS

The Group's steady long-term growth is largely due to its ability to invest in new projects each year. Investment projects in the industrial gas business are spread throughout the world, highly capital intensive and supported by long-term contracts, in particular for Large Industries. Air Liquide has thus tailored its financing to the nature of its projects, based on the diversification of financing sources, the prudent management of the balance sheet and innovative financing methods. This financing policy is fundamental for the Group's continued development.

The Group's investments reflect its growth strategy. They can be classified into two categories:

- industrial investments, which bolster organic growth and guarantee the efficiency, replacement, maintenance and safety of installations;
- financial investments, which strengthen existing positions, or accelerate penetration into a new region or business segment through the bolt-on acquisition of companies or assets already in operation, as well as new technologies.

The nature of industrial investments differs from one World Business Line to the next: from gas production units for Large Industries and Electronics, to filling centers, logistics equipment, storage facilities, medical devices and management systems for Industrial Merchant, Electronics and Healthcare. The nature of investments is also highly varied within Global Markets & Technologies. Capital intensity varies greatly from one business to another.

3.2.1. Capital intensity

Capital intensity is the ratio of capital required to generate one euro of supplementary revenue, when projects or businesses reach maturity. This capital is either invested in industrial assets (production units, storage facilities, logistics equipment, etc.), or used as working capital to finance the development of the activities.

Capital intensity varies significantly from one business to another:

- Large Industries:
  - air gases production has a capital intensity of around 3. It varies with the trend in electricity prices,
  - hydrogen and cogeneration have a capital intensity of between 1.5 and 2, due to the high proportion of natural gas in the cost of sales. This capital intensity therefore varies with the changes in natural gas and electricity prices;
- Industrial Merchant capital intensity to launch the business in a new market is between 1.5 and 2;
- Electronics has an average capital intensity of around 2.5;
- in Healthcare, capital intensity, excluding acquisitions, is around 1 depending on the product mix.

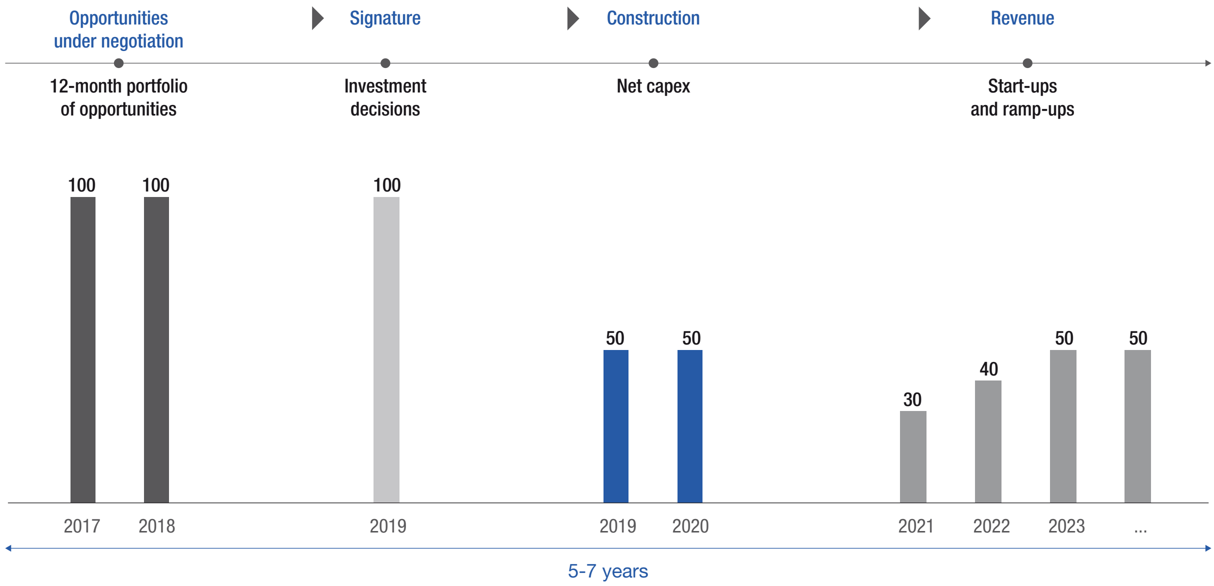
The Group's capital intensity therefore continues to vary depending on the business mix, project type and prices of raw materials. It is much higher for renewal and efficiency investments.

Whatever the capital intensity, any project must enable the Group to achieve its Return On Capital Employed (ROCE) objective over the long term. Therefore, for the same level of return on investment, the operating margin (OIR to revenue ratio) of a project will depend on the capital intensity of the activity in which the project is carried out.

3.2.2. The theoretical lifespan of gas production unit contracts

Long-term development is one of the key characteristics of the Industrial Gas business. It is particularly evident in the investment cycle, where there is approximately a five-year span between the study of a new construction project for a Large Industries customer and the first corresponding industrial gas sales. Investment cycles in other business lines are generally shorter. Monitoring the lifespan of these projects is essential to anticipating the Group's future growth. The chart below provides details of each stage of this process based on the example of a Large Industries contract.

INVESTMENT CYCLE OF A LARGE INDUSTRIES CONTRACT

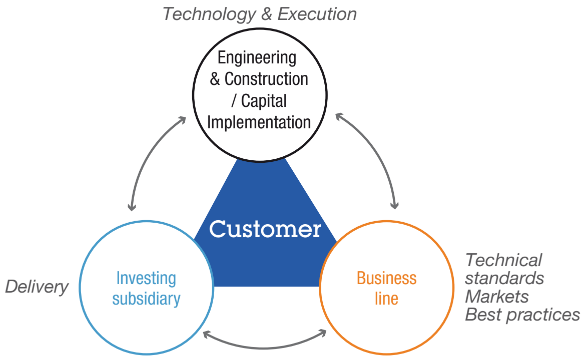


Applying a therotical capital intensity of 2, an investment of 100 million euros in a new project should generate 50 million euros of sales per annum, when fully ramped-up.

- Opportunities and Negotiation phase: the project is included in the portfolio of investment opportunities and enters into the development process. Projects exceeding 5 million euros of investment for Large Industries and exceeding 3 million euros for other business lines are monitored within the portfolio of potential opportunities and split between those for which a decision is expected within 12 months and those for which the investment decision will take more than one year. Projects are then discussed and negotiated with the customer. Projects can be removed from the portfolio for several reasons:
  1. the contract is signed, it is removed from the portfolio and therefore becomes an investment decision;
  2. the project is abandoned by the customer;
  3. the customer decides against an over-the-fence gas supply or the project is awarded to a competitor;
  4. the project is delayed beyond 12 months: it is removed from the 12-month portfolio but remains in the long-term portfolio.
- Signature phase: the two parties reach an agreement. The signing of a long-term contract represents an investment decision validated by the internal governance bodies. The project is removed from the portfolio of investment opportunities and is registered in current investments.
- Construction phase: the construction of the unit generally takes around 24 months and sometimes up to 36 months depending on the size of the project. This is the capital expenditure period. The project remains in current investments.
- Revenue phase:
  1. commissioning: this corresponds to the start-up of the unit. Sales reflect the needs of the customer with a guaranteed minimum volume at the take-or-pay level, guaranteeing minimum profitability from the beginning of the contract;
  2. ramp-up: this is the unit's ramp-up phase. Over the course of the contract term, volumes increase above the take-or-pay level to the nominal amount defined in the contract. Nominal capital intensity is achieved only at the end of this phase.

3.2.3. Governance of major growth projects

Three Air Liquide entities are at the heart of major growth projects, from development through to its execution.



The business line involved ensures the global customer relationship is monitored, provides the required know-how and ensures the overall consistency of the project, in terms of both contract and technical standards. It is also responsible for good internal governance practices.

The local subsidiary proposes the project and, once the contract has been signed, carries the investment on its balance sheet. It is then responsible for operations, customer relations and the project's financial profitability.

Engineering & Construction provides the technologies and guarantees that they are competitive, both overall and specifically for each project, thanks to a good industrial architecture solution. Engineering & Construction is responsible for the technical aspect and works with local Capital Implementation site management assistance teams (CI within the hubs) which are responsible for executing the project.

Potential projects are identified well in advance, based on good market knowledge and a strong local presence. The first stage includes selecting the opportunities in which the Group would like to invest both commercial and technical resources, in line with its global strategy. This selection process is followed by a series of validation stages.

During the development stage, the project is submitted for the approval of the geographic region on which it depends. At the Group level, two major bodies validate the relevance of the project: the RIC (Resources & Investment Committee – see below) which is responsible for assessing and validating investment requests, and the ERC (Engineering Risk Committee) which is responsible for assessing technical and execution risk.

Once the project has been decided on by Air Liquide and signed with the customer, it is executed by a team composed of representatives of the investing subsidiary and of Engineering & Construction, under the supervision of the geographic hub.

The type, complexity, geography and size of investment opportunities have changed significantly during recent years. A dedicated CIG (Capital Implementation Group) made up of experts strengthens the team in charge of executing investments.

During the start-up of a unit, project management is the responsibility of the local operational teams, under strict standards to ensure the site's security and integrity. The operational management of the unit is carried out by the local subsidiary, and the Group and hub's Operations Control monitors its financial performance.

ROLE OF THE RESOURCES & INVESTMENT COMMITTEE (RIC)

The purpose of these Committees is to assess and approve requests for investments that have been submitted, as well as medium and long-term contractual commitments and Human Resources requirements that may arise therefrom.

They meet regularly (usually once a month) for each hub (Americas, Europe, Asia Pacific, and Middle East and Africa) and each World Business Unit (Healthcare, Engineering & Construction, Innovation & Development Division (IDD), Headquarters).

Each Committee meeting is chaired by a member of the Executive Committee in charge of the hub or of the World Business Unit involved and brings together managers of the region and business line concerned by the investment, as well as representatives of the Group Finance Department (who have a veto right), Engineering & Construction, and the Capital Implementation Group (CIG).

The Committee's decisions are reviewed by Executive Management.

The decision is based on a rigorous assessment of individual projects as well as each project's expected profitability. The following criteria are systematically reviewed:

- the location of the project: the analysis will take into account whether the project is based in an industrial basin with high potential, whether it is connected to an existing pipeline network, or whether it is in an isolated location;
- the competitiveness of the customer's site: based on size, production processes and particularly their environmental footprint, cost of raw materials and access to markets;
- customer risk;
- exposure to the risk of corruption;
- contract clauses;
- end products and the stability of future demand for these products;
- quality and risk related to the technical solution;
- country risk: evaluated on a case-by-case basis and can lead to changes in the financing policy and its supplementary insurance cover;
- Social and Environmental Responsibility criteria, in particular relating to greenhouse gas emissions, water consumption, and relations with local communities;
- the compatibility of projects with the Group's Climate Objectives, based on a minimum of 50 euros per ton of CO_2 equivalent for the cost of a project's greenhouse gas emissions.

Following approval by the RIC and signing with the customer, the project is transferred to the current investment category.

INVESTMENT CYCLE DEFINITIONS

Investment opportunities at the end of the period
Cumulative value of investment opportunities taken into account by the Group for a decision within the next 12 months. Industrial projects generating revenue of more than 5 million euros for Large Industries and more than 3 million euros for other business lines, including replacement assets and efficiency projects.

Decisions during the period
Cumulative value of industrial and financial investment decisions. Growth and non-growth industrial projects, including the renewal of assets, efficiency projects, maintenance and security, as well as financial decisions (acquisitions).

Investments backlog at the end of the period [(a)]
Cumulative value of investments for projects that have been decided but not yet started up. Industrial projects of more than 10 million euros, including the renewal of assets and efficiency projects.

Sales backlog
Cumulative value of forecast annual revenue, generated by current investments at the end of the period, fully ramped-up.

(a) Different from construction in progress (see note 13.1 to the consolidated financial statements on page 230) without threshold or business criteria.

3.3. FINANCING

The financing policy is regularly reviewed to provide the best possible support to the Group's development and take into account changes in financial market conditions, while respecting a credit profile in line with Standard & Poor's and Moody's long-term minimum "A" category rating. This credit profile depends on ratios such as net debt to equity and cash flow from operating activities after changes in working capital requirements to net debt.

The Air Liquide Group applies the following principles of prudence:

- pursuing the diversification of financing sources and spreading of debt maturities in order to minimize refinancing risk;
- backing commercial paper issues with confirmed credit facilities;
- hedging interest rate risk to ensure visibility of financing costs, in line with long-term investment decisions;
- funding investments in the currency of the operating cash flows, to ensure a natural currency hedging;
- a permanent centralization of funding and excess cash through Air Liquide Finance, a wholly-owned entity of L'Air Liquide S.A.

3.3.1. Diversifying and securing financing sources

Air Liquide diversifies its financing sources by accessing various debt markets: commercial paper, bonds and banks.

Air Liquide uses the short-term commercial paper market, in France, through two French Commercial Paper programs of up to an outstanding maximum of 3 billion euros each, and in the United States through a US Commercial Paper program (USCP) of up to an outstanding maximum of 2 billion US dollars.

For its long-term financing, Air Liquide has a Euro Medium Term Note (EMTN) program to issue long-term bonds of up to an outstanding maximum amount of 12 billion euros. This program allows, in particular, for bonds to be issued in the principal currencies (euro, US dollar, Japanese yen) as well as in other currencies (Chinese renminbi, Swiss franc, pound sterling and Russian ruble).

As part of the Group's policy to diversify its financing sources, Air Liquide also has access to a bond issue program on the domestic Chinese market for a maximum amount of 10 billion Chinese renminbi.

The Group also raises funds through bank debt (loans and credit facilities).

To avoid liquidity risk relating to the renewal of funding at maturity, and in accordance with the Group's internal policy, the Group limits its short-term debt maturities to an amount which is covered by committed credit facilities from its core banks.

Investments are generally funded in the currency in which the cash flows are generated, creating a natural currency hedge.

3.3.2. Centralization of cash and funding, excess cash and hedging

To benefit from economies of scale and facilitate capital markets financing (bonds and commercial paper), the Group uses a dedicated subsidiary, Air Liquide Finance. This subsidiary centralizes the vast majority of the Group's financing transactions. It hedges currency, interest rate and energy risk for the Group's subsidiaries in those countries where it is permitted by law.

In the countries where local regulations permit, Air Liquide Finance also centralizes cash flow balances through direct or indirect daily cash pooling of these outstanding balances or through intra-group loans and borrowings. When daily international cash concentration is not possible, there exist, nonetheless, local cash poolings which allow periodic intercompany loans to Air Liquide Finance.

Due to the currency matching within Air Liquide Finance, resulting from the currency hedging of intra-group loans and borrowings, these internal financing transactions do not generate a foreign exchange risk for the Group.

Air Liquide Finance, which centralizes the Group's financial hedging transactions, complies with EMIR requirements (European Market Infrastructure Regulation) relating to its status as a non-financial counterparty (NFC-) and ensures risk mitigation and derivative transaction reporting are in line with technical standards published by ESMA.

Furthermore, in certain specific cases (e.g. regulatory constraints, high country risk, joint ventures, etc.), the Group may limit its risk through adapted management, by setting up specific financing in the local banking market, and by using credit risk insurance.

3.3.3. Staggering debt maturity schedules

To minimize the refinancing risk related to debt maturity schedules, the Group spreads maturities over several years.

Debt maturity schedules are regularly reviewed by Executive Management.

Refinancing risk is also reduced by the regularity of the cash flow generated from Group activities.

3.3.4. Use of bank guarantees

Group subsidiaries require from time to time bank guarantees, mostly in favor of Engineering & Construction, Global Markets & Technologies and Healthcare customers, either during the tender period (bid bond), or after contract award, during contract execution until the end of the warranty period (advance payment bond, retention bond, performance bond, and warranty bond).

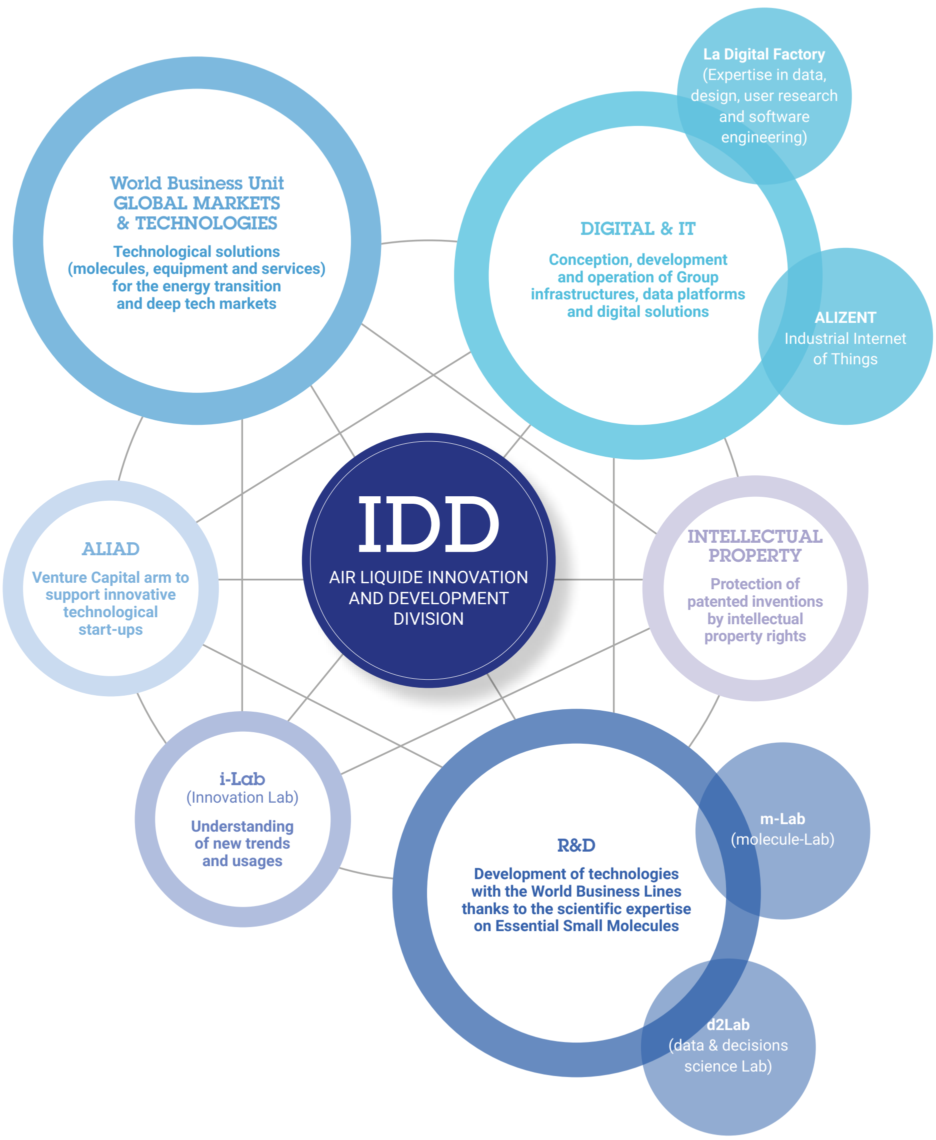
The most common bank guarantees are advance payment bonds and performance bonds and are extended to customers to secure contractual performance.

In the Group's ordinary course of business, certain subsidiaries are required to provide financial payment guarantees to secure rental or insurance obligations.

The projects, for which these guarantees are granted, are regularly reviewed by management and are subject to approval by the Board of Directors for guarantees which exceed 100 million euros. When guarantee payment calls become probable, the necessary provisions are recorded in the consolidated financial statements.

3.4. INNOVATION

Over the past five years, Air Liquide has reinvented its innovation approach and has introduced a **dedicated structure.** The Innovation & Development Division (IDD) **steers the innovation strategy** on behalf of the Group's hubs and operations, and contributes to the Group's transformation. The Innovation & Development Division relies on both the global network of Innovation Campuses and on dedicated labs, which are at the heart of the global innovation ecosystems.



Decisions relating to the Innovation strategy depend on the **Group's governance bodies (Resources & Investment Committees – RIC, Risk Committee),** the operation of which is described on page 43.

Research & Development projects are subject to joint governance by the Heads of R&D programs and the World Business Lines, to ensure that projects are aligned with business line strategies and to anticipate the industrialization and roll-out phase. The implementation of R&D projects for a cluster, in line with the World Business Lines' strategy, helps improve customer proximity and reduce the time to market of innovations.

Moreover, **technology roadmaps** dedicated to Hydrogen Energy, Global Markets & Technologies, and Engineering & Construction have been defined and are coordinated by the Innovation & Development Division's Chief Technology Officer, in close cooperation with R&D. Structured around the maturity scale of the projects, these roadmaps are used as steering tools for the Group's technological innovation strategy. The **First-of-its-Kind Committee (FOIK),** specifically created to assess risk relating to pilot projects and demonstrations carried out for the first time by the Group, meets monthly. The **Digital Committee** validates digital projects during the development phase before they are rolled out (Minimum Viable Products – MVP) and the related expenses.

The Innovation strategy is also regularly reviewed by the Group's **Executive Committee and Board of Directors.**

PERFORMANCE

Unless otherwise specified, all variations on revenue commented below are made on a **comparable basis,** which excludes the currency, energy (natural gas and electricity) and significant scope impacts. The reference to **Airgas** corresponds to the Group Industrial Merchant and Healthcare activities in the United States.

1. Key Figures

(in millions of euros)	FY 2018	FY 2019	2019/2018 published change	2019/2018 comparable change [(a)]
Total Revenue	**21,011**	**21,920**	**+4.3%**	**+3.2%**
Of which Gas & Services	*20,107*	*21,040*	*+4.6%*	*+3.5%*
Operating Income Recurring	3,449	3,794	+10.0%	+7.5%
Operating Income Recurring *(as % of Revenue)*	16.4%	17.3%	+90 bps	
Variation excluding energy		*+70 bps*		
Other Non-Recurring Operating Income and Expenses	(162)	(188)		
Net Profit (Group Share)	2,113	2,242	+6.1%	
Recurring Net Profit (Group Share) [(b)]	2,113	2,307	+9.2%	+11.1%
Adjusted Earnings per Share *(in euros)*	**4.49**	**4.76**	**+5.9%**	
Adjusted Net Dividend per Share *(in euros)* [(c)]	**2.40**	**2.70**	**+12.4%**	
Cash Flow before change in working capital requirements [(d)]	4,242	4,859	+14.5%	
Net Capital Expenditure [(e)]	2,272	2,616		
Net Debt	12,535	12,373		
Net Debt to Equity ratio	68.8%	64.0%		
Recurring ROCE [(f)]	**8.0%**	**8.6%**	**+60 bps**	

(a) Change excluding the currency, energy (natural gas and electricity) and significant scope impacts, see reconciliation in appendix.
(b) Excluding exceptional and significant transactions that have no impact on the operating income recurring, see reconciliation in appendix.
(c) 2019 proposed dividend. 2018 figures restated for the impact of the free share attribution in October 2019.
(d) Data from 2018 restated. Excluding IFRS16, the change would be +8.3%.
(e) Including transactions with minority shareholders.
(f) Based on the recurring net profit, see reconciliation in appendix.

2. Income Statement

REVENUE

Revenue (in millions of euros)	FY 2018	FY 2019	2019/2018 published change	2019/2018 comparable change
Gas & Services	20,107	21,040	+4.6%	+3.5%
Engineering & Construction	430	328	-23.7%	-25.0%
Global Markets & Technologies	474	552	+16.5%	+14.9%
TOTAL REVENUE	**21,011**	**21,920**	**+4.3%**	**+3.2%**

Revenue by quarter (in millions of euros)	Q1 2019	Q2 2019	Q3 2019	Q4 2019
Gas & Services	5,237	5,299	5,242	5,262
Engineering & Construction	93	83	81	71
Global Markets & Technologies	111	129	131	181
TOTAL REVENUE	**5,441**	**5,511**	**5,454**	**5,514**
2019/2018 Group published change	**+8.6%**	**+7.0%**	**+3.5%**	**-1.1%**
2019/2018 Group comparable change	**+5.0%**	**+4.7%**	**+3.5%**	**-0.1%**
2019/2018 Gas & Services comparable change	**+4.8%**	**+5.0%**	**+3.5%**	**+0.9%**

Group

Group revenue for 2019 totaled **21,920 million euros,** up **+3.2%** on a comparable basis. Gas & Services enjoyed robust comparable sales growth of **+3.5%** despite a slowing economic environment in the 4th quarter of 2019. In Engineering & Construction, sales to third-party customers were down compared with 2018, with resources mainly allocated to internal projects, industrial investment decisions having reached a record high in 2019, in particular in Large Industries. Global Markets & Technologies continued its dynamic development with growth of **+14.9%.**

The currency impact was positive at +2.1%, whereas the energy impact was unfavorable (-1.4%). The acquisition of Tech Air in the United States at the end of the 1st quarter of 2019 and the disposal of Fujian Shenyuan in September generated a significant scope impact of +0.4% over the year. The Group's **published revenue growth** was therefore up **+4.3%** for 2019.

Gas & Services

Gas & Services revenue reached **21,040 million euros** in 2019, up **+3.5%** on a comparable basis. All activities contributed to growth, in particular Healthcare and Electronics. Large Industries (**+3.4%**) benefited notably from sustained hydrogen volumes in Europe and Asia and from the ramp-up of several new units. In a less favorable economic environment in the 4th quarter 2019, Industrial Merchant growth reached **+1.9%,** driven mainly by efficient price management (**+3.6%**), including helium. Strong healthcare growth (**+5.7%**) was due to organic sales growth, in particular in Home Healthcare in Europe and Latin America and in Medical Gases in the United States. Electronics revenue maintained a very dynamic growth momentum over the year (**+7.9%**) with double-digit growth for Carrier Gases and Advanced Materials sales.

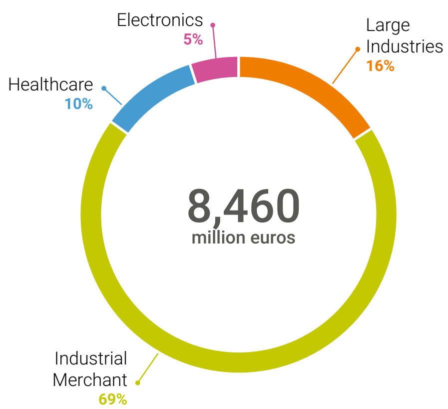
As published sales were up **+4.6%** in 2019, with the unfavorable energy impact (-1.5%) more than offset by the favorable currency (+2.1%) and significant scope (+0.5%) impacts which included the consolidation of Tech Air and the disposal of Fujian Shenyuan.

Revenue by geography and business line *(in millions of euros)*	FY 2018	FY 2019	2019/2018 published change	2019/2018 comparable change
Americas	7,982	8,460	+6.0%	+1.5%
Europe	7,111	7,172	+0.9%	+3.4%
Asia Pacific	4,359	4,794	+10.0%	+7.7%
Middle East & Africa	655	614	-6.3%	+1.5%
GAS & SERVICES REVENUE	**20,107**	**21,040**	**+4.6%**	**+3.5%**
Large Industries	5,685	5,629	-1.0%	+3.4%
Industrial Merchant	9,181	9,754	+6.3%	+1.9%
Healthcare	3,486	3,693	+6.0%	+5.7%
Electronics	1,755	1,964	+11.9%	+7.9%

Americas

Gas & Services revenue in the Americas totaled **8,460 million euros** in 2019, an increase of **+1.5%.** Large Industries sales were stable in 2019, due to several customer maintenance turnarounds in the United States during the 2nd half of the year. Industrial Merchant revenue growth was resilient at +0.7%, driven mainly by higher prices. Electronics growth stood at +2.1% and Healthcare continued to improve strongly (+9.7%), in particular in Medical Gases in the United States and Latin America.

AMERICAS GAS & SERVICES 2019 REVENUE



- **Large Industries** revenue was stable compared with 2018. Activity was dynamic throughout the year in Latin America, in particular with the start-up of a hydrogen-supply contract in Mexico in the 2nd quarter, and the ramp-up of Air Separation Units in Brazil and Columbia. The situation in North America was more contrasted. The solid growth in oxygen volumes during the 1st half of 2019 did not offset the high prices of the 1st half of 2018, due to severe weather conditions. The 2nd half saw a decline in hydrogen sales, as the numerous customer maintenance turnarounds penalized sales growth by more than 4% over the half year. Cogeneration sales strongly improved over the year.
- **Industrial Merchant** sales growth was resilient at **+0.7%** in a slower industrial environment, driven by high prices, which were up +4.3% over the year. In North America, sales grew strongly in consumer-related markets such as Food and Pharmaceuticals as well as in the Research sector. In contrast, hardgoods revenue declined significantly in the United States, due to the slowdown in industrial sectors such as Construction and Metal Fabrication. In South America, double-digit growth was driven in particular by a strong increase in liquid gas volumes in Brazil.
- **Healthcare** revenue grew strongly by **+9.7%,** with no significant contribution from acquisitions. Medical Gases sales growth was high in the United States, in particular to proximity care players, where the digital interface cylinder offering has enjoyed significant success. Activity remained very dynamic in Latin America, in particular in Colombia.
- **Electronics** sales were up **+2.1%** over the year, driven by strong Carrier Gases growth, whereas Equipment & Installation sales in the 4th quarter were down markedly, compared with record level seen in the same period in 2018.

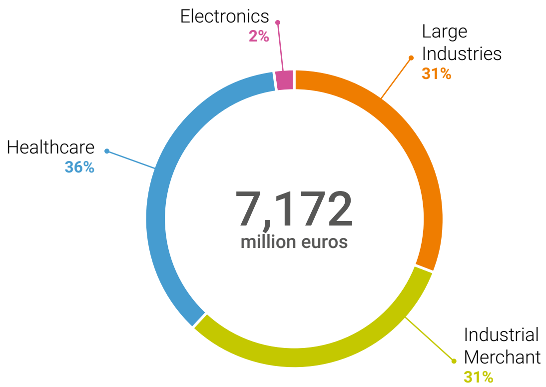
AMERICAS

- Mid-June, Air Liquide announced the **signature of two long-term supply agreements with Marathon Petroleum Company** for a total of up to **900 tonnes per day of oxygen** for Marathon Petroleum's Refineries in Texas City, Texas and Garyville, Louisiana. The two agreements nearly **double the amount of oxygen** that Air Liquide will supply to Marathon Petroleum in total. Both sites are located on the Gulf Coast.
- **Air Liquide and Shell Chemicals** announced in late July the **renewal of contracts** for the supply of **oxygen, nitrogen, steam and electricity** to Shell's Scotford facility in **Alberta, Canada.** To support this renewed long-term commitment, Air Liquide will further enhance its Scotford site operations, which will support future growth in this key industrial basin and create additional operational efficiencies.

Europe

Revenue in Europe reached **7,172 million euros** over 2019, up **+3.4%** on a comparable basis driven by good Healthcare sales momentum (+5.2%) and a solid growth in Industrial Merchant (+3.4%), notably thanks to high price impacts and robust volumes. Large Industries sales (+1.7%) were driven by higher hydrogen volumes for refineries in Benelux, whereas demand remained weaker in the Steel and Chemical sectors.

EUROPE GAS & SERVICES 2019 REVENUE



- **Large Industries** revenue was up **+1.7%** over the year. Hydrogen sales were boosted by high demand among refiners connected to the pipeline network in the Benelux. Activity was weaker in the Steel sector in Germany and Italy and in Chemicals in Germany. Sales growth continued in the East, in particular with final contributions from the ramp-up of an oxygen unit in Turkey and the takeover of a hydrogen unit in Kazakhstan.
- **Industrial Merchant** sales growth was very solid in 2019 (**+3.4%**), driven mainly by high prices (+3.2%) and the further development of the Food and Pharmaceuticals markets. Several initiatives creating significant value for both customers and the Group were launched, focusing the customer portfolio on applications which justify higher price impacts. At the same time, the carbon dioxide market recovered from a difficult 2018. Almost all countries contributed to growth, in particular Eastern Europe and the United Kingdom which enjoyed double-digit growth.
- **Healthcare** sales enjoyed strong, fully organic growth of **+5.2%.** Growth momentum in Home Healthcare was very dynamic, notably thanks to a strong increase in the number of patients treated for diabetes in Scandinavia and France, and for sleep apnea in France and Spain. Sales of Medical Gases for hospitals improved despite constant pressure on pricing. The Hygiene activity grew strongly, through the German subsidiary Schülke.

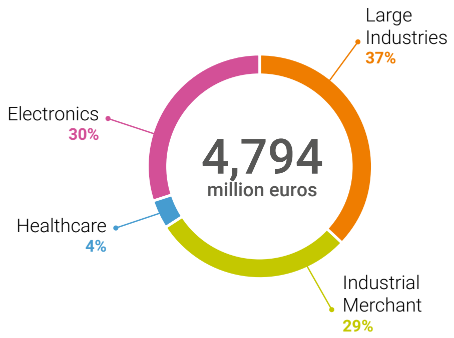
EUROPE

- Air Liquide and PAO Severstal, a steel and mining company and long-term partner of the Group, have announced the signature, in March, of a new **long-term contract for the supply of oxygen, nitrogen and argon** in Cherepovets (Russia). Air Liquide will invest around **50 million euros** in the construction of a state-of-the art Air Separation Unit (ASU), which will improve significantly the energy efficiency of the production process and **reduce CO_2 emissions by 20,000 tons per year.** The new signature illustrates the Group's development strategy in key industrial basins and demonstrates its ability to create value for its customers.
- In October, Air Liquide announced the signature of a **long-term contract** in **Kazakhstan**. **Air Liquide Munay Tech Gases,** a company jointly owned by Air Liquide (75%) and the Kazakhstan national oil & gas company (25%), will build, own and operate a new nitrogen unit in a growing chemical basin, requiring a **15 million euros** investment. This new unit will supply up to **8,000 Nm^3/h nitrogen** and should be operational in **2021.**
- **Air Liquide is pursuing its development in home healthcare in Europe** by broadening its range of services for diabetes patients in Germany, Belgium, the Netherlands and Luxembourg. The Group provides home care for **1.7 million patients** with chronic diseases around the world. **Air Liquide leverages its experience in the support of patients with respiratory diseases,** which combines expertise in medical equipment, personalized patient follow-up and development of associated digital services.

Asia Pacific

Revenue in the Asia Pacific zone totaled **4,794 million euros** in 2019, up **+7.7%.** Large Industries sales grew strongly (+9.7%) thanks to the ramp-up of several units in China. Industrial Merchant growth was solid (+3.7%), in particular in China and South-East Asia. Electronics revenue maintained its very dynamic growth momentum in 2019 (+10.4%) despite a major decline in Equipment & Installations sales in the 4th quarter compared with record high sales in 2018.

ASIA PACIFIC GAS & SERVICES 2019 REVENUE



- **Large Industries** sales (**+9.7%**) were driven in particular by the recent ramp-up of three production units in China, including the contribution from Fujian Shenyuan, which was disposed of in early September. Hydrogen sales to refiners also rose strongly in Singapore.
- In **Industrial Merchant,** revenue was up by **+3.7%** thanks notably to the strong increase in cylinder gas volumes in China. Liquid gas volumes were up in the Chinese market but did not offset prices that are now returning to normal levels compared with high previous years. In South-East Asia, revenue also enjoyed sustained growth, particularly in Singapore and Malaysia, whereas the Japanese and Australian markets remained more challenging. The region benefited from a positive price impact of +1.1%, partly driven by helium.
- **Electronics** revenue was up **+10.4%,** thanks to the double-digit growth of Carrier Gases which benefited from the ramp-up of several units, and the growth of Advanced Materials with the success of the new enScribe™ offering for the etching of electronic chips, in particular in Korea. Following a strong 1st half-year, Equipment & Installation sales were down towards the end of the year compared with the record level seen during the 4th quarter of 2018.

ASIA PACIFIC

- In mid-September, Air Liquide announced the **signature of a long-term contract** for the supply of **hydrogen** to Shell's Tabangao refinery in the **Philippines.** Air Liquide will invest **30 million euros** in the construction of a state-of-the-art Hydrogen Manufacturing Unit (HMU) that will be fitted with **a CO_2 recovery unit** that mitigates direct carbon emission levels by capturing and liquifying the CO_2 for other uses.
- Air Liquide announced in late-October the **acquisition of Southern Industrial Gas Sdn Bhd** (SIGSB), a **key Malaysian industrial gas player** with approximately **20 million euros of annual revenue.** This operation doubles Air Liquide's Packaged Gases filling capacity in Malaysia and is expected to deliver significant synergies with its current operations in the country, which now covers most of Malaysia.

Middle East and Africa

Revenue in the Middle East and Africa zone amounted to **614 million euros,** up **+1.5%** over 2019. Industrial Merchant remained very dynamic in the Middle East, Egypt and India, with strong helium sales in particular. Activity was up slightly in Large Industries, with the major units in the region, located in Saudi Arabia and South Africa, now operating at full capacity. The Healthcare activity continued to grow in Egypt and Saudi Arabia.

Engineering & Construction

Consolidated **Engineering & Construction** revenue, at **328 million euros,** was down compared with 2018, with resources mainly allocated to internal projects in Large Industries and Electronics. Total sales including Group projects were up, boosted by a record-high level of investment decisions, in particular in Large Industries.

Order intake for Group projects and third-party customers totaled **838 million euros** at the end of December 2019, a slight increase compared with 2018. They came from Asia, followed by Europe and the Americas. These orders are mainly related to Air Separation Units for the Chemicals and Metals industries, and ultra-pure nitrogen production units for the semiconductor industry.

Global Markets & Technologies

Global Markets & Technologies revenue was up **+14.9%** in 2019 at **552 million euros.** Biomethane grew strongly thanks to the ramp-up of several units in Europe. Sales of equipment related to the Turbo Brayton technology, which reduces greenhouse gas emissions through the reliquefaction of natural gas when transported by sea, also strongly contributed to this growth.

Order intake for Group projects and third-party customers was up +13.7% and totaled **523 million euros,** of which more than 100 million euros are for equipment based on the Turbo Brayton technology.

INNOVATION AND GLOBAL MARKETS & TECHNOLOGIES

- Air Liquide inaugurated in March its **Innovation Campus Tokyo in Japan.** This newest Campus, representing an **investment of 50 million euros,** illustrates the Group's open innovation approach, with a focus on energy transition and environment, healthcare, digital transformation and development of Advanced Materials for Electronics. It gathers **nearly 200 employees** in a state-of-the-art new 8,000-square-meter site.
- In April, Air Liquide announced having signed **more than 20 contracts worth a total of 100 million euros** thanks to a solution that reduces greenhouse gas emissions for the maritime industry. The Group developed a refrigeration and liquefying technology based on the Turbo-Brayton physical principle, which reliquefies the evaporated natural gas in LNG (Liquefied Natural Gas) vessels and keeps it under its liquid form in the container. With these contracts, Air Liquide is helping to **prevent more than 120,000 tonnes of CO_2-equivalent emissions per year.**
- Air Liquide and Houpu (Chengdu Huaqi Houpu Holding Co.) announced at the end of April the finalization of the creation of Air Liquide Houpu Hydrogen Equipment, a **joint venture for the development, production and distribution of hydrogen refueling stations** for Fuel Cell Electric Vehicles. This collaboration will combine Air Liquide's global technological expertise in clean hydrogen mobility solutions with Houpu's leadership in the production and construction of natural gas refilling stations on the **Chinese market.**
- In early September, Air Liquide **signed a Memorandum of Understanding with Equinor and its partners (Shell and Total) to explore collaboration in a CO_2 capture and storage project, Northern Lights.** The Northern Lights project is aimed to mature the development of offshore carbon storage on the Norwegian Continental Shelf and has the potential to be the first storage project site in the world receiving CO_2 from industrial sources in several European countries.
- In mid-September, Air Liquide announced the **launch of Qlixbi, a breakthrough packaged gas offer including a new generation of gas cylinder and a suite of digital solutions designed to revolutionize the customer experience in welding.** Developed in collaboration with more than 700 welding customers, this innovation improves the way they use and manage gases in their daily operations thanks to a revolutionary connector ("Click & Weld"), a reserve indicator on the cylinder combined with an IoT ("Internet of Things") system and a digital application.
- In November, **Air Liquide and Sinopec** have signed a **Memorandum of understanding** in order to accelerate the **deployment of hydrogen mobility solutions in China.** Under the agreement, Air Liquide will provide its expertise so as to develop competitive hydrogen solutions for the world's largest mobility market. It will reinforce the **long-term partnership** between Air Liquide and Sinopec.
- **Air Liquide, the Durance, Luberon, Verdon urban area (DLVA) and Engie** have entered into an ambitious partnership in November to develop the **"HyGreen Provence"** project, which aims at producing, storing and distributing green hydrogen. Initiated in 2017, it will make possible the production of **1,300 GWh** of solar electricity as well as the **production of renewable hydrogen on an industrial scale through water electrolysis.** It will meet a very broad spectrum of needs from transportation to heating. The first deliverable stages should occur by the **end of 2021.**

OPERATING INCOME RECURRING

Operating income recurring before depreciation and amortization reached **5,932 million euros,** up by a strong **+13.7%** as published compared with 2018 and **+8.6%** excluding the application of IFRS16. Under IFRS16, operating expenses linked to lease contracts are now accounted for as depreciation and amortization and financial expenses, which explains the minor increase of +1.5% in **other operating expenses and income. Purchases** were down -1.5%, thanks mainly to the decrease in natural gas prices, lower hardgoods sales and the impact of the efficiency program. **Personnel costs** were up +6.4%, mainly due to acquisitions, in particular that of Tech Air in the United States, and the increase in the number of employees to support the growth of Home Healthcare which is a labor-intensive business.

Depreciation and amortization reached **2,138 million euros,** up markedly by +21.0% due to the application of IFRS16. Despite the impact of the start-up and ramp-up of new production units, the increase in depreciation and amortization was limited to +4.5% excluding the currency impact and the application of IFRS16.

In 2019, **efficiencies** increased markedly by **+23.4%** to **433 million euros,** compared with 351 million euros in 2018. These represented savings of 2.7% of the cost base and largely exceeded the objective, which had been set at more than 400 million euros after the reinforcement of the program at the beginning of the year. The main drivers of this increase in efficiencies are the roll-out of digital tools, the continuation of the realignment plans and the ramp-up of Airgas within the program. In total, more than 60% of efficiencies are from industrial projects, which target in particular a decrease in logistics costs and the optimization of production units, around 30% relate to purchasing gains and almost 10% to transformation initiatives, notably the restructuring of operations. The contribution from the roll-out of digital tools is increasing. In addition, employee training on **continuous improvement** initiatives supported the efficiency program.

EFFICIENCIES

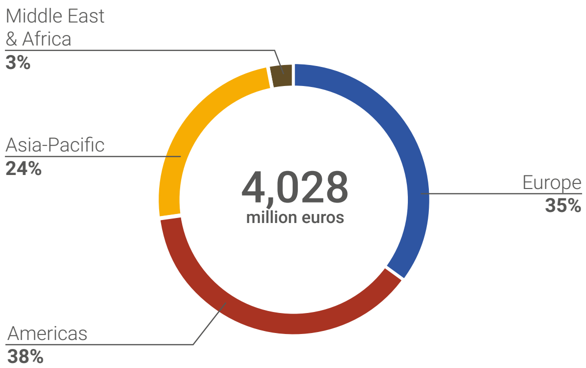
- Early May, Air Liquide and STMicroelectronics announced **a collaborative initiative** on **digital transformation** to accelerate the development of **digital solutions for industrial applications.** This cooperation will extend the long-standing business relationship established over the past decades between both companies.

The Group's **operating income recurring (OIR)** reached **3,794 million euros** for 2019, a published increase of +10.0%, or +7.5% on a comparable basis. The **operating margin (OIR to revenue)** stood at **17.3%,** a marked improvement of **+90 basis points** compared to 2018 and of **+70 basis points** excluding the energy impact, including +10 basis points from the initial application of IFRS16.

The improvement in operating margin was driven by three factors: an increase in prices as part of a process to create value for customers and measures in favor of the product mix; the first results from the strengthening of the efficiencies program; and active business portfolio management.

Gas & Services

GAS & SERVICES 2019 OPERATING INCOME RECURRING



Operating income recurring for Gas & Services amounted to **4,028 million euros,** an increase of +9.5% as published, and +7.2% on a comparable basis compared to 2018. The Gas & Services **operating margin** stood at **19.1%,** an improvement of **+80 basis points** and of **+60 basis points** excluding the energy impact, including +10 basis points from the initial application of IFRS16.

Gas & Services Operating margin [(a)]	2018	2019	2019, excluding energy impact	2019/2018 change, excluding energy impact
Americas	17.2%	18.2%	18.1%	+90 bps
Europe	19.2%	20.0%	19.5%	+30 bps
Asia Pacific	19.2%	19.8%	19.8%	+60 bps
Middle East & Africa	16.0%	17.9%	16.1%	+10 bps
TOTAL	**18.3%**	**19.1%**	**18.9%**	**+60 bps**

(a) Operating income recurring/revenue, as published figures.

Operating income recurring for the **Americas** region stood at **1,537 million euros** for 2019, a strong increase of **+12.2%** as published due in particular to the acquisition of Tech Air in the United States at the end of the 1st quarter of 2019. Excluding the energy impact, the operating margin stood at 18.1%, an increase of **+90 basis points.** This improvement was notably thanks to Airgas, which deployed a voluntarist price management approach in Industrial Merchant as well as major efficiencies generated in all business lines, and to portfolio management. The decrease in hardgoods sales in the United States generated a positive mix impact on the margin.

Operating income recurring in **Europe** reached **1,431 million euros,** an increase of **+4.6%.** Excluding the energy impact, the operating margin stood at 19.5%, a **+30 basis points** increase mainly due to the rollout of applications offering higher added value which generated stronger price impacts in Industrial Merchant as well as efficiencies generated across all business lines.

Operating income recurring in **Asia Pacific** stood at **951 million euros,** an increase of **+13.6%.** The operating margin excluding the energy impact reached 19.8%, up **+60 basis points.** Price impacts were sustained in Industrial Merchant, in particular for helium, and all business lines contributed to margin improvement with high levels of efficiencies. Several Large Industries and Electronics start-ups also contributed to the margin improvement.

Operating income recurring for the **Middle East and Africa** region amounted to **109 million euros,** representing an increase of **+4.5%.** Excluding the energy impact, the operating margin was 16.1%, an increase of **+10 basis points** due to high price impacts, in particular in Healthcare.

Engineering & Construction

Engineering & Construction generated an operating income recurring of **9 million euros** in 2019. The business line benefited from the Group's investment momentum and the increase in order intake. The operating margin stood at 2.7% and should continue to improve progressively to reach a medium-term margin of between 5% and 10%.

Global Markets & Technologies

Operating income recurring for Global Markets & Technologies stood at **67 million euros** with an operating margin at 12.2%, representing a significant increase of **+170 basis points** compared to 2018. A portion of these activities is in the start-up phase and the margin level, which depends on the nature of the projects carried out during the period, may vary significantly.

Research & Development and Corporate costs

Research & Development expenses and Corporate costs stood at **311 million euros,** a +12.3% increase compared to 2018, due mainly to the development of innovation and the ramping-up of the Group's digital transformation.

RESEARCH & DEVELOPMENT

- Early June, Air Liquide inaugurated, at its new Innovation Campus Paris, **Accelair,** an **entity dedicated exclusively to deep tech start-ups.** In line with its open innovation strategy, the Group will welcome **approximately twenty start-ups,** which will benefit from dedicated workspaces and a support program with Air Liquide experts.
- **Three winners of the 2018 Scientific Challenge were rewarded** at the end of June by Air Liquide out of more than 132 proposals from 34 countries. Teams of researchers, start-ups and private or public institutes were invited to submit scientific research projects aimed at **improving air quality and fighting climate change.** The three winners received the **"Air Liquide Scientific Prize"** endowed with 50,000 euros and have signed a partnership agreement with the Group that enables them to receive 1.5 million euros in funding, shared between the three projects.

NET PROFIT

Other operating income and expenses showed a **net balance of -188 million euros.** This notably included 95 million euros in expenses relating to realignment plans in various countries and businesses as well as the capital loss on the disposal of the Fujian Shenyuan units which was completed in September 2019.

The **financial result** amounted to **-468 million euros** compared with -353 million euros in 2018. **Cost of net debt,** at -362 million euros, was up 58 million euros, mainly due to a non-recurring gain of around 55 million euros relating to debt restructuring in the United States in 2018. The **average cost of net debt,** at **3.0%,** was stable compared to 2018 and down slightly excluding the impact of hyperinflation in Argentina. **Other financial income and expenses** amounted to -106 million euros compared with -49 million euros in 2018. This increase was mainly due to the application of IFRS16 for close to 40 million euros.

Income tax expense stood at **802 million euros,** which corresponds to an effective tax rate of **25.5%** in 2019. This +60 basis points increase compared to 2018 was notably due to the non-deductibility of the capital loss on the disposal of the Fujian Shenyuan units.

The share of profit of associates amounted to 1 million euros and the **share of minority interests in net profit** reached **96 million euros,** stable compared to 2018 excluding the currency impact.

Net profit (Group share) amounted to **2,242 million euros** in 2019, an increase of **+6.1%** as published and **+6.7%** excluding the application of IFRS16.

Excluding the capital loss on the disposal of the Fujian Shenyuan units in 2019 and the non-recurring financial gain in 2018, **recurring net profit** [(a)] **Group share,** was up **+11.1%.**

Net earnings per share, at **4.76 euros,** were up significantly (**+5.9%**) compared to 2018, in line with the increase in net profit (Group share). The average number of outstanding shares used for the calculation of net earnings per share as of December 31, 2019 was **471,214,966.**

CHANGE IN THE NUMBER OF SHARES

	2018	2019
Average number of outstanding shares [(a)]	**426,674,123**	**471,214,966**
Number of shares as of December 31, 2018		429,423,434
Options exercised during the year, prior to the free share attribution		430,376
Cancellation of treasury shares		(953,000)
Free shares issued		44,117,721
Options exercised during the year, after the free share attribution		86,983
NUMBER OF SHARES AS OF DECEMBER 31, 2019		**473,105,514**

(a) Used to calculate net earnings per share and adjusted in 2018 for the free share attribution that took place on October 9, 2019.

DIVIDEND

At the Annual General Meeting on May 5, 2020, the payment of a dividend of **2.70 euros per share** will be proposed to shareholders for the fiscal year 2019. Following the **free share attribution** of 1 for 10 in October 2019, the proposed dividend shows a strong growth of **+12.4%** compared with last year. The total estimated pay-out taking into account share buybacks and cancellations would amount to **1,311 million euros,** representing a **pay-out ratio of 58%** of the published net profit. The ex-dividend date is scheduled for May 11, 2020 and the payment is scheduled for May 13, 2020.

(a) See definition and reconciliation in the appendix.

3. 2019 Cash Flow and Balance Sheet

(in millions of euros)	2018 restated [a]	2019
Cash flow from operating activities before change in working capital	**4,242**	**4,859**
Change in working capital requirement	613	(37)
Other cash items	(139)	(110)
Net cash flow from operating activities	**4,716**	**4,712**
Dividends	(1,234)	(1,237)
Purchases of property, plant and equipment and intangible assets, net of disposals [b]	(2,271)	(2,616)
Increase in share capital	138	39
Purchase of treasury shares	(64)	(148)
Lease liabilities repayments and net interests paid on lease liabilities		(287)
Impact of exchange rate changes and net indebtedness of newly consolidated companies & restatement of net finance costs	(449)	(301)
Change in net debt	**836**	**162**
Net debt as of December 31	(12,535)	(12,373)
DEBT-TO-EQUITY RATIO AS OF DECEMBER 31	**69%**	**64%**

(a) The adjustment for income and expenses with no cash impact related to IAS19 and IFRS2 have been reclassified from Other cash items to Other non cash items in 2018. See data published in 2018 in appendix.
(b) Including transactions with minority shareholders.

NET CASH FLOW FROM OPERATING ACTIVITIES AND CHANGES IN WORKING CAPITAL REQUIREMENT

Cash flow from operating activities before changes in working capital requirement totaled 4,859 million euros and stood at **22.2% of Group sales** (21.0% excluding the application of IFRS16). This represented strong published growth of **+14.5%** (+8.3% excluding the application of IFRS16).

Working capital requirement (WCR) **increased by 37 million euros** in 2019. In Engineering & Construction, advances from third-party customers were lower due to a refocus of the activity on internal projects. Gas & Services WCR also increased, in line with the growth of the activity. Working capital requirements excluding tax came to **4.4% of sales,** in line with the 2018 level.

Net cash flow from operating activities after changes in working capital requirement amounted to **4,712 million euros** and reached **21.5% of sales.** Note that working capital requirements had been reduced markedly in 2018 due to the implementation of a program to dispose of significant receivables, in particular at Airgas. These programs stabilized in 2019. Therefore, in 2019, the strong growth in cash flow from operating activities coupled with the marginal change in WCR has allowed to generate a high level of **net cash flow from operating activities after changes in working capital requirement,** stable compared with 2018.

CAPITAL EXPENDITURE

Gross capital expenditure totaled **3,205 million euros,** including transactions with minority shareholders. This reflects a marked increase in industrial investments and the acquisition of Tech Air, which contributes significantly in expanding Airgas' geographical coverage in the United States.

(in millions of euros)	Industrial investments	Financial investments [a]	Total capital expenditures [a]
2015	2,028	395	2,423
2016	2,259	12,180	14,439
2017	2,183	144	2,327
2018	2,249	131	2,380
2019	**2,636**	**568**	**3,205**

(a) Including transactions with minority shareholders.

Proceeds from the sale of fixed assets totaled **584 million euros,** mainly due to the disposal of Fujian Shenyuan's units which was finalized in September. These also included, to a lesser extent, the disposal of an Airgas safety services business. A total of six divestitures were completed in 2019, reflecting the Group's active business portfolio management.

Net capital expenditure, including the buyout of minority interests, amounted to **2,616 million euros.**

Industrial capital expenditure

In 2019, gross industrial capital expenditure for the Group amounted to **2,636 million euros,** a major increase of +17.2% compared to 2018. It represented **12.0% of sales.** For Gas & Services, this expenditure totaled **2,411 million euros** and its geographical split is described below.

	Gas & Services				
(in millions of euros)	Europe	Americas	Asia Pacific	Middle East and Africa	Total
2018	676	861	461	73	2,071
2019	**815**	**946**	**588**	**62**	**2,411**

Financial investments

Financial investments reached **537 million euros** in 2019, mainly due to the acquisition of Tech Air in the United States. A total of 24 acquisitions were completed in 2019.

NET DEBT

Net debt at December 31, 2019 reached **12,373 million euros.** Despite a major increase in the level of investments and an unfavorable currency impact, net debt was down -162 million euros compared to the end of 2018, thanks to the marked increase in cash flow from operating activities in 2019. The **net debt-to-equity ratio** stood at **64.0%** at the end of December 2019, an improvement of -480 basis points compared to the end of 2018.

ROCE

The return on capital employed after tax (ROCE) [(a)] was 8.4% at the end of 2019. **Recurring ROCE** [(a)] which excludes the capital loss on the disposal of the Fujian Shenyuan units on net profit, stood at **8.6%,** i.e. a **+60 basis points** improvement compared to the end of December 2018. This improvement is in line with the Group's NEOS target of returning to a ROCE of above 10% by 2021-2022.

4. Investment cycle and financing

INVESTMENTS

The strong momentum of investment projects continued and was reflected in the high level of the main indicators described below.

Investment decisions and investment backlog

(in billions of euros)	Industrial investment decisions	Financial investment decisions (acquisitions)	Total investment decisions
2015	1.9	0.5	2.4
2016	2.0	12.2	14.2
2017	2.4	0.2	2.6
2018	3.0	0.2	3.1
2019	**3.2**	**0.6**	**3.7**

Industrial and financial investment decisions represented a total of **3.7 billion euros** in 2019, a **+19.8%** increase compared with 2018.

Financial investment decisions totaled 580 million euros and included the acquisition of Tech Air in the United States at the end of the 1st quarter, one of the largest independent distributors of industrial gases and welding supplies in the United States. The Group also acquired a stake of almost 20% in the capital of Canada-based Hydrogenics, a leader in equipment for hydrogen production through PEM (Proton Exchange Membrane) electrolysis. Other bolt-on acquisitions were carried out, in particular in Industrial Merchant in Asia and North America and in Healthcare in Europe.

(a) See definition and reconciliation in Appendix.

FINANCIAL INVESTMENT DECISIONS

- Airgas, an Air Liquide company, completed in March the **acquisition of Tech Air,** one of the largest independent distributors of industrial gases and welding supplies serving various geographies in the United States. Serving more than **45,000 customers** and generating **annual revenue of approximately 190 million US dollars,** Tech Air will allow Airgas to further strengthen its network in the United States with a complementary footprint to better serve customers while generating very significant efficiencies.
- In January 2019, Air Liquide announced the **acquisition of a nearly 20% stake in the capital of the Canadian company Hydrogenics Corporation,** representing an **investment of 20.5 million US dollars** (18 million euros). In February, the Group announced the construction in Canada of **the largest membrane-based electrolyzer in the world** to develop its **carbon-free hydrogen** production. This **20 megawatts** electrolyzer, **with Hydrogenics technology**, allows the Group to reaffirm its long-term commitment to the hydrogen energy markets and its ambition to be a major player in the supply of carbon-free hydrogen.
- Mid-June, Air Liquide announced the **acquisition of Medidis in the Netherlands,** a major player for the treatment of respiratory diseases at home and the production and supply of medical oxygen. The acquisition of this Dutch actor, employing more than **70 people** and generating **revenue of approximately 11 million euros** in 2017, allows Air Liquide, present in the home healthcare market in the Netherlands for more than 20 years, to strengthen its position in a growing market.
- Air Liquide continues to develop its home healthcare activity in Europe with the acquisition of **Sleep & Health SA** and **Megamed AG,** two historic players in this sector and based in Switzerland. These acquisitions enable the Group to serve more than **3,000 new patients** and strengthen the position of Air Liquide, leader in home healthcare in Europe, in a growing market within a mature healthcare system.
- Air Liquide, Europe's leader in home healthcare, announced in April the **acquisition of the Spanish startup DiaLibre.** With this acquisition, the Group **reinforces its service offering** throughout the diabetic patient's care pathway, from the distribution of medical equipment to the personalized support of **diabetic patients.** DiaLibre's offering combines personalized therapeutic support programs and medical follow-up for patients using **innovative technologies.**

Industrial investment decisions reached a record high of **3,157 million euros,** with major investments for long-term contracts with Large Industries customers, mainly in strategic basins where the Group is already present. More than 410 million US dollars were invested in the United States for new Air Separation Units and the development of the **Gulf Coast** pipeline network. Between 2015 and 2022, Air Liquide will have almost **doubled its oxygen production capacity** in the United States. Investments in Electronics continued, mainly in Asia, and those contributing to **efficiencies** were up by nearly **+45%** compared with 2018. Investments contributing to efficiencies now represent **more than 10%** of the amount of industrial decisions. The number of decisions relating to contract renewals also increased. Finally, **close to 30%** of industrial investment decisions contributed to the Group's **Climate Objectives.**

INDUSTRIAL INVESTMENT DECISIONS

- Air Liquide has signed a **long-term agreement with Gulf Coast Growth Ventures (GCGV)** at the beginning of July, a 50/50 joint venture between ExxonMobil and SABIC. The Group will supply **2,000 tons per day of oxygen and 900 tons per day of nitrogen from its industrial gas pipeline network** to GCGV's planned ethane cracker facility located near Corpus Christi, in Texas. To support the new agreement and additional volumes, Air Liquide plans to invest nearly **140 million US dollars** to build a new world-scale Air Separation Unit and related infrastructure investments.
- In mid-September, Air Liquide announced an investment **of more than 270 million US dollars** in the U.S. Gulf Coast to support a **new long-term agreement with Methanex Corporation** to supply **oxygen, nitrogen and utilities.** To serve Methanex and its other customers in the industrial basin that encompases Geismar and Baton Rouge, Air Liquide will build **two new Air Separation Units with a capacity of 2,500 tons/day of oxygen each** and invest in connected infrastructure assets – **increasing** the company's Mississippi River Pipeline's **supply capacity by more than 25%.**

The total **investment backlog** amounted to **2.8 billion euros,** a marked increase of more than 600 million euros compared with the end of 2018, as new investment decisions more than offset the start-up of new units. These investments should lead to a future contribution to annual sales of approximately **0.9 billion euros per year** after the full ramp-up of the units.

Start-ups

There were **18 start-ups** during 2019. These included several production units for **Electronics** in Asia and for **Large Industries** in most regions. A new pipeline network at a major industrial basin in Saudi Arabia was also commissioned in 2019.

The **contribution to sales** of unit start-ups and ramp-ups totaled **336 million euros** for 2019. This mainly included additional sales for **Large Industries** in China particularly with the final contributions from Fujian Shenyuan, the disposal of which was finalized in September 2019, in Mexico with the start-up of a hydrogen-supply contract, and in Eastern Europe. **Electronics** sales also benefited from several unit start-ups and ramp-ups in Asia.

For 2020, the contribution to sales of unit start-ups and ramp-ups is forecasted at **around 230 million euros,** and should be higher in 2021, boosted by several major start-ups.

Investment opportunities

The **12-month portfolio of opportunities** remained strong and totaled **2.9 billion euros,** an increase compared with 2.6 billion euros at the end of 2018. New projects entering the portfolio exceeded those signed by the Group, awarded to the competition or delayed.

The portfolio of opportunities is fairly well balanced geographically: Europe and Asia are the leading regions within the portfolio, followed by the Americas and Middle East & Africa with similar levels of opportunities. Almost two-thirds of the portfolio of opportunities came from projects in Large Industries, in particular for Chemicals; Electronics was the second largest contributor, followed closely by Global Markets & Technologies.

Around half the value of the portfolio came from projects with investment amounts of less than 50 million euros, and several projects are above 100 million euros. The portfolio included some asset takeover opportunities that would have a faster contribution to growth. A positive contribution to the Group's **Climate Objectives** was identified for around a quarter of the amount of investment opportunities.

2019 FINANCING

"A" category financial rating confirmed

Air Liquide is rated by two main rating agencies, Standard & Poor's and Moody's. The long-term rating from Standard & Poor's is "A-" and from Moody's is "A3". These are in line with the Group's strategy. The short-term ratings are "A2" for Standard & Poor's and "P2" for Moody's. Standard & Poor's confirmed its rating on July 22, 2019 and upgraded its outlook from stable to positive. Moody's confirmed its ratings on June 28, 2019 and maintained its stable outlook.

Diversifying and securing financial sources

As of December 31, 2019, financing through capital markets accounted for **92% of the Group's total debt,** for a **total amount of outstanding bonds of 12.1 billion euros,** under several programs, and **0.2 billion euros of commercial paper.**

The total amount of credit facilities was stable at **3.6 billion euros.** At the beginning of December, five bilateral credit facilities, for a total amount of 500 million euros, were included in the syndicated credit facility negotiated in 2018 for an initial amount of 2 billion euros. The first one-year extension option has been applied to this facility, which now amounts to **2.5 billion euros,** maturing in December 2024, with a second extension option possible. On this occasion, this credit facility was indexed to Corporate Social Responsability (CSR) criteria.

NEW FINANCING MECANISM

- In early December, **Air Liquide signed an amendment to its syndicated credit line** that implements from now on **a correlation scheme between its financial costs and three of its CSR targets** regarding its carbon intensity, gender diversity and safety. Air Liquide testifies through this initiative its willingness to combine performance and responsibility.

The amount of total debt maturing in the next 12 months is 1.8 billion euros, a marked decrease compared to the amount at December 31, 2018.

2019 issues

In June 2019, under its EMTN program, the Group issued an 11 year public bond for an amount of **600 million euros.** In September 2019, the Group also issued a 10 year bond in 144A format in the US market, for an amount of **500 million US dollars.**

Moreover, as of the end of 2019, outstanding bonds issued under the EMTN program amounted to 6.4 billion euros (nominal amount).

BONDS

- In early September, Air Liquide issued bonds on the American market for an amount of **500 million US dollars with a 10-year maturity at a yield of 2.362%.** With this transaction, the Group confirms its willingness to foster long-term relationships with American credit investors.

Net debt by currency as of December 31

	31/12/2018	31/12/2019
Euro	45%	45%
US dollar	37%	40%
Chinese renminbi	3%	0%
Japanese Yen	3%	2%
Other	12%	13%
TOTAL	**100%**	**100%**

Investments are generally funded in the currency in which the cash flows are generated, creating a **natural currency hedge.** In 2019, net debt in euros was stable in terms of volume and percentage. Debt in US dollars increased slightly, mainly due to currency impact. Net debt in Chinese renminbi decreased, due to the divestiture of the Fujian Shenyuan units by Air Liquide China. Debt denominated in Japanese yen decreased in volume and percentage, as the cash flows generated were used to repay a portion of the debt.

Centralization of cash and funding

Air Liquide Finance pools the cash balances of Group entities. In 2019, Air Liquide included the New Zealand dollar in its daily cash pooling, which now covers 15 currencies.

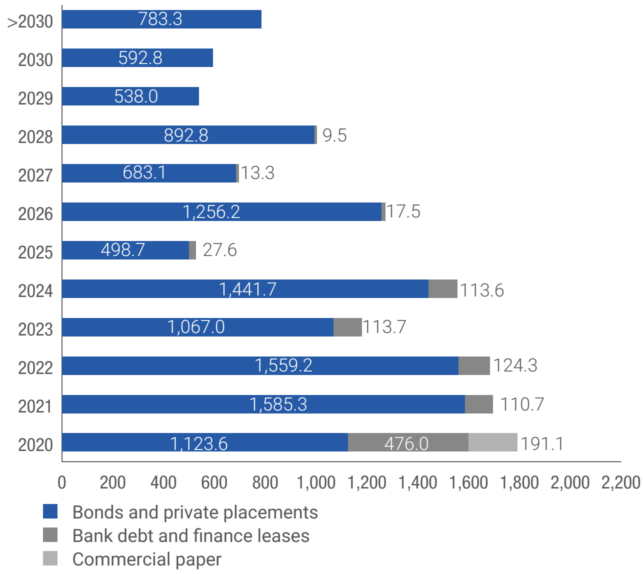
As of December 31, 2019, Air Liquide Finance had granted to Group entities, directly or indirectly, the equivalent of **15.3 billion euros in loans** and received **3.9 billion euros** in excess cash **as deposits** from them. These transactions were denominated in 29 currencies (primarily the euro, US dollar, Singapore dollar and Chinese renminbi). 390 Group entities lend, borrow or are included in the Group cashpooling, directly or indirectly (including subsidiaries where cash pooling is carried out locally before being centralized at Air Liquide Finance).

Debt maturity and schedule

The average of the Group's debt maturity was **6.2 years** at December 31, 2019, an increase compared to December 31, 2018. Indeed, some bond issues matured in 2019 without renewal, thanks to the generation of net cash flow in 2019.

The following chart shows the Group's debt maturity schedule. The single largest annual maturity represented approximately 13% of total debt.

DEBT MATURITY SCHEDULE



APPENDICES

Impact of IFRS16

As of January 1, 2019, the Group financial statements include the impacts of the mandatory adoption of the standard IFRS16 "Leases" issued on January 13, 2016 with **no restatement of prior period financial statements. The standard does not affect the recognition of revenue** for the Group.

The main impact of the application of IFRS16 for the Group as a lessee consists of the recognition on the balance sheet of all lease contracts, without distinction between finance and operating leases. In the course of its activity, the Group as a lessee enters in contracts mainly for the following type of assets:

- Land, buildings and offices;
- Transportation equipment, in particular for Industrial Merchant and Healthcare;
- Other equipment.

Any contract containing a lease leads to the **recognition on the lessee's balance sheet of a lease liability** measured at the present value of the remaining lease payments **and a right-of-use asset** measured at the amount equal to the lease liability, adjusted by the amount of any prepaid or accrued lease payments as well as of any provision for onerous leases recognized in the balance sheet as of December 31, 2018.

Impacts on the Group financial statements on December 31, 2019 are detailed in note 2 to the consolidated financial statements.

Performance indicators

Performance indicators used by the Group that are not directly defined in the financial statements have been prepared in accordance with the AMF position 2015-12 about alternative performance measures.

The performance indicators are the following:

- Currency, energy and significant scope impacts
- Comparable sales change and comparable operating income recurring change
- Operating margin and operating margin excluding energy
- Recurring net profit Group share
- Return on Capital Employed (ROCE)
- Recurring ROCE

Currency, energy and significant scope impacts

Since industrial and medical gases are rarely exported, the impact of currency fluctuations on activity levels and results is limited to euro translation impacts with respect to the financial statements of subsidiaries located outside the euro zone. **The currency effect** is calculated based on the aggregates for the period converted at the exchange rate for the previous period.

In addition, the Group passes on variations in the cost of energy (electricity and natural gas) to its customers via indexed invoicing integrated into their medium and long-term contracts. This indexing can lead to significant variations in sales (mainly in the Large Industries business line) from one period to another depending on fluctuations in prices on the energy market.

An energy impact is calculated based on the sales of each of the main subsidiaries in Large Industries. Their consolidation allows the determination of the energy impact for the Group as a whole.

The foreign exchange rate used is the average annual exchange rate for the year N-1. Thus, at the subsidiary level, the following formula provides the energy impact, calculated for natural gas and electricity respectively:

> Energy impact = Share of sales index to energy year (N-1) x (Average energy price over the year (N) - Average energy price over the year (N-1))

This indexation effect of electricity and natural gas does not impact the operating income recurring.

The significant scope effect corresponds to the impact on sales of all acquisitions or disposals of a significant size for the Group. These changes in scope of consolidation are determined:

- for acquisitions during the period, by deducting from the aggregates for the period the contribution of the acquisition;
- for acquisitions during the previous period, by deducting from the aggregates for the period the contribution of the acquisition between January 1 of the current period and the anniversary date of the acquisition;
- for disposals during the period, by deducting from the aggregates for the previous period the contribution of the disposed entity as of the anniversary date of the disposal;
- for disposals during the previous period, by deducting from the aggregates for the previous period the contribution of the disposed entity.

Comparable sales change and comparable operating income recurring change

Comparable changes for sales and the operating income recurring **exclude the currency, energy and significant scope impacts described above.** For 2019, the calculations are the following:

(in millions of euros)	FY 2019	FY 2019/2018 Published Growth	Currency impact	Natural gas impact	Electricity impact	Significant scope impact	FY 2019/2018 Comparable Growth
Revenue							
Group	21,920	+4.3%	446	(293)	(8)	95	+3.2%
Impacts in %			*+2.1%*	*-1.4%*	*+0.0%*	*+0.4%*	
Gas & Services	21,040	+4.6%	433	(293)	(8)	95	+3.5%
Impacts in %			*+2.1%*	*-1.4%*	*-0.1%*	*+0.5%*	
Operating Income Recurring							
Group	3,794	+ 10.0%	71	-	-	17	+ 7.5%
Impacts in %			*+2.0%*			*+0.5%*	
Gas & Services	4,028	+ 9.5%	68	-	-	17	+ 7.2%
Impacts in %			*+1.8%*			*+0.5%*	

Comparable sales change for the 4th quarter 2019 is calculated as follow:

(in millions of euros)	Q4 2019	Q4 2019/2018 Published Growth	Currency impact	Natural gas impact	Electricity impact	Significant scope impact	Q4 2019/2018 Comparable Growth
Revenue							
Group	5,514	-1.1%	84	(129)	(30)	19	-0.1%
Impacts in %			*+1.5%*	*-2.3%*	*-0.5%*	*+0.3%*	
Gas & Services	5,262	-0.2%	81	(129)	(30)	19	+0.9%
Impacts in %			*+1.5%*	*-2.4%*	*-0.6%*	*+0.4%*	

Operating margin and operating margin excluding energy

The operating margin is the ratio of the operating income recurring divided by revenue. The operating margin excluding energy corresponds to the operating income recurring, not affected by the indexation effect of electricity and natural gas, divided by revenue excluding the energy impact (including currency impact):

(in millions of euros)		2019	Natural gas impact	Electricity impact	2019 excluding energy
Revenue	Group	21,920	(301)	(11)	22,232
	Gas & Services	21,040	(301)	(11)	21,352
Operating Income Recurring	Group	3,794	-	-	3,794
	Gas & Services	4,028	-	-	4,028
OIR Margin	Group	+17.3%			+17.1%
	Gas & Services	+19.1%			+18.9%

Recurring net profit Group share

The recurring net profit Group share corresponds to the net profit Group share excluding exceptional and significant transactions that have no impact on the operating income recurring.

The recurring net profit Group share in 2019 excluded the after-tax loss on the Fujian Shenyuan divestment. It reached 2,307.4 million euros.

The comparable growth takes the net profit Group share in 2018 excluding the exceptional gain after-tax of 35.7 million euros due to the debt restructuring in the U.S. It reaches 2,077.7 million euros.

The comparable growth of the 2019 recurring net profit Group share reached 2,307.4 / 2,077.7 - 1 = +11.1%.

Return on capital employed (ROCE)

Return on capital employed after tax is calculated based on the Group's consolidated financial statements, by applying the following ratio for the period in question. For the numerator: net profit excluding IFRS16 "Net finance costs after taxes" for the period in question. For the denominator: the average of (total shareholders' equity excluding IFRS16 + net debt) at the end of the past three half-years.

(in millions of euros)		2018 (a)	H1 2019 (b)	2019 (c)	ROCE Calculation
	Net Profit excluding IFRS16			2,352.0	2,352.0
	Net finance costs			(361.6)	(361.6)
	Effective tax rate [(a)]			25.0%	25.0%
	Net financial costs after tax			(271.2)	(271.2)
	Net Profit – Net financial costs after tax			**2,623.2**	**2,623.2**
Denominator ((a)+(b)+(c))/3	Total equity excluding IFRS16	18,207.4	17,966.0	19,338.8	18,504.1
	Net debt	12,534.9	13,698.8	12,373.3	12,869.0
	Average of (total equity + net debt)				**31,373.1**
ROCE					**8.4%**

(a) Excluding non-recurring tax impact.

Recurring ROCE

The recurring ROCE is calculated in the same manner than the ROCE using the recurring net profit for the numerator.

(in millions of euros)		2018 (a)	H1 2019 (b)	2019 (c)	ROCE Calculation
	Recurring Net Profit excluding IFRS16			2,417.9	2,417.9
	Net finance costs			(361.6)	(361.6)
	Effective tax rate [(a)]			25.0%	25.0%
	Net financial costs after tax			(271.2)	(271.2)
	Recurring Net Profit – Net financial costs after tax			**2,689.1**	**2,689.1**
Denominator ((a)+(b)+(c))/3	Total equity excluding IFRS16	18,207.4	17,966.0	19,338.8	18,504.1
	Net debt	12,534.9	13,698.8	12,373.3	12,869.0
	Average of (total equity + net debt)				**31,373.1**
RECURRING ROCE					**8.6%**

(a) Excluding non-recurring tax impact.

5. Environment and society

Results for the Group's Environment and Society performance are closely monitored. This section presents Air Liquide's primary measures, as well as indicators relating to the main environmental and societal risks.

The main environmental and social risks, the risk management policies applied by the Group and the results of these policies described in chapters 1, 2 and 5, represent the Extra-financial Performance Declaration – (article L. 225-102-1 paragraph 1 French Commercial Code).

In-depth environment and social reporting, as well as additional information, is presented in Chapter 5.

A cross-reference table for the risks included under the Extra-financial Performance Declaration is available on page 289 of Chapter 5.

5.1. SAFETY: A FUNDAMENTAL VALUE

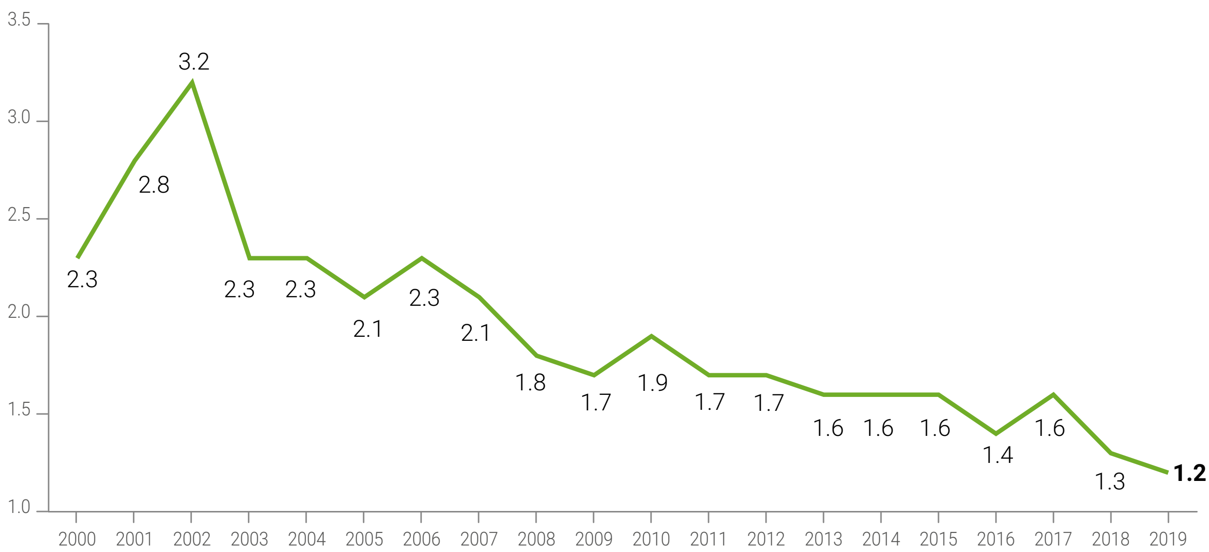
The lost-time accident frequency rate of Air Liquide employees continued to improve and stood at 1.2 at the end of 2019, a 3.9% improvement compared to 2018. This is the lowest frequency rate the Group has achieved in more than 20 years.

The frequency rate is significantly higher for home healthcare businesses, which expose our employees to risks inherent in patients' homes; these accidents are less severe overall.

In 2019, Air Liquide unfortunately experienced a fatal accident which led to the death of two subcontracted drivers. This accident took place on the road during the transportation of gas. The Group strives to fully analyze all accidents in order to draw lessons from them, to prevent them from occurring again.

The health and safety of individuals risk is addressed in Chapter 2 "Risk factors and control environment", page 95.

LOST-TIME ACCIDENT FREQUENCY RATE OF AIR LIQUIDE EMPLOYEES [(a)] [(b)]



(a) Number of lost-time accidents with at least one lost day per million hours worked by Group employees.
(b) Including Airgas since 2017.

5.2. CLIMATE OBJECTIVES: 2019 ACHIEVEMENTS

At the end of November 2018, Air Liquide announced its 2025 Climate Objectives. As part of this global approach, the Group takes active measures for the climate in its operations, with its customers and ecosystems by offering low-carbon solutions. Air Liquide has set objectives which are the most ambitious in its sector. These Climate Objectives contribute to mitigating the greenhouse gas emissions risk described in Chapter 2 "Risk factors and control environment", page 95.

During 2019, and in order to make the Climate Objectives highly operational, the Group's regional clusters have drawn up their Climate roadmaps for 2025 and are committed to improving their carbon intensity during this timescale. For each ACE objective, they have identified actionable drivers within their operations (among those identified at the Group level) and have quantified their future contribution based on common indicators. Objectives for 2020 have been set, based on this roadmap.

ASSETS

2025 objectives	2019 results	
To reduce carbon intensity [a] by 30% by 2025 (4.4), based on 2015 emissions levels (6.3)	**27%**	reduction in carbon intensity compared with the 2015 carbon intensity.
Driver 1: Increasing its purchases of renewable electricity by nearly 70%	**24%**	increase in renewable electricity purchased by Air Liquide since 2015, which is 36% of the target to be achieved.
Driver 2: Improving the energy efficiency of its production units by 5%	**-1.2%**	decrease in energy consumption per m^3 of air gas produced compared with 2015.
	0.2%	increase in energy consumption per m^3 of hydrogen produced since 2015.
Driver 3: Reducing the carbon footprint of its bulk and cylinder products by 10% through the optimization of both production and transportation and the efficiency of delivery rounds.	**1.9%**	improvement in the efficiency of the delivery of bulk products compared to 2015 (in km by ton of product transported).

CUSTOMERS

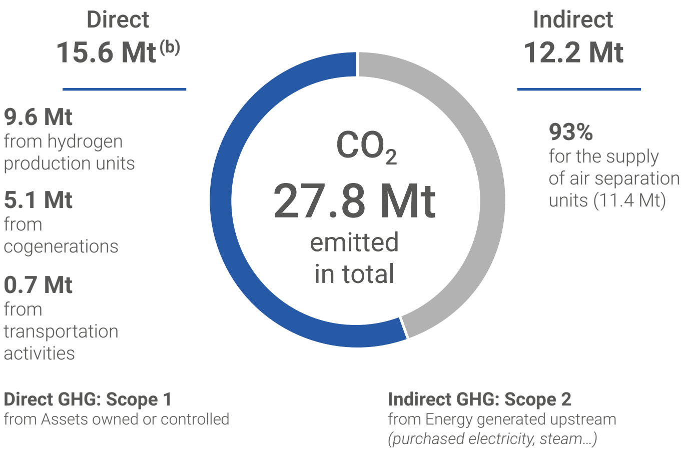
2025 objectives	2019 results	
Rolling out low-carbon offerings and solutions	**16.8 Mt**	CO_2 emissions avoided by Air Liquide or its clients
Co-developing innovative procedures with its customers	**3**	major pilots to reduce the carbon footprint of customers

ECOSYSTEMS

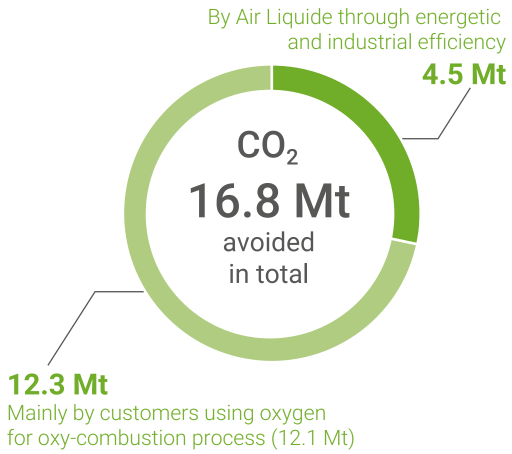
2025 objectives	2019 results	
Expanding the circular economy	**1.1 TWh**	biomethane production capacity
Developing clean refrigerated transport	**> 300**	cryogenic air conditioning for Blueeze™ and Cryocity™ trucks
Promoting hydrogen for clean mobility	**> 120**	H_2 stations designed and installed by the Group
Creating a global hydrogen economy	**81**	companies are now members of the Hydrogen Council

2019 REPORTS ON AIR LIQUID'S GREENHOUSE GAS EMISSIONS: STABLE EMISSIONS AND INCREASING AVOIDED EMISSIONS

Greenhouse gas emissions



Avoided emissions



(a) *In kg CO_2 equivalent/euro of operating income recurring before depreciation and amortization at 2015 exchange rate and excluding IFRS16 for greenhouse gas emissions scopes 1 and 2.*

(b) *Includes 0.2 Mt CO_2-eq. due to the Group's other activities.*

Direct emissions

Air Liquide's direct emissions (scope 1) are mainly relate to:

- the production of hydrogen used to desulfurize fossil fuels, described on page 312 of Chapter 5 "Environmental and Societal Reporting" and which avoids the emission of 1.7 Mt of SOx.;
- cogeneration, which allows for the simultaneous production of electricity and heat, a process which is more efficient (and which therefore emits less CO_2) than producing these two forms of energy separately. This efficiency means emissions avoided for the planet.

The Group's direct emissions are slightly increasing from 15.4 million tons of CO_2 equivalent in 2018 to 15.6 million tons in 2019, i.e., an increase of 1.6%. This growth is mainly due to increased sales linked to cogeneration in the United States (due to favorable electricity market conditions) and hydrogen sales in Benelux, China and Singapore.

Indirect emissions

Indirect emissions (scope 2) are mainly related to the production of air gases, in particular oxygen, which are primarily used for:

- the treatment of patients in Healthcare. These emissions therefore contribute to the protection of human life, for both immediate needs (in hospitals, emergency departments) and regular needs (homecare patients suffering from respiratory diseases);
- oxy-combustion which, by improving steel and glass production processes, helps reduce energy consumption and thus contributes to improving the environmental footprint of Air Liquide's customers. Indirect emissions, mainly related to the production of oxygen (11.4 Mt), helped the Group's customers avoid at least 12.1 Mt of emissions from their oxy-combustion processes.

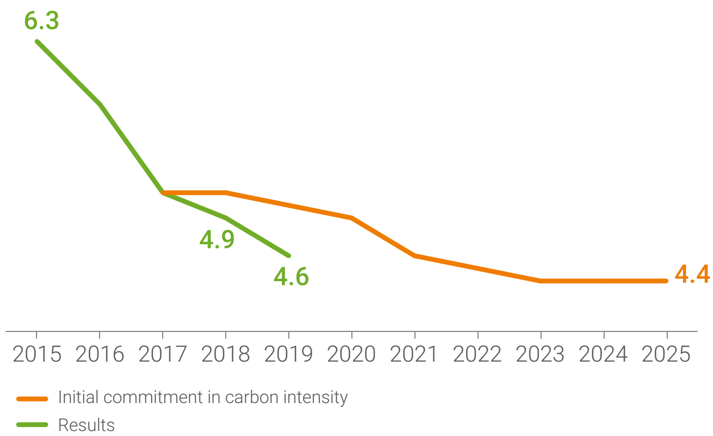
Thanks to its energy and industrial efficiency (proprietary production technology, sharing of production assets, distribution via pipelines, etc.), the Group has avoided 4.5 Mt of additional emissions compared with the in-house production by the customers themselves of their industrial gases.

The Group's indirect emissions fell from 12.4 million tons in CO_2 equivalent in 2018 to 12.2 million tons in 2019, which is a reduction of 1.7%. This reduction is partly due to a decrease in oxygen sales.

5.2.1. Taking action within the Company (A)

This year, the carbon intensity [a] is 4.6, which represents a 27% reduction compared to the 2015 carbon intensity (6.3).

CARBON INTENSITY



This intensity is lower than initially expected, mainly due to the divestment of the Fujian Shenyuan industrial gas units in September, but also to larger customer shutdowns resulting in lower production volumes.

Disposal of industrial gases units in Fujian Shenyuan

In line with the Group's objective to reduce its carbon intensity, in 2019 Air Liquide completed the disposal of its dedicated industrial gases plants in Fujian Shenyuan which were coal-fueled.

(a) In kg CO_2 equivalent/euro of operating income recurring before depreciation and amortization at 2015 exchange rate and excluding IFRS16 for greenhouse gas emissions scopes 1 and 2.

Air Liquide has identified three key drivers over the 2015-2025 period to reach its carbon intensity objective:

Driver 1

Renewable energy

To increase its purchases of renewable electricity from 6 TWh in 2015 to 10 TWh in 2025, Air Liquide has introduced a proactive approach to renewable electricity procurement through direct contracts with producers (called PPA – Power Purchase Agreements). Furthermore, the Group has included the energy mix in the selection criteria of its suppliers. Finally, this driver takes into account the improvement targeted by the Paris Agreement for the energy mix of the countries where the Group operates.

Monitoring indicators

7.4 TWh of renewable energy purchased in 2019 – i.e., 36% of the target.

Air Liquide, the Durance, Luberon, Verdon urban area (DLVA) and ENGIE sign a cooperation agreement to develop the "HyGreen Provence" project which aims at producing, storing, and distributing green hydrogen

Initiated in 2017, "HyGreen Provence" should make it possible to develop and validate the technico-economic conditions for the production of 1,300 GWh of solar electricity, equivalent to the annual residential consumption of about 450,000 people, together with the production of renewable hydrogen on an industrial scale through water electrolysis. The project will be developed in several stages with the first deliverables envisaged by the end of 2021 and a possible final stage in 2027. In the long term, several tens of thousands of metric tons of renewable hydrogen could be produced in this way every year to meet a very broad spectrum of uses.

Driver 2

Energy efficiency

The Group aims to reduce the energy consumption by unit of volume of its plants by 5% through:

- innovation to improve the performance of the most recent existing production units;
- investments to modernize production units;
- the automation and centralization of its operations: the Group has optimized the performances of its plants – in particular in terms of energy consumption – resulting in both efficiency gains and a reduction in its environmental footprint (CO_2 emissions avoided).

Monitoring indicators

-1.2% energy consumption per m^3 of air gas produced in 2019 vs. 2015.

+0.2% energy consumption per m^3 of hydrogen produced in 2019 vs. 2015.

In Canada, Air Liquide is investing to improve the efficiency of the Hamilton ASU and reduce its CO_2 emissions

The Group is investing 5.8 million euros to install a new nitrogen compressor, which will replace the current set up of five compressors. This should reduce the electric consumption of the site by some 2 MW, which would lead to annual energy savings (of around 1 million dollars per year) and a reduction in indirect CO_2 emissions of around 1,350 tons per year.

Driver 3

Transportation

Currently, only 15% of air gases and hydrogen produced by Air Liquide are transported by road (the rest of the deliveries are carried out either by pipeline or through units directly installed at the customers' sites). Moreover, thanks to the success of the delivery optimization programs, the efficiency of industrial gases transportation continues to improve.

Moreover, Air Liquide aims to convert 20% of its fleet of trucks to alternative fuels by 2025. The first project has been launched in Europe which aims to convert 50% of its trucks during this period (including trucks operated by subcontractors).

Monitoring indicators

21 km: it is the distance traveled per ton of industrial gas delivered, i.e., an improvement of -1.9% compared to 2015.

More than **100** trucks converted to alternative fuels.

A lower environmental impact for the transportation of bulk and cylinder products

As part of its approach of reducing its carbon footprint on bulk and cylinder products, the Group has asked its carriers to convert their fleet of trucks to alternative fuels. This trust-based relationship has, for example, enabled near 40% of trucks in Spain and Portugal to be converted to natural gas, which is currently the best alternative fuel in these countries.

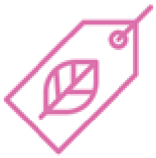
5.2.2. Taking action with customers (C)

With its customers, the Group is committed to working towards a clean and sustainable industry. Thanks to its essential molecules management (oxygen, hydrogen, carbon dioxide…) and the in-depth knowledge of its customers' processes, Air Liquide offers technologies which allow them to improve the energy efficiency of their industrial processes and reduce their emissions.

Air Liquide has identified two key drivers to reach this objective:

Driver 1

Rolling out low-carbon offerings and solutions



Air Liquide provides its customers with the possibility of outsourcing some of their processes in order to pool assets and thus reduce the amount of energy used by up to 20%.
The Group is also developing offerings which will reduce transport-related emissions, in particular through small production units installed at customers' sites and new-generation cylinders which are 40% lighter than those made of steel. To improve the energy efficiency of combustion in the steel and glass industries, Air Liquide provides oxy-combustion solutions. This process consists of enriching air with oxygen to reduce energy consumption.

Monitoring indicators

12.1 Mt of CO_2 emissions avoided for customers, thanks to oxy-combustion technology.

More than 750 On-Site Industrial Merchant units in operation.

Customer gas supply outsourcing contracts

In 2019, Air Liquide signed a new long-term contract with Pemex Transformación Industrial, a subsidiary of national oil and gas company Petróleos Mexicanos (PEMEX), for the hydrogen supply of the PEMEX refinery located in Tula de Allende (State of Hidalgo) in central Mexico. With an investment of 50 million euros for the acquisition and optimization of an existing hydrogen production unit, this contract will enable Air Liquide to strengthen its presence in central Mexico while improving the energy efficiency of these units.

Another example in Kazakhstan where, under a new long-term agreement with Kazakhstan Petrochemical Industries (KPI), Air Liquide Munay Tech Gases will build, own and operate a new nitrogen unit in the growing chemical basin of Karabatan, close to the Atyrau refinery.

Driver 2

Co-developing innovative procedures with its customers

Air Liquide is working in partnership with its customers to introduce new solutions that will reduce the environmental footprint in various business areas:

- either by reducing, where possible, the CO_2 emissions of its customers by offering innovative solutions;
- or by capturing CO_2 to give it a second life (CCUS [a] – Industrial Merchant business and Large Industries customers) or by storing it permanently (CCS [b] – storage in old offshore natural gas reserves, for example).

Monitoring indicators

3 major pilots to reduce customers' carbon footprint (see below).

Air Liquide and thyssenkrupp Steel, a global leader in rolled flat carbon steel, join forces in a pioneering project to produce low-carbon steel

For the first time, hydrogen will be injected on a large scale to partially replace pulverized coal in blast furnaces during steel production.

Air Liquide will ensure a stable supply of hydrogen from its 200-km pipeline network in the Rhine-Ruhr area. This solution will be implemented at one of the blast furnaces in thyssenkrupp's integrated steel mills at the Duisburg site in Germany. Testing began at the end of 2019. thyssenkrupp aims to reduce CO_2 emissions from the steel production process by up to 20% once this solution is rolled out to all of the site's blast furnaces.

Air Liquide partners with ArcelorMittal in the first industrial scale plant on a pilot project to reduce carbon emissions from the production of steel and recycle them into advanced bioethanol [c]

As part of this project, Air Liquide Engineering & Construction will provide a technological solution that purifies offgas coming from the blast furnace. These gases will then be injected into a bioreactor to produce bioethanol. This technology leverages Air Liquide's extensive know-how and illustrates its capacity to develop sustainable solutions supporting its customers in the steel industry to reduce greenhouse gas emissions.

Its implementation at ArcelorMittal's steel plant in Ghent, Belgium, will make it the first European industrial scale demonstration plant to produce bioethanol from waste gases from the steelmaking process. Construction of the facility is underway and it should be operational at the end of 2020. In the long term, the site should produce 80 million liters of bioethanol per year.

(a) CCUS: Carbon Capture, Utilization and Storage.
(b) CCS: Carbon Capture and Storage.
(c) Advanced bioethanol is a second generation of biofuel manufactured from non-food biomass.

Air Liquide is collaborating with Equinor and its partners (Shell and Total) on the Northern Lights project, a CO_2 capture and storage project

This project is aimed at developing offshore CO_2 storage on the Norwegian Continental Shelf and has the potential to be the first storage site in the world to receive CO_2 from industrial sources in several European countries.

Under this memorandum of understanding, the parties will explore the possibility of cooperating in Carbon Capture and Storage (CCS) development, which also includes CO_2 capture, liquefaction, and transportation to an offshore natural reservoir.

5.2.3. Acting for ecosystems (E)

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE | 11 SUSTAINABLE CITIES AND COMMUNITIES | 13 CLIMATE ACTION | 17 PARTNERSHIPS FOR THE GOALS

With ecosystems, via an active dialog with key players (public authorities, industrial partners, NGOs, etc.), Air Liquide is contributing to the development of a low-carbon society.

Many industrial and medical gas applications protect the environment on the sites of Group clients and life at the homes of Group patients. These applications represent more than **40% of Group revenue for 2019.**

Air Liquide has identified four key drivers:

Driver 1

Expanding the circular economy

For road freight transport, the use of biomethane reduces particulate matter emissions by 85%, CO_2 emissions by 90% and noise emissions by 50% compared with diesel. The use of biomethane is growing and diversifying into the industrial and transport sectors by using new efficient and environmentally-friendly applications.

Key indicators

Installed production capacity : **1.1 TWh**

Over **80** vehicle supply stations

Driver 2

Clean refrigerated transport

Refrigerated transport is changing and cryogenic technologies are at the forefront of this change.
Air Liquide's expertise in this field has led to the development of Blueeze™, an innovative solution (based on liquid nitrogen) for refrigerated transport by truck. Demand for this solution is on the rise, particularly in Europe. For light utility vehicles, Cryocity™ has been designed by our research staff and is based on the use of dry ice (CO_2) aimed at inter-urban delivery for the last mile and reducing air and sound pollution.
The first tests in France were convincing and some pilots are currently being tested in Europe.

Key indicators

> 300 cryogenic air conditioning systems for Blueeze™ and Cryocity™ trucks

Driver 3

Promoting hydrogen for clean mobility

Air Liquide is investing in low-carbon hydrogen production assets as well as in a distribution network for hydrogen mobility.

Key indicators

120 H_2 stations designed and installed by the Group

> 130 hydrogen taxis on the roads in the Île-de-France region

Air Liquide and Sinopec (China Petroleum & Chemical Corp.) have signed, in Beijing, in the presence of Emmanuel Macron, President of the French Republic, and Xi Jinping, President of the People's Republic of China, a memorandum of understanding (MoU) to contribute to the acceleration of the roll-out of hydrogen mobility solutions in China

The Air Liquide and Sinopec executives have agreed to study the development of a hydrogen mobility network and the enhancement of the regulatory framework intrinsic to the development of hydrogen energy in China, home to the world's largest mobility market. Under the agreement, Air Liquide will provide Sinopec with its hydrogen supply chain expertise, from production and storage to distribution, so as to provide competitive hydrogen supply solutions to the Chinese clean mobility market.

Driver 4

Creating a global hydrogen economy

Air Liquide is a key driver in the creation of a global hydrogen economy. The Group was one of the founders of the Hydrogen Council, an initiative bringing together global industry leaders to share their vision and ambition for hydrogen as an accelerator of the energy transition and to achieve climate change objectives. Hydrogen can decarbonize end uses such as transport, energy for industry or heating and electricity in the residential sector. Hydrogen can also play a major role in the storage of surplus energy in markets dominated by renewables.

Key indicators

81 companies are now members of the Hydrogen Council

Air Liquide makes a strategic investment in the production of decarbonized hydrogen by electrolysis

Air Liquide announced that it has acquired an 18.6% stake in the capital of the Canadian company Hydrogenics Corporation, a leader in electrolysis hydrogen production equipment and fuel cells. This strategic transaction, which represents an investment of 20.5 million US dollars (18 million euros), enables the Group to reaffirm its long-term commitment to the hydrogen energy markets and its ambition to be a major player in the supply of carbon-free hydrogen, particularly for industry and mobility markets.

Hydrogen Council

Launched during the Davos World Economic Forum at the beginning of 2017, the Hydrogen Council is the first global initiative of its kind which intends to show that hydrogen is a key solution in energy transition. The Council is currently composed of more than 81 members, including Air Liquide. The initiative is growing rapidly, with 22 new members, including several investors, who have joined the Hydrogen Council.

If deployed on a large scale, hydrogen could represent almost one fifth of total energy consumed by 2050. This would help reduce annual CO_2 emissions by around 6 gigatons compared with current levels and account for 20% of the decrease required to limit global warming to 2°C by 2100.

Hydrogen has the potential to generate 2,500 billion US dollars in revenue and create more than 30 million jobs by 2050.

INITIATIVES IN FAVOR OF THE CLIMATE

In July 2019, the Group joined the Science-Based Targets (SBT) initiative, a certification created by a coalition of stakeholders committed to environmental issues.

The Science-Based Target initiative provides companies with a methodology for setting a GHG emissions reduction objective based on climate science and in line with a 2°C or lower scenario. Indeed, there is currently no sectoral approach specific to Air Liquide's activities, which has the particularity of serving a wide variety of sectors of the economy. Moreover, the current SBT methodology does not allow the inclusion of avoided emissions, which is one of Air Liquide's major commitments to reduce emissions beyond its own businesses. Air Liquide will continue its discussions with the SBT initiative, to better value its actions in favor of the climate.

The Group believes that the major challenges facing our society can be met through active dialog. For this reason, it has been an active member of the TCFD (Task Force on Climate-related Disclosures), a task force which brings together institutional investors, audit firms and listed companies with the aim of developing recommendations for voluntary disclosures regarding financial risks linked to climate change.

Today, like all European companies, the Air Liquide Group applies the European Directive on extra-financial reporting for the publication of information corresponding to 2019. This directive includes all of the recommendation made by the TCFD, except for the financial forecast for climate-related measures.

EFFICIENT SOLUTIONS FOR A CLEAN ECONOMIC GROWTH

Following the success of the first solar flight around the world, Bertrand Piccard and the Solar Impulse Foundation has launched the second phase of their action: selecting #1000solutions that can protect the environment in a profitable way, and bringing them to decision makers to help them adopt more ambitious environmental targets and energy policies. Through the Global Efficient Solutions Alliance, Bertrand Piccard wishes to federate clean technology players and highlight existing solutions in order to accelerate their implementation.

Today, 18 innovations developed or supported by Air Liquide have been labeled by the Solar Impulse Foundation. These solutions prove that environmental protection and the fight against climate change create businesses and constitute a fantastic industrial market.

The solutions supported by Air Liquide concern the hydrogen and biomethane markets. Solutions also make it possible to limit air pollution, purify water, or reduce the carbon footprint.

5.3. ACHIEVEMENT IN 2019 REGARDING DIALOG WITH STAKEHOLDERS

For Air Liquide, dialog with stakeholders is a strategic objective announced in the NEOS company program.

The global climate approach implemented since Air Liquide's objectives to reduce its carbon footprint were announced has enabled the Group to strengthen dialog with its stakeholders. This objective, which was also announced in the NEOS company program, contributes directly to the Group's aim of achieving responsible growth.

As part of this constant dialog with its stakeholders and for the third year in a row, Air Liquide has focused on Millennials [(a)] and their relationship with the company. This year, a study was carried out with the Viavoice polling institute of a sample of 2,000 persons, representing the over-18 population, including 528 Millennials (18-34 year olds). This study focused in particular on their view of large corporates' influence on the future. Results revealed that companies are seen by 18-34 year olds as one of the best-positioned players to understand the challenges facing society, ahead of politicians, non-profit organizations and NGOs, start-ups and trade unions. This study highlights the fact that the younger generation expects strong societal commitments from companies and concrete proof of said commitments.

5.3.1. Employees

In 2019, Air Liquide employed 67,200 persons in 80 countries.

The Human Resources strategy is set out in Chapter 5, page 297. It also takes into account the risks identified in the Chapter 2 "Human resource management risks", page 89.

Since 2018, Human Resources is committed to achieving the following objectives:

2025 objectives		2019 results	
35%	of women among Group managers and professionals.	**29%**	of women among Group managers and professionals.
33%	of young graduates among managers and professional recruitments.	**27%**	of young graduates among managers and professional recruitments [(b)].

Internal audits were carried out to ensure that entities complied with the Human Resources objectives, and to verify the monitoring of indicators and the implementation of action plans.

The Group developed the "Care & Perform" initiative, in partnership with the European Works Council (CEE), aimed at preventing psycho-social risks. This charter is based on principles of action relating to improving organization, on the workload and on the home-life balance. The measurement and monitoring of the commitment of Group employees is carried out using "Care & Perform" indicators in Europe. Moreover, a new tool for collecting employees' views called "MyVoice" was tested in several countries in 2019 and will be deployed throughout the Group. The French companies in the historical scope [(c)] of consolidation signed an agreement on the inclusion of disabled persons at the end of 2019. This agreement represents a new ambition on this subject.

(a) Millennials, or generation Y, include those born between 1985 and 2005. This population is perceived as having its own sociological and behavioral characteristics.
(b) The year 2018 is taken as the reference year. The indicator evolves each year to take into account the entire corresponding period (2018 to achieved year). For 2019 only the indicator would be 26%.
(c) The historical perimeter represents 10 Air Liquide subsidiaries in France.

A COLLECTIVE COMMITMENT TO ACHIEVING THE CLIMATE OBJECTIVES

As part of the roll-out of its Climate Objectives announced at the end of 2018, Air Liquide introduced a dedicated internal structure. The announcement of these objectives and the associated action plan have proved to be factors that have boosted the commitment of Group employees.

The Climate Champions

Present within each operating entity, Climate Champions are responsible for rolling out the Group's Climate Objectives. The Climate Champions are the point of contact of the Sustainable Development Department in the clusters. They develop a roadmap that defines all the operational measures required to achieve the objectives. Their role includes monitoring KPIs, identifying projects and reporting progress.

The Climate Ambassadors community

This community supports the Climate Champions with its on-the-ground approach. Climate Ambassadors actions include local initiatives such as recycling, zero-waste campaigns, sustainable mobility, etc. They are tasked with sharing their experience and raising awareness among employees of sustainable development in the workplace. The community has nearly 200 ambassadors.

EFFORTS RECOGNIZED AND AWARDED

On November 21, 2019, Air Liquide was recognized at the Pavillon d'Armenonville in Paris during the Victoire des leaders du Capital Humain in the "CSR policy" category. The jury greeted Air Liquide's global approach, which is supported by all employees, to deploy its Climate Objectives. A few weeks before the event, a jury of close to 150 members listened to the innovative projects of more than 80 companies. The members of jury then announced 20 winners and five special mentions were made. The jury praised Air Liquide for its comprehensive approach that was supported by all employees to roll-out its Climate Objectives.

5.3.2. Investors and shareholders

2019 stock market performance and overall shareholder return

In 2019, the stock market performance of Air Liquide's share was +28% (vs. +26.37% for the CAC 40).

Furthermore, 30 free shares attributions have been made since 1962.

At December 31, 2019, the overall financial performance of the Air Liquide share, i.e. the rate of return on invested capital, or Total Shareholder Return (TSR) [(a)], amounts to:

END OF 2019 DATA

TSR	5 years	10 years	20 years
Air Liquide registered shares	+11.98%	+12.63%	+10.70%
Air Liquide bearer shares	+11.47%	+12.06%	+10.07%
CAC 40 reinvested dividends	+10.43%	+7.99%	+3.11%

(a) The TSR is an annualized rate of return for a shareholder who buys his shares at the beginning of the period and resells them at the end of the period. This calculation takes into account the evolution of the share price, the dividends reinvested in shares as well as the allocations of free shares, both increased by the loyalty bonus, and includes the impact related to the capital increase of 2016.

2019 initiatives

Individual shareholders

Individual shareholders have been contributing to and supporting the Group's growth since its creation. Shareholders' trust and loyalty are key to Air Liquide's growth. For more than a century, the Group has been dedicated to involving them in its growth and has fostered a long-term relationship based on transparency, dialog and proximity.

At the end of 2019, 420,000 individual shareholders owned 32% of the capital of the Group; it represented the highest percentage among companies in the CAC 40.

The Group received six shareholder-related awards including the Grand Prix de l'Assemblée Générale awarded by the Institut du Capitalisme Responsable.

MEETING WITH SHAREHOLDERS

The General Meeting: the 2019 General Meeting welcomed 3,903 people and almost 120,000 votes are counted each year. The dates for the next Air Liquide Combined General Meeting are Tuesday, May 5, 2020; Tuesday, May 4, 2021; and Wednesday, May 4, 2022.

"Post-General Meeting" conferences: the Chairman and Chief Executive Officer visits several towns and cities in France to present the Group's results, strategy and outlook to shareholders. In 2019, Benoît Potier met with shareholders in Lyon and Biarritz and exchanged views with them at a round table on the challenges of climate change and the associated opportunities for the Group.

Other meetings with shareholders: the Director of Shareholder Services and his teams regularly meet with shareholders throughout the year, in various French towns and cities.

Air Liquide also took part in the first "Investir Day" held in Paris. This event attracted close to 4,000 visitors, with more than one-third of these aged under 35, on the subject "Give sense to shares". The objective of the event: to demonstrate to young people, often far from the shareholder world, that investing in shares contributes to the development of the real economy, job creation and, in the case of Air Liquide, to the energy transition.

Institutional investors

The Investor Relations team met with more than 700 investors in 2019 during 13 roadshows, 28 conferences and many individual meetings. Members of the Executive Committee took part in some of these events.

In 2019, these roadshows and conferences were held in Europe, notably in London, Paris and Frankfurt, and in North America (New York, Boston San Francisco and Toronto).

These meetings provided the opportunity to discuss subjects related to strategy and performance, Socially Responsible Investment (SRI) and corporate governance with investors.

A SYNDICATED CREDIT FACILITY ASSOCIATING EXTRA-FINANCIAL PERFORMANCE WITH FINANCIAL COST

In December 2019, Air Liquide signed an amendment to its 2 billion euros syndicated credit facility to include a correlation mechanism between its financial expenses and three of its CSR objectives relating to carbon intensity, gender diversity, and safety. As an industrial player which champions sustainable development, this initiative showcases the Group's desire to combine performance and responsibility.

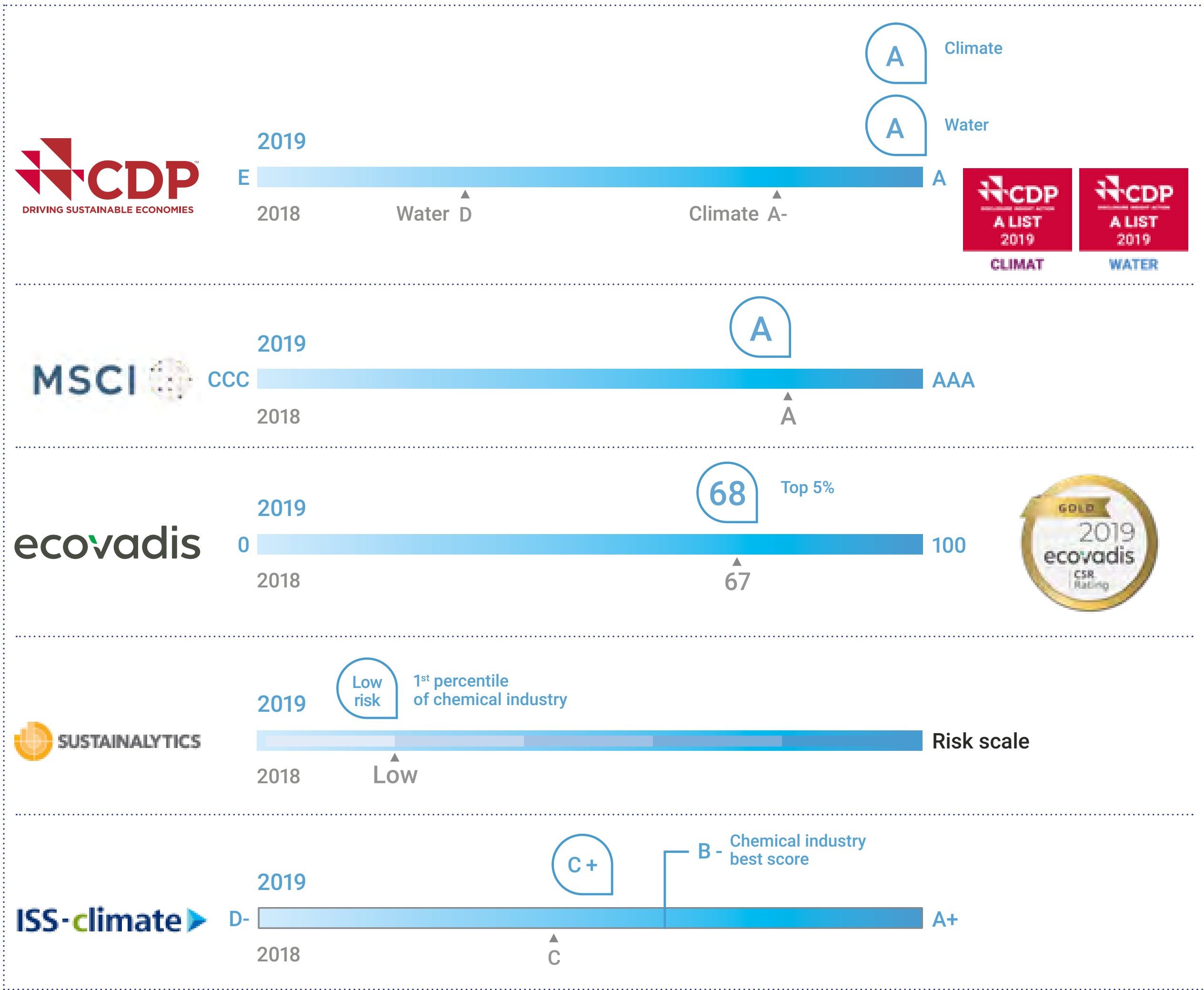
Efforts recognized and awarded

Air Liquide recognized by the CDP as one of the best performing for the climate

This year Air Liquide was ranked double "A" (in the Climate and Water categories), the highest rating awarded by the CDP (ex Carbon Disclosure Project), a non-profit organization which assessed companies on their work on climate. This ranking places the Group as one of the most committed companies in terms of the fight against climate change. In 2019, more than 8,400 companies provided the CDP with data on their environmental impacts (climate - water - forests) for an independent assessment. Among these companies, only 38 obtained a triple A or double A rating, including 3 French companies, of which Air Liquide.

Through this distinction, the CDP recognizes a sustainable growth strategy which has been in place for several years. The Group's progress in hydrogen energy and biomethane is proof of this, as are the numerous innovative projects in which the Group has taken part in association with its metals and petrochemical customers.

RATING AGENCY ASSESSMENTS



Boursorama responsible investment award

In November, Air Liquide was awarded the Responsible Investment prize at the Investor Awards ceremony organized by Boursorama. More than 100,000 investors and individual shareholders voted to recognize the Group's commitment to meeting environmental and societal challenges through concrete and visible projects with its partners and customers.

iA INVESTOR AWARDS 2019

5.3.3. Customers and patients

Air Liquide contributes to the performance of its customers and patients

The Group pays particular attention to the satisfaction of its customers and patients and implements action plans to continuously improve it. Air Liquide, in particular, helps enable its industrial customers to operate in a safer, more sustainable and economic manner and supports them in their expansion. In the same way, the Group helps patients improve their care conditions by offering innovative equipment and services.

Successful customer commitment

Air Liquide organizes with its customers common reflection days called "Techno days". These meetings help to identify common research and development topics, particularly around climate and energy transition topics. These days, which were highly appreciated by customers, provided an opportunity to discuss several subjects such as CO_2 capture solutions or the reduction of customers' carbon footprint thanks to Air Liquide solutions.

100,000

customer/patient returns collected since 2017

88%

satisfied or very satisfied Air Liquide customers [(a)]

Customers particularly appreciate the quality of the Group's products and services, safety standards, as well as the attitude and efficiency of the teams with which they are in contact.

In 2019, Air Liquide Healthcare launched the "Changing Care. With you" program. Through this approach the Group is committed, alongside patients, healthcare professionals and hospitals, to making the health system efficient and virtuous for all.

5.3.4. Sustainable procurement

The Group attaches great importance to the ability of its suppliers to offer long-term partnerships and to ensure a high level of safety, reliability, competitiveness and innovation, while guaranteeing that ethics, Human Rights and Sustainable Development are also taken into account.

Air Liquide rewarded as a supplier

Finally, in 2019, Air Liquide was scored 68/100 by EcoVadis. This score puts the Group in the "Gold" category as an "advanced" supplier in terms of sustainable development (only 5% of suppliers fall within this category, which is the highest ranking). EcoVadis is the main global rating platform for the social and environmental performance of supply chains. The assessment covered the environment, social, business ethics and sustainable procurement. Air Liquide also works with this platform to assess the sustainable development performance of its own suppliers.

(a) Based on customer satisfaction survey feedback (85% in 2018).

A recognized sustainable procurement approach

This year, Air Liquide was recognized for its Responsible Procurement measures on several occasions:

- in March, Air Liquide was awarded “Best Value Chain Engagement” by EcoVadis;
- in May, Air Liquide was recognized by the Sustainable Purchasing Leadership Council (SPLC) for “Best Overall Sustainable Purchasing Program”;
- in September, Air Liquide received the award for “Best Responsible Buyer” by Handeco for its projects in France;
- in May, Air Liquide China and E&C China provided Sustainable Procurement training to around one hundred Chinese suppliers during a “Suppliers Day” in partnership with EcoVadis. Two suppliers received the “Air Liquide China” award.

Sustainable procurement for all

Since its inauguration in October 2018, the Group Procurement Department organized in October 2019 its second Business Meeting for the adapted and protected work sector with HandivAirsity, which was launched by the Group in 2017. Among the one hundred or so guests, 15 ESATs (organizations for the social and professional integration of disabled persons) and EAs (Adapted Companies) presented shared achievements to the Group’s key players, covering a wide range of businesses and services across the whole of France. 46% of ESATs and EAs invited in 2018 established or renewed a sales relationship with the Group.

5.3.5. The Air Liquide Foundation and local communities

In 2019, the Foundation approved 51 projects in 16 countries, including three new countries, Congo, the Democratic Republic of the Congo and the Dominican Republic:

- seven scientific research and education projects relating to air quality and respiratory diseases;
- 44 local development projects in fields including professional integration, education and training, access to care, disability, social welfare, micro-entrepreneurship and the environment.

Since its creation in 2008, the Air Liquide Foundation has supported more than 360 projects in 52 countries. A dedicated website enables projects to be directly submitted online, in French or English. The website address is: www.fondationairliquide.com.

Moreover, at the end of 2019, the Foundation’s Board of Directors defined new strategic orientations to maximize its scientific and social impact. The Foundation has therefore focused its work around two cornerstones:

Research and scientific education

Support for fundamental research projects and scientific education to help advance the state of the art of science and raise awareness among the younger generation and the general public.

Local development

Support for professional integration projects for people having difficulty finding work and projects sponsored by Air Liquide employees in territories in which the Group operates.

In territories affected by a high rate of unemployment and technical professions facing recruitment difficulties, the Foundation is developing innovative professional integration projects in partnership with the Group’s local teams and local non-profit organizations. The first two projects, one in Les Mureaux in the field of welding and the other a digital project in Johannesburg, have already been launched.

By relying in particular on the Group's skills, and to respond more effectively to societal challenges, the Air Liquide Foundation is implementing new methods of intervention:

- a significant increase in the Foundation’s budget;
- co-construction of projects with research bodies and non-profit organizations;
- multi-year support;
- higher funding allocated to project leaders;
- employee commitment: project sponsorship and monitoring, skill-based sponsorship.

5.3.6. Relationships with the public sphere

Air Liquide's Public Affairs teams in France have increased discussions and information sharing regarding the various interest representation measures relating to the Air Liquide businesses which they represent, both directly and indirectly via boards and professional bodies. These discussions, which took place throughout 2019, helped identify new measures with our counterparts in the public sphere that were better coordinated and more cross-divisional between the Group's various businesses in France and which offered greater clarity in our messages.

Several major Public Affairs events, dedicated to the development of the Group's business and also to competitiveness in France took place in 2019. These included:

- **The Productive Pact for Full Employment:** On October 15, 2019 the French Minister of the Economy and Finance, Bruno Le Maire, presented the broad guidelines for the "Productive Pact for Full Employment" announced by the French President during feedback from the Great National Debate. To draw up these guidelines, the French Minister of the Economy and Finance, in partnership with the Minister for Higher Education, Research and Innovation, tasked a team of experts with drawing up an ambitious and selective strategy to boost fresh industrial and entrepreneurial momentum on the emerging industrial markets. Benoît Potier, Chairman and CEO of Air Liquide, appointed as a member of this team, actively contributed to defining the key markets, emerging markets which presented major challenges in terms of competitiveness. The identification of these emerging markets in which France has the potential to play a leading role on a global scale, focused around four fundamental societal challenges (healthy and sustainable food, the health and well-being of our fellow-citizens, the environment and the ecological and energy transition, and digital sovereignty), will be used to define the structure of the Productive Pact which will be presented by the Government in 2020.
- **Hydrogen roundtable for a sustainable productive pact:** On November 26, 2019 at Air Liquide's Paris Innovation Campus, a roundtable discussion was held on the subject of hydrogen for a sustainable productive pact. Elisabeth Borne, the French Minister for Ecological and Sustainable Transition, Bruno Le Maire, the French Minister of the Economy and Finance, and several global leading industrial executives that are members of the Hydrogen Council attended the discussion. This roundtable was an opportunity to present the advances in this field to the ministers present and, with Air Liquide taking the lead and with all of the industrial players, to launch a series of projects with the various State departments (Ministry for Ecological and Sustainable Transition, Ministry of the Economy and Finance, General Secretariat for Investment and the Agency for the Environment and Energy Management), aimed at drawing up an ambitious hydrogen sector policy that would be integrated within the Productive Pact for Full Employment.

STUDY ON THE EXPECTATIONS OF CIVIL SOCIETY TOWARDS COMPANIES

In 2019, the Sustainable Development Department sponsored a survey on the expectations of civil society towards companies in partnership with six other French industrial groups within the Observatory for Materiality. This survey was carried out by the Institut du Capitalisme Responsable, in partnership with the IFOP (the French Institute of Public Opinion) on a sample of 3,000 persons representing civil society in France, Germany and Poland in November 2018. This survey highlighted that civil society expected concrete measures from companies, in particular environmental and social measures.

Participants identified the major challenges arising from their country's current issues (survey carried out in April 2019):

- France: the environment, unemployment, terrorism;
- Germany: immigration, the environment, poverty;
- Poland: healthcare, the environment, employment.

6. Innovation

6.1. PREPARING FOR FUTURE GROWTH

The **Group's innovation expenses** amounted to **317 million euros in 2019.** Innovation expenses correspond to the OECD definition, namely research and development, market launch and marketing expenses for new offerings and products.

This amount highlights the Group's long-term commitment to developing and maintaining a large and balanced innovation portfolio to drive its operational excellence and sustainable growth. These innovations, which are co-developed with the ecosystems, meet the needs and usages of its customers and patients and contribute to major societal challenges. Likewise, applying the OECD definition, **4,300 employees** work in entities dedicated to innovation or that contribute to innovation through the development and the market launch of new offerings and products.

Patented inventions contribute to the Group's competitiveness and to differentiated offerings, and highlight the Group's capacity for technological innovation. **330 new inventions** were protected in 2019. These are complemented by third-party intellectual property rights, obtained by partnerships, which allow the Group to test new technologies and digital solutions. Air Liquide has a portfolio of 3,445 inventions, which are protected by at least one patent. Air Liquide's portfolio has 10,760 patents, the largest in its industry.

Knowledge of the end markets thanks to the World Business Lines which consolidate user experience with customer and patient expectations, allow the Innovation teams to focus on continuously improving Group offerings by integrating new technologies (notably digital) and new ways of working, and by developing, with the ecosystems, differentiating solutions for its customers and patients.

The Group's innovation strategy relies on the **curiosity of the teams and their result-oriented mindset,** which is key to allowing Air Liquide to reinvent its business, anticipate the challenges of its markets and take into account the new usages of its customers and patients. The Group has not only implemented internal programs to encourage and recognize **the talent and expertise** of its technical experts who contribute to innovation, but also, since 2014, the talent of its innovators.

AIR LIQUIDE RECOGNIZES ITS TEAMS WHO CONTRIBUTE TO INNOVATION

The Group has introduced **Technical Community Leaders (TCL),** a promotion and recognition program for the technical field and for the expertise of Group employees. Each level of this program is a progression in terms of responsibilities, recognition and influence. Since the launch of TCL in 2003, more than 3,000 Air Liquide experts have been recognized, and play a key role in the sharing of knowledge and best practices, transferring technical expertise and developing the long-term expertise that Air Liquide will require in the future. In 2019, three International Fellows, 22 International Senior Experts and 79 International Experts received this recognition. Moreover, the Group has introduced a new field of expertise: Digital & IT, which recognizes the strategic nature of the expertise of data scientists, network architects and software engineers. 12 experts were nominated in this field.

The #**iNVENT** recognition program rewards employee inventors of patented inventions that are successfully marketed, or that give Air Liquide a competitive advantage. Moreover, a trophy is awarded for the best invention of the year, selected from among the patent applications filed within each business in the past two years, and a bonus to inventors when a patent is delivered. This program ensures that inventors are rewarded quickly and the portfolio of inventions is managed more efficiently. More than 3,000 rewards have been awarded to inventors employed by Air Liquide since 1997.

Air Liquide also recognizes its **employee innovators** who contribute to incremental innovation with customer-centric offerings and through the invention of new solutions. In 2019, Air Liquide honored 138 innovators across its hubs. Each year, Air Liquide brings together Technical Community Leaders, inventors and innovators at its ***Be Innovation*** event in Paris and in all its hubs, to recognize the employees' contribution to innovation and contribute to replicate innovative solutions within the Group.

The wide range of innovative technologies and solutions in the field of energy transition, reinforced by the strength of digital and strong integration within the ecosystems, allow the Innovation teams to **contribute to the Group's sustainable growth.**

The Group intends to dedicate **around 100 million euros** of its Innovation expenses every year to reduce its carbon footprint and that of its customers. In particular, it develops technologies to reduce its own emissions and offers cleaner solutions for other CO_2-emitting sectors: the Innovation teams are currently working, for example, on improving the energy efficiency of production units, as well as on CO_2 capture and valorization technologies (CCS – Carbon Capture and Storage and CCUS – Carbon Capture, Utilization and Storage). In addition to Innovation expenses, **cumulative capital expenditure for the 2014-2019 period totaled around 480 million euros in biomethane and hydrogen mobility,** two innovations which are a means to reduce particulate matter emissions, improve air quality, and reduce greenhouse gas emissions from transport to help in the fight against climate change.

6.2. INNOVATION TO BOOST OPERATIONAL EXCELLENCE

By combining its digital expertise with its technological capabilities, Air Liquide innovates through **digital solutions which help optimize production operations, improve transactions with customers and at the point of use** on the premises of customers and healthcare professionals and in patients' homes. This digital transformation, a key driver of **Industry 4.0,** improves customer and patient experience, and strengthens operational efficiency gains.

In 2019, Air Liquide reached a **major milestone in its digital transformation:** the roll-out of digital solutions by the clusters and Operations was scaled up. After defining its digital roadmap and establishing a shared language based on its Assets, Customers and Ecosystems ("ACE") which set out the fundamentals of its digital strategy, Air Liquide introduced global programs to promote operational excellence, such as Smart & Innovative Operations for gas production.

This scaling up was made possible by the structure implemented: the Group relies in particular on the Digital Fabs. These are key partners for the World Business Lines and Corporate functions for their digital roadmaps and draw on the expertise of flexible multi-disciplinary teams. The Digital Fabs also benefit from the Group's in-depth business knowledge and the expertise of the Digital & IT teams in data, design, software engineering, user research and network architecture. Moreover, in 2019, the Group was **top of the e-CAC 40 listing for its digital maturity** in France.

THE GLOBAL SMART & INNOVATIVE OPERATIONS (SIO) PROGRAM TO OPTIMIZE INDUSTRIAL PRODUCTION AND ENERGY CONSUMPTION

The **global Smart & Innovative Operations (SIO) program** relies on data analysis (Air Liquide collects one billion data each day on its production units) to improve the reliability of oxygen, nitrogen and hydrogen plants and optimize energy consumption. This program requires the use of the plants' remote management centers: in France (St-Priest) for Southern Europe, in China (Shanghai), in South East Asia (Kuala Lumpur), the Middle East (Dubai), in the United States (Houston) and in Northern Europe (Brussels). This program ensures the optimal operation of the production facilities by monitoring in real time that the plants are running at optimal levels in terms of energy efficiency. It is also used to maximize their reliability rate, which is another key element of energy consumption. The **predictive maintenance** tool which contributes to ensuring this reliability has now been rolled out at **200 production units**. Thus, thanks to data analysis coupled with the real-time human intelligence of operators, pilots and analysts, as well as production and data experts, the global SIO program contributes to operational excellence while also reducing CO_2 emissions.

Air Liquide organized its first Data Summit in 2019 to share and improve its expertise in data with its customers and partners. This event, which brought together more than 100 participants, was an opportunity to exchange views on transformation challenges relating to data in industry and its future, and to discuss best practices regarding the technological, organizational and change management challenges faced.

Likewise, R&D teams, which work as a network at the Innovation Campuses, contribute to the Group's operational excellence. In close partnership with the World Business Lines, they help drive **knowledge of end markets and consolidate user experience** to define and develop innovative offerings for the present and the future.

COBOTS TO IMPROVE THE PRODUCTIVITY OF WELDERS IN THE UNITED STATES

At its Innovation Campus Delaware, Air Liquide has developed, in partnership with its Airgas and Red-D-Arc subsidiaries, a new offering which helps improve the productivity of welders. In a context where recruiting qualified welders is challenging, the teams invented and developed the **Cobotic welding system,** which is simple to install and use. The system has a multidimensional arm equipped with a welding torch connected to a power supply and welding wire, and uses Air Liquide's ARCAL welding gases solution. It offers proprietary welding "recipes" – available through a cloud application – which covers 80% of the needs of a welding workshop and allows customers to easily manage short-run productions. Launched in January 2018, in partnership with Hirebotics start-up, the offering was marketed in November 2019 during the Chicago Fabtech show.

REACTOR TECHNOLOGY BASED ON 3D PRINTING TO PRODUCE HYDROGEN MORE EFFICIENTLY

Air Liquide has developed expertise in intensifying processes through the **manufacturing of equipment using 3D printing,** also known as **additive manufacturing.** The Group is part of the collaborative project FAIR (French acronym for Additive Manufacturing for the Intensification of Reactors) which, by bringing together academic and industrial partners, aims to create a new French industrial sector. Air Liquide has thus, through 3D printing, created a reactor to produce hydrogen, a first for a certified pressurization equipment. Additive manufacturing has broken technological limitations (other technologies were not capable of manufacturing parts which met physical constraints), to offer more compact, less energy-intensive intensifying equipment at a lower cost with a weaker carbon footprint. The Group is currently testing this new reactor to produce hydrogen.

6.3. INNOVATION FOR CUSTOMERS AND PATIENTS WITH NEW OFFERINGS

Innovation also focuses on the deployment of new offerings for the Group's customers and patients. Thanks to their proximity with their customers, Air Liquide's teams are in a position to anticipate future usages, invent new solutions and roll them out in the relevant markets.

QLIXBI, A BREAKTHROUGH PACKAGED GAS OFFERING DESIGNED WITH WELDERS, FOR WELDERS

The welding market is one of the Group's historic markets. The Group launched a **breakthrough innovation, Qlixbi,** which includes a next generation gas cylinder and a range of digital solutions for welding which radically transforms customer experience. Developed in close collaboration with more than 700 welding customers, this innovation was launched in September 2019 and has improved the way in which they use and manage gases in their industry on a daily basis.

E-HEALTH: ROLL OUT OF THE CHRONIC CARE CONNECT™ SOLUTION IN FRANCE

As part of the French government's ÉTAPES program aimed at promoting real-life telemedecine initiatives, in 2019 Air Liquide Healthcare, a pioneer in **remote medical surveillance**, scaled up its **Chronic Care Connect™ program** in France.One year after its launch, Air Liquide Healthcare supports **more than 2,400 patients** with its solution in France, in coordination with private practitioners and healthcare facilities who chose this solution to improve the home healthcare monitoring of patients with chronic heart failure, respiratory insufficiency and diabetes.

The aims of remote medical surveillance include preventing complications, avoiding re-hospitalizations, and helping healthcare professional gain time, i.e. monitoring chronically ill patients in their homes by analyzing data transmitted by connected medical devices and questionnaires. Compliant with health data privacy rules, Chronic Care Connect™ solutions combine algorithms which analyze real-time data on the software platform received from one or more connected measurement devices (scales, blood glucose monitors etc.) and questionnaires, with the filtering of alerts by specially-trained State-registered nurses. This innovation was developed using the expertise of the Group's teams in data science, their in-depth knowledge of medical conditions, and their ability to work closely with healthcare professionals and patient associations.

In 2019, the Group's Innovation teams also focused on stepping up the roll-out of **new energy transition offerings.**

Air Liquide is a leader in the **global hydrogen economy.** The Group was one of the founders of the **Hydrogen Council** which brings together more than 80 global industrial players. **Hydrogen** – in particular low-carbon hydrogen – plays a key role in the **fight against climate change and the energy transition** (mobility, energy). In 2019, Air Liquide confirmed its commitment in this field and its leading role in promoting and deploying the hydrogen economy, thus contributing to objectives to limit the planet's temperature rise due to climate change.

THE WORLD'S LARGEST MEMBRANE-BASED ELECTROLYZER TO PRODUCE LOW-CARBON HYDROGEN

Air Liquide launched the construction in **Canada** of the **largest PEM (Proton Exchange Membrane) electrolyzer in the world** with a 20-megawatt (MW) capacity for the production of **low-carbon hydrogen**. This investment allows the Group to reaffirm its long-term commitment to the hydrogen energy markets and its ambition to be a major player in the supply of low-carbon hydrogen.

This electrolyzer will increase the current capacity of Air Liquide's hydrogen facility, located in Bécancour, Quebec (Canada), by 50%. This new PEM electrolyzer, with Hydrogenics technology, will be the world's largest and will serve the increasing demand for low-carbon hydrogen. Bécancour's proximity to major industrial markets in Canada and the United States will help ensure North America's supply of low-carbon hydrogen for both industry and mobility usages.

This new production unit will significantly reduce carbon intensity, compared to the traditional hydrogen production process. Emissions of nearly 27,000 tons of CO_2 per year, equivalent to those of about 10,000 sedan cars per year, will then be prevented.

HYDROGEN STATIONS: DEPLOYMENT OF INFRASTRUCTURES IN JAPAN, SOUTH KOREA, CHINA AND GERMANY AND NEW INITIATIVES IN FRANCE

In 2019, Air Liquide inaugurated **17 new stations** in Japan, China, South Korea and Germany, highlighting the acceleration in the roll-out of dedicated infrastructure for the hydrogen energy market. The Group has designed and installed 120 hydrogen charging stations for mobility around the world to date, providing it with feedback from its teams and partners to improve its customer experience and reduce costs ahead of a large-scale deployment.

To facilitate the roll-out of Fuel Cell Electric Vehicles and their recharging infrastructure within the Île-de-France region, **HysetCo** was created in 2019 by Air Liquide, Idex, Kouros, Société du Taxi Électrique Parisien (STEP) and Toyota and is the first asset management company dedicated to the development of hydrogen mobility. Each player contributes its expertise to this ecosystem which aims to develop a hydrogen society in France notably through Hype, the world's first fleet of zero-emission Hydrogen taxis. HysetCo is committed to the fight against air pollution and promoting the energy transition and has a short-term objective of reaching 600 taxis by the end of 2020, as well as "zero emissions for taxis and chauffeur-driven tourism vehicles (VTCs) by the 2024 Paris Olympic and Paralympic Games".

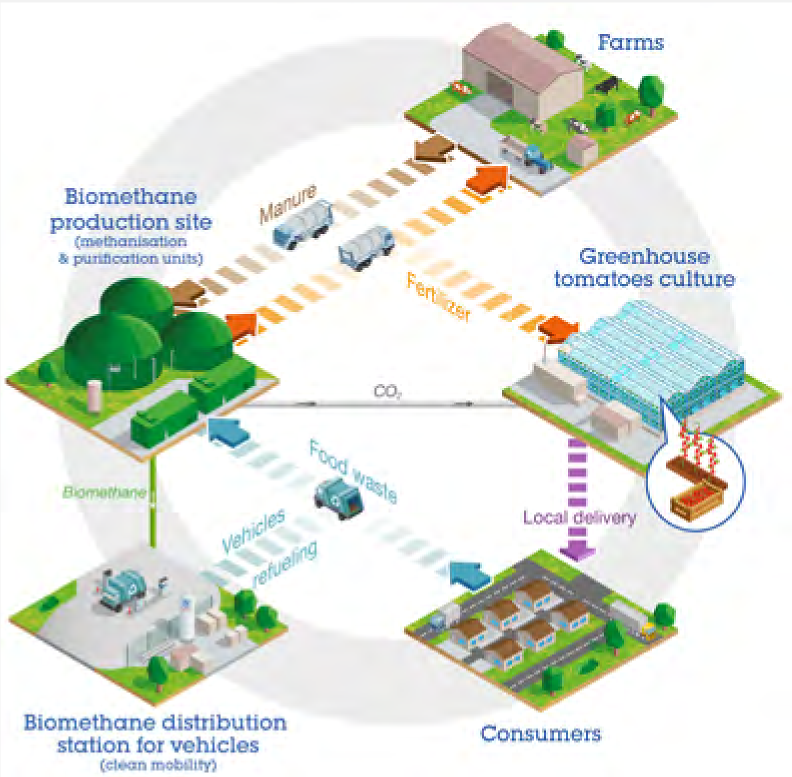
In September 2019, the **first commercial route** using Fuel Cell Electric buses was inaugurated between the cities of Versailles and Jouy-en-Josas (Yvelines) in France. These buses recharge with low-carbon hydrogen at Air Liquide's Loges-en-Josas station, which is also used by the Parisian "Hype" fleet of more than 130 Hydrogen taxis.

Moreover, Air Liquide aims to expand the **circular economy, notably through the production and usage of biomethane.** The Innovation teams, ranging from R&D to Global Markets & Technologies' business developers, are working on the transformation of biomass into biomethane and organic fertilizer, using the Group's membrane technologies which purify biogas to produce biomethane and allow for it to be injected into the grid. Used as fuel, bio-NGV – bio Natural Gas Vehicle – is a new renewable non-fossil energy which reduces the carbon footprint by 90% and particulate matter emissions by 85%, compared to diesel. In 2019, Air Liquide commissioned four new biomethane units in France, the United States and the United Kingdom. The Group operates **18 biomethane production units in the world**.

THE MAGIC FACTORY, AN EXAMPLE OF A CIRCULAR ECONOMY IN NORWAY

In the Oslo region, in Norway, Air Liquide has joined forces with local players of the "**Magic Factory**" project.

The digester processes the food waste of the region's inhabitants as well as slurry and manure from neighboring farms. This waste ferments and emits biogas, which is captured and purified. Some of this biogas becomes biomethane, which is used as fuel for vehicles (in particular garbage trucks which collect the waste processed at the site). The rest (the digestate), as well as the CO_2 removed from the biogas, are used as fertilizer for greenhouse crops, on site, crops which in turn generate plant-based waste which is fed to the digester.



In 2019, the Global Markets & Technologies World Business Unit continued to market technological solutions to support the rising **energy transition markets** and thus accelerate Air Liquide's sustainable growth.

A TECHNOLOGICAL SOLUTION TO REDUCE GREENHOUSE GAS EMISSIONS IN THE MARITIME SECTOR ACCLAIMED BY CUSTOMERS

Air Liquide is continuing to develop sales of its **Turbo-Brayton cryogenic equipment,** with around **50 units sold** over the last two years for a total value of **almost 180 million euros.**

The technology developed, based on the Turbo-Brayton physical principle, reliquefies natural gas boil-off in LNG vessels in order to significantly reduce **greenhouse gas emissions** during transport. Air Liquide therefore enables the gas to be stored in a container in liquid form and helps shipping companies and freight forwarders to comply with maritime industry regulations on greenhouse gas emissions.

With these twenty or so contracts, Air Liquide is helping to **prevent more than 240,000 tons of CO_2-equivalent** each year. This Air Liquide technology was first used in the space industry to preserve biological samples on the International Space Station (ISS) at very low temperatures, before being adapted by Air Liquide's teams for the maritime industry. It can also be adapted to other sectors and other gases, for example to liquefy biomethane and hydrogen. This commercial success illustrates the capacity of the Group's teams to develop sustainable technological solutions in new markets.

The Global Markets & Technologies teams also use their expertise in extreme cryogenics and decentralized energy to design and develop unique innovative solutions, with high scientific and technology content, for their **deep tech customers.**

DEEP TECH DRIVING SPACE EXPLORATION: OF THE MOON AND MARS

With their extensive experience of the largest international space programs (including the European Ariane program, Herschel satellites, Planck, MeteoSat weather satellite, and the International Space Station's MELFI freezer), Air Liquide's teams are contributing to the **"ExoMars" mission** which in 2020 will send a rover to the red planet to analyze its subsoil and the **"Luna" project** which seeks to establish a lunar analogue facility, in partnership with the European Space Agency (ESA) and the German Aerospace Center (DLR). Air Liquide is working on two parts of the Luna project: the production and supply of energy (via a hydrogen fuel cell) and supporting life (oxygen supply, capturing CO_2, inerting, etc.). These cutting-edge technologies, developed for space applications, could in the long term be used for other industrial applications.

6.4. INNOVATING WITHIN INNOVATION ECOSYSTEMS

In a social and societal environment characterized by major changes related to scientific and technological advances, **Air Liquide's innovation strategy** is part of an open ecosystem which is a prerequisite to efficiently innovate with its customers and all stakeholders.

Air Liquide relies on its **Innovation Campuses** in Europe (Paris, Frankfurt), the United States (Delaware) and Asia (Shanghai, Tokyo) to **unite the innovation ecosystems** in which the Group has played a major role for many years.

These Innovation Campuses gather, in the same building, the teams which contribute to innovation, in particular the R&D teams, operational Business Development teams which are responsible for the local implementation of innovation as soon as it is launched, World Business Line employees, and the Innovation & Development teams. From one country to another, the campuses can also welcome **customers, suppliers, start-ups and partners** on their premises. These campuses are an integral part of the Group's innovation approach with the ecosystems. For many years, Air Liquide has adopted a **co-development approach for its solutions,** from the R&D to launch phases and right through to the end user, with its customers, suppliers, universities and start-ups. Campuses allow the Group to benefit from new expertise, favor new collaborative work methods, and thus bring innovative offerings to market more rapidly.

INAUGURATION OF THE INNOVATION CAMPUS TOKYO

In March 2019, Air Liquide inaugurated its **Innovation Campus Tokyo in Yokosuka, Japan,** in which the Group invested 50 million euros. This new Campus houses nearly 200 employees, including Air Liquide's Research and Development teams, experts in customer applications and digital specialists, as well as teams dedicated to exploring new markets, at a new state-of-the-art 8,000-square-meter site with eight laboratories and six pilot platforms equipped to facilitate research and development undertaken in collaboration with customers as well as start-ups and academic partners. These work spaces provide technologies that allow full-scale replication of customers' production processes in order to better meet their needs and to achieve faster time-to-market.

This new Campus will focus on developing **advanced materials,** especially for the manufacture of next-generation semi-conductors, flexible displays, energy storage and distribution systems. It will also accelerate the development of solutions to improve **energy efficiency, reduce the carbon footprint, and develop new energies,** such as hydrogen energy and biomethane.

Outward-looking, Air Liquide's Innovation teams benefit from their position at the heart of Innovation ecosystems to establish **partnerships:** with the CEA, the CNRS, the Institut de Recherche Technologique Systemx on predictive maintenance, and the Additive Factory hub (additive manufacturing) **in France. In the US,** the Group innovates with the DOE (the US Department of Energy), the CAPD, led by the Carnegie Mellon University working on decision-making tools for the optimized management of production units and distribution, with Cornell, Carnegie Mellon and Delaware Universities and Wharton Business School (University of Pennsylvania), in the fields of data science and Artificial Intelligence. **In Asia,** it collaborates with the Universities of Shanghai, Zhejiang and Jiaotong in China; and with the Universities of Kyoto and Nagoya on organic metals in gas separation and storage in Japan.

AIR LIQUIDE'S SCIENTIFIC CHALLENGE TO ESTABLISH NEW ACADEMIC PARTNERSHIPS

Air Liquide organized its latest Scientific Challenge event, open to the entire scientific community and aimed at inventing new solutions to improve air quality and fight against climate change. For this Challenge, a Committee of Air Liquide experts and world-renowned members of the scientific world selected **three winners** from among more than **132 proposals from 34 different countries:**

- José Manuel Serra Alfaro from the Instituto de Tecnología Química in Spain, for his project on the development of a new process using a reactor membrane to produce purified hydrogen in a single step, at a competitive price;
- Christophe Copéret from the ETH Zurich in Switzerland, for his project on efficient catalysts for the use of hydrogen and CO_2 to produce methanol;
- Wenbiao Shen from the Nanjing Agricultural University in China, for his project on the use of water enriched with hydrogen in agriculture to reduce the use of fertilizers and pesticides on fruit and vegetables.

The three winners each received the "Air Liquide Scientific Prize" worth 50,000 euros and have signed a partnership agreement with the Group that will enable them to receive 1.5 million euros in funding, shared between the three projects, to develop their scientific proposals and transform them into market-ready technologies.

ACCELAIR, AIR LIQUIDE'S DEEP TECH START-UP ACCELERATOR

In 2019, Air Liquide launched its own **start-up accelerator** at its Innovation Campus Paris. Accelair is therefore an entity dedicated exclusively to deep tech start-ups. These start-ups have specific needs due to their longer development times and need for dedicated scientific laboratories. In line with its open innovation strategy, the Group offers selected start-ups access to experimental spaces as well as a support program with Air Liquide experts, all with the aim of accelerating the time-to-market of their offering. Four start-ups joined the program in 2019, which will be limited to approximately twenty start-ups.

A JOINT PARTNERSHIP WITH STMICROELECTRONICS

In 2019, Air Liquide and STMicroelectronics engaged in a **collaborative initiative to accelerate the development of digital solutions for industrial applications.** This partnership has extended the long-standing business relationship established over the past decade between both companies. ST and Air Liquide have developed and tested ergonomic Proofs of Concept which integrate the industrial Internet of Things to improve the traceability of gas cylinders at industrial sites and to provide remote surveillance of connected industrial equipment. These Proofs of Concept include ST chips. This partnership showcases the innovation approach favored by Air Liquide with its customers.

More than 60% of Research and Development projects were conducted under partnerships with laboratories, start-ups, industrial players and customers in 2019.

All in all, Air Liquide is thus piloting **230 academic and industrial partnerships,** and supports **three research chairs in France:** with University of Paris-Sud, for the "Another Kind of Physics" Chair, with the École Centrale Supelec for the "Supply Chain Management" Chair and with Grenoble Management School for the "Energy for Society" Chair. The Group works with **100 start-ups worldwide.**

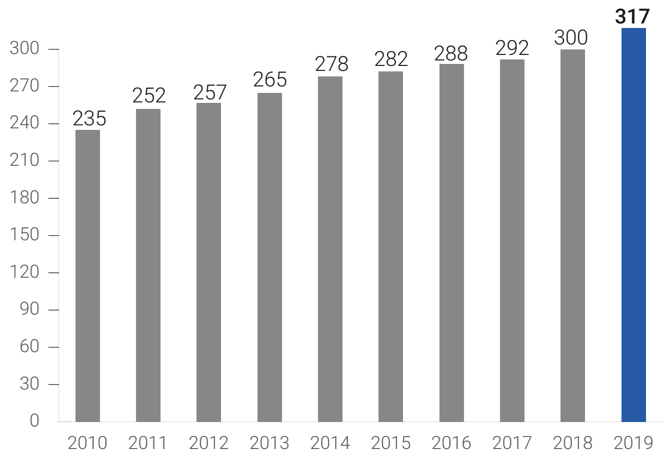
Air Liquide's ability to **continuously identify new academic partnerships,** notably through its Scientific Challenges, and **start-ups** in particular via its Accelair deep tech accelerator and its ALIAD venture capital structure, allows it to stay on the cutting edge of scientific, technological and digital developments. Moreover, **partnerships developed with industrial players** contribute to an in-depth understanding of the **markets** and new usages: they enable the Innovation teams to anticipate **customers' needs** and offer **relevant innovative solutions** to meet these needs. This integration within the ecosystems drives the Group's Innovation strategy.

6.5. INNOVATION INDICATORS CONCERNING THE GROUP AS A WHOLE [(a)]

AS OF DECEMBER 31, 2019

Number of employees working on innovation	4,300
of which researchers	*1,300*
of which Global Markets & Technologies employees	*2,000*
R&D industrial partnerships	91
R&D scientific partnerships (academic and technology institutes)	140
Start-ups collaborating with the Group	100

INNOVATION EXPENSES



PATENTS

	2015	2016	2017	2018	2019
Number of inventions protected by at least one patent	3,200	3,363	3,335	3,395	3,445
New patent applications filed during the year	271	296	318	309	330

(a) Applying the OECD definition.

OUTLOOK

2019 is a landmark year, characterized simultaneously by a significant improvement in performance, a high level of investments to serve customers and strengthen efficiency, and the operational implementation of the Group's climate action plan.

2019 sales were driven by the development of Gas & Services and Global Markets & Technologies. On a comparable basis, **all Gas & Services activities,** which account for **96%** of **Group** revenue, **progressed** over the year, with particularly dynamic **Electronics** and **Healthcare**. Geographically, every region grew, notably the **Europe** and **Asia Pacific** regions.

Overall, and despite the expected global economic slowdown observed in the 4th quarter, the Group delivered **robust results,** confirming the relevance of its economic model and strategy.

The improvement in the Group's operating margin reflects the dynamic management of both pricing and product mix, the asset portfolio, and **efficiencies.** The latter reached **433 million euros.** Cash flows were high and the debt to equity ratio declined substantially. The Group's balance sheet is solid. **ROCE continues to improve.** 2019 performance is **in line** with all of the targets of the NEOS program and the Group's Climate Objectives.

In a context where industrial opportunities remain high, **investment decisions rose sharply,** to **3.7 billion euros.** The new projects that have been signed with clients in Large Industry and Electronics will allow the Group to further strengthen its position in major industrial basins.

The Group starts the year with confidence in a context characterized by a new uncertainty related to the **Coronavirus epidemic.**

At the filing date of this document, the impact of this epidemic on Air Liquide's 2020 results is **difficult to quantify.** Industrial operations are **partially affected in China,** mainly in Industrial Merchant, which represented less than 25% of the 2019 country sales, China contributing by only 9% to the Group's total revenues.

This provides us with the opportunity to commend the **professionalism of our Chinese colleagues, fully mobilized.**

Assuming no major change in the environment and the international health situation is under control, Air Liquide is confident in its ability to further increase its operating margin and to deliver net profit growth in 2020, at constant exchange rates.

2

RISK FACTORS AND CONTROL ENVIRONMENT

RISK FACTORS AND MANAGEMENT MEASURES

The Group identifies the risk factors to which it is exposed using a formal risk management approach. This presentation of risk factors and related management measures is based on the reference framework of the internal control and risk management system, developed under the supervision of the French financial markets authority (AMF) and was prepared with contributions from several departments (particularly Finance, Group Control, Legal, Safety and Industrial Systems, etc.).

The risks presented below, at the date of this Universal Registration Document, are the risks that the Group considers may have a significant negative impact on its business, results, outlook, or reputation, should they occur. The list of these risks is, however, not exhaustive and other risks, unknown at the date of this document, could occur and have a negative effect on the Group's business.

As part of its risk management approach, the Group is committed to regularly assessing the risks and to reducing the likelihood that they will occur or their potential impact by implementing internal control and risk management procedures, as well as formalized and specific action plans. These procedures, as well as the Group's Codes and policies, are included in a Manual, called the BLUEBOOK, which is the cornerstone of the Group's internal control system, and accessible to all Air Liquide employees.

Risk factors are presented below in a limited number of categories according to their nature. In each category, the most significant risk factors are presented first (in bold).

Although the risk categories have not been classed in order of size, the two most significant risks for the Air Liquide Group are both related to its business. These are industrial risks and industrial investment-related risks.

Business-related risks	**Industrial risks**
	Industrial investment-related risks
	Sourcing-related risks
	Risks relating to the design and construction of production units
	Human Resources management related risks
	Customer risks
Financial risks	**Counterparty and liquidity risks**
	Foreign exchange risks
	Interest rate risks
	Risks involving credit ratings
	Tax risks
Digital risks	**Digital risks**
Environmental and societal risks	**Greenhouse gas emissions related risks**
	Discrimination-related risks
Geopolitical, regulatory and legal risks	**Geopolitical risks**
	Regulatory and legal risks

1. Business-related risks

The industrial gas business is characterized by a significant technology content (both in the design phase and the construction of production units), local production units, high capital intensity, and substantial energy requirements. Various risks are associated with these characteristics.

The risks associated with these characteristics are mitigated by various factors which include primarily the diversity of industries and customers served by the Group, the multiple applications that it offers them, as well as the large number of geographical locations in which it operates. In addition, a significant share of business is subject to contracts, a strict investment project authorization and management process, and a tailored energy policy.

1.1. INDUSTRIAL RISKS

Identification and description of risks

Industrial risks are linked to the various industrial products, processes and distribution methods implemented by the Group. They are distributed over a large number of local production sites.

Over and above the usual risks inherent in all industrial activities, Air Liquide's businesses entail more specific risks relating to:

- products: the intrinsic properties of industrial gases manufactured, transformed or packaged by the Group classifies them in the dangerous materials category;
- processes and their operation: cryogenics is used to separate gases by distillation, store them and transport them. This very low temperature technique requires specific means of control and protection to avoid in particular:
  - cryogenic burns associated with liquefied gases,
  - anoxia, associated with inert gases,
  - over-oxygenation or fires, associated with oxygen and oxygen mixtures.

  The same applies for high temperature techniques, used in particular in the production of hydrogen, which are particularly exposed to risks of fire or explosions.
  In addition, pressure is central to the Group's processes. Pressurized equipment must be designed with safety devices which limit the risk of accidents caused by an uncontrolled increase of pressure;
- logistics and transportation: each year, delivery vehicles, sales staff and technicians travel hundreds of millions of kilometers. Non-compliance with the highway Code or the lack of regular maintenance of vehicles would expose drivers and third parties to increased risks of accidents. In addition, industrial sites use a lot of motorized lifting gear which present specific risks (collision, falling packaging, etc.). Training and authorization are thus required to operate them;
- engineering and construction: industrial risks are factored in and must commence at the design phase of future installations. During the construction phase, the lack of a strict accident prevention framework would affect the coordination among the various stakeholders and expose teams to risks of accidents.
- delivery reliability: the Group is exposed to the risk of faults in the systems supplying gas to customers, which could lead to a disruption to supply, in terms of quality or volumes;
- specific standards and regulations, in particular in Healthcare, with the risk of non-compliance of products and services provided to patients.

Risk management measures

Safety is a fundamental value for the Group and the "zero accidents, on every site, in every region, in every unit" objective remains a key priority.

The Group, as a responsible industry player, is therefore committed to efficiently and under all circumstances reducing the exposure of its employees, subcontractors, customers, patients and suppliers to professional and industrial risks.

The safety results for the past 30 plus years illustrate the long-term effectiveness of the Group's actions in this area.

To manage these risks, the Group has an Industrial Management System (IMS), which operates based on:

- empowerment of the Management bodies governing the Group's various entities for the effective implementation of this system;
- the issue of key management and organizational procedures that aim to ensure:
  - compliance with standards and regulations,
  - design management,
  - industrial risk management,
  - hygiene, health and environmental management,
  - the training and certification of personnel,
  - the management of operating and maintenance procedures,
  - the management of industrial purchasing,
  - change management,
  - the analysis and treatment of incidents and accidents,
  - the dissemination of shared technical standards within Group entities.

The IMS document base is updated and supplemented on an ongoing basis.

The Safety and Industrial Systems Department and the Industrial Departments of the World Business Lines supervise and control the implementation of the IMS, by notably relying on:

- on-going awareness-raising actions for teams by providing specifically related training;
- the presentation of various dashboards designed to monitor performance in terms of the safety and reliability of operations;
- process audits to verify the implementation conditions and compliance of operations with IMS requirements;
- throughout safety reviews prior to the start-up of any new facility to prevent any accidents due to a construction defect;
- technical audits carried out by the Industrial Departments to ensure the compliance of operations with Group rules.

The evolution of safety performances of operations and their level of compliance with IMS requirements are regularly monitored by the Executive Committee.

1.2. INDUSTRIAL INVESTMENT-RELATED RISKS

Identification and description of risks

The Group may be exposed to certain risks specific to its industrial investments. Each investment project may be affected, particularly in its profitability, by different factors linked primarily to project location, customer quality, good project management by the customer, and particularly the respect of implementation schedules, the competitiveness of the site, as well as to design, cost estimates, quality, and meeting construction deadlines and budgets for gas production units.

Moreover, in new emerging markets such as those related to energy transition, the Group may be exposed, in addition to the above-mentioned risks, to risks related to the degree of maturity of some of these market segments or in certain regions.

Risk management measures

The BLUEBOOK's Operations control policy sets out the principles of the strict control of the Group's industrial investments and its commitments, the implementation of which is set out in the investment decisions procedure; the latter includes in particular:

- a detailed review and approval process of investment requests based on very strict assessment criteria as well as of any associated medium- and long-term contractual commitments, within the Resources and Investments Committees (described on page 43);
- control of investment decisions through the specific follow-up of authorizations granted as well as contributions expected and seen during the initial years. In addition, the subsidiaries are obliged to report (above certain thresholds) all budget overruns and implement corrective action plans aimed at ensuring the profitability of the investments concerned; for the largest ones, they are supported by experts ("Capital Implementation" teams) in order to secure good preparation and execution;
- more in-depth analysis of the profitability of certain major investments (comparative analysis prior and subsequent to completion).

1.3. SOURCING-RELATED RISKS

Identification and description of risks

Electricity and natural gas are the main raw materials used by production units. Their availability is thus essential to the Group. Where the local market permits, Group subsidiaries secure the energy sourcing through medium to long-term supply commitments and competitive bidding scenarios with local suppliers with the objective of achieving the most reliable and competitive energy costs, with a low-carbon footprint, available on the market.

Risks to which the Group are exposed when sourcing raw materials relate to:

- energy supply (access and reliability, in particular counterparty risk, etc.);
- volumes (non-compliance with obligations and commitments on volumes, etc.);
- prices (volatility, competitiveness, etc.);
- compliance with current regulations (market transparency rules, Sapin 2 Law, etc.);
- changes in local regulations on energy and its deregulation.

Financial risk relating to raw materials is described in note 26.1 to the consolidated financial statements on page 250.

Moreover, the Group may be temporarily exposed to supply shortages for certain molecules which are only produced at a limited number of sites, in particular with worldwide reach, such as helium and rare gases.

Risk management measures

Due to the geographic spread of Group activities, its sourcing contracts are diversified.

The management of exposure to specific energy sourcing risks is described in the Group's Energy management policy and is based on two principles:

- energy purchasing must exclusively cover internal production needs ("own-use");
- entities pass on energy cost fluctuations to their customers via indexed invoicing integrated into their medium- and long-term gas supply contracts.

The Energy Risk Management Group Committee, "Enrisk", reviews the procurement strategies of the entities, validates the most significant commitments and ensures the relevant procedures are properly applied, in particular in terms of sustainable development.

Each month, this Enrisk Committee brings together the Vice President in charge of the Large Industries World Business Line, the Energy Director, the Group's Operations Control Vice President and the Director in charge of Accounting policies. Meeting minutes are sent to all Executive Committee members.

Moreover, risks relating to the sourcing of certain molecules produced at a limited number of sites with worldwide reach are managed by a strategy of diversifying sources, storing molecules and securing procurement through long-term contracts.

1.4. RISKS RELATING TO THE DESIGN AND CONSTRUCTION OF PRODUCTION UNITS

Identification and description of risks

Air Liquide's engineering team designs and builds production units worldwide which are primarily intended for Group investments, but also for third-party customers.

As these projects generally extend over several years, they are exposed, at their various stages, to risks relating to design, purchasing, transport or construction and more generally the overall quality, schedule and costs. Risks relating to these projects are often greater during the construction phase, in particular for turnkey projects:

- the quality and delivery times for critical equipment, on the one hand, and on-site construction costs and deadlines on the other may give rise to project start-up setbacks and impact project profitability;
- unexpected technical problems may also arise, in particular when a new innovative process is implemented;
- certain projects are located in regions of the world that may be a source of specific political or economic risks.

Risk management measures

The engineering team has implemented a risk management system for the execution of all its projects (of varying size and complexity and which use different types of technology), which is described in the Engineering-specific document the "Playbook".

This system relies on an Engineering Risk Committee and aims to guarantee effective risk assessment for the duration of each project's life and the implementation of adequate risk management measures:

- during the development stage: by identifying, as best as possible, potential threats (but also opportunities) that may have an impact on the project's results during the forthcoming execution stage, thus allowing adequate decisions to be taken;
- during the execution stage: by continuing to regularly assess already-identified risks which could change, occur or disappear, but also by identifying and dealing with any new threats which could have an impact on the contractual commitments, technical integrity or performance of the project right through until its completion.

1.5. HUMAN RESOURCES MANAGEMENT RELATED RISKS

Identification and description of risks

The long-term performance of the Air Liquide Group is driven, in particular, by the quality of its employees, their skills and their commitment.

In its businesses, the Group is therefore exposed to the risk of not being able to:

- attract and maintain the required skills at the right time and in the right place, in particular in emerging markets where the Group is expanding its activities, or in regions where the employment market is strained;
- develop these skills, in particular with the digitization of certain businesses.

These risks would result, in particular, in shortcomings in:

- the level or quality of training;
- the management of careers and opportunities;
- the recognition of performances and contributions, in particular in certain areas of expertise.

In addition to risks relating to the management of skills, psycho-social risks may also affect the health and level of commitment of Group employees.

Risk management measures

The Group is committed to identifying, attracting and developing the necessary scientific and technical skills required for its growth, the efficient working of its operations and innovation. The Human Resources policy defines the main rules, together with the roles and responsibilities of the different parties in their implementation, with respect to, among others:

- the acquisition and sustaining of required skills, in particular through the SPRING long-term program, which identifies and manages critical skills. Training provided under the Air Liquide University brand also contributes to this goal and, in particular, e-learning courses attended by an increasing number of users (more than 56,000 in 2019) in a wide range of domains (ethics, industrial safety, competition law, digital security, etc.). This training is part of a program and is managed by a dedicated tool (LMS: Learning Management System);
- supporting employees in their personal development throughout their career, particularly thanks to a centralized career and skills management tool (TMS: Talent Management System) and the communication of career advancement opportunities (TAS: Talent Acquisition System);
- measuring and recognizing performance and contributions for all employees. In addition to employee remuneration and loyalty policies (regular capital increases reserved for employees), specific provisions aimed at promoting and sustaining certain skills, such as inventor and entrepreneur recognition programs, the technical expertise development scheme ("Technical Community Leaders") in a wide range of fields such as industrial operations, industrial safety and digital and IT since 2019.

More generally, the Group ensures the building of a performance-focused, attractive and collaborative professional environment while also safeguarding the health and well-being of Group employees in their workplace:

- the "Care & Perform" initiative, developed in partnership with the European Works Council in 2019, aims to prevent psycho-social risks. This initiative is based on Principles of Action relating to improving organization, workload and the home-life balance.
- The measurement and management of employees' commitment is carried out using a new employee listening tool, "MyVoice", which has been tested in several countries of the Group in 2019 (12,700 participants) and will be deployed in 2020. In Europe, "Care & Perform" also includes indicators to measure the commitment of European employees.

1.6. CUSTOMER RISKS

Identification and description of risks

The primary customer risk is the risk of bankruptcy or closure of a customer's production site.

More generally, the business of some of the Group's customers may be interrupted following major climatic or political events.

The amount of operating receivables as well as allowance for doubtful receivables are shown in note 18 "Trade receivables" to the consolidated financial statements on page 233.

Risk management measures

The diversity of the Group's geographic presence in 80 countries helps distribute customer risk. The Group's subsidiaries serve a very large number of customers (more than two million worldwide) in a broad range of industries: chemicals, steel, metals, refining, food, pharmaceuticals, automotive, healthcare, electronics, photovoltaics, research laboratories, etc.

The Group's first customer represents less than 2% of revenue, the Group's top 10 customers represent around 10% of revenue and the top 50 customers represent around 25% of revenue.

A significant part of the Industrial Gas business is covered by customer contracts, with commitment periods specific to the relevant business line:

- the Large Industries business and a third of the Electronics business rely on 15-year to 20-year and up to 15-year take-or-pay secured contracts respectively, ensuring a guaranteed minimum revenue and offering strong future cash flow predictability;
- the contracts in the Industrial Merchant business, generally with a one to five-year duration, also include services relating to storage and cylinders;
- in the Healthcare business, positions vary between health systems, with certain countries awarding one to five-year contracts on a regional and pathology basis following public tenders.

Finally, the impact on the Group of the risks of customer business interruption following major climatic or political events is limited by the wide diversity of countries in which it operates. This impact can be offset by the necessary recourse to gases in critical situations. Indeed, gases are needed to secure industrial or chemical installations (inert gases), maintain local industrial activity (essential to industrial processes) or even sustain life (medical gases). The Group's businesses are therefore often protected or prioritized depending on the situation.

2. Financial risks

The Group's financial policy sets out the management principles for the financial risks to which its business is exposed. In this context, the Group has defined and regularly reviews the terms of the financial procedures which forbid speculative transactions notably on financial instruments.

Financial decision-making governance is the responsibility of the two Finance Committees (Strategic Finance Committee and Operational Finance Committee), with the former considering issues relating to the financing strategy and the latter dealing with the practical methods of its implementation.

2.1. COUNTERPARTY AND LIQUIDITY RISKS

Identification and description of risks

Counterparty risk primarily relates to trade receivables, outstanding amounts on short-term investments and derivative instruments for hedging, and to credit facilities contracted with each bank.

Trade receivables risks relate to receivables on the balance sheet that may remain unpaid in the long term, in particular in the event of the financial hardship of a customer.

Investment risk is mainly related to short-term deposits in the event that one of the Group's key banks default and, to a lesser extent, an impairment loss due to use of SICAVs (open-ended investment companies) for a portion of the portfolio.

Hedging derivative risk relates to the positive market value of transactions which would be lost in the event of the default of one or more counterparties, and the need to substitute new hedges under potentially less favorable conditions.

Finally, the main risk related to credit facilities is that the facility is unavailable in the case of a drawdown.

Note 26.1 to the consolidated financial statements describes counterparty and liquidity risk for the year ended December 31, 2019.

Notes 18.1 and 18.2 to the consolidated financial statements provide a breakdown of trade and other operating receivables and allowances for doubtful receivables.

Risk management measures

With industrial projects and acquisition transactions, customer counterparty risk is one of the key elements assessed by the Resources and Investments Committees.

For long-term contracts, an assessment of a potential customer's credit profile is carried out before any contact is made. This assessment is then taken into account in the payment terms proposed to customers.

For the Group's major customers, counterparty risk is monitored on a monthly basis using ratings provided by financial rating agencies, or via an internal rating when there is no specific published rating available. The actual structure of contracts, in particular for Large Industries and Electronics, reduces risks in that these medium- to long-term contracts include safeguarding clauses for the Group.

In certain cases (mainly Europe and the United States), the risk of losses on trade receivables is transferred to the banks through de-consolidating factoring programs.

Moreover, to reduce risks relating to the default of a financial counterparty, the Group has adopted a conservative approach to its short-term investments and works with leading banks and financial institutions rated at least A or A2 by Standard & Poor's or Moody's, except in exceptional and justified circumstances.

Investments must therefore be made with key banks, (i.e., leading banks selected according to their financing resources, their geographical and product coverage, as well as their financial stability) with maturities of less than three months, be highly liquid and have low volatility. The ratings of key banks and risk indicators available on the markets are monitored on a daily basis using real-time financial information services.

Cash pooling with the help of international cash pooling (a daily leveling system towards Air Liquide Finance) and the policy of annual extraction of subsidiaries' dividends also helps limit the amount of local cash in each country.

To minimize the risk relating to the market value of hedging derivatives used to manage foreign exchange and interest rate risk and that of fluctuations in raw materials prices, the Group works with "key banks" on one hand, while also ensuring it diversifies its transactions. This work depends on framework agreements (French Banking Federation (FBF) and International Swaps and Derivative Association (ISDA) agreements). The Group has decided not to use a collateralization mechanism due to the low average duration of these derivatives and the possible resulting cash fluctuations.

Finally, in terms of financing, to ensure its development and independence, the Group ensures that is has sufficient and permanent sources of liquidity, meaning adequate financing resources available at any time and at the lowest cost from a large range of key banks and financial markets.

2.2. FOREIGN EXCHANGE RISKS

Identification and description of risks

The Group, due to its international presence, is naturally exposed to foreign currency fluctuations with, on one hand, a transaction risk and, on the other hand, a risk relating to the translation of its financial statements into euros (the Group's reporting currency).

Foreign exchange transaction risk relates, on one hand, to the foreign currency commercial cash flows of operating entities and, on the other hand, cash flows arising from royalties, technical support and dividends.

Translation risk relates to the publication of the Group's financial statements in euros from the entities' financial statements in local currencies, without an impact on the profitability of the Group's businesses.

Following the acquisition of Airgas in the United States, the exposure of the Group's revenue and assets to the US dollar has increased, as has the Group's US dollar denominated debt, with a risk linked to the translation of the financial statements:

- large fluctuations in the value of the euro against the US dollar have a more significant impact on the Group's published results than before the acquisition;
- these foreign exchange variations have an impact on the figures presented in the Group's balance sheet, particularly concerning the debt.

Note 25.3 to the consolidated financial statements presents net debt by currency and note 26.1 to the consolidated financial statements describes the foreign exchange risk management process and the derivative instruments used, as well as sensitivity to foreign currency exchange rates.

Risk management measures

Since industrial and medical gases are not transported over long distances, most products are manufactured in the country where they are sold. The Group considers that its activities and its profitability have a low level of exposure to currency fluctuations.

The Group has nevertheless defined methods for hedging its main foreign exchange risks, whether this is borne by the holding companies or the operating entities, in terms of authorized hedging instruments, the decision process and the execution of transactions.

These measures are supplemented by management rules adapted to local circumstances, which are aimed at ensuring compliance and security of transactions and optimizing management.

The application of this financial policy is controlled by the Finance Department. The majority of transactions are executed directly on a centralized basis with the subsidiaries and over-the-counter markets, which is completed by consolidated Reports provided by various Group entities on a monthly or quarterly basis, depending on the type of risk.

The activities are managed on the basis of highly separated duties, using a multilateral negotiation platform, cash management software, and a communication platform linked to the Swift banking network.

Furthermore, the Group provides a natural hedge and reduces its exposure to exchange rate fluctuations by raising debt in the currency of the cash flows generated to repay the debt. Thus, financing is raised either in local currency or, when sales contracts are indexed in euros or US dollars, in foreign currency (EUR or USD).

2.3. INTEREST RATE RISKS

Identification and description of risks

The interest rate risk is mainly linked to the fluctuation of future cash flows on debt when the rate is variable, indexed to indices such as Euribor or Libor.

Due to the increased level of debt resulting from the 2016 Airgas acquisition, and particularly in case of a significant increase in interest rates upon future renewals of bonds in euros and in US dollars issued post-acquisition, the Group may find itself obliged to devote a more significant portion of cash flows from its operational activities to service its debt.

Note 25.4 to the consolidated financial statements presents the fixed-rate portion of debt and note 26.1 to the consolidated financial statements describes the sensitivity of the Group's financial expenses to interest rate fluctuations and the interest rate repricing schedule for fixed-rate debt and interest rate risk hedging instruments.

Risk management measures

The Group's strategy is to maintain, over a medium- to long-term period, a majority of total debt at fixed rates, notably by using firm or option hedges.

Centralized interest rate hedging methods have also been defined for each major currency in which debt is held (in particular EUR, USD, JPY, and CNY, which represent more than 90% of total net debt) including:

- the selection of authorized tools, in particular swaps and interest rate options;
- hedging decision processes;
- methods of executing transactions.

For other debt foreign currencies, rules have been defined in order to ensure that the transactions initiated to hedge interest rate risk are consistent with Group objectives.

Moreover, pre-hedging transactions for future highly-probable issues are regularly implemented to protect the Group against an increase in interest rates.

With few exceptions, all interest rate transactions are centrally processed by Air Liquide Finance, and regularly valued using both internally-designed tools and an independent specialized firm.

2.4. RISKS INVOLVING CREDIT RATINGS

Identification and description of risks

To gain access to capital markets, Air Liquide relies on the short-term and long-term financial credit ratings of Standard & Poor's and Moody's.

Like all groups that are subject to ratings, Air Liquide could suffer a negative impact on its ability to finance its continuing operations and to refinance its debt should a rating agency significantly downgrade its rating below its current level, due to a higher level of debt than expected or for other credit-related reasons.

Risk management measures

The ratings attributed by Standard & Poor's are A- long term / Positive outlook / A-2 short term, and A-3 long term / Stable outlook / P-1 short term by Moody's.

Both agencies' models and adjustments have been replicated internally by the Group Treasury and Financing Department to be able to assess changes in key ratios presented to the agencies and identify any potential deviations.

This information is regularly presented to the Finance Committees and a Liquidity Report is shared with both agencies each quarter.

2.5. TAX RISKS

Identification and description of risks

The Group is exposed to tax risk in certain countries, due to changes in applicable regulations, which may have an impact on its activities or its results. This risk may arise from:

- challenges in the application of current regulations or standards;
- errors when completing tax returns;
- regular audits by tax authorities which could lead to disagreements over the interpretation of facts.

Risk management measures

As far as tax is concerned, the Group focuses on complying with laws and regulations. Modifications of laws and regulations are followed and monitored by its Tax Department and its local Finance Departments.

The Group's tax Charter supports its ambition to remain a leader in its sector by acting in a responsible manner, consistent with the Group's long-term growth strategy. Air Liquide has defined the following principles which govern its tax policy, in line with article L. 225-102-1 of the French Commercial Code:

- Group entities must respect the laws and regulations in force, as well as the international standards that affect it such as those of the OECD, in particular on transfer prices;
- Group entities ensure that tax returns and payments are completed in compliance with local regulations. They complete the required tax returns according to the jurisdictions in which the Group operates;
- the Group is committed to acting with integrity in all tax-related matters. It aims to operate in a transparent manner and build constructive, long-term relationships with the tax authorities;
- the Group deals with tax-related matters by banning tax havens and does not make use of shell corporations without economic or commercial substance;
- the Group protects value for its shareholders by taking measures to minimize double taxation phenomena. Furthermore, it acts to minimize fiscal risk.

Its tax strategy is in line with the Group's strategy. It is transparent, sustainable in the long term and complies with the Code of Conduct.

Within this governance framework, the Group's tax affairs are managed by a team of dedicated, qualified tax experts, who work closely with management and respect the Group's values.

L'Air Liquide S.A., on its own behalf and on behalf of its integrated French subsidiaries, is the first company to sign the "Fiscal Partnership" with the French tax authorities. By signing this partnership in March 2019, L'Air Liquide S.A. and its subsidiaries have entered a trust-based, transparent relationship with the French tax authorities.

3. Digital risks

3.1. DIGITAL RISKS

Identification and description of risks

The Group's activities, expertise and, more generally, its relations with all the stakeholders (customers, suppliers, banks, communities of experts, etc.) depend on increasingly dematerialized and digitized operations. These operations rely on interdependent information systems and communication networks both in functional, technical, as well as human level terms.

The Group's pursuit of this digital transformation increases its exposure to risks relating to data integrity, availability and confidentiality as well as the availability of IT systems and applications. For data confidentiality, the increase in expectations and requirements for protection also adds the risk of regulatory non-compliance.

These risks, which impact all economic and political players, are increasing in intensity due to the severity and frequency of digital attacks and to their changing nature (historically, cyber risks constituted industrial espionage or data hacking and have come to involve the risks of cyber criminality, malwares and ransomwares). These attacks, which spread at high velocity, have the potential to affect all regions and businesses, with significant impacts on industrial processes (disturbance of production or distribution activities), the capacity for communication, notably internal, and on the Group's image (digital identity theft, dissemination of false information, etc.).

Risk management measures

The Digital Security Policy sets the basic rules governing the identification of digital security issues and handling of associated risks, and outlines the roles and responsibilities in this area. It is accompanied by:

- procedures describing, in particular, how to secure data and applications, detect and deal with incidents;
- Codes outlining principles to be respected by users and IT administrators.

The Digital Security Department reports directly to the Group Control Department and uses resources set aside in the hubs, clusters (groups of countries), World Business Units and World Business Lines to coordinate and control in conjunction with the IT Department the roll-out of this policy from a risk assessment that is regularly updated according the development of threats. This roll-out is centered on a long-term operational program aimed at defining the key areas and measures to be taken under the supervision of a member of the Executive Committee, with in particular:

- risk prevention and awareness raising for employees, with teaching tools such as phishing campaigns, e-learning courses on information protection (notably personal or sensitive data) and use of IT tools, etc.;
- better consideration of digital security from the project design phase, as an inherent part of any resulting solution, and continued treatment of IT vulnerabilities, protection of critical applications and of the most sensitive information; monitoring of digital threats, information leaks and major cyber incidents that could affect the Group's activities, particularly through penetration testing and the implementation of a mechanism to monitor information available on the Internet;
- implementing regulatory compliance for the organization using specific projects or programs such as the General Data Protection Regulation; for the latter, a framework agreement was drafted governing data sharing within the Group, and a mechanism for the handling and processing of complaints was introduced;
- revision of the incident management system completed by undertaking a diagnosis to assess the quality and efficiency of the protection of our sensitive digital assets.

Moreover, the Group has adapted its crisis management system to the specific characteristics of digital risks; it is also working on a multi-year program aimed at strengthening the digital protection of its industrial assets.

4. Environmental and societal risks

Environmental and societal risks include risks relating to Air Liquide's environmental footprint (greenhouse gas emissions, resource management, natural disasters, discharges into air and water) and its societal impact (health and safety of individuals, discrimination and labor law).

The Group adheres to the highest standards in terms of the respect of Human Rights and fundamental freedoms. It also strives to ensure its development while limiting its environmental impact and in particular its carbon footprint. The latter, along with all environmental risks (discharges into water and air, resource management and natural disasters) are analyzed and are part of the approval criteria for investment projects. Moreover, all Group subsidiaries are subject to compliance with the prescribed procedure for the identification and analysis of environmental and societal risks, as well as the definition and monitoring of related action plans, at least once a year.

The two risks described below are those considered material within the meaning of the Prospectus 3 regulation (the risk relating to health and safety is described in paragraphs 1.5 Human Resources management risks, page 89 and 1.1 Industrial risks, page 87 respectively).

4.1. GREENHOUSE GAS EMISSIONS RELATED RISKS

Identification and description of risks

Almost 85% of Air Liquide's large production units are Air Separation Units which do not use any combustion processes and consume almost exclusively electrical energy. Electricity used by the Group to power these units generate CO_2 emissions at electricity suppliers which are known as indirect emissions.

The Group's other two main energy consuming activities are hydrogen production and cogeneration. These account for nearly 15% of large production units and use combustion processes emitting CO_2 (direct emissions).

Air Liquide's business model is based on the outsourcing of its customers' industrial gases needs. This outsourcing, which allows customers to concentrate on their core business, is also justified by Air Liquide's expertise which allows optimization of the energy consumption of production tools. Greenhouse gas emissions are therefore reduced across the entire value chain, even though this may lead to an increase in these emissions for the Group itself.

Risk management measures

As part of its Climate Objectives, the Group has published key indicators which can be used to measure and improve its environmental impact. These objectives commit Air Liquide to taking active operational measures, as well as with its customers and more generally step up its actions in favor of a low-carbon society.

Through its Engineering & Construction business, the Group designs its own production units. For example, it adapts the design of these units to customers' needs, technological developments and energy costs. Air Liquide also operates Air Separation Units and hydrogen units and therefore benefits from a virtuous circle of steady improvement from the design stage through to the units' operation. Old units are replaced by new ones that are more efficient in terms of the consumption of resources whenever circumstances enable it.

Air Liquide has included the price of CO_2 within the assessment process for new investment projects which helps better assess the resilience of a customer's site to a carbon constraint and anticipate the risk of stranded assets (which reflects the notion of an asset's impairment loss) under this constraint.

Moreover, Air Liquide has designed and developed CO_2 capture systems which can be installed notably at hydrogen production units.

4.2. DISCRIMINATION-RELATED RISKS

Identification and description of risks

Air Liquide operates businesses with high technological content in a large number of countries with different cultures. It is therefore naturally exposed to discrimination risks relating in particular to gender mix (gender disparity in technical and expert professions), diversity and disability.

Risk management measures

The Group's Principles of Action and the key concepts of the Code of Conduct reaffirm the Group's values and, more specifically, a culture based on diversity, openness, transparency, respect for others and the rejection of all forms of discrimination. These values are also included in the Human Resources policy.

Moreover, Air Liquide is a signatory of the United Nations Global Compact, for which one of the principles aims to contribute to the elimination of all forms of discrimination in respect of employment and occupation.

To this effect, measures are regularly taken aimed at promoting gender mix (for example to increase the number of women among managers and professionals to 35%), nationality mix (Air Liquide's senior managers are now of 34 different nationalities), and inclusion (review of the policy relating to employees with disabilities).

5. Geopolitical, regulatory and legal risks

5.1. GEOPOLITICAL RISKS

Identification and description of risks

Considering the changing international climate, including increasing tensions between or in some countries and the terrorist threat, the Group may be exposed in certain countries to risks affecting the economic or finance area, as well as the security of its facilities or safety of employees, either on-site or during business travel.

Risk management measures

The diversity of the Group's sites, as well as the industries and sectors in which it works, helps reduce its exposure to geopolitical risks.

When investment requests are reviewed, the geopolitical context of a project (in both safety and economic terms) is part of the criteria taken into account before any approval: country risk is thus assessed on a case-by-case basis and may lead to adjustments to financing strategy and supplementary insurance cover.

Moreover, all countries in which the Group operates are subject to permanent monitoring and analysis of the geopolitical context.

Finally, the Safety and Industrial System Department uses awareness-raising and training tools to protect employees, travelers and expatriates who are potentially exposed in certain regions or when traveling for business: e-learning, prior intervention from specialists on certain specific risks (health, hygiene, pollution, kidnapping, etc.). Other measures are also implemented to secure products and sites that are most exposed locally to an external threat.

5.2. REGULATORY AND LEGAL RISKS

Identification and description of risks

In the large number of countries where the Group operates, its entities are exposed to the risk of non-compliance with local laws and regulations. In an increasingly complex context due to a continuously rising number of standards, they must monitor changes to the legal and regulatory framework while remaining aware of business-specific constraints.

In Healthcare in particular, specific constraints, and associated risks, exist which relate notably to public markets, to the marketing of products which may be subject to drug regulatory control and the protection of personal information on each patient.

The Group is faced, in all regions in which it operates, with risks of non-compliance with competition law, provisions aimed at combating corruption, as well as regulations restricting the export of certain products.

In more operational terms, Group entities are exposed to the risk of non-compliance with contractual obligations (of their own or those of their contractual counterparties).

Liabilities and contingent liabilities related to disputes are described in notes 23 and 31 to the consolidated financial statements.

Intellectual property-related risks

The external and global environment surrounding intellectual property points to a growth in patent activity as well as, in certain jurisdictions, a greater focus on the protection of trade secrets. The Group's business is not dependent on technologies patented by third-parties; it relies mainly on technologies, processes and designs developed internally by its innovation teams, the World Business Lines and in the field. The resulting inventions are reviewed and systematically protected by patents, drawings and models, brands, or by other means. Innovation is increasingly achieved in partnership with third parties; in particular the Group develops innovative businesses through partnerships, buying shares in innovative entities, or acquisitions. In addition, third-party technologies can be incorporated in implementing its business.

This could lead to the risks of the infringement of the intellectual property rights of third parties (patents, utility models, copyright, design, etc.) – counterfeiting – in particular when several market players are working on similar technologies (especially in markets or technologies that are "new" in general or "new" for the Group). Risks may also arise in the processing of confidential third-party information when working in partnerships.

Risk management measures

Changes to legal and regulatory requirements are monitored with particular vigilance, especially in view of the energy transition, and are accompanied by the implementation of procedures aimed at improving teams' awareness of these risks and providing them with tools to ensure compliance with obligations in the relevant fields, in particular through:

- Group Codes on how to behave in order to comply with competition laws (including Europe, the United States and Asia-Oceania), accompanied by surprise audits and training that includes e-learning;
- a memorandum, specifying the rules to be observed to prevent market abuse (insider trading);
- a guidance document for export control and international sanctions, as well as a tool to identify and verify third parties;
- a corruption-prevention program in which Executive Management and management are closely involved; this program relies in particular on the mapping of corruption risks, the key principles of the Codes of Conduct and an Anti-Corruption Code rolled out within the subsidiaries, a strong set of training and awareness-raising actions for those exposed to corruption-related risks, a third-party assessment mechanism, a whistleblowing system and accounting controls. This program is regularly updated to take into account new regulatory and legal requirements under the coordination of the Group's Ethics Officer, who relies on a network of ethics correspondents and the support of the Operational Departments in the hubs and businesses; it is regularly audited;
- various contract guides (for Large Industries, Industrial Merchant, Electronics, Engineering & Construction and Financing) and Codes of Good Practices (for Healthcare).

To the Group's knowledge, there have been no governmental, legal or arbitration proceedings which are pending or looming, which may have or have had, in the past 12 months, significant impacts on the Group's financial situation or profitability.

Governance relating to intellectual property and related risk management principles are set out in the Group Policy and procedures aimed at:

- ensuring Air Liquide's compliance with valid patents and other intellectual property rights held by third parties in its different areas of business, in particular through freedom to operate analysis;
- protecting Group intellectual property assets, by protecting its inventions, designs and brands through their identification (on an official filing basis) and managing Group obligations in terms of the recognition of their inventors;
- in the case of partnerships or other third-party relations, supporting stakeholders within the Group to manage risk relating to the protection of third-party rights.

To this end, the Group relies on an Intellectual Property Department, comprising professionals located at the Group's head office and in the main geographic regions.

CONTROL ENVIRONMENT

This section describes the key elements of the control and risk management environment instituted by the Company.

1. Organization

The Group is organized and based on a consistent Group strategy. It is supported by a method of management which centers on mid-term objectives that are categorized by business, as well as a steering process for activities based on annual budgetary objectives, which are further categorized down to the individual plan level. As part of the NEOS company program, the Group has developed into a network organization that promotes communication and shortens decision-making circuits.

The organization breaks down into:

- hubs which ensure the presence and representation of the Group in the main global regions. With the base (L' Air Liquide S.A. Head Office), they are responsible for defining the Group's operational strategy and its global performance. They accommodate the representatives of the Corporate functions and World Business Lines who ensure that the Group strategy is properly implemented locally;
- entities, grouped in clusters (groups of countries) for better pooling of resources, which provide operational management of their activities and implement the Group strategy in those countries where the Group has a presence;
- the World Business Lines, which:
  - with the hubs and Strategy Department, prepare the medium-term strategic goals for the businesses they represent,
  - have responsibility for strategic marketing, the transformation of their respective businesses, industrial policy and the suitability of skills in their specific areas of business;
- the World Business Units specific to certain businesses (Healthcare, Engineering & Construction);
- the Innovation & Development Division, which brings together all the research and innovation resources, technology development, Digital teams (La Factory, ALIZENT, i-Lab) and the Global Markets & Technologies (GM&T) WBU.

This organization also includes the Corporate functions, which notably comprise the three key control departments that report to Executive Management:

- the Finance Department, which is responsible for:
  - the reliability of accounting and financial information,
  - the Group's financial and tax risk management,
  - the drafting of Group objectives and monitoring of performance by operations control, based on financial data prepared by the accounting teams, analysis conducted by the financial teams of the various entities as well as certain operational data;
- the Group Control Department, which:
  - provides expertise and assistance to entities in their risk management approach (see below) and builds a Group synthesis,
  - verifies the effective application of internal control and risk management procedures through audits carried out according to a defined program presented to the Group's Audit and Accounts Committee. This program, developed and based on the risk analysis, is regularly monitored by the Audit and Accounts Committee in liaison with the Environment and Society Committee (for environmental and societal issues). Audit Reports are systematically supplemented by corrective action plans, which are supervised by a member of the Executive Committee. These Reports, as well as subsequent follow-up Reports, are the subject of various communications and periodic discussions with the Statutory Auditors,
  - helps Group entities ensure compliance with and promotion of both the Group's ethical values, particularly through training and awareness-raising actions and the treatment of fraud and deviations, as well as with international trade regulations (all these actions, organizations, and tools are presented in detail in the Extra-financial Performance Declaration),
  - provides guidance to Group entities, through the Digital Security Department, which reports directly to the Group Control Department, on the identification and protection of their data, systems, and digital applications (definition of rules, roll-out expertise and advice, control of proper implementation);
- the Legal Department, which identifies legal risks, issues internal guidelines and Codes, and then oversees their proper implementation. It monitors developments in the main disputes and manages insurance.

Finally, this organization relies on a framework of authorizations and delegations:

- to members of the Executive Committee and certain departments and services in order to define their commitment and payment powers for commercial transactions (sales or purchasing);
- to certain executives in charge of entities or sites in France in particular, in order to ensure the prevention and management of industrial risks in terms of hygiene and safety;
- to certain financial executives, in order to ensure the security of transactions and financial flows.

The managers of the various Group subsidiaries exercise their duties under the control of the Boards of Directors and in accordance with laws and regulations applicable in the countries where they operate.

2. Risk management

To ensure the continued development of its activities, the Group must actively pursue an approach to prevent and manage the risks (especially industrial and financial risks) to which it is exposed.

In terms of the Group's business activities, industrial risk management must essentially focus on prioritizing safety and security while maintaining a permanent focus on the reliability of facilities.

Financial risk management requires strict control over investments, combined with prudent and rigorous practices regarding the accounting and financial aspects of the activities.

The Group's formal risk management approach aims to ensure:

- the regular identification of the different forms of risk (industrial, financial and other) encountered by the Group during the pursuit of business activities, which are assessed according to both potential damage and probability of occurrence;
- the assessment of the level of maturity of the management of each risk based on a common scale with respect to the quality of policies, organizational structures, processes and controls in place;
- the progress of the main corrective action plans undertaken to mitigate these risks, by focusing monitoring activities on a limited number of priorities.

This three-phase risk management process (mapping, maturity level assessment, mitigation plans) covers over 70 entities representing more than 90% of consolidated Group revenue.

The Risk Management Department within the Group Control Department leads this approach using:

- resources dedicated by the hubs, World Business Units and World Business Lines to manage the approach in their respective scopes of responsibility (under the supervision of the Boards of Directors of the entities concerned) and to provide a summary thereof;
- the work of members of the Risk Committee that it coordinates (described on page 105).

The Audit and Accounts Committee reviews Group risk management based on presentations covering:

- the progress of the approach (on an annual basis);
- each major risk management system based on a multi-year program structured according to the challenges;
- internal audit summaries of these risk management systems.

Finally, an annual summary of risk management actions undertaken by the Group is presented to the Board of Directors; each year it validates the Audit and Accounts Committee's provisional program which is presented to it beforehand, as well as a list of subjects of strategic interest or with particular relevance that will be presented in a more specific manner.

3. Internal control

In addition to the Principles of Action, (https://www.airliquide.com/group/groups-principles-action) which reaffirm the Group's values with particular reference to stakeholders (shareholders, customers and suppliers, employees, etc.), the Group's policies, Codes, and procedures are grouped together in an overall reference manual, the BLUEBOOK, which is available to employees on the Intranet. They constitute a set of internal control and risk management documents, which must be implemented by each entity included in the Group's consolidated financial statements.

The BLUEBOOK is the cornerstone of the Group's internal control system, which aims to ensure that:

- the Group's activities and the conduct of its employees:
  - comply with laws and regulations, internal standards and applicable best practices,
  - comply with the objectives defined by the Company, especially in terms of risk prevention and management policies,
  - contribute to safeguarding the Group's assets;
- all financial and accounting information communicated either internally or externally gives a true and fair view of the situation and activity of the Group and complies with prevailing accounting standards.

Generally, the Group's internal control system should help better master its activities, the efficiency of its operations and the efficient use of its resources.

As with other "assurance systems", it cannot provide an absolute guarantee that the Group's objectives will be met.

In 2019, the Group pursued the actions undertaken in previous years, with more than 70 material Group entities and shared service platforms (representing over 90% of consolidated Group revenue), reviewing the appropriateness of their internal control system in relation to the Reference Framework for internal control and risk management systems. These entities also implemented actions aimed at improving their control system in terms of annual guidelines defined at the beginning of the year by the hubs and World Business Units, the Group Control Department and the Finance Department. The latter two together organize these improvement measures and report on their progress to the Group's Executive Management then to the Audit and Accounts Committee.

Audits are coordinated by the Group Control Department and the Statutory Auditors, based on a joint work program, to verify assessments of the internal control system and the correct implementation of key operating controls, including in small and medium-sized entities based on a framework of key control processes adapted for their use.

RECENT MEASURES AIMED AT STRENGTHENING THE SYSTEM

In 2019, the Group continued its measures to improve the quality of its internal control and risk management system, with in particular:

- in terms of governance:
  - in the areas of Environment and Society, strengthening of governance and of supervision of measures (risk mapping, priorities for action, etc.) during a joint annual meeting of the Audit and Accounts Committee and the Environment and Society Committee;
- in terms of organization:
  - the introduction or widening of the scope of shared service centers, in particular financial and accounting (in Portugal for eleven European countries, in Malaysia for several Asian countries, etc.) aimed at improving the efficiency of processes;
- in terms of ethics;
  - the continuation of the corruption prevention program with, in particular, greater diligence with regard to third parties (customers and suppliers) as well as accounting controls based on a mapping of corruption risk elements;
- in terms of industrial safety:
  - the gradual roll-out of a simplified system for managing industrial reliability and safety (Industrial Management System) as well as more targeted measures in terms of road safety.
- in terms of digital security:
  - the development of a Group program aimed at improving the security of digital industrial assets in each business;
  - the adaptation of the Group's crisis management system to the specific characteristics of cyber risk, to help make rapid decisions to protect the Group's IT systems.

4. Financial and accounting information

In order to guarantee the quality and reliability of financial and accounting information produced, the Group primarily relies on a set of accounting principles and standards, as well as a consistent accounting and management reporting system and feeds both the Group statutory consolidation process and the management analysis that is under the responsibility of independent departments, which report to the Finance Department.

The Group accounting manual, which includes the Group financial policy, defines the accounting rules and principles as well as the consolidation methods applicable and states the formats applicable for reporting financial and accounting information. This manual is regularly updated by the Finance Department with the amendments to IFRS or their interpretations.

Management and Accounting Reports are each prepared under the responsibility of independent but interactive departments that follow identical methods and principles:

- this independence allows for the enhancement of information and analysis through the use of complementary indicators and data, particularly those which are specific to each business;
- the fact that these bodies are interactive provides for better control of the reliability of information through the systematic and regular reconciliation of data.

The reports primarily include:

- monthly management reporting, known as the "Monthly Flash Report", that provides information on revenue and the main financial indicators: income statement, cash flow from operating activities, net debt and the amount of investments authorized and committed;
- quarterly reporting, known as the "Management Control Report", which provides details of the primary items of the income statement, balance sheet and cash flow statement;
- a quarterly "variance" analysis report to assess the various components of the change in operating income recurring.

These three documents are compiled by each management entity according to a predefined yearly timetable.

They are systematically accompanied by comments on activities drawn up under the supervision of the entity's Chief Executive Officer, and are consolidated at Group level with a breakdown for each hub and business;

- quarterly reporting for accounting consolidation is compiled by each subsidiary which, in addition, must provide (on a semi-annual basis) information on off-balance sheet commitments that include in particular:
  - energy purchasing,
  - financial guarantees and deposits,
  - all other contractual commitments.

Accounting consolidation statements and monthly reporting are escalated to the Central Consolidation Department. This department prepares the consolidated data and works in conjunction with the Operations Control Department, whose duty it is to analyze and comment on the results, identify and explain any differences with respect to forecasts, and update said forecasts. Meetings are organized each month with the heads of hubs and clusters (groups of countries) to clarify these analyses.

As part of the scope of the Group Performance Steering Committee, a rolling forecast for the rest of the current year is systematically presented by the Finance Department, in order to identify, when applicable, any differences with respect to yearly targets and take the necessary steps.

Through regular controls, the Finance Department ensures the effective application of accounting methods and principles in the various Group entities. The most complex accounting standards, particularly those relating to employee benefits (IAS19R), methods of consolidation (IFRS10/11), the classification of major Large Industries' contracts (IFRS15) and derivative financial instruments (IAS32, IFRS7, IFRS9) as well as the implementation of new standards, are subject to greater support and tighter controls or to direct treatment by the Finance Department.

It also relies on audits carried out by the Group Control Department, with which it has regular contact.

The quality and reliability of financial and accounting information also depend on information systems which are increasingly integrated (such as ERP), a Group consolidation software package.

The project, which aims to further harmonize ERPs, continues on the basis of the definition of an accounting and financial framework tailored to the various Group businesses.

5. Vigilance Plan

INTRODUCTION AND METHODOLOGY

In accordance with article L. 225-102-4 of the French Commercial Code, the aim of the Vigilance Plan is to identify risks and prevent serious violations with respect to Human Rights and fundamental freedoms, to the health and safety of persons and to the environment, which may result from the activities of the Group, its subcontractors, or suppliers with whom Air Liquide has an established business relationship.

The plan therefore applies to all Group subsidiaries, as well as to subcontractors and suppliers with whom Air Liquide has an established business relationship; it is based on the following:

1° risk mapping to identify, analyze and rank these risks;

2° regular assessment procedures of the position of subsidiaries, subcontractors, or suppliers with whom the Group has an established business relationship, in terms of risk mapping;

3° risk mitigation measures and the prevention of serious harm;

4° a whistleblowing mechanism and compilation of reports on the existence or occurrence of risks, established in cooperation with the unions representing said company;

5° a monitoring system of measures implemented and the assessment of their efficiency.

5.1. RISK MAPPING FOR THE VIGILANCE PLAN

5.1.1. Relating to Group businesses

Environmental and societal risks are included in the Group's risk protocol. They are also subject to specific mapping covering areas targeted by law and set out in the table below:

Topics covered by the duty of vigilance	Associated risks	Treatment of subject in the URD	
		Identification	Implementation
Human rights and fundamental freedoms	Discrimination*	Prerequisites to action page 19	Prerequisites to action page 19
	Labor law		
Health and safety of individuals	Health and safety of individuals*	Prerequisites to action page 19	Environment and Society performance page 62
Environment	Greenhouse gas emissions*	Strategy page 37 and Environment and Society performance page 62	Environment and Society performance page 62
	Resource management		
	Discharges into air and water		

* *Material risk factors within the meaning of the Prospectus 3 regulation, which are described in section 4 Environmental and societal risks page 95.*

All "environmental and societal risks" are assessed by groups of countries (clusters) according to their impact and probability of occurrence. Specific mapping of net risk is established at the Group level and is based on the summary of this assessment.

5.1.2. Relating to suppliers

A level 1 suppliers' risk map is drawn up each year based on the methodology developed by the Group Procurement Department. This methodology allows subsidiaries to rate the criticality of their suppliers according to seven criteria including the CSR [(a)] criterion. This criterion is itself based on four elements (the supplier's business, country risk, Air Liquide's rate of dependency on the supplier, the amount spent by the Group with this supplier). Deviation from just one of these elements is sufficient to class a supplier as "critical" in terms of CSR.

(a) *Corporate Social Responsibility.*

5.2. ASSESSMENT PROCEDURES OF THE POSITION OF SUBSIDIARIES, SUBCONTRACTORS AND SUPPLIERS

5.2.1. Risk analysis by subsidiaries

Each year, risks are assessed locally by groups of countries (clusters) under the responsibility of their General Managers, in terms of impact (financial and reputational) and probability. A matrix dedicated to the Duty of Vigilance is drawn up at the Group level.

Method components (for example the analysis matrix) are provided by the Sustainable Development Department which supervises the process. The assessment is then reviewed by the risk Committee and the Environment and Society Committee [(a)].

This assessment allows the Group to rapidly implement corrective measures.

Steering Commitee	Frequency	Role
Governance ■ Executive Management ■ Risk Department ■ Finance Department ■ HSE Department ■ Legal Department ■ Communication Department	Two meetings per year	■ Validates guidelines ■ Analyses decision-making ■ Ensures follow-up measures
Operational steering ■ Sustainable Development Department ■ Procurement Department ■ HR Department ■ HSE Department ■ Business Line Department ■ Cluster Department ■ Legal Department	Four meetings per year	■ Ensures regulatory compliance ■ Implements operational roll-out ■ Suggests areas for improvement ■ Monitors indicators
Environment and Society Committee	Three meetings per year	■ Contributes its expertise on CSR subjects, to a delegation by the Board of Directors

5.2.2. Assessment of suppliers by the Procurement Department and by subsidiaries

For suppliers recognized as critical in terms of CSR, the Group assesses, with the support of EcoVadis, their performance in the following fields: the environment, social, business ethics and the supply chain. This assessment is based on the combined references of EcoVadis and the Procurement Department.

The EcoVadis questionnaire is regularly updated to take into account the results from previous campaigns. For example, a criterion relating to water consumption was added this year. To monitor the CSR performance of smaller suppliers while adapting to their structure, Air Liquide also developed a more suitable internal questionnaire in 2019.

In 2019, 944 suppliers were identified as presenting a critical CSR risk and are part of the long-term assessment program.

Cumulatively over the 2017-2019 period, 914 assessments of suppliers' CSR performance (including 325 in 2019) were carried out by EcoVadis and by using Air Liquide's internal questionnaire.

These indicators are monitored under the Group's Vigilance Plan.

5.2.3. Assessment of subsidiaries by independent auditors

All Group subsidiaries are subject each year to social, safety and environmental reporting. Data are collected, analyzed, consolidated and published in the Universal Registration Document (Chapter 5). Moreover, it is audited by an independent verifier (for around 20% of the Group's environmental data and 30% of its Human Resources data).

The conclusions of the independent verifiers are published on page 319. Moreover, these are used to draw up action plans when non-compliance with Group protocols is identified.

5.3. RISK MITIGATION MEASURES AND THE PREVENTION OF SERIOUS HARM

5.3.1. Within the Group

- Air Liquide has formalized, in the BLUEBOOK, its values, Codes of Conduct, policies and internal procedures, in order to manage and mitigate environmental and societal risks. In terms of safety and the environment, the IMS provides a framework for operations. The Group's commitment in terms of safety, ethics and Human Rights and fundamental freedoms (see "Prerequisites to action" section on page 19) highlight that these are prerequisites that are taken into account in all of the Group's businesses.
- Following a risk assessment, any anomalies detected must be subject to a local action plan. Assessments are reviewed at the Group level by the risk Committee to ensure the implementation of action plans.

(a) See description of Committees on pages 105 and 130 to 131.

Mitigation measures implemented in 2019

To mitigate environmental risks: climate roadmaps have been drawn up for all operations. They have been drafted based on the Group's Climate Objectives. An internal "Climate Champions" network has been created to ensure the correct reporting of environmental data and to identify anomalies. Specific training courses have also been designed and are currently being rolled out within the Group.

Measures implemented as part of the Climate Objectives are described in Chapter 1, page 38.

To mitigate occupational health and safety risks, and in particular the risk relating to the psychological health of employees, seven principles of prevention were drawn up in partnership with Air Liquide's European Works Council. These principles outline appropriate working and cooperation conditions to prevent psycho-social risks:

1. Oversight of change management and transformation
2. Continuous improvement
3. Respect for the personal life of all employees and the facilitation of well-being at work
4. Encouraging autonomy and accountability in the workplace
5. Encouraging healthy relationships in the workplace
8. Building a culture of listening and feedback
7. Encouraging inclusion and diversity

Moreover, the Group is developing the MyVoice program to measure employees' commitment (see page 69). A pilot phase was completed in 2019 and the program will be rolled out in 2020.

Measures relating to inclusion and diversity (gender, age, nationality and disability) are described in Chapter 5, page 299.

5.3.2. Suppliers' sites

Two procedures in the BLUEBOOK relate to sustainable procurement and suppliers' relations. The latter was updated in 2019.

Checks are carried out during tender offers. These checks relate in particular to the interrogation of public databases on subjects including sanctions and anti-corruption.

To reduce risks and prevent the grave abuse of Human Rights and fundamental rights, the health and safety of individuals, and the environment by suppliers, Air Liquide routinely sends the Supplier's Code of Conduct to all Group suppliers in order to promote and enforce practices relating to Human Rights, ethics, the environment and safety. This Code can be found in 13 languages on Air Liquide's website (https://www.airliquide.com/group/sustainable-procurement).

Moreover, a Sustainable Development clause is included in the Group's new contracts and framework agreements with its suppliers. This clause covers the option for Air Liquide to assess the supplier's sustainable development performance, as well as the obligation to implement adequate corrective measures. It also includes a compulsory reporting element for the suppliers in question, in particular on safety, energy and water consumption and atmospheric emissions, as well as Human Resources.

The Group also conducts on-site Sustainable Development audits for certain suppliers that are considered to be particularly at risk in this area, following unsatisfactory assessments. They are conducted according to recognized external benchmarks, often by a specialized external auditor. Following these audits, corrective action plans are drawn up. In certain cases, the business relationship may be suspended while the supplier brings its practices into compliance.

In addition to these measures, the Group also has Procurement procedures and provides training. Several training courses exist according to the degree of risk: e-learning or on-site training. Suppliers are provided with the same amount of information as Group employees.

Mitigation measures implemented in 2019

- Change in critical supplier classification which allows at-risk suppliers to be identified more quickly and efficiently.
- New criteria have been added to the supplier assessment process such as, for example, criteria relating to water consumption.

AIR LIQUIDE'S MEASURES RELATING TO ITS SUPPLIERS AWARDED

- EcoVadis Leadership awards in the following category: Best Value Chain Engagement. This award acknowledges excellence in engaging suppliers in Sustainable Procurement programs.
- Sustainable Purchasing Leadership Council (SPLC) in the following category: Leadership Award for Overall Sustainable Purchasing Program.
- Handeco Award (largest sustainable sourcing structure in France) in the Best Sustainable Sourcing Buyer category.

The above information is presented in the diagram below which highlights that all levels of suppliers are subject to risk mitigation measures:

SUPPLIERS	Code of conduct and training	CRS Clause	Evaluation by Ecovadis or internal questionnaire	Implementation of an action plan and on-site audit
Air Liquide suppliers	✔	NA	NA	NA
Suppliers with contract	✔	✔	NA	NA
Critical suppliers	✔	✔	✔	NA
Non-compliant suppliers	✔	✔	✔	✔

5.4. WHISTLEBLOWING MECHANISM AND COMPILATION OF REPORTS

The current whistleblowing tool, Ethicall, allows employees and external collaborators to report deviations from the Code of Conduct, including on subjects relating to Human Rights and fundamental freedoms, health and safety in the workplace as well as environmental protection.

5.5. MONITORING SYSTEM OF MEASURES IMPLEMENTED AND THE ASSESSMENT OF THEIR EFFICIENCY

The Vigilance Plan is drafted and monitored by the Sustainable Development, Procurement and Legal Departments. It is overseen by operational teams which have a dedicated procedure in place on this subject. The Board of Directors' Environment and Society Committee is regularly informed (at least once a year) of the monitoring and implementation of the Vigilance Plan.

5.5.1. Monitoring of supplier-related measures

Critical CSR suppliers are assessed using EcoVadis and Air Liquide questionnaires. These questionnaires have four categories: environment, social, ethics and value chain. The monitoring system for these critical CSR suppliers is presented in the table below:

CORRECTIVE MEASURES APPLIED ACCORDING TO A SUPPLIER'S FINAL SCORE

Assessment of critical CSR supplier (Based on EcoVadis + Air Liquide criteria) Score out of 100	Supplier score for each area of assessment	Overall supplier score		
		≥ 45	between 25 and 45	< 25
	If one criterion obtains a score of ≥ 20			
	If one criterion obtains a score of < 20			

Reassessment of a supplier every three or five years according to the duration and specific characteristics of the contract.
Reassessment of a supplier every three years with regular monitoring of a corrective action plan.
One month to draw up a corrective action plan and then implementation of this plan within the following 12 months. A review is carried out each quarter by the procurement steering Committee.

The overall review of assessments and action plans is validated by the Procurement Managers Committee.

5.5.2. Monitoring of measures relating to the whistleblowing mechanism

The Group whistleblowing monitoring system is supervised by the Ethics Officer. Each year, it communicates the type of reports received and implements dedicated action plans.

DETAIL OF ETHICALL REPORTS

Number of Ethicall reports in 2019	**298**
Including alerts relating to Human Resources	77%
Including alerts relating to suspected fraud or conflicts of interests	17%
Alerts requiring corrective action	27%

6. Monitoring of control systems

The Board of Directors exercises its control over Group management based on the various quarterly activity Reports it receives from Executive Management and the work of the Audit and Accounts Committee, according to the methods and principles described (Reports, debriefings, etc.) on pages 124 to 126.

Executive Management exercises its control over risk management, in particular through SICR meetings (Strategy – Investment – Corporate Policies Review) and the monthly Group Performance Meetings (described on page 41).

It also relies on existing Reports and:

- Executive Committee meetings, with, in particular, debriefings from the Safety and Industrial System Department regarding Group performance in terms of security and the progress of current actions;
- work carried out by the Finance Department, and the Group Control Department;
- recommendations made by various Group Committees set up to ensure enhanced management of certain commitments and more significant stakes (the role and members of these Committees are described below).

These control measures are enhanced by the involvement of operational departments and the Executive Committee in the implementation and follow-up of actions needed to improve and strengthen the quality of internal controls.

THE RISK COMMITTEE

The purpose of this Committee is to provide support and expertise to the hubs, World Business Units and World Business Lines which must implement and coordinate the risk management approach in their respective scopes of responsibility.

It brings together the Corporate functions: Group Control (notably covering Ethics and Digital Security), Legal, Finance, Communication, Safety and Industrial System, Human Resources and Group Operations Control Departments.

Chaired by the Chairman and CEO and attended by two Executive Vice Presidents and the Strategy Director, it meets twice a year to, on one hand, report on the progress of priority mitigation measures for major risk, prepare a risk management synthesis and define Group orientations and, on the other hand, examine certain strategic risks more closely.

THE FINANCE COMMITTEES

The purpose of the **Strategic Finance Committee** is to verify the effective application of the Group's financial policy, to approve financial management proposals and suggestions that have been submitted and to approve the rules governing the Group's financial policy, which are subjected to regular review.

It brings together the Executive Vice President – Chief Financial Officer, the Deputy Chief Financial Officer, the Group Finance and Treasury Director, and the Corporate Finance Director who meet under the authority of the Chairman & CEO.

The Committee meets at least three times a year and upon request, if necessary.

The purpose of the **Operational Finance Committee** is to make day-to-day decisions concerning the financial management of the Group, to propose structuring transactions to the Strategic Finance Committee and to ensure their implementation after approval.

It brings together the Executive Vice President – Chief Financial Officer, the Deputy Chief Financial Officer, the Group Finance and Treasury Director, and the Corporate Finance Director, assisted by a Committee Secretary.

The Committee meets every four to six weeks, and the minutes of these meetings are sent to the Chairman and CEO.

THE RESOURCES & INVESTMENT COMMITTEES (RIC)

The purpose of these Committees is to assess and approve requests for investments that have been submitted, as well as medium and long-term contractual commitments and Human Resources requirements that may arise therefrom.

They meet regularly (usually once a month) for each hub and each World Business Unit.

Each Committee meeting is chaired by a member of the Executive Committee in charge of the hub or of the World Business Unit involved and brings together managers of the region and business line concerned by the investment, as well as representatives of the Group Finance Department (who have a veto right), Engineering & Construction, and the Capital Implementation Group (CIG).

The Committee's decisions are reviewed by Executive Management.

THE ETHICS COMMITTEE

The purpose of this Committee is to supervise the Group's ethics program (monitoring of actions undertaken to prevent deviations, proposing short- and medium-term orientations) and to recommend sanctions in case of significant deviation.

It brings together the Legal, Group Control, and Human Resources Departments as well as a representative of operational functions; it meets at least once per year and more often when required.

THE DIGITAL SECURITY COMMITTEE

This Committee is responsible for validating the strategic directions for digital security and for ensuring the operational progress of certain Group projects (industrial IT, digital innovation, etc.).

It brings together the IT, Digital, Industrial Safety, and Digital Security managers, as well as a representative of Operations and, when required, other Corporate Departments. It meets each month under the chairmanship of a member of the Executive Committee.

OTHER COVERAGE SYSTEMS

The Group has adequate insurance coverage, underwritten by first-rate insurers, for civil liability, property damage and business interruption.

1. Property damage and business interruption

Group property and business interruption are covered by property and casualty insurance policies underwritten in each country in which the Group operates. Almost all of these policies are integrated into an international program.

These policies, which are generally of the "All Risks" form, cover fire, lightning, water damage, explosions, vandalism, impact, machinery breakdown, theft and, depending on the country and in limited amounts, natural disasters.

Business interruption is insured for most production sites under these same policies. The coverage period for business interruption is 12 to 18 months. Deductible amounts are correlated to the size of the sites. Insurers conduct regular visits at the main industrial sites for risk prevention purposes.

2. Civil liability

In terms of civil liability, the Group has global coverage which covers all of its businesses under an umbrella policy, underwritten in France, which covers both the Company and its subsidiaries beyond any local coverage provided for the subsidiaries.

This policy covers the liability of Group companies for any damage they might cause to a third party in the course of doing business (operational risk) or arising from their products (product risk).

The coverage amount underwritten exceeds 500 million euros. Coverage is built on several overlapping insurance lines and each line has been underwritten for a given amount with several insurers sharing the risk. Beyond the first line, the upper lines pick up the excess risk from the lower lines.

The policy underwritten by the Company in France serves as an umbrella for subsidiaries. Under this umbrella, each foreign subsidiary has its own policy covering damages to third parties incurred through its businesses or products. The amount insured for each subsidiary in its policy depends on the amount of its revenue. The coverage under the Group's umbrella policy is supplemental to any local amounts.

3. Captive reinsurance

A portion of property damage and business interruption risk is kept by the Group via a captive reinsurance company located in Luxembourg, which also participates in the coverage of the Group's civil liabilities as well as in the coverage of goods transported.

This company covers claims of up to a maximum of 32 million euros per year with sub-limits per claim adapted to the nature of the claim. Beyond these amounts, risks are transferred to third-party insurers. Their management is entrusted to a captive manager approved by the Luxembourg Insurance Commission.

3

CORPORATE GOVERNANCE

This chapter includes, in particular, the elements of the Report on Corporate Governance drawn up on the basis of Ordinance No. 2017-1162 of July 12, 2017 by the Board of Directors at its meeting on February 10, 2020, on the recommendation of the Appointment and Governance Committee and the Remuneration Committee.

Those parts of the Report relating to the composition, preparation and organization of the work of the Board of Directors have been prepared on the basis of contributions from several of the Company's corporate functional divisions, including in particular the Legal, Financial and Human Resources Departments.

MANAGEMENT AND CONTROL

1. Board of Directors

DIRECTORS CURRENTLY IN OFFICE (AS OF DECEMBER 31, 2019)

Members of the Board	Changes in 2019 (a)	Nationality	Age (b)	Gender	Year of first appointment	Years of service on the Board (b)	End of current term
Benoît POTIER Chairman and Chief Executive Officer		French	62	M	2000	15	2022
Jean-Paul AGON Lead Director		French	63	M	2010	9	2022
Geneviève BERGER	May 7, 2019 (Renewal: BoD, ESC)	French	64	F	2015	4	2023
Philippe DUBRULLE Director representing the employees		French	47	M	2014	5	2022
Pierre DUFOUR		Canadian	64	M	2012	7	2020 (e)
Brian GILVARY		British	57	M	2016	3	2020 (f)
Siân HERBERT-JONES	May 7, 2019 (Renewal: BoD, AAC)	British	59	F	2011	8	2023
Xavier HUILLARD		French	65	M	2017	2	2021
Karen KATEN		American	70	F	2008	11	2020 (g)
Sin Leng LOW		Singaporean	67	F	2014	5	2022
Thierry PEUGEOT		French	62	M	2005	14	2021
Annette WINKLER		German	60	F	2014	5	2022

(a) *BoD: Board of Directors; LD: Lead Director; AAC: Audit and Account Committee; NGC: Nomination and Governance Committee; RC: Remuneration Committee; ESC: Environment and Society Committee.*

(b) *Number of full years of service as of December 31, 2019 The term of office of Benoît Potier as President of the Management Board (2001-2006) is not taken into account.*

(c) *Pursuant to the decision of the Board of Directors of February 10, 2020; for information regarding independence criteria, please refer to this Universal Registration Document – page 112.*

(d) *In accordance with the recommendation of the AFEP/MEDEF Code.*

SOCIAL AND ECONOMIC COMMITTEE DELEGATES

Pierre GAC	Social and Economic delegate
Patrice LEVEE	Social and Economic delegate

Independent Director [c]	Audit and Accounts Committee (Board Committees)	Nomination and Governance Committee (Board Committees)	Remuneration Committee (Board Committees)	Environment and Society Committee (Board Committees)	Number of directorships in listed companies [d]	Experience and expertise
No					2	Chairman and Chief Executive Officer
Yes		President	Member		1	Executive Officer of an international corporation with an understanding of consumer products markets
Yes				Member	1	Expertise in hospital, health and research
No				Member	0	Knowledge of the Air Liquide Group and its activities as an employee
No				President	1	Former Executive Officer of the Air Liquide Group, deep knowledge of the engineering and gas businesses and intensive international experience
Yes	Member				1	Knowledge of the energy sector, financial expertise, as well as the global vision of a large international group
Yes	President				2	Expertise in finance and audit, knowledge of the Service sector
Yes			President		2	Experience as a Chairman and Chief Executive Officer of a large international group and knowledge of construction business
Yes		Member			0	Managerial experience within a large pharmaceutical group and knowledge of the health sector particularly in North America and the rest of the world
Yes	Member				0	Management of industrial activities and knowledge of the Asian markets
No	Member				1	Management experience within a large company in the automotive sector
Yes		Member	Member		1	Former Senior Management of a division of a large German industrial group with an international reach in the automotive sector

(e) Renewal of term not requested.
(f) Renewal of term proposed to the General Meeting of May 5, 2020.
(g) Non-renewal of term in compliance with the internal regulations of the Board of Directors.

NEW CANDIDATES PROPOSED TO THE GENERAL MEETING OF MAY 5, 2020

Anette BRONDER
Kim Ann MINK

2. Executive Management and Executive Committee as of December 31, 2019

Benoît Potier Chairman and Chief Executive Officer [(a)] Born in 1957 – French	**François Abrial** Group Vice President in charge of the Asia-Pacific hub Born in 1962 – French
Michael J. Graff Executive Vice President Supervises the Americas and Asia-Pacific hubs, together with the Electronics World Business Line Chairman of the Board of Airgas Born in 1955 – American	**Pascal Vinet** Group Vice President Chief Executive Officer of Airgas Born in 1962 – French
François Jackow Executive Vice President Supervises the Europe Industries, Europe Healthcare, and Africa / Middle-East & India hubs, together with the Healthcare World Business Line and the Customers Global Function Born in 1969 – French	**Armelle Levieux** Group Vice President In charge of Human Resources Born in 1973 – French
Fabienne Lecorvaisier Executive Vice President – Chief Financial Officer Supervises the Finance & Operations Control Corporate Functions and the General Secretariat Born in 1962 – French	**Susan Ellerbusch** In charge of the Large Industries and Electronics activities in the United States Born in 1967 – American
Guy Salzgeber Executive Vice President Supervises the Industrial Merchant and Hydrogen Energy World Business Lines, together with the following Global and Corporate Functions: Innovation, Intellectual Property, Digital & IT, Safety, Procurement, Public & International Affairs and Sustainable Development and the Global Markets & Technologies activity Born in 1958 – French	**Matthieu Giard** In charge of the Industrial Merchant World Business Line, of the Procurement Global Function and the Performance Improvement Program Born in 1974 – French
Jean-Marc de Royere Senior Vice President In charge of Inclusive Business Chairman of the Air Liquide Foundation Born in 1965 – French	**Emilie Mouren-Renouard** In charge of Innovation, Digital & IT, Intellectual Property, and the Global Markets & Technologies activity Born in 1979 – French
François Venet Senior Vice President in charge of Strategy Supervises Large Industries business line and the Engineering & Construction activity Born in 1962 – French	**Diana Schillag** In charge of the Healthcare World Business Line and the Europe Healthcare hub Born in 1974 – German

François Darchis ceased to be Senior Vice President in charge of Innovation and Development, with effect from August 31, 2019, to exercise his right to retirement.

(a) Within the meaning of the French Commercial Code.

COMPOSITION, PREPARATION AND ORGANIZATION OF THE WORK OF THE BOARD OF DIRECTORS

As at December 31, 2019, the Board of Directors comprises twelve members: eleven members appointed by the Annual General Meeting, including six foreign members (German, American, British, Canadian and Singaporean) and five women (representing 45%), and one Director representing the employees appointed by the France Group Committee. The term of office is for four years. The Board aims to stagger the renewals of the terms of office. In May 2020, at the close of the General Meeting, following the expiry of the terms of office of two Directors and subject to the approval of the proposed resolutions, the Board of Directors will comprise twelve members: eleven members appointed by the General Meeting, including six foreign nationals and six women (i.e. 55%) and one Director representing employees.

1. Code of Corporate Governance

The Board of Directors confirmed that, in keeping with the Group's previous practices, the AFEP/MEDEF Code of Corporate Governance for listed companies is the Code to which the Company voluntarily refers. This Code in its updated version, is available on the website https://afep.com/wp-content/uploads/2020/01/Afep_Medef-Code-revision-2020-EN-.pdf.

The AMF Report on Corporate Governance, the remuneration of Executive Officers, internal audit and risk management, together with the Report of the Haut Comité de Gouvernement d'Entreprise (French High Committee on Corporate Governance) of December 2019 have been reviewed.

Pursuant to article L. 225-37-4, 8th of the French Commercial Code, those provisions of the aforementioned Code that are currently not applied and the reasons for this are stated in this Report. A summary is presented in table format on page 131.

The principles governing the professional ethics of Directors, the diversity policy which applies to the Board of Directors, together with the composition, role and rules of operation of the Board and its Committees are defined in the internal regulations, the up-to-date version of which, as approved by the Board of Directors on September 25, 2018 and are published in their entirety on the Company's website.

2. Composition of the Board of Directors

The internal regulations stipulate that:

"The members are chosen for their skills, their integrity, their independence of mind and their determination to take into account the interests of all shareholders."

"**The diversity policy concerning the Board of Directors:** the composition of the Board of Directors, with regard to its members appointed by the Annual Shareholders Meeting upon the proposal of the Board of Directors, shall reflect diversity and complementarity of experience, in particular international experience, nationalities, age, gender, cultures and expertise, including a significant number of executive managers or former executive managers; the Board of Directors shall look for persons possessing skills in the following areas: marketing, services, industry, finance, health, research and technology."

The Board of Directors, which has twelve members, reflects a diversity of profiles, experience and complementarity of skills, which is appropriate for the issues faced by Air Liquide. The Board of Directors considers that compliance with the diversity policy criteria listed above contributes to the quality of its debates.

The diversity policy which applies to the members of the Board is accompanied by guidelines, which are set forth in the internal regulations which, although not written in stone, also guide the composition of the Board, in particular in terms of the number of Directors appointed by the General Meeting (in principle between 10 and 12), the balance between (former) executive managers and external members, the duration of the terms of office (four years, principle of staggering renewals, the proportion of members appointed by the General Meeting in office for more than 12 years cannot exceed one-third), age or the proportion of members who qualify as independent, thus aiming to comply with the recommended principles in terms of good Corporate Governance practices.

The Board of Directors relies upon the work of the Appointments and Governance Committee in order to propose to the General Meeting, any new appointment or renewal of the offices of Director. The Appointments and Governance Committee carries out its search for new members on the basis of its evaluation of the needs and developments expressed by the Board of Directors and in consideration of the principles and the diversity policy defined above.

In this regard, in 2019, the Appointments and Governance Committee continued its search for candidates. In liaison with an external consultant, the Committee identified several profiles, directing its search, in accordance with the diversity policy, towards female candidates, profiles with special skills in the Digital and Innovation sectors and North-American profiles. This work, which has been reported to the Board, forms part of the policy to continue to improve the diversity of profiles and the complementarity of experience, expertise and cultures on the Board of Directors.

In this context, on the recommendation of the Appointment and Governance Committee, the Board of Directors decided to propose to the General Meeting of May 5, 2020 the appointment of two new Directors, namely Anette Bronder and Kim Ann Mink (the individual information sheets for the candidates are contained at page 144 of the Universal Registration Document, and the draft resolutions proposing their appointment as Directors are contained at page 334).

The non-discrimination and diversity policy in leaderships and particularly information relating to the manner in which the Company tries to obtain a balanced representation of men and women on the Executive Committee, and to the results concerning the gender mix with regard to the 10% of positions which carry the most responsibility, is contained in this Universal Registration Document, at Chapter 5, pages 299 to 301.

In accordance with the AFEP/MEDEF Code, the internal regulations provide for a limit, for non-executive Directors, of four other terms of office in French or foreign listed companies and, for the Executive Directors, of two other terms of office. Moreover, an obligation to provide information on the terms of office held in other companies, including their participation on the Board Committees of such companies, is provided for non-executive Directors. In this connection, the Board was informed of the Appointment of Annette Winkler as an independent Director of Renault. Moreover, an obligation to ask for the opinion of the Board of Directors (which makes a decision on the recommendation of the Appointments and Governance Committee) before accepting a new corporate office in a listed company is also provided for the Company's Executive Officers.

3. Independence of Board members

Based on the full definition of independence set out in the AFEP/MEDEF Code of Corporate Governance, the internal regulations define the criteria applied within the Company to assess the **independence** of Board members.

"A member of the Board of Directors is independent when he/she has no relationship of any kind with the Company, its Group or its management which may interfere with his/her freedom to exercise his/her judgement.

In this spirit, the criteria which may provide guidance to the Board in order to classify a member as independent will be as follows:

- he/she is not and has never been an employee or member of the executive management of the Company;
- he/she does not hold office as Chairman, Chief Executive Officer, Chairman or member of the Management Board of a company in which the Chairman of the Board of Directors, the Chief Executive Officer or a Senior Executive Vice-President of Air Liquide is a Director or member of the Supervisory Board;
- he/she must not have any business relations with the Air Liquide Group which represent a significant part of the business activities (i) of the Company of which the Director is a member of the executive management or (ii) of Air Liquide;
- he/she does not have any close family links with the Chief Executive Officer or a Senior Executive Vice-President;
- he/she must not have been an Auditor of the Company during the previous five years;
- he/she must not have been a member of the Board of Directors (or Supervisory Board) of the Company for more than 12 years."

An assessment of the independence of its members appointed by the General Meeting is included on the agenda for a Board meeting once a year. In reliance on the work of the Appointments and Governance Committee, the Board of Directors reviews each of the criteria contained in the Board's internal regulations and in the AFEP/MEDEF Code for assessing the independence of each Director.

For the criteria relating to business relations, the Board relies upon a chart summarizing the purchases and sales implemented during the previous fiscal year between companies of the Air Liquide Group and companies of groups within which an Air Liquide Director appointed by the General Meeting (or proposed Director) also exercises a term of office or executive role. Such figures are weighed against the total purchases and sales of each group to measure their significance. In addition to the aforementioned **quantitative** criteria, the Board of Directors carries out a **qualitative** review of the situation of each Director holding a term of office or executive role at the group in question.

For the 2019 fiscal year, this chart shows that the amounts of sales by the Air Liquide Group to any of the relevant groups or of its purchases from any of such groups do not exceed 0.4% of the total sales or purchases by the Air Liquide Group or by any of the relevant groups.

From a qualitative point of view, it was also noted that neither Air Liquide nor the relevant groups have a relationship of economic dependence or exclusivity, as they are large international groups with highly diversified activities. It was asserted that, in light of the highly decentralized organization of the Air Liquide Group, its size, the diversity of its businesses, which are, for the most part, extremely local, and its broad geographical presence, the relevant Directors do not become involved in business relations which are conducted, within the Air Liquide Group, entirely by the managers of the relevant hubs, Clusters (groups of countries/entities) and countries.

After a review of each individual situation, the Board concluded that none of the Directors has to exercise a direct or indirect decision-making power in the contractual negotiations leading to the business affairs discussed. If this were not the case, he/she would have to declare a conflict of interest to the Board. This matter would then be addressed in accordance with the ethical rules provided for in the internal regulations.

The review by the Board of Directors of the individual situation of each Director in light of the criteria required by the AFEP/MEDEF Code for independent status is shown in the following table:

AFEP/MEDEF Criteria	Benoît POTIER (Chairman & CEO)	Jean-Paul AGON	Geneviève BERGER	Pierre DUFOUR	Brian GILVARY	Siân HERBERT-JONES	Xavier HUILLARD	Karen KATEN	Sin Leng LOW	Thierry PEUGEOT	Annette WINKLER	Philippe DUBRULLE (Director representing the employees)
Criterion 1 Employee Executive Officer within the previous 5 years	✖	✔	✔	✖	✔	✔	✔	✔	✔	✔	✔	N/A
Criterion 2 Cross-directorships	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	N/A
Criterion 3 Significant business relations	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	N/A
Criterion 4 Family ties	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	N/A
Criterion 5 Not to have been an auditor of the Company within the previous 5 years	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	N/A
Criterion 6 Term of office in excess of 12 years	✖	✔	✔	✔	✔	✔	✔	✔	✔	✖	✔	N/A
Criterion 7 Status of non-executive company officer	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Criterion 8 Major shareholder status	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

The Board also reviewed the situation of each Director in light of each of the criteria in the internal regulations as set forth above (page 112 of this Universal Registration Document). The criteria used are very largely inspired by the AFEP/MEDEF Code of Corporate Governance.

The Board continues to consider, however, that the Company's former employees or officers cannot be deemed to be independent even if they ceased to hold office more than five years ago.

Further to the recommendation made by the AMF, a table showing the list of Directors in 2019 who are considered to be independent in light of the criteria provided for in the internal regulations, as compared with the AFEP/MEDEF Code, is set out below.

	As at 12/31/2019 Independence of the Directors elected by the General Meeting in light of the criteria in the	
	Internal regulations	**AFEP/MEDEF Code**
Benoît Potier Chairman and Chief Executive Officer	No	No
Jean-Paul Agon Lead Director	Yes	Yes
Geneviève Berger	Yes	Yes
Pierre Dufour	No (a)	No (a)
Brian Gilvary	Yes	Yes
Siân Herbert-Jones	Yes	Yes
Xavier Huillard	Yes	Yes
Karen Katen	Yes	Yes
Sin Leng Low	Yes	Yes
Thierry Peugeot	No (b)	No (b)
Annette Winkler	Yes	Yes
Philippe Dubrulle Director representing the employees	N/A	N/A

(a) Former employee/Member of the executive management of the Company.
(b) Length of term of office exceeding 12 years.

The Board thus found that, at the end of the 2019 fiscal year, the following members elected by the General Meeting were independent: Jean-Paul Agon, Geneviève Berger, Brian Gilvary, Siân Herbert-Jones, Xavier Huillard, Karen Katen, Sin Leng Low and Annette Winkler (namely 73% are independent Directors). Pursuant to the provisions of the AFEP/MEDEF Code, Philippe Dubrulle, Director representing the employees was not taken into account when calculating this ratio.

4. Professional ethics of Directors – Rights and obligations of Directors

The internal regulations summarize the main obligations imposed on Directors. The Directors represent all the shareholders and shall act in all circumstances in the Company's best interests.

Each Director undertakes to meet the obligations imposed upon him/her by the articles of association and the various legal, regulatory or internal Company provisions and, more specifically, the internal rules relating to the prevention of market abuse or the obligations to report transactions in the Company's shares. Each Director is bound by an obligation of secrecy. The members of the Audit Committee are, in particular, bound by an obligation of confidentiality concerning the information relating to the services performed by the Statutory Auditors, in accordance with the legal conditions. Each Director shall endeavour to take part in all meetings of the Board and the Committees of which he/she is a member, and attend the General Meetings.

The information required by the AFEP/MEDEF Code concerning the level of attendance of the members of the Board of Directors is shown below:

	Board of Directors	Audit and Accounts Committee	Appointments and Governance Committee	Remuneration Committee	Environment and Society Committee
Benoît Potier Chairman and Chief Executive Officer	100%	-	-	-	-
Jean-Paul Agon Lead Director	83.33%	-	100%	100%	-
Geneviève Berger	100%	-	-	-	100%
Pierre Dufour	83.33%	-	-	-	100%
Brian Gilvary	100%	100%	-	-	-
Siân Herbert-Jones	100%	100%	-	-	-
Xavier Huillard	83.33%	-	-	100%	-
Karen Katen	83.33%	-	100%	-	-
Sin Leng Low	83.33%	75%	-	-	-
Thierry Peugeot	100%	100%	-	-	-
Annette Winkler	100%	-	100%	100%	-
Philippe Dubrulle Director representing the employees	100%	-	-	-	100%
TOTAL	**93.06%**	**93.75%**	**100%**	**100%**	**100%**

Each Director shall keep him/herself informed and devote the time and attention required to perform his/her duties. Under the Company's articles of association, each Director must hold at least 500 registered shares in the Company. The Director shall inform the Company of the number of shares which he/she holds.

These provisions do not apply to the Director representing the employees.

Under the internal regulations:

"the members of the Board of Directors must inform the Board of any situation of conflict of interest, even if it is only potential, with the Company and must refrain from taking part in the discussions and in the vote on the corresponding decision."

This obligation is completed by a formal annual declaration provided to the Company by each Director, attesting to the absence of a potential conflict of interest involving him/her.

DECLARATIONS

Pursuant to the declarations made to the Company by each corporate officer, the Company confirms that the corporate officers have no family ties with any other corporate officer and have not been convicted of fraud at any point during the last five years.

No official charge and/or public sanction has been pronounced against them by the statutory or regulatory authorities (including any professional bodies) and they have not been barred by a court from serving as a member of a Supervisory Board, Board of Directors or other management body of an issuer or from taking part in the management or conduct of an issuer's business affairs at any point during the last five years. They have no conflict of interest (even if it is only potential) with regard to L'Air Liquide S.A. No arrangement or agreement has been entered into with the principal shareholders, customers, suppliers or other persons, pursuant to which L'Air Liquide S.A.'s corporate officers were selected as such. Such persons have not agreed any restriction on the transfer, within a certain period of time, of their holding in the capital of L'Air Liquide S.A. apart from the rules relating to the prevention of market abuse, the statutory obligation for the members of the Board of Directors who are elected by the General Meeting to hold at least 500 registered shares in the Company throughout the period of their term of office and the shareholding obligations which apply to the Executive Officers. The corporate officers have not been linked to any bankruptcy, receivership or liquidation at any point during the last five years.

Finally, the Appointments and Governance Committee, under the management of the Lead Director, currently has the task of preventing potential situations of conflict of interest on the Board.

As every year, an internal memo on the prevention of market abuse was sent to the Directors (at the beginning of 2020), which outlines in greater detail the applicable legal and regulatory obligations by which they are bound pursuant to the European and national provisions.

All the provisions governing Directors' rights and obligations are included in the manual for members of the Board of Directors which is updated every year.

5. Combination of the roles of Chairman and Chief Executive Officer

The Board of Directors decided to maintain the combination of the roles of Chairman and Chief Executive Officer, both roles being held by Benoît Potier, at the close of the General Meeting on May 16, 2018 which decided upon the renewal of his term of office as Director. Within the scope of the evaluation questionnaire, which was prepared at the end of 2019, concerning the way in which the Board operates, the Directors confirmed their agreement to this General Management organization.

This mode of Executive Management of the Company allows for regular, personalized exchanges between the shareholders and the General Management through a single contact person, who has an in-depth knowledge of the Group and its businesses and makes it possible to ensure that the definition of the Group's strategy takes due account of shareholders' expectations and interests over the long term. Maintaining the combination of roles therefore promotes a close, trusting relationship between the Executive Officer and the shareholders. This organization is in keeping with the very specific shareholding structure of Air Liquide which has always consisted, alongside institutional investors from all continents, of a significant number of individual shareholders (who hold 32% of the capital at the end of 2019), accompanying the Group over the long term.

In this regard, the Company regularly organizes, in particular through its Shareholder Service, meetings between the Chairman and Chief Executive Officer and the individual shareholders. Accordingly, the Chairman and Chief Executive Officer chairs the Committee for communication with individual shareholders which, in 2019, met three times at the Company's head office. Each year, after the General Meeting, two meetings are organized in two cities in France: accordingly, in 2019, they were held in Biarritz (May 14, 2019) and Lyon (May 28, 2019). These encounters are followed by a question and answer session (as at the Annual General Meeting) during which the Chairman and Chief Executive Officer has discussions with the shareholders.

The Chairman and Chief Executive Officer also regularly meets the institutional shareholders, through the intermediary of the Shareholder Relations Service, either individually or at group meetings which are organized several times a year. These are essentially question and answer sessions. Accordingly, in 2019, Benoît Potier met several dozens of institutional investors at meetings in Paris, London and New York. He also had discussions with financial analysts in London during a question and answer session.

A procedure is in place which enables the Board of Directors to be informed of contacts made between the Chairman and Chief Executive Officer and the principal shareholders.

The combination of the roles of Chairman and Chief Executive Office complies with the balanced governance rules, ensuring the continued success of the Group and the loyalty of its shareholders. The principal applicable governance rules are described below:

- the presence of an independent Lead Director, Jean-Paul Agon, who has specific powers, including the power to ask the Chairman to convene the Board of Directors on a given agenda, the Chairman being bound by that request. The Lead Director may be asked by the other Directors for individual meetings, whenever they consider necessary and the Directors are regularly questioned on their level of dialogue with the Lead Director. In order to further enrich the dialogue with the principal shareholders, the latter have the right, at their request, to meet with the Lead Director (two meetings thus took place in 2019);

- a composition of the Board which ensures a preponderance of independent Directors and a balance of skills and nationalities. The articles of association grant a power to one-third of the Directors to convene a Board meeting and determine its agenda, if a Board meeting has not been convened for over two months. In addition, the Directors have the possibility of setting up working groups within the Board in the event of a significant acquisition. Every year, the Board holds an **executive session,** chaired by the Lead Director, without the presence of the Executive Officers and former Executive Officers or of any person internal to the Group;
- the existence of specialist Committees on appointments and governance, remuneration, audit and environment and society, each Director now being a member of at least one Committee. A monitoring task was entrusted to the Appointments and Governance Committee which is responsible for supervising the proper working of the governance bodies. In this regard, pursuant to the internal regulations, the Committee is the organ of dialogue between the non-executive Directors and the Chairman and Chief Executive Officer, in particular in the event of conflicts within the Board; it monitors the changes in the Corporate Governance practices and the process for evaluating the Board.

Since 2014, as part of the annual evaluation questionnaires, the Directors are systematically questioned on the mode of exercise of the General Management (combination of roles) and on the actual participation of the members of the Board.

Each year, the Appointments and Governance Committee considers the procedure for the replacement of the General Management in the event of an emergency situation.

In connection with the interactions between the Board of Directors, the Chairman and Chief Executive Officer and the management teams, the relations between the Board of Directors, the Chairman and Chief Executive Officer and the Executive Committee are linked as follows:

- a balanced organization:
  - limits on the powers of the Chairman and Chief Executive Officer, the Board's agreement being required for significant transactions,
  - regular interactions between the non-executive Directors and the members of the Executive Committee at the time of specific presentations made to the Board, in particular during the full-day session on strategy or during Committee meetings. The Directors may ask to meet members of the Executive Committee at any time,
  - regular information being provided to the Directors, including in-between Board meetings;
- an annual review of the assessment of performance and remuneration of the Executive Officers by the Committee which is always carried out without the presence of the relevant Executive Officer;
- the Executive Committee, which now comprises 14 members, ensures the coordination between the various Group programs and activities. The Executive Committee focuses principally on the review of Group's strategy, operational management in terms of objectives, state of progress and action plans, the conduct of projects for change, human resources strategy and development. The four Executive Vice-Presidents form part of the Executive Committee.

6. Lead Director

Pursuant to the terms of article 13 of the articles of association, the Board of Directors is obliged to appoint a Lead Director, as long as the roles of Chairman and Chief Executive Officer are combined.

Within this framework, on May 3, 2017 and on the recommendation of the Appointments and Governance Committee, the Board of Directors appointed Jean-Paul Agon, an independent Director, as Lead Director. Jean-Paul Agon's term of office as Director, having expired, was renewed by the General Meeting on May 16, 2018 for a period of four years. At the close of that General Meeting, the Board of Directors decided to renew Jean-Paul Agon's position as Lead Director for the period of his term of office on the Appointments and Governance Committee.

The meeting of the Board of Directors held on May 16, 2018, at the close of the General Meeting, also decided to renew Jean-Paul Agon's position as Chairman of the Appointments and Governance Committee for the period of his term of office as Director.

The internal regulations of the Board of Directors:

A) define the responsibilities and powers of the Lead Director as follows:

"Roles and responsibilities and powers of the Lead Director

The Lead Director has the following roles and responsibilities and powers:

1. He conducts, upon delegation from the Chairman of the Appointments and Governance Committee when he is not the Committee Chairman himself, the work of the Appointments and Governance Committee concerning the governance tasks entrusted to the Committee, notably for the examination of the choice of general management organization, the review of changes in and application of the rules of Corporate Governance, the preparation of the evaluation of the functioning of the Board, the review of ethical issues, the attention paid to the proper functioning of the governance bodies, in particular in the transmission of the information requested by independent Directors; on all these points, the Lead Director can formulate all proposals and make any suggestions he considers necessary.

   More specifically, the Lead Director coordinates, within the Committee, the implementation of the procedures aimed at identifying and analyzing potential situations of conflicts of interest on the Board; he draws the attention of the Chairman and Chief Executive Officer to potential situations of conflicts of interest identified in this manner.

   He reports on these matters to the Board of Directors.
2. The Lead Director, after receiving the opinion of the Appointments and Governance Committee, may ask the Chairman of the Board of Directors to convene a meeting of the Board of Directors on any specified agenda, at any time and as often as required in the interests of the Company.

   Under the conditions provided for in Article IV of these regulations, the Lead Director may also receive a delegation of authority to convene a meeting of the Board of Directors at the request of at least one-third of its members.
3. The Lead Director, after receiving the opinion of the Appointments and Governance Committee, may propose the inclusion of additional points on the agenda for any Board meeting to the Chairman of the Board of Directors.
4. Once a year, the Lead Director calls a meeting of the members of the Board of Directors for a session to be held without the presence of the Group's Executive Directors (or former Executive Directors) or internal Directors and employee representatives. He organizes and leads the discussions of this annual session which he chairs.
5. The Lead Director reviews the requests made by shareholders with regard to governance and makes sure that they are answered.
6. The Lead Director reports on his activities to the Board of Directors every year.
7. The Lead Director makes sure that a report is made to the shareholders on the governance issues falling within the scope of his responsibilities. A report on his activities is made in the Reference Document."

B) provide that, within the scope of the annual evaluation of the Board, the Directors will be systematically asked to indicate whether it appears to them to be necessary for the Company's General Management organization to be reexamined;

C) also provide, without prejudice to the provisions on convening the Board of Directors, which are set forth in the internal regulations of the Board of Directors, that the Lead Director, after receiving the opinion of the Appointments and Governance Committee, may ask the Chairman to convene the Board of Directors on a given agenda; this right may be exercised at any time and as often as the Company's interests may require. The Chairman is bound by such a request.

In addition, certain governance measures promote exchanges between the Lead Director and the Directors and dialogue between the Lead Director and the shareholders (see page 115).

See pages 128 and 129 for the 2019 report on the exercise of the Lead Director's term of office.

7. Role and tasks of the Board of Directors

The Board of Directors determines the major orientations of the Company's activities. Accordingly, it **examines and approves the Group's major strategic orientations.** It ensures the implementation of these orientations by the General Management. In order to reflect the amendments made to article L. 225-35 of the French Commercial Code by the law on business growth and transformation (PACTE), it is proposed that the Combined General Meeting of May 5, 2020 amend article 15 of the Company's articles of association (Powers of the Board of Directors), in order to provide that the Board "determines the orientations of the Company's activities and ensures their implementation, in line with its corporate interest, by taking into account the social and environmental stakes of its activity" (see the draft resolutions on pages 341 and 342 of this Universal Registration Document).

The Board of Directors regularly reviews, in connection with the strategy which it has defined, opportunities and the financial, legal, operational, social and environmental risks, together with the measures taken accordingly. It ensures that a system has been implemented for the prevention and detection of corruption and influence peddling.

Subject to the powers attributed to the General Meetings and within the limit of the corporate purpose, the Board deals with any issue concerning the smooth running of the Company and manages corporate business pursuant to its decisions. The internal regulations stipulate that the **specific powers** attributed by law to the Board of Directors include, in particular, the choice of Executive Officers, the determination of the terms and conditions governing the remuneration and performance of their duties, the appointment of the Lead Director, the convening of the General Meeting, the determination of the agenda and proposed resolutions, the preparation of the financial statements and Annual Management Report, as well as the determination of its internal rules (formation of Committees, distribution of Directors' remuneration, etc.). The Board also exercises the **powers delegated to it by the General Meeting**, particularly with regard to the granting of stock options or award of performance shares, issues of marketable securities, share buyback or employee savings programs or simple bond issues. Concerning the bond issues, it is proposed that the General Meeting of May 5, 2020 amend the Company's articles of association (article 15 – Powers of the Board of Directors and article 19 – Powers of the Shareholders' Meetings) so that the Board of Directors alone has power to decide upon or authorize the issue of bonds, as allowed for by the first section of article L. 228-40 of the French Commercial Code, thus reducing the administrative procedure for the issues (see page 344 of this Universal Registration Document).

8. Limits on powers

The internal regulations specify the rules limiting the powers of the Chairman and Chief Executive Officer, by defining the thresholds above which certain key decisions require prior authorization by the Board of Directors, in accordance with article 13 of the articles of association:

- sureties, endorsements and guarantees for an individual amount in excess of 100 million euros or for an annual aggregate amount in excess of 500 million euros;
- external sales or contributions (to non-controlled companies) of equity investments or lines of business, certain mergers, demergers or partial business transfers, completed for an individual amount in excess of 250 million euros or an annual aggregate amount, for each of these categories of transactions, in excess of 400 million euros; external sales or contributions of real estate assets for an individual amount in excess of 80 million euros or an annual aggregate amount in excess of 150 million euros;
- creation of pledges or security for an individual amount in excess of 80 million euros or an annual aggregate amount in excess of 150 million euros;
- commitments to invest, acquisitions which will be posted under "fixed assets" on the balance sheet, or subscriptions to share capital increases, for an individual amount in excess of 250 million euros or an annual aggregate amount in excess of 400 million euros; the Board of Directors is informed, if possible ex ante and in any event ex post, of transactions for an individual amount in excess of the threshold of 250 million euros, (i) involving purchases of items that cannot be posted under "fixed assets" on the balance sheet, such as electricity or natural gas purchases, and (ii) involving sales to third parties of goods or engineering or construction services;
- financing operations concerning the Group for an amount which is likely to substantially alter the Group's financial structure;
- operations which are likely to substantially alter the Group's strategy.

Furthermore, the Board shall be given prior information in the event of a fundamental modification of the information system, leading to development costs in excess of 250 million euros.

9. Functioning of the Board of Directors

Informing the Directors: the internal regulations define the methods for informing the Directors. They specify, in particular, that prior to Board meetings, a file of meeting documentation is sent out to Board members covering the principal items on the agenda, since 2013, the file is also accessible in electronic format. The Chairman and Chief Executive Officer, assisted, if need be, by members of the management teams, presents to the Board of Directors a quarterly report on the Company's management, the draft annual and interim financial statements and the various issues requiring the Board's authorization or opinion. For major substantive issues, a very detailed summary is prepared. Any member of the Board of Directors may request any additional information he/she considers necessary. He/she makes such a request to the Chairman of the Board.

Conduct of meetings: the internal regulations define the frequency of meetings and the rules for convening meetings and for participation by videoconference or telecommunications. They provide, in particular, for the Lead Director's right to ask for a meeting of the Board of Directors to be convened with any specified agenda and also for the conditions of the executive session attended by the members of the Board of Directors without the presence of the Group's Executive Directors (or former Executive Directors) or internal Directors and employee representatives, chaired by the Lead Director.

The Statutory Auditors are also heard during the meetings to review the financial statements.

During the meeting, a summary presentation of the items is then made, allowing considerable time for exchanges and discussions The presentations give rise to questions and are followed by discussions. A round-the-table discussion is systematically held concerning the significant points, before moving to vote on the items on the agenda. Detailed written minutes are then sent to the members for their review and comments, before the approval of the Board of Directors at its next meeting.

Formation of Committees: the internal regulations define the task and operating procedures for the four Board Committees (a description of the Committees' tasks is provided at pages 124, 127, 129 and 130).

Training measures: the internal regulations stipulate that training relating to the Company's businesses and specific features and to the Corporate Social Responsibility business challenges is offered to the Directors, in particular by means of site visits or meetings with senior executives. More particularly, information on the Group's accounting, financial and operational specificities is offered to the members of the Audit and Accounts Committee. The Director representing the employees may, furthermore, receive training relating to his rights and obligations as a Director, in accordance with the applicable regulations. In 2019, the Director representing the employees notably attended two training courses, in addition to the meetings organized within the Group with certain members of the Executive Committee on specific topics (including in particular the impacts of the PACTE Law), one in June 2019, offered by the IFA on the subject of "the Board of Directors and CSR", the other concerning the sustainable business model, organized by Centrale Supelec_EXED, part of which was completed in November 2019 (a session also being planned in 2020).

Each year, the Directors are asked about their training requirements and a training request form is systematically proposed once a year to each Director and to the new Directors. It consists of proposals for meetings with the heads of each of the major business lines and main central functions, and site visits.

Within this framework, the Directors may ask to meet Executive Committee members or ask for specific training for each business line, activity or geographical zone.

In 2019, certain Directors took part in training courses/information meetings organized with members of the Executive Committee on (i) the Healthcare business with the organization of patient rounds, (ii) the Large Industries business as part of an industrial site visit, (iii) R&D, (iv) the Electronics business and (v) Human Resources. In addition, meetings were organized with the members of the Executive Committee concerned by the topics of Corporate and Social Responsibility and the processing of extra-financial information.

10. Participation of employee representatives on the Board of Directors

10.1. WITH A DELIBERATIVE VOTE

Philippe Dubrulle, the Director representing the employees is subject to all the provisions of the internal regulations governing the rights and obligations of the Directors described above. Appointed by the France Group Committee in 2014, Philippe Dubrulle's office was renewed by that same Committee, at its plenary session on December 6, 2017, for a term of four years which will expire at the close of the General Meeting called to approve the financial statements for the 2021 fiscal year. He sits on the Board with a deliberative vote.

Pursuant to the applicable regulations at the time of his appointment, on the recommendation of the Appointments and Governance Committee, the Board of Directors had defined the amount of time allocated to the Director representing the employees for (i) the preparation of meetings (15 hours/meeting) and (ii) training (20 hours/year or 80 hours on a cumulative basis over the entire length of his term of office). Within this framework, in 2016, the Director representing the employees had followed the training course provided by Sciences-Po in partnership with the IFA and obtained the company Director's certificate.

As part of the renewal of the term of office of the Director representing the employees in 2017, the Board of Directors has defined a new training program. Furthermore, given the new regulations (PACTE Law), the minimum training period for Directors representing the employees is now 40 hours per year (compared to 20 hours previously). This time is considered as actual working time and remunerated as such.

The trainings carried out by Philippe Dubrulle in 2019, is stated at page 119.

Within the scope of the agreement entered into with the various stakeholders and pursuant to the provisions in force within the Group, which apply to all the employees performing duties on Boards of Directors of the Group companies, it was agreed that the employee Director would not receive any remuneration.

Philippe Dubrulle participates on the Board Committee, which is in charge of reviewing the environmental and societal issues. He contributes in particular to this Committee, as part of the assignments which are entrusted to it concerning the definition and roll-out of the Group's actions on environmental and societal matters, the vision of the employees of the Group's operating entities. Philippe Dubrulle, who had made known his interest in issues relating to sustainable development, has sat on the Environment and Society Committee since it was formed, in May 2017.

The Board of Directors has decided to propose to the General Meeting of May 5, 2020 that article 11 of the articles of association be brought into line with the provisions of the PACTE Law in order to provide for the appointment of a second Director representing the employees, if the number of Directors on the Board of Directors, calculated in accordance with article L. 225-27-1-II of the French Commercial Code, is more than eight (compared to twelve previously) (see page 341 of this Universal Registration Document). L'Air Liquide S.A.'s articles of association provide that the European Works Council is the competent body to appoint a second Director representing the employees.

The PACTE Law provides that the Directors representing the employees must take office within six months of the General Meeting which makes the amendments to the articles of association required for their appointment, and thus, in practice, within six months of the General Meeting to be held on May 5, 2020.

As for Philippe Dubrulle, the second Director representing the employees who will be appointed by the European Works Council, will benefit from the time allocated for (i) the preparation of meetings (15 hours/meeting) and (ii) training (40 hours/year).

10.2. WITH AN ADVISORY VOTE

Taking the appointment of a Director representing the employees into account, the number of Social and Economic Council delegates participating on the Board with an advisory vote, can in principle be reduced to one.

At the request of the employee representatives and with the agreement of the Board of Directors, it was provided, in an agreement entered into with the various stakeholders, which was renewed in December 2017, that two Central Works Council delegates (and not one as provided by law) would continue to participate in meetings with an advisory vote; this participation is in addition to that of the employee Director who sits on the Board with a deliberative vote; the purpose of this agreement is to allow balanced representation of the most representative trade unions on the Board.

As a result of the above-mentioned agreement, two members of the Social and Economic Council, who are delegated by that Council, had the possibility to attend all the Board of Directors' meetings held during the 2019 fiscal year with an advisory vote. The delegates receive the same documents as those provided to the Directors on the occasion of these meetings. At meetings, the delegates are able to express their opinion on the questions discussed.

A preparatory meeting, in the presence of a member of the Executive Committee and the Secretary of the Board of Directors, is scheduled before each Board meeting. This preparatory meeting is the opportunity to go through the whole file for the Board meeting with the Director representing the employees and the Social and Economic Council delegates and to comment on the items on the agenda. It offers the participants the opportunity to raise their questions and make their initial comments.

11. Appraisal of the Board of Directors

The internal regulations stipulate that:

"The Board will ensure that an evaluation is carried out periodically of its composition, its organization and its functioning as well as those of its Committees. An update will be made by the Board on this topic once a year and a formal evaluation will be carried out at least every three years. Within the scope of the evaluation of the Board, the Directors will be asked to state whether it appears to them to be necessary for the choice of the Company's general management organization to be reexamined."

An evaluation of the functioning of the Board of Directors is carried out every year, alternating, one year, between a full appraisal questionnaire leading to a summary showing the replies and the adoption of recommendations for action and, the next year, a questionnaire aimed at making an assessment of the actions implemented in light of the recommendations made.

The functioning of the Board of Directors and its Committees was fully evaluated in 2019. In this regard, a full appraisal questionnaire was submitted to the Board members and individual interviews were held with the Board's Secretary.

The summary of responses presented by the Chairman of the Appointment and Governance Committee to the February 2020 Board meeting reveals a **very favorable overall perception** of the functioning of the Board of Directors. The members highlighted, in particular, the quality of the exchanges within the Board, the level of dialogue and the contributions of the members. The feedback is also very positive on the **executive session** and on the new **joint session between the Audit Committee and the Environment and Society Committee.** The members wish to continue site visits and contacts with management. The focal points concern in particular the pursuit of efforts to recruit American Directors, the continuation of the work of the Committee responsible for preparing the succession plan, and the pursuit of contacts with management.

In light of the collegiate nature of the Board, the assessment questionnaire concentrates on the collective contribution of members to the Board operation. However, the questionnaire invites the Director to make an evaluation of the actual, individual contribution of Directors in the reflections of the Board of Directors. The contribution by each Director is assessed, furthermore, by the Appointments and Governance Committee and then by the Board of Directors at the time of renewal of the terms of office of Directors and Committee members.

12. Executive session of the non-executive members of the Board of Directors

Pursuant to the provisions of the AFEP/MEDEF Code which recommend that at least one meeting per year is organized without the presence of the Executive Directors, the internal regulations stipulate that:

"Once a year, the Lead Director calls a meeting of the members of the Board of Directors for a session to be held without the presence of the Group's Executive Directors (or former Executive Directors) or internal Directors and employee representatives. He organizes and leads the discussions of this annual session which he chairs."

In 2019, the executive session took place at the close of the November meeting of the Board of Directors. A report was provided to the Chairman and Chief Executive Officer.

13. The Board of Directors' work in 2019

In 2019, the Board of Directors met six times with an effective attendance rate, or telephone attendance rate, of 93.06% of its members.

The Board's activities related to the following issues:

13.1. MONITORING OF THE GROUP'S DAY-TO-DAY MANAGEMENT

Monitoring of the Group's day-to-day management is carried out particularly by:

- reviewing the quarterly activity reports, the annual and interim parent company and consolidated financial statements in the presence of the Statutory Auditors, which are used to determine the dividend distribution policy;
- reviewing the Group's financial position regularly, and more specifically: financing and debt management strategies;
- monitoring risks and the procedures for their prevention including a more in-depth review of certain risks based on the work of the Audit and Accounts Committee and the Environment and Society Committee and the review of opportunities;
- reviewing the minutes of the meetings of the four Committees (including the minutes of the joint session between the members of the Audit and Accounts Committee and the members of the Environment and Society Committee);
- making decisions, in particular with respect to the investments necessary for the Group's medium-term development and corresponding financing capacities and the bond program;
- the share buyback/cancellation policy;
- the award of performance shares;
- reviewing, at each meeting, the report on acquisitions, sales and major projects in progress;
- reviewing employment-related documents: the social balance sheet (report on employee-related matters) and forward-planning documents;
- reviewing the composition of the Board of Directors, in particular with regard to the diversity policy which it has defined;
- preparing the Annual General Meeting (agenda, proposed resolutions, Annual Management Report, Report on Corporate Governance and other reports or sections contained in the Universal Registration Document, which are prepared or approved by the Board of Directors; answers to shareholders' written questions);
- Human Resources issues; the annual deliberation with regard to the Company's professional gender and equal pay policy pursuant to the law of January 27, 2011 and the three-year professional gender equality agreement within L'Air Liquide S.A.; the involvement of employees in the consultation process with the Social and Economic Council concerning the Company's strategic orientations pursuant to the law of June 14, 2013;
- the annual review of ongoing regulated related-party agreements.

13.2. MONITORING OF THE GROUP'S MAIN STRATEGIES ON SIGNIFICANT ISSUES

Following the presentations made by General Management and certain senior executives, the Board of Directors closely considered the following in 2019:

(i) questions relating to **strategy** and particularly the monitoring of the Group's performance, the objective concerning the Airgas synergies (attained one-year ahead of schedule), the significant consolidation of the Group's efficiency program with a new annual objective of 400 million euros, thus amounting in aggregate to 1.5 billion euros at the end of 2020 (instead of the 1.2 billion euros initially planned for in the NEOS company program); review of the portfolio of businesses; examination of ongoing operations (acquisitions, sales) and, more specifically, the acquisition of Tech Air Inc. by Airgas and the sale of Air Liquide Fuzhou by Air Liquide China; investment decisions including in particular two projects linked to the Climate Objectives, namely the construction in Canada of the largest PEM (Proton-Exchange Membrane) electrolyzer in the world for the production of carbon-free hydrogen and Air Liquide's participation in an innovative large-scale CO_2 capture and storage project in Norway; examination of the mergers taking place in the industry and the changes to the competitive environment;

(ii) the **governance** issues concerning the renewal of Siân Herbert-Jones' term of office as an independent Director and the renewal of her office as Chair of the Audit and Accounts Committee; the renewal of Geneviève Berger's term of office as an independent Director and the renewal of her office as a member of the Environment and Society Committee; the supervision of the work of the Appointments and Governance Committee relating to the recruitment of Directors and the future succession of the Executive Officer and, in general, the succession plans; the regulatory watch;

(iii) the questions relating to **Corporate Social and Environmental Responsibility** within the scope of the Corporate Sustainability Program strategy, including in particular the Climate Objectives defined by the Group based on the work of the Environment and Society Committee;

(iv) the implementation of an appraisal procedure in respect of transactions in the ordinary course of business entered into on arm's length terms.

13.3. FUNCTIONING OF THE CORPORATE GOVERNANCE BODIES

The functioning of the corporate bodies is organized in accordance with the recommendations of the AFEP/MEDEF Code of Corporate Governance, and the provisions of the internal regulations of the Board of Directors.

Concerning the Executive Officer

Benoît Potier's office as Chairman and Chief Executive Officer was renewed by decision of the Board of Directors on May 16, 2018.

Employment contract / corporate office of the Chairman and Chief Executive Officer

In accordance with the AFEP/MEDEF Code of Corporate Governance, which recommends that the Chairmen and Chief Executive Officers of listed companies do not combine an employment contract with their corporate office, Benoît Potier put an end to his employment contract as of May 5, 2010.

Remuneration

The Board of Directors assessed the performance of the senior Executive Officer in respect of the 2018 fiscal year and determined the amount of his remuneration in respect of that fiscal year. The Board also determined the remuneration policy applicable to the Executive Officers as from 2019.

The Board also decided upon the remuneration policy for the Chairman and Chief Executive Officer and the Directors that is submitted for the vote of the General Meeting on May 5, 2020. This policy is described in the section on remuneration set forth below on pages 178 et seq.

The elements of remuneration paid in 2019 or awarded to the Executive Officer in respect of 2019 are also described in this section, together with the information contained in the Report on Corporate Governance relating to the remuneration of each corporate officer (Chairman and Chief Executive Officer and Directors).

The information contained in this section incorporates the new provisions of the PACTE Law, of Ordinance No. 2019-1234 and Decree No. 2019-1235 of November 27, 2019. The Annual General Meeting on May 5, 2020 will thus be invited to decide upon (i) the elements which make up the total remuneration and the benefits of any kind that may be paid in 2019 or awarded to the Executive Officer in respect of the 2019 fiscal year ("Say on Pay ex post"), (ii) the remuneration policy for the corporate officers for the 2020 fiscal year ("Say on Pay ex ante") and (iii) the information referred to in part I of article L. 225-37-3 of the French Commercial Code concerning the remuneration of the Chairman and Chief Executive Officer and the Directors.

Shareholding obligation

The rules with regard to the holding of shares set by the Board of Directors are described in detail in the section on remuneration set forth below (see pages 154-155).

Concerning the Board of Directors

Composition

Appointment – Renewal of terms of office:

- The Board proposed to the General Meeting on May 7, 2019 to renew the terms of office of Siân Herbert-Jones and Geneviève Berger which expired at the close of the said General Meeting for a further period of four years. Following the renewal of these terms of office by the General Meeting, the Board of Directors decided to renew Siân Herbert-Jones' office as Chair of the Audit and Accounts Committee and Geneviève Berger's office as a member of the Environment and Society Committee.
- The Board took note that the terms of office of Pierre Dufour, Karen Katen and Brian Gilvary are due to expire at the close of the Combined General Meeting on May 5, 2020.

  Brian Gilvary has been an independent Director on the Board of Directors since May 2016 and a member of the Audit and Accounts Committee since May 2017. He brings to the Board of Directors his expertise in finance, his knowledge of the energy sector and his global vision of a large international group. As a British citizen, Brian Gilvary also provides the Board with his multi-cultural expertise. His term of office is proposed for renewal to the General Meeting.

  Karen Katen's office is not proposed for renewal in accordance with the provisions of the internal regulations which stipulate that "No proposal will be made for renewal of the term of office of a Director who has reached 70 years of age during the financial year prior to the expiry of his/her term of office, unless such Director is a former member of the Company's executive management (former member of the Management Board, Chief Executive Officer or Senior Executive Vice President), in which case the age limit will be increased to 74 years."

  The Board of Directors also took formal note of Pierre Dufour's decision not to seek the renewal of his office as Director.

  On the proposal of the Appointments and Governance Committee, the Board therefore proposed to the Annual General Meeting to be held on May 5, 2020 to:

  – renew for a further period of four years Brian Gilvary's term of office which is due to expire at the close of the said General Meeting,
  – appoint Anette Bronder and Kim Ann Mink as new Directors, for a period of four years.

Directors' remuneration

The Board set the formula for distributing Directors' remuneration among its members for 2019 within the budget authorized by the General Meeting of May 16, 2018 for a maximum amount of 1.15 million euros per fiscal year.

On the recommendation of the Remuneration Committee, the Board of Directors decided to propose to the General Meeting of May 5, 2020 that it increase the amount of remuneration that may be allocated each year to the Directors to 1.3 million euros, as of 2020 (see the draft resolution at page 337 of this Universal Registration Document). The proposed increase takes into account, in particular, the increase in the number of meetings in connection with the consolidation of the work program for the Board of Directors and for certain committees, together with the intention to continue to promote a diversity of skills and nationalities on the board of Directors during future intended recruitments.

Appraisal (see above)

The Board of Directors approved the wording of the full questionnaire sent to the Directors at the end of 2019. Furthermore, it heard the feedback provided by the Chairman of the Appointments and Governance Committee on the Directors' responses.

14. The Committees of the Board of Directors

The Board of Directors has set up four Board Committees: the Audit and Accounts Committee, the Appointments and Governance Committee, the Remuneration Committee and the Environment and Society Committee.

14.1. THE AUDIT AND ACCOUNTS COMMITTEE

As at December 31, 2019, the Audit and Accounts Committee comprised **four members: Siân Herbert-Jones, Committee Chair, Thierry Peugeot, Sin Leng Low and Brian Gilvary. 75% of the members, including the Chair, are independent.**

The Committee members combine experience in business management with economic and financial expertise (see professional careers in the bibliographical memos on Directors on pages 132 et seq.). A qualified chartered accountant who worked in an audit firm for 13 years (PwC), Siân Herbert-Jones joined the Sodexo group in 1995, where she was Group Chief Financial Officer from 2001 until December 2015. Siân Herbert-Jones, in her capacity as Chair of the Audit and Accounts Committee, provides the Committee with her extensive financial expertise. Moreover, Brian Gilvary, the Chief Financial Officer of the BP group, also provides the Committee with his expertise in this sector, given his considerable experience in Finance.

Composition and tasks as defined by the internal regulations

The Committee must be comprised of three to five members of the Board of Directors and at least two-thirds of its members must be independent.

The tasks of the Audit and Accounts Committee as defined by the Board of Directors in the internal regulations are set forth below.

TASKS

"The purpose of the Committee is to prepare the decisions to be taken by the Board of Directors by examining the following issues and reporting on them to the Board:

By receiving reports:
jointly and separately, in order to compare and combine different points of view, from:
- the Finance & Management Control and Legal Divisions;
- the Internal Audit and Control Management;
- the External Auditors.

Concerning the following points:
- existing organization and procedures in the Group;
- their actual functioning;
- how the financial statements and the accounts are drawn up.

In order to reach:
by comparing and combining the points of view collected and using their business judgment based on professional experience, a reasonable judgment concerning:
1. Accounts and accounting principles used (their conformity in relation to the reference standards, a fair and complete reflection of the Group's situation, transparency, readability, consistency over time).
2. Existence and functioning of control organizations and control procedures adapted to the Group, making it possible to identify and manage the risks incurred, including social and environmental risks, and to report on them.
3. Organization of the internal audit function, the plans for assignments and actions in the internal audit field, the findings of these assignments and actions and the recommendations and ensuing measures taken.
4. Choice and renewal of the External Auditors, review of the tendering process, opinion on the selection of External Auditors and the rotation of audit partners, review of proposed fees, information on the overall fees paid indicating the amount of fees paid for non-audit services.
5. Procedures relating to the preparation and processing of the extra-financial information.

The Committee:
1. Collects the observations of the executive management on these various issues. It hears the Chief Executive Officer or Senior Executive Vice-Presidents at the Committee's request or at the request of the persons concerned.
2. Makes recommendations, where applicable, to guarantee the integrity of the financial information preparation process.
3. Monitors the performance by the Statutory Auditors of their engagement.
4. Ensures compliance with the conditions of independence of the Statutory Auditors defined by the applicable regulations and examines every year with the Statutory Auditors the risks with regard to their independence and the safeguard measures taken to attenuate these risks.
5. Makes a recommendation to the Board of Directors on the Statutory Auditors proposed for appointment by the Shareholders Meeting, including at the time of renewal of the term of office.
6. Approves the provision by the Statutory Auditors or the members of its network of services other than the certification of the financial statements under the conditions provided for by the internal procedure applicable in this field.
7. Receives the additional report of the Statutory Auditors in accordance with the provisions of Article 11 of Regulation (EU) No. 537/2014 of April 16, 2014 and discusses with them the essential questions resulting from the statutory audit of the financial statements which are set out in the additional report.
8. Reports to the Board of Directors on its work, informing it of any problems that may be encountered, observations made to the executive management and progress made in relation to these observations."

The Committee meets, in principle, three times a year, and always before the Board meetings during which the annual or interim financial statements are reviewed.

An initial verbal report is given to the Board by the Committee Chair. Written minutes of the meeting are transmitted to the Directors. The Committee may ask to convene Group employees. It may meet with the Statutory Auditors or members of the Group Internal Control Department in person. It may call on external experts for assistance. The Chairman and Chief Executive Officer does not attend meetings of the Audit and Accounts Committee.

The Audit and Accounts Committee's work in 2019

The Audit and Accounts Committee met four times with an effective attendance rate, or attendance rate by telephone, of 93.75% its members.

The Committee reviewed the annual and interim consolidated financial statements and the annual parent company financial statements; it took due note of the Company's financial situation, cash flow position and commitments. During the presentation by the Group Vice President Finance, the Committee more particularly analyzed the provisions, the "Other operating income and expenses" items, cash flow, taxation, risk exposure… It reviewed the drafts of the analyst presentation relating to the financial statements.

In addition, the Committee heard the presentations of the Statutory Auditors underlining the key points of the results and took note of their conclusions.

At the beginning of the year, the Committee reviewed the amount of fees paid to the Statutory Auditors in respect of the previous fiscal year.

The Committee took due note of the contents of the three draft reports issued by the Statutory Auditors, pursuant to European Regulation No. 537/2014. The reports on the statutory accounts and the consolidated statements include a description of the principal audit topics and are included in the Universal Registration Document while the third, more detailed report is intended for the Audit Committee only.

The Committee reviewed the achievement of the cumulative synergies relating to Airgas, the consolidation of the Group's efficiency program, the Group's financing policy, debt and liquidity management and the various impacts of the regulatory changes (including in particular the IFRS16 and IFRIC23 norms).

Furthermore, specific risk presentations were made to the Committee on the following points: (i) major industrial accidents/fatal accidents linked to Air Liquide's industrial operations, (ii) the state of progress of the protection of digital assets, (iii) the operating and industrial information systems, (iv) engineering and construction: the viability of the organizations, skills and processes, (v) country risks (emerging countries), (vi) the monitoring process for industrial investment decisions, (vii) energy management policy, (viii) the availability and sustainability of Human Resources skills and (ix) compliance with the provisions of the Sapin II Law, and (x) litigation and tax risks.

Pursuant to the new obligations resulting from the PACTE Law, the Audit and Accounts Committee also reviewed the assessment procedure for ordinary agreements entered into on arm's length terms which has been implemented at the Group and recommended its adoption by the Board of Directors. This procedure provides methods for identifying agreements to be entered into by L'Air Liquide S.A. for the whole of the Group's central and operating services, and their classification as either regulated agreements or as ordinary agreements entered into on arm's length terms. The procedure contains the steps to be followed in order to inform the appropriate (Finance/Legal) Departments following the identification of a regulated agreement so that it can be authorized in advance by the Board of Directors. The procedure also contains the methods for identifying ordinary agreements entered into on arm's length terms and the methods for processing them, including in particular the retention of the analysis making it possible to classify the said agreement and an obligation to carry out an automatic reassessment before each modification, renewal, rollover or termination in order to verify whether the relevant agreement should retain the same classification. An annual report will be made to the Board of Directors on the application of the procedure, which may be revised in accordance with any identified requirements.

The Committee also heard regular reports on the main assignments carried out by the Group Internal Control Department, the follow-up of any corrective actions taken and the Group Internal Control Department's main assignments for the forthcoming fiscal year. The Committee also regularly monitored the process for deployment of the risk management procedure within the Group. It reviewed the Group's risk map and the changes made to it. The Committee reviewed the information provided in the Universal Registration Document concerning the internal control and risk management procedures and recommended its approval by the Board of Directors. The Committee was informed in this context of the new Prospectus regulations and, more particularly, of their impact on the presentation of risks in the Universal Registration Document. A report was made to the Board.

In accordance with longstanding practice in the Group, the Committee is tasked with monitoring the management of all the risks identified by the Group, even if particular attention is paid to accounting or financial risks; a methodology for the monitoring of each type of risks (including, in particular, the identification of the management and control bodies and procedures) and an appropriate time scale (annual review or regular review at less frequent intervals, depending on the type of risks) were defined. At year-end, the Committee ensures that all of the risks identified on the risk map and subject to regular review have been examined by the Audit Committee according to the frequency specified. The work program prepared for the 2020 fiscal year is consistent with this approach. It was presented to the Board for discussion. The Committee discussed the topics that could be presented to the Board to improve the fit between the work of the Committee and that of the Board on this subject.

The Audit Committee was also informed of the non-audit services which were approved in 2019 within the scope of the approval procedure for the Group's non-audit services, which was validated by the Board meeting on July 29, 2016. This procedure was last updated in June 2018.

Several days prior to each meeting, a file of meeting documentation, also available in electronic form, is sent out to Committee members. Each Committee meeting is preceded by a preparatory meeting attended by the Committee Chair, assisted by the Committee Secretary, the Group Vice President Finance and the Group Internal Audit Director. In order to prepare the meetings where financial statements are reviewed, the Committee Chair meets with the Statutory Auditors, without the presence of the Company representatives. During the meeting, each presentation made by the Group Vice President Finance, the Group Internal Audit Director, the senior executive specializing in the area under discussion or the Statutory Auditors, during the financial statement review meetings, is followed by discussion.

A verbal report and then written minutes of each meeting are prepared for the Board of Directors.

The Committee Chair receives summaries of the internal audit reports. In addition, after presentation meetings for the accounts for the fiscal year, the Committee members meet alone with the Statutory Auditors, without the presence of the Company representatives.

As recommended in the AFEP/MEDEF Code of Corporate Governance, the following measures are taken so that the time during which the financial statements are available to be reviewed is sufficient: preparatory meeting with the Committee Chair more than one week prior to the meeting, as provided for above; dispatch of files, now also available in electronic form, to Committee members five to seven days in advance. These measures enable the members to review the financial statements well in advance of the meeting. When compatible with the schedules of the members travelling from abroad, the Committee meetings relating to the financial statements are held the day before the Board meeting.

Joint session of the Audit and Accounts Committee / Environment and Society Committee

A joint session between the Audit Committee and the Environment and Society Committee was held for the first time in June 2019. This joint session, requested by the Directors in the Board's evaluation questionnaire at the end of 2017, permits good interaction between the two Committees, in particular with regard to the review of risks. The Audit Committee reviews the control procedures for the whole of the risks, including any environmental and societal risks, which are examined in detail by the Environment and Society Committee. The joint session thus makes it possible for the members to discuss subjects which concern both the Committees.

Moreover, for the first time, in 2019, an extra-financial Performance Declaration was included in the 2018 Reference Document as part of an Integrated Management Report (regrouping the financial and extra-financial information). The joint session helps ensure a consistent approach, as reflected in the reconciliation of the financial and extra-financial data in the Integrated Management Report. It will now be held once a year.

At the joint meeting held on June 17, 2019, the members of the Audit Committee and the Environment and Society Committee reviewed the procedures relating to the preparation and processing of the extra-financial information, the examination of the environmental and societal risk mapping, and the review of certain specific risks.

14.2. THE APPOINTMENTS AND GOVERNANCE COMMITTEE / THE LEAD DIRECTOR

As at December 31, 2019, the Appointments and Governance Committee had **three members: Jean-Paul Agon, Chairman of the Committee and Lead Director, Karen Katen and Annette Winkler. 100% of the Committee members are independent.**

Composition and tasks as defined by the internal regulations

The Appointments and Governance Committee must be comprised of three to five members of the Board of Directors and the majority of its members must be independent, according to the assessment made by the Board. The Chairman and Chief Executive Officer attends Committee meetings and is closely involved in its discussions. However, he may not be present for any discussions of the Committee relating to him personally. The Committee meets at least three times a year. The conclusions of Committee meetings are presented by the Committee Chairman for discussion and decision-making at the next Board of Directors' meeting.

TASKS

Pursuant to the internal regulations, the tasks of the Appointments and Governance Committee are as follows:

"1. Concerning the Board of Directors:

- make proposals to the Board of Directors for renewal and appointment of Directors. This Committee looks for new members on the basis of its evaluation of the needs and developments expressed by the Board of Directors, and taking into consideration, in particular, the principle of attempting to achieve a balanced composition of the Board of Directors: representation between women and men, nationality, international experience, expertise, etc.;
- make proposals to the Board of Directors for the creation and composition of Board Committees;
- periodically evaluate the structure, size and composition of the Board of Directors and submit to it recommendations regarding any potential change;
- the Committee periodically reviews the criteria applied by the Board to classify a Director as independent; once a year, it examines, on a case-by-case basis, the situation of each Director or each candidate for the duties of Director in light of the criteria applied and makes proposals to the Board of Directors.

2. Concerning the Chairman and Chief Executive Officer or the Chief Executive Officer, as the case may be:

- examine, as necessary and, in particular at the time of expiry of the term of office concerned, the renewal of the term of office of the Chairman and Chief Executive Officer, or the terms of office of both the Chairman and of the Chief Executive Officer;
- examine the changes in these duties and provide for solutions for their renewal, where applicable;
- examine the succession plan for members of the executive management applicable in particular in the case of an unforeseen vacancy;
- examine periodically developments with regard to the Senior Executive Vice-Presidents, hear the Chairman and Chief Executive Officer (or the Chief Executive Officer) on the needs and the potential proposals for their replacement;
- more generally, ensure that it is kept informed by the Chairman and Chief Executive Officer (or the Chief Executive Officer) of planned changes in executive management resources (and, in particular, the Executive Committee).

3. Concerning governance:

- examine, at the time of renewal of the term of office of the Chairman and Chief Executive Officer or of the terms of office of the Chairman and of the Chief Executive Officer, or when a request in that respect is made by Directors within the framework of the evaluation of the Board, whether it is appropriate to continue to combine these roles (or to separate them);
- monitor the changes in the rules of Corporate Governance, in particular within the scope of the code to which the Company refers and inform the Board of Directors of its conclusions; follow up on the application of the rules of Corporate Governance defined by the Board of Directors and make sure of the information given to the shareholders on this topic;
- prepare the evaluation of the way the Board operates provided for by the internal regulations;
- examine issues of ethics that the Audit and Accounts Committee, the Board of Directors or its Chairman may decide to refer to it;
- ensure the proper functioning of the governance bodies and in particular the transmission of information requested by independent Directors;
- assist, at their request, the Chairman and the Chief Executive Officer in their dealings with independent Directors, and be the instrument of dialogue aimed at preventing potential situations of conflict on the Board.

The Committee can request the assistance of outside experts if necessary. The Company shall provide the Committee in such a case with the corresponding funding.

The Lead Director, upon delegation from the Chairman of the Committee when he is not the Chairman of the Committee himself, conducts the Committee's work concerning the above-mentioned points of governance: the Lead Director can formulate all proposals and make any suggestions that he considers to be necessary in this field. More particularly, the Lead Director coordinates, within the Committee, the implementation of the procedures aimed at identifying and analysing potential situations of conflicts of interest on the Board; he draws the attention of the Chairman of the Board of Directors to potential situations of conflicts of interest identified in this manner.

He reports on these matters to the Board of Directors."

The powers and tasks of the Lead Director are described in §6 above.

The Appointments and Governance Committee's work in 2019

The Appointments and Governance Committee met three times in 2019 with an effective attendance rate, or attendance rate by telephone, of 100% of its members.

Concerning the Board of Directors

The Committee verified that the composition of the Board of Directors complied with the rules provided in the internal regulations. Taking into consideration the diversity policy discussed on pages 111 and 112, it made recommendations on the desirable future changes in the composition of the Board of Directors in the short and medium-term and continued to manage the search and assessment procedure for potential candidates. These searches led the Committee to recommend to the Board of Directors that it propose to the General Meeting of May 5, 2020 the appointment of two new Directors, who have special expertise in the Digital and Innovation sectors, namely Anette Bronder and Kim Ann Mink.

The Committee recommended proposing the renewal of the terms of office of Geneviève Berger and Siân Herbert-Jones to the General Meeting on May 7, 2019 and of Brian Gilvary to the General Meeting on May 5, 2020.

Pursuant to the PACTE Law, the Committee proposed amending the articles of association in order to provide for the appointment of a second Director representing employees, if the number of members of the Board of Directors, calculated in accordance with article L. 225-27-1-II of the French Commercial Code, is more than eight (and no longer twelve).

Concerning the composition of the Committees, the Lead Director and the working group

The Committee reviewed the composition of the Committees and the "Shareholder Relations" working group. In this regard, the Committee recommended to the Board of Directors, given the termination of the terms of office of Pierre Dufour and Karen Katen as Directors at the end of the General Meeting of May 5, 2020, to appoint with effect from that date, (i) Annette Winkler as Chair of the Environment and Society Committee, as a replacement for Pierre Dufour, (ii) Xavier Huillard as a member of the Appointments and Governance Committee, as a replacement for Karen Katen and (iii) Brian Gilvary as a member of the Remuneration Committee, as a replacement for Annette Winkler. The Board on February 10, 2020 approved in principle this new composition of the Committees.

Concerning the Chairman and Chief Executive Officer and the management teams

The Committee reviewed the specific procedure and the scenario envisaged in the event of the replacement of the General Management in an emergency situation. This procedure is reviewed each year and updated where applicable.

The Committee was informed of changes to the organization of the Group, which notably resulted in a change to the composition of the Executive Committee which now has fourteen members, of whom five are women.

The Committee continued to examine in detail the profiles of potential high achievers, with a particular view to a future succession.

Concerning governance

The Committee looked at the personal situation of each member of the Board of Directors in light of the independence criteria set forth in the internal regulations. In particular, it reviewed the chart summarizing the flows (purchases and sales) which occurred during the past fiscal year as between the companies in the Air Liquide Group and those Group companies at which a Director of Air Liquide (or candidate proposed for such office) also exercises a term of office or an executive role and made its assessment in the light of both quantitative and qualitative criteria. Pursuant to the AFEP/MEDEF Code, a table showing the situation of each Director in light of the independence criteria is contained at page 113.

The Committee reviewed the level of attendance of each Director at the meetings of the Board of Directors and the Committees, which is shown in the table contained on page 114.

The Committee took note of the information provided by the Directors concerning their terms of office as Directors which are external to the Group.

It reviewed the recommendations of the Report of the Haut Comité de Gouvernement d'Entreprise and the AMF Annual Report on Corporate Governance published in December 2019 and made its recommendations concerning the practices followed by the Company. It examined the draft of this section of the Universal Registration Document, incorporating part of the Report on Corporate Governance and recommended that it be adopted by the Board of Directors.

It examined the chart showing the deviations of the Group's practices as compared to the AFEP/MEDEF Code. Upon the presentation of the report on the work of the Remuneration Committee, the Chairman and Chief Executive Officer does not attend, since 2019, the Board deliberations concerning his remuneration.

The Committee consequently recommended that the Board of Directors eliminate the deviation relating to article 18.3 of the APEF/MEDEF Code, and the Board approved the elimination of this deviation. The updated summary table is contained at page 131 of this Document.

At the start of 2019, the Committee reviewed the summary of the replies to the simplified evaluation questionnaire of the Board of Directors in respect of the 2018 fiscal year. At the end of the 2019 fiscal year, the Committee updated the contents of the full evaluation questionnaire for 2019 before it was sent to the Directors. Concerning the assessment of the Board of Directors, see page 121.

The Committee took note of the principal provisions of the PACTE Law which impact governance. After analysis, the Committee recommended proposing amendments to the articles of association to the General Meeting on May 5, 2020, which will make it possible to bring those articles into line with the provisions of the PACTE Law (appointment of a second Director representing employees, if the number of members of the Board of Directors is more than eight – and no longer twelve; incorporation of the amendments made to the French Commercial Code by providing that the Board of Directors should decide the orientations of the Company's activities and supervise their implementation, in accordance with its corporate interests, by taking into account the social and environmental stakes of its business; replacement of the term "Directors' fees" by the term "annual remuneration" with regard to the Directors' remuneration).

The Committee reviewed the non-discrimination and diversity policy in leaderships and particularly information relating to the manner in which the Company tries to obtain a balanced representation of men and women on the Executive Committee. It notably took note of the results concerning the gender mix with regard to the 10% of positions which carry the most responsibility. A report was made to the Board. These elements are contained in this Universal Registration Document, in Chapter 5, on pages 299 to 301.

The Committee reviewed the training courses offered to the Directors, including the training offered to the Director representing employees. It was provided with a report on the training carried out over the course of the year (see page 119).

Tasks of the Lead Director: report on his activities

Jean-Paul Agon has been Lead Director since May 3, 2017.

The Lead Director's activities during the fiscal year related to the following points:

- The Lead Director conducted the work of the Appointments and Governance Committee concerning the governance tasks entrusted to the Committee and in particular:
  - a review of the Company's practices in light of the recommendations of the AFEP/MEDEF Code, the AMF and the Haut Comité de Gouvernement d'Entreprise included in their respective 2019 reports;
  - the preparation of the questionnaire for evaluation of the functioning of the Board, which included a specific section enabling each Director to give his/her opinion on the individual contributions of the Directors to the Board's reflections. The transmission of this questionnaire at the end of 2019 was followed up by individual interviews between each Director and the Secretary to the Board allowing significant opportunity for members to comment freely. The Lead Director presented to the Board meeting in February 2020 a summary of the

assessments made with regard to the functioning of the Board and the recommendations made by the Committee, which led to debate;
- informing the Board of Directors on the regular contacts between the Chairman and Chief Executive Officer and the principal shareholders.

- A review of the expectations expressed by the shareholders at the General Meeting on May 7, 2019. Interviews were also held with numerous institutional investors as from the autumn of 2019 in order to prepare for the General Meeting on May 5, 2020.
- The Lead Director held detailed discussions with some shareholders concerning questions of governance.
- The Lead Director **held very regular discussions with the Chairman and Chief Executive Officer** with regard to all significant governance topics for the fiscal year; he also spoke at length **with the Directors.**
- The Lead Director chaired the **executive session** which was held at the end of the Board meeting in November 2019 and was attended by all the Directors apart from the Executive Directors (or former Executive Directors) or internal Group Directors and employee representatives. The Lead Director held discussions with the Chairman and Chief Executive Officer on the matters raised during this executive session.
- He reported to the Board on his activities in February 2020.

During the 2019 fiscal year, the Lead Director attended five Board meetings (out of six) and all the meetings of the Appointments and Governance Committee (three meetings) and the Remuneration Committee (three meetings).

14.3. THE REMUNERATION COMMITTEE

As at December 31, 2019, the Remuneration Committee had **three members: Xavier Huillard, Chairman of the Committee, Jean-Paul Agon and Annette Winkler. 100% of the Committee members are independent.**

Composition and tasks as defined by the internal regulations

The Remuneration Committee must be comprised of three to five members of the Board of Directors and the majority of its members must be independent. The Committee meets at least three times a year. The conclusions of Committee meetings are presented by the Committee Chairman for discussion and decision-making at the next Board of Directors' meeting.

TASKS

"Pursuant to the internal regulations, the tasks of the Remuneration Committee are as follows:

- examine the performance and all the components of remuneration including stock options, or other forms of deferred remuneration, pension plans and, in general, the conditions of employment of the Chairman and Chief Executive Officer or both the Chairman and the Chief Executive Officer as well as the Senior Executive Vice-Presidents and make the corresponding recommendations to the Board of Directors;
- propose, where applicable, the remuneration of the Vice Chairman or Vice Chairmen;
- examine the remuneration and retirement policy applied to executive management and in particular to the Executive Committee;
- examine the proposals by the executive management concerning the granting of stock options and other incentive systems related to the share price to other Group employees and propose their granting to the Board of Directors;
- examine and propose to the Board of Directors the allocation of Directors' fees among Board members.

The Committee can request the assistance of outside experts if necessary. The Company shall provide the Committee in such a case with the corresponding funding."

The Remuneration Committee's work in 2019

The Remuneration Committee met three times in 2019 with an effective attendance rate, or attendance rate by telephone, of 100% of its members. The Chairman and Chief Executive Officer is not present for any discussions by the Committee relating to him personally. At Board meetings, the Committee Chairman reports on the work of the Remuneration Committee. At the General Meeting, the Committee Chairman reports on the Board's decisions concerning the remuneration policy applicable to the Group's Executive Officers.

Remuneration of the Executive Officers/long-term incentive policy

The Committee examined the principles of the remuneration policy applicable to the Executive Officers and its various components.

For the 2019 fiscal year, the Committee made recommendations concerning the remuneration policy for the Executive Officers and how it applies to Benoît Potier. Since the repositioning of Benoît Potier's remuneration was completed in 2018, the Committee recommended that the level of his total annual target remuneration should be stabilized. The Committee reviewed the draft resolution and presentation put to the ex ante vote of the General Meeting on May 7, 2019 on the remuneration policy applicable to the Executive Officers.

Following remarks made by shareholders, the Committee reviewed the performance criteria for the annual variable remuneration and the long-term incentives and recommended that these criteria be amended (see page 148 of this Universal Registration Document).

Since the General Meeting on May 7, 2019 was asked to renew the authorizations to grant stock options and performance shares, the Committee recommended that the Board of Directors reduce the sub-limits on the grant of these remuneration tools to the Executive Officers in order to bring them closer to past practices (see page 148).

For 2019, the Committee recommended to the Board of Directors' meeting held on September 30, 2019 that it only grant performance shares (instead of a mix of stock options and performance shares as before) to all the beneficiaries (including the Executive Officer), in order to simplify and homogenize the long-term incentive measures ("LTI").

The Committee reviewed the satisfaction of the performance conditions for the performance share and stock option plans.

The Committee reviewed the rules for holding shares which apply to the Executive Officers.

In January 2020, the Committee prepared for the Board of Directors' meeting in February 2020 to record the increase in Benoît Potier's conditional rights for the 2019 fiscal year pursuant to the defined benefit pension plan which he benefits from.

The Committee took note of the provisions of the PACTE Law and of Ordinance No. 2019-1234 and Decree No. 2019-1235 of November 27, 2019 implemented pursuant to that law. In accordance with these new provisions, the Committee reviewed the draft reports and resolutions to be put to the General Meeting of May 5, 2020 concerning the remuneration of the Company officers (a report containing information on the remuneration of the Executive Officer and the Directors and provided for in article L. 225-37-3-I of the French Commercial Code) and the Executive Officer's remuneration for 2019.

The Committee made recommendations concerning the **remuneration policy** for the Corporate Officers which now includes the remuneration of the Directors pursuant to the PACTE Law and which is the subject of a resolution to be put to the General Meeting on May 5, 2020.

The Committee recommended amending the performance conditions for the grants of performance shares and/or stock options providing a new criterion linked to Air Liquide's carbon intensity.

The Committee also examined the possible alternatives to the defined benefit pension plan which Benoît Potier benefits from and recommended the implementation of a collective pension insurance contract with individual subscription, with effect from January 1, 2020.

Remuneration of the Directors

The Committee made recommendations concerning the level of remuneration for the Directors pursuant to article L. 225-45 of the French Commercial Code (formerly "Directors' fees") to be granted in respect of the 2019 fiscal year within the total amount authorized by the General Meeting. The Committee also recommended the addition of variable remuneration linked to the Directors' attendance at the joint session of the Audit and Accounts Committee and the Environment and Society Committee (see page 165) and the increase by the General Meeting of the amount of the remuneration that may be allocated each year to the Directors (see page 123).

Corporate Governance

The Committee looked at the measures on transparency and communication and issued its recommendations. It reviewed the section below on remuneration, including the enclosed Report on Corporate Governance (the section on remuneration) and recommended their approval by the Board of Directors.

14.4. THE ENVIRONMENT AND SOCIETY COMMITTEE

The Environment and Society Committee, which focuses on Corporate Social and Environmental Responsibility issues, was formed on May 3, 2017. As at December 31, 2019, it had **three members: Pierre Dufour, Chairman of the Committee, Geneviève Berger and Philippe Dubrulle.**

Composition and tasks as defined by the internal regulations

The Committee must comprise three to four members of the Board of Directors.

TASKS

"The tasks of this Committee are as follows:

- examine, and make recommendation regarding, the Group's strategy and commitments in the field of sustainable development;
- monitor the deployment of the Group's environmental and societal actions. In this respect, it notably monitors the topics related to air quality, energy consumption, greenhouse gas emissions, as well as the actions engaged by the Foundation;
- examine the environmental and societal risks in liaison with the Audit Committee and the impact of environmental and societal issues in terms of investment, economic performances and image;
- monitor the reporting systems, the preparation of extra-financial information, the annual CSR report and, in general, any information required by the legislation in force with regard to CSR;
- make an annual review of a summary of the extra-financial ratings made with regard to the Group."

The Committee shall meet, in principle, twice a year.

It reports on its work to the Board of Directors. The conclusions of the meetings of the Environment and Society Committee are presented by the Committee Chair for discussion and, if applicable, for a decision by the Board of Directors at a later Board meeting. The Committee may be assisted by external experts.

The Committee shall receive regular reports from the member of the Executive Committee who is responsible for sustainable development, concerning the Group's strategy on Corporate Sustainability Program and its implementation.

The Environment and Society Committee's work in 2019

The Environment and Society Committee met three times in 2019, with an effective attendance rate, or attendance rate by telephone, of 100% of its members.

At these meetings, the Committee reviewed, in particular, the Group's environmental and societal risks, the changes to such risks, and the related monitoring procedures, taking into account the regulations concerning the duty of vigilance owed by parent companies. The Committee reviewed the environmental and societal risk-mapping which forms part of the Group's general risk-mapping.

As part of the Group's Sustainable Development strategy, the Committee was provided with an update on the Climate Objectives defined by the Group which were published on November 30, 2018. Information was also presented to the Committee on specific issues concerning, in particular, the topic of employee engagement, which forms the basis of the Group's Human Resources policy, and concerning the Air Liquide Foundation, its actions and objectives up until 2022.

The Committee also reviewed the procedures relating to the preparation and processing of the extra-financial information and the elements contained in the extra-financial Performance Declaration which was included, for the first time, in the 2018 Reference Document. Compliance with the new regulations relating to the extra-financial performance statement provided an opportunity to produce an integrated management report, consolidating both the financial and extra-financial information. The Committee was thus informed of the collaborative work by the relevant Group Departments which led to the production of the Integrated Management Report (containing the extra-financial performance statement).

The Committee was also informed of the preparation of the 2019 Universal Registration Document, more specifically by taking into account the new Prospectus regulations and their impact on the presentation of risks, including the environmental and societal risks. The Committee reviewed the extra-financial Performance Declaration included in this Document. A report was made to the Board of Directors.

Furthermore, the Committee read the report summarizing the Group's extra-financial ratings. It also drew up a draft work program for 2020.

In order to ensure proper coordination with the work of the Audit and Accounts Committee, a joint session of the Environment and Society Committee and the Audit and Accounts Committee was held, for the first time, on June 17, 2019. At this joint session, the members of both Committees reviewed the environmental and societal risks, and more specifically certain of those risks, the mapping of such risks, together with the procedures relating to the preparation and processing of the extra-financial information. The elements concerning this first joint session are contained in page 126 of this Document.

Each meeting gives rise to the preparation of a file, which is sent several days before the meeting and is also available in electronic format. At the meeting, each presentation made gives rise to discussion. An oral report and then written minutes of each meeting are prepared for the Board of Directors.

15. Application of the AFEP/MEDEF Corporate Governance Code: summary table

L'Air Liquide S.A. applies the AFEP/MEDEF Code, apart from the following recommendations:

Recommendations	L'Air Liquide S.A. practice and justification
Independence criteria for the Directors Article 9.5: In order to qualify as independent, a Director: must not have been "during the course of the previous five years, an employee or Executive Director of the Company; an employee, Executive Director or a Director of a company that the latter consolidates; an employee, Executive Director or Director of the parent company or a company consolidated within this parent company";	The Board of Directors considers that the former employees or Senior Executive Officers of the Company cannot be considered to be independent, even if their duties ended more than five years ago (see pages 112 and 113).
Remuneration Committee Article 18.1: "It is recommended […] that one of its members be an employee Director."	A Director representing the employees appointed by the France Group Committee has participated in Board meetings since July 2014. Philippe Dubrulle, Director representing the employees is a member of the Board Committee which focuses on environmental and societal issues. He contributes to this Committee, as part of the tasks which are assigned to it concerning the definition and deployment of the Group actions on environmental and societal issues, the vision of the employees of the Group's operating entities. Philippe Dubrulle, who had made known his interest in sustainable development matters, has been a member of the Environment and Society Committee since its formation, in May 2017.

16. Shareholder relations working group

During the past fiscal year, the tasks of the "Shareholder Relations" working group have essentially focused on shareholder strategy and Air Liquide's relations with its shareholders.

17. Participation by shareholders at the General Meeting

Pursuant to article L. 225-37-4, 9th of the French Commercial Code, it is specified that the specific terms and conditions relating to the participation of shareholders at the General Meeting are set out in articles 5 to 10 and 18 and 19 of the Company's articles of association (set out on pages 357 et seq. of this Universal Registration Document).

18. Delegations of authority granted by the General Meeting

Pursuant to article L. 225-37-4, 3rd of the French Commercial Code, it is specified that the summary table of the valid delegations of authority granted by the General Meeting in connection with increases in the share capital is set out on pages 354 and 355 of this Universal Registration Document.

INFORMATION CONCERNING MEMBERS OF THE BOARD OF DIRECTORS AND EXECUTIVE MANAGEMENT

(as of December 31, 2019)

Benoît POTIER

Chairman and Chief Executive Officer

Nationality: French
Born on September 3, 1957
Date of first appointment: May 2000
Start of current term: May 2018
End of current term: 2022 (General Meeting to approve the financial statements for the fiscal year ending December 31, 2021)
Number of shares owned as of December 31, 2019: 389,756
Business address: Air Liquide – 75, quai d'Orsay – 75321 Paris Cedex 07

Career

A graduate of École Centrale de Paris, Benoît Potier joined Air Liquide in 1981 as a Research and Development engineer. After serving as a Project Manager in the Engineering & Construction Division, he was made Vice President of Energy Development in the Large Industries business line. In 1993, he became Director of Strategy & Organization and, in 1994, was put in charge of the Chemicals, Metal & Steel, Oil and Energy Markets. He was made an Executive Vice President of Air Liquide in 1995 with additional responsibilities over the Engineering & Construction Division and the Large Industries operations in Europe. Benoît Potier was appointed Chief Executive in 1997. He was appointed to the Board of Directors in 2000 and became Chairman of the Management Board in November 2001. In 2006, he was appointed Chairman and Chief Executive Officer of L'Air Liquide S.A.

Positions and activities held during 2019

Functions within the Air Liquide Group

- **Chairman and Chief Executive Officer:** L'Air Liquide S.A.*, Air Liquide International, Air Liquide International Corporation (ALIC)
- **Director:** American Air Liquide Holdings, Inc., The Hydrogen Company
- **Director:** Air Liquide Foundation

Positions or activities outside the Air Liquide Group

- **Director:** Danone* (member of the Appointment and Remuneration Committee, chairman of the Purposes and Engagements Committee since April 2019)
- **Member of the Supervisory Board:** Siemens AG* (member of the Nominating Committee)
- **Co-Chair:** The Hydrogen Council
- **Member:** European Round Table (ERT)
- **Director:** CentraleSupélec (until September 2019), Association nationale des sociétés par actions (ANSA) (until April 2019)
- **Member of the Board:** Association française des entreprises privées (AFEP) (until May 2019)
- **Member of the French Board:** INSEAD

Positions and activities held during the last five years and that have expired

2018

- **Chairman:** European Round Table (ERT) (until May 2018)

2017

- **Chairman:** Air Liquide Foundation (until March 2017)

2014

- **Vice-Chairman:** European Round Table (ERT) (until June 2014)
- **Director:** Cercle de l'Industrie (until May 2014), La Fabrique de l'industrie (until June 2014)

(*) Listed company.

Thierry PEUGEOT

Director – Member of the Audit and Account Committee

Nationality: French
Born on August 19, 1957
Date of first appointment: May 2005
Start of current term: May 2017
End of current term: 2021 (General Meeting to approve the financial statements for the fiscal year ending December 31, 2020)
Number of shares owned as of December 31, 2019: 2,232
Address: 18, avenue Georges Mandel – 75116 Paris – France

Career

A graduate of ESSEC, Thierry Peugeot began his career with the Marrel Group in 1982 as Export Manager for the Middle East and English-speaking Africa for Air Marrel, and then Director of Air Marrel America. He joined Automobiles Peugeot in 1988 as Regional Manager of the South-East Asia zone, then Chief Executive Officer of Peugeot do Brasil in 1991 and Chief Executive Officer of Slica in 1997. In 2000, he became International Key Accounts Director of Automobiles Citroën and then, in 2002, Vice President of Services and Spare Parts before being appointed to the PSA Peugeot Citroën Vice Presidents Committee. Thierry Peugeot has been Chairman of the Supervisory Board of Peugeot S.A. between 2002 and 2014.

Positions and activities held during 2019

Functions within the Air Liquide Group

- **Director:** L'Air Liquide S.A.* (member of the Audit and Accounts Committee since May 2012)

Positions or activities outside the Air Liquide Group

- **Chief Executive:** Société anonyme de participations
- **Director:** Établissements Peugeot Frères (Chairman of the Accounts Committee)
- **Director:** Compagnie Industrielle de Delle
- **Permanent representative** of the Compagnie Industrielle de Delle on the LISI* Board of Directors (member of the Remuneration Committee and President of the Appointments Committee)
- **Chairman:** CITP
- **Chairman:** SIV
- **Chairman and Chief Executive Officer:** SID
- **Honorary Chairman:** Association nationale des sociétés par actions (ANSA)

Positions and activities held during the last five years and that have expired

2016

- **Director:** Faurecia* (Member of the Strategic Committee) (until May 2016)

2015

- **Director:** Société FFP* (until May 2015)
- **Senior Executive Vice President:** Établissements Peugeot Frères (until April 2015)

2014

- **Chairman of the Supervisory Board:** Peugeot S.A.* (until April 2014)
- **Member of the Supervisory Board:** Peugeot S.A.* (until July 2014)
- **Vice Chairman of the Supervisory Board:** Gefco (until December 2014)
- **Chairman:** Association nationale des sociétés par actions (ANSA) (until July 2014)

(*) Listed company.

Karen KATEN

Independent Director – Member of the Appointments and Governance Committee

Nationality: American
Born on August 22, 1949
Date of first appointment: May 2008
Start of current term: May 2016
End of current term: 2020 [(a)] (General Meeting to approve the financial statements for the fiscal year ending December 31, 2019)
Number of shares owned as of December 31, 2019: 2,425
Business address: EW Healthcare Partners – 280 Park Avenue, 27th Floor East – New York, NY 10017 – USA

Career

Karen Katen, a US citizen, is a graduate of the University of Chicago (BA in Political Science and MBA). In 1974, she joined Pfizer and carried out various management and executive positions during more than 30 years. In her last position with Pfizer, she was Vice-Chairman of Pfizer Inc. and President of Pfizer Human Health, the Group's main operating department. Karen Katen played a major role in the introduction of new medicines for the treatment of cardiovascular and mental diseases, as well as diabetes and cancer. She also successfully oversaw the integration of Warner Lambert (acquired in 2000) and Pharmacia (acquired in 2003) in the Pfizer Group. Having retired from Pfizer in March 2007, she was Chairman of the Pfizer Foundation. Currently she is a Senior Advisor at EW Healthcare Partners, a healthcare venture and growth equity firm.

Positions and activities held during 2019

Functions within the Air Liquide Group

- **Director:** L'Air Liquide S.A.* (member of the Appointments and Governance Committee since May 2012)

Positions or activities outside the Air Liquide Group

- **Chairman of the Board:** Armgo Pharma
- **Chairman and Director:** Rand Corporation's Health Board of Advisors
- **Director:** The Economic Club of New York Board of Trustees, Peterson Institute for International Studies
- **Senior Advisor:** EW Healthcare Partners
- **Trustee:** University of Chicago
- **Trustee:** University of Chicago Graduate School of Business

Positions and activities held during the last five years and that have expired

2018

- **Director:** Home Depot* (until May 2018)

2016

- **Director:** IMS Health, Takeda Global Advisory Board

2015

- **Director:** Catamaran Inc.* (until July 2015), Harris Corporation*

(a) Non-renewal of term in compliance with the internal regulations of the Board of Directors.
(*) Listed company.
N.B.: For information regarding independence criteria, please refer to this Universal Registration Document – page 112.

Jean-Paul AGON

Independent Director – Lead Director – Chairman of the Appointments and Governance Committee – Member of the Remuneration Committee

Nationality: French
Born on July 6, 1956
Date of first appointment: May 2010
Start of current term: May 2018
End of current term: 2022 (General Meeting to approve the financial statements for the fiscal year ending December 31, 2021)
Number of shares owned as of December 31, 2019: 1,784
Business address: L'Oréal – 41, rue Martre – 92110 Clichy

Career

A graduate of HEC Business School, Jean-Paul Agon began his career with the L'Oréal Group in 1978. From 1981 to 1997, he held various Senior Management positions first as General Manager of L'Oréal Greece and General Manager of L'Oréal Paris, then International Managing Director for Biotherm International, Managing Director for L'Oréal Germany and finally Managing Director for L'Oréal Asia Zone. From 2001 to 2005, he was Chairman and Chief Executive Officer of L'Oréal USA as well as several subsidiaries of the L'Oréal Group in the USA. In 2005, he was appointed Deputy Chief Executive Officer of the L'Oréal Group, and became Chairman and Chief Executive Officer of the Group in 2006. He is Chairman and Chief Executive Officer of L'Oréal since March 2011.

Positions and activities held during 2019

Functions within the Air Liquide Group

- **Director:** L'Air Liquide S.A.* (Lead Director since May 2017; member of the Appointments and Governance Committee since May 2015, then Chairman of this Committee since May 2017; member of the Remuneration Committee since May 2012 – Chairman of this Committee from May 2015 to May 2018)

Positions or activities outside the Air Liquide Group

- **Chairman and Chief Executive Officer:** L'Oréal*
- **Chairman:** L'Oréal Foundation
- **Director:** Raisesherpas
- **Director:** Association françaises des entreprises privées (AFEP)
- **Director:** Institut français des relations internationales (IFRI)

Positions and activities held during the last five years and that have expired

2014

- **Director:** L'Oréal USA Inc. (United States)
- **Director:** Galderma Pharma S.A. (Switzerland) (until July 2014)

(*) Listed company.

N.B.: For information regarding independence criteria, please refer to this Universal Registration Document – page 112.

Siân HERBERT-JONES

Independent Director – Chairman of the Audit and Account Committee

Nationality: British
Born on September 13, 1960
Date of first appointment: May 2011
Start of current term: May 2019
End of current term: 2023 (General Meeting to approve the financial statements for the fiscal year ending December 31, 2022)
Number of shares owned as of December 31, 2019: 1,013

Career

Holder of a Master of Art degree in History from Oxford University and a graduate from the Institute of Chartered Accountants in England and Wales, Siân Herbert-Jones first practiced for 13 years with the firm of PriceWaterhouseCoopers, in the London office from 1983-1993 in particular in the capacity of Corporate Finance Manager, then in the Paris office from 1993 to 1995 in the capacity of Mergers & Acquisitions Manager. She then joined the Sodexo Group in 1995 in which she was successively in charge of international development from 1995 to 1998 and the Group's Treasury Department from 1998 to 2000 then Deputy Chief Financial Officer in 2000. From 2001 to December 21, 2015, she was Chief Financial Officer; and member of the Executive Committee of the Sodexo Group. Since 2016, she holds several positions within Board of Directors of large companies and also pursues other consulting activities in societal and environmental fields.

Positions and activities held during 2019

Functions within the Air Liquide Group

- **Director:** L'Air Liquide S.A.* (Chairman of the Audit and Accounts Committee since May 2015; member of this Committee since May 2013)

Positions or activities outside the Air Liquide Group

- **Director:** Cap Gemini SE* (member of the Audit and Risks Committee); Bureau Veritas* (member of the Audit and Risks Committee); Compagnie Financière Aurore Internationale (Sodexo Group)

Positions and activities held during the last five years and that have expired

2017

- **Member of the Appointments and Remuneration Committee:** Veritas* (until May 2017)

2015

- **Chief Financial Officer and member of the Executive Committee:** Sodexo Group*
- **Chairman:** Etin SAS (France); Sodexo Etinbis S.A.S. (France); Sofinsod SAS (France)
- **Director:** Sodexho Awards Co, Sodexo Japan Kabushiki Kaisha Ltd., Sodexho Mexico S.A. de CV, Sodexho Mexico Servicios de Personal S.A. de CV, Sodexo Remote Sites the Netherlands B.V., Sodexo Remote Sites Europe Ltd., Universal Sodexho Eurasia Ltd., Sodexo, Inc., Sodexo Management, Inc., Sodexo Remote Sites USA, Inc., Sodexo Services Enterprises LLC, Universal Sodexho Services de Venezuela S.A., Universal Sodexho Empresa de Servicios y Campamentos S.A., Sodexo Global Services UK Ltd.
- **Member of the Management Board:** Sodexo en France SAS (France), Sodexo Entreprises SAS (France), Sodexo Pass International SAS (France), One SAS (France)
- **Permanent representative** of Sofinsod SAS on the Supervisory Board of One SCA (France)

(*) Listed company.

N.B.: For information regarding independence criteria, please refer to this Universal Registration Document – page 112.

Pierre DUFOUR

Director – Chairman of the Environment and Society Committee

Nationality: Canadian
Born on March 28, 1955
Date of first appointment: May 2012
Start of current term: May 2016
End of current term: 2020 [(a)] (General Meeting to approve the financial statements for the fiscal year ending December 31, 2019)
Number of shares owned as of December 31, 2019: 99,462

Career

A graduate of École polytechnique, Montréal University, Stanford University (California) and Harvard University (Massachusetts), Pierre Dufour began his career in 1976 at Lavalin Inc. (now SNC-Lavalin Inc.), a leading engineering contractor in Montreal, Canada. From 1991 to 1997, he was Chief Executive Officer of SNC-Lavalin Inc. Pierre Dufour joined Air Liquide in 1997 as Vice President of Worldwide Engineering before his promotion to Group Industrial Director in 1998, overseeing the technical aspects of Group operations worldwide. In 2000, he was appointed Chairman and Chief Executive Officer of American Air Liquide Holdings Inc., in Houston, Texas and joined Air Liquide Group's Executive Committee. He was appointed Senior Executive Vice President in 2007 and appointed to the Board of Directors in 2012. In charge of the Frankfurt hub since inception in 2014, he is also responsible for the World Business Line Large Industries as well as Engineering & Construction, plus the Asia Pacific region. Since 2016, he is also Chairman of Airgas, Inc. Pierre Dufour has decided to claim his pension entitlement and left his executive positions within the Air Liquide Group by the end of 2017. Pierre Dufour will continue to be a Director of L'Air Liquide S.A.

Positions and activities held during 2019

Functions within the Air Liquide Group

- **Director:** L'Air Liquide S.A.* (Chairman of the Environment and Society Committee since May 2017)

Positions or activities outside the Air Liquide Group

- **Director:** Archer Daniels Midland Company* (member of the Audit Committee and Sustainability / Corporate Responsibality Committee)

Positions and activities held during the last five years and that have expired

2018

- **Director:** National Grid Plc* (member of the Safety, Environment and Health Committee, Remuneration Committee and Nominations Committee) (until July 2018)
- **Director:** Airgas, Inc. (until December 2018)

2017

- **Senior Executive Vice President:** L'Air Liquide S.A.* (until May 2017)
- **Chairman of the Board of Directors:** Airgas, Inc. (until March 2017)
- **Senior Executive Vice-President and Director:** Air Liquide International (until June 2017)
- **Director:** American Air Liquide Holdings, Inc. (until May 2017), Société d'Oxygène et d'Acétylène d'Extrême-Orient (SOAEO) (until June 2017)
- **Chairman and Director:** American Air Liquide Inc. (until May 2017)
- **Managing Director:** Air Liquide Global Management Services GmbH (until July 2017)

2015

- **Chairman of the Board of Directors and Director:** Air Liquide Middle East (until December 2015)

(a) Renewal of term not requested.
(*) Listed company.

Sin Leng LOW

Independent Director – Member of the Audit and Account Committee

Nationality: Singaporean
Born on June 9, 1952
Date of first appointment: May 2014
Start of current term: May 2018
End of current term: 2022 (General Meeting to approve the financial statements for the fiscal year ending December 31, 2021)
Number of shares owned as of December 31, 2019: 1,521
Business address: Nanyang Academy of Fine Arts – 80 Bencoolen Street Singapore 189655

Career

Sin Leng Low is a graduate of the University of Alberta (Canada) in Electrical engineering, has a Master of Business Administration from the Catholic University of Leuven (Belgium) and completed the Advanced Management Program at Harvard Business School (USA). After spending part of her career in the Singapore government administrative service, Sin Leng Low held the duties of Executive Vice President at electricity provider Singapore Power and Managing Director of its telecommunications subsidiary from 1995 to 2000. In 2000, she joined energy, water, marine and urban development group Sembcorp Industries, where she successively held the positions of Group Chief Operating Officer and Executive Chairman of the subsidiary spearheading the industrialization and urbanization development business in China, Vietnam and Indonesia until end 2012, and Senior Advisor for four years.

Positions and activities held during 2019

Functions within the Air Liquide Group

- **Director:** L'Air Liquide S.A.* (member of the Audit and Accounts Committee since May 2015)

Positions or activities outside the Air Liquide Group

- **Member of the Board of Trustees:** Singapore University of Technology & Design (SUTD)
- **Chairman and Director:** Nanyang Academy of Fine Arts (NAFA)
- **Chairman:** Nanyang Fine Arts Foundation Limited, NAFA International Pte Ltd.
- **Executive Board member:** China Cultural Center

Positions and activities held during the last five years and that have expired

2016

- **Senior Advisor:** Sembcorp Development Ltd.
- **Chairman:** Sino-Singapore (Chengdu) Innovation Park Development Co., Ltd. (in which Sembcorp Development holds a 25% stake indirectly through a joint venture: Singapore-Sichuan Investment Holding Pte Ltd.)
- **Director:** Singapore-Sichuan Investment Holding Pte Ltd. (a 50/50 partnership between Sembcorp Development and Singbridge Pte Ltd. which is wholly owned by Singapore Temasek group)

(*) Listed company.

N.B.: For information regarding independence criteria, please refer to this Universal Registration Document – page 112.

Annette WINKLER

Independent Director – Member of the Remuneration Committee – Member of the Appointments and Governance Committee

Nationality: German
Born on September 27, 1959
Date of first appointment: May 2014
Start of current term: May 2018
End of current term: 2022 (General Meeting to approve the financial statements for the fiscal year ending December 31, 2021)
Number of shares owned as of December 31, 2019: 1,859
Business address: Villa Kayser – Uhlbacher Strasse 7 – 70329 Stuttgart – Germany

Career

Doctor in Economics from the University of Frankfurt (Germany), Annette Winkler became the Managing Shareholder of a medium-sized construction company. In 1995, she joined the Mercedes-Benz group, where she held a variety of positions and in particular that of Senior Director / Head Public Relations and Communications. After spending two years as Head of the Mercedes-Benz sales and service outlet in Braunschweig, she became Chief Executive Officer of DaimlerChrysler Belgium and Luxembourg (1999-2005), then Vice President of Global Business Management & Wholesale Europe (2006-2010). Vice President of Daimler AG, since 2010 she was Chief Executive Officer of smart (with overall responsibility for the brand, also in charge of the smart factory in Lorraine), until 2018.

Positions and activities held during 2019

Functions within the Air Liquide Group

- **Director:** L'Air Liquide S.A.* (member of the Remuneration Committee since May 2015; member of the Nomination and Governance Committee since May 2017)

Positions or activities outside the Air Liquide Group

- **Member of the Supervisory Board:** Mercedes-Benz South Africa (until June 2019)
- **Director:** Renault S.A.* (Member of the Strategy Committee) (since June 2019); Renault S.A.S. (since June 2019)
- **Member of the Counsel for Foreign Economic Affairs** of the German Ministry for Economics [(a)]

Positions and activities held during the last five years and that have expired

2018

- **Vice President:** Daimler AG *, head of Smart (until September 2018)

(a) Until March 2020.
(*) Listed company.
N.B.: For information regarding independence criteria, please refer to this Universal Registration Document – page 112.

Philippe DUBRULLE

Director representing the employees – Member of the Environment and Society Committee

Nationality: French
Born on June 23, 1972
Date of first appointment by the Group Committee in France: June 2014
Start of current term: May 2018
End of current term: 2022 (General Meeting to approve the financial statements for the fiscal year ending December 31, 2021)
Business address: Air Liquide Advanced Technologies, 2, rue de Clémencière, 38360 Sassenage – France

Career

An enginneering graduate from École Supérieure de l'École Supérieure de l'Énergie et des Matériaux, Philippe Dubrulle has held various positions as an engineer, Product Manager and International Sales Manager at several aeronautical group both in France and abroad. He joined Air Liquide Group in 2008. Based in Sassenage, he is an employee of the subsidiary Air Liquide Advanced Technologies. He is Programmes & Services Manager, Aerospace & Defense. Philippe Dubrulle was appointed as the Director representing the employees by the Group Committee in France on June 18, 2014, his office was renewed by that same Committee, at its plenary session on December 6, 2017. A Member of the French Institute of Directors, he has been a Certified Company Director – ASC France since November 2016.

Positions and activities held during 2019

Functions within the Air Liquide Group

- **Director:** L'Air Liquide S.A.* (member of the Environment and Society Committee since May 2017)
- **Programmes & Services Manager, Aerospace & Defense:** Air Liquide Advanced Technologies

Positions and activities held during the last five years and that have expired

-

(*) Listed company.

Geneviève BERGER

Independent Director – Member of the Environment and Society Committee

Nationality: French
Born on January 26, 1955
Date of first appointment: May 2015
Start of current term: May 2019
End of current term: 2023 (General Meeting to approve the financial statement for the fiscal year ended December 31, 2022)
Number of shares owned as of December 31, 2019: 610
Business address: Firmenich S.A., Route des Jeunes, 1 P.O. Box 239, CH – 1211 Geneva 8 – Switzerland

Career

With a Ph.D. in physics, Doctor of Medecine and with a Ph.D. human biology, Geneviève Berger was Director of the mixed laboratory for parametric imaging CNRS-Broussais Hôtel-Dieu from 1991 to 2000. She was General Manager of the CNRS between 2000 and 2003. She served as University Professor and Hospital Managing Director at La Pitié-Salpêtrière between 2003 and 2008 before joining Unilever as Chief Research and Development Officer and then Chief Science Officer from 2008 to 2014. She has been the Head of the research departement at the Swiss company Firmenich since July 1, 2015.

Positions and activities held during 2019

Functions within the Air Liquide Group

- **Director:** L'Air Liquide S.A.* (member of the Environment and Society Committee since May 2017)

Positions or activities outside the Air Liquide Group

- **Head of the Research Department:** Firmenich
- **Non-executive Director and member of the Scientific Committee:** AstraZeneca*

Positions and activities held during the last five years and that have expired

2015

- **Non-executive Director:** Merz (until March 2015)

2014

- **Scientific Director:** Unilever

(*) Listed company.

N.B.: For information regarding independence criteria, please refer to this Universal Registration Document – page 112.

Brian GILVARY

Independent Director – Member of the Audit and Account Committee

Nationality: British
Born on February 12, 1962
Date of first appointment: May 2016
Start of current term: May 2016
End of current term: 2020 [(a)] (General Meeting to approve the financial statements for the fiscal year ending December 31, 2019)
Number of shares owned as of December 31, 2019: 1,943
Business address: BP Plc – 1 St James's Square – London SW1Y 4PD – United-Kingdom

Career

A British citizen, holder of a PhD in mathematics from the University of Manchester (UK), Brian Gilvary joined BP group in 1986 where he has spent his entire career. Following a variety of roles in the upstream, downstream and trading of the oil and gas business in Europe and the United States, he became the Downstream's Chief Financial Officer and Commercial Director from 2002 to 2005. From 2005 until 2009 he was Chief Executive of the integrated supply and trading function. In 2010 he was appointed Deputy Group Chief Financial Officer with responsibility for the finance function. Brian Gilvary was appointed Chief Financial Officer of BP on January 1, 2012. Having worked in both upstream and downstream, he has a strong experience of BP oil and gas business and a significant expertise of finance and trading.

Positions and activities held during 2019

Functions within the Air Liquide Group

- **Director:** L'Air Liquide S.A.* (member of the Audit and Accounts Committee since May 2017)

Positions or activities outside the Air Liquide Group

- **Chief Financial Officer and Executive Director:** BP Plc* [(b)]
- **Director:** BP International Limited, BP Plc (Member of the "Results Committee")
- **Director** (until July 8, 2019): BP Capital Markets Plc, BP Car Fleet Limited, BP Corporate Holdings Limited, BP Finance Plc, BP Global Investments Limited, BP Holdings North America Limited, The BP Share Plans Trustees Limited
- **Chairman:** The 100 Group
- **Non-executive Director:** Royal Navy Board
- **Senior Independent Director:** Francis Crick Institute
- **Member:** Trilateral Commission
- **Member:** Development Advisory Board of upReach

Positions and activities held during the last five years and that have expired

2016

- **External advisor:** HM Treasury Financial Management Review Board

As from February 1, 2020, Mr Brian Gilvary is appointed Non-Executive Director of Barclays Plc.*
(a) Renewal of term proposed to the General Meeting of May 5, 2020.
(b) Until June 30, 2020.
(*) Listed company.
N.B.: For information regarding independence criteria, please refer to this Universal Registration Document – page 112.

Xavier HUILLARD

Independent Director – Chairman of the Remuneration Committee

Nationality: French
Born on June 27, 1954
Date of first appointment: May 2017
Start of current term: May 2017
End of current term: 2021 (General Meeting to approve the financial statements for the fiscal year ending December 31, 2020)
Number of shares owned as of December 31, 2019: 13,220
Business address: VINCI – 1, cours Ferdinand de Lesseps, 92851 Rueil-Malmaison Cedex – France

Career

Xavier Huillard is a graduate of the École polytechnique and the École nationale des ponts et chaussées. He has spent most of his working life in the construction industry in France and abroad. He joined Sogea in December 1996 as Deputy Chief Executive Officer in charge of international activities and specific projects, and then became its Chairman and Chief Executive Officer in 1998. He was appointed Deputy General Manager of VINCI in March 1998 and was Chairman of VINCI Construction from 2000 to 2002. He was appointed Senior Executive Vice President of VINCI and was Chairman and Chief Executive Officer of VINCI Energies from 2002 to 2004, then Chairman of VINCI Energies from 2004 to 2005. Xavier Huillard became Director and Chief Executive Officer of VINCI in 2006 and was appointed Chairman of the Board of Directors and Chief Executive Officer of VINCI on May 6, 2010. He was Chairman of the Institut de l'Entreprise from January 2011 to January 2017. Xavier Huillard is Chairman of Vinci Concessions since June 20, 2016.

Positions and activities held during 2019

Functions within the Air Liquide Group

- **Director:** L'Air Liquide S.A.* (member of the Remuneration Committee since May 2017 and Chairman of this Committee since May 2018)

Positions or activities outside the Air Liquide Group

- **Chairman and Chief Executive Officer:** VINCI*
- **Permanent representative** of VINCI on the Board of Directors of Aéroports de Paris* (member of the Remuneration, Nomination and Governance Committee)
- **Chairman:** VINCI Concessions SAS
- **Chairman of the Supervisory Board:** VINCI Deutschland GmbH
- **Permanent representative** of VINCI on the Board of Directors of VINCI Energies, and of Fabrique de la Cité
- **Permanent representative** of Snel on the Board of Directors of ASF
- **Permanent representative** of VINCI Autoroutes on the Board of Directors of Cofiroute
- **Chairman:** Fondation d'entreprise VINCI de la Cité
- **Director:** Kansai Airports
- **Honorary Chairman:** Institut de l'entreprise
- **Director:** Aurore Association

Positions and activities held during the last five years and that have expired

2017

- **Chairman:** Institut de l'Entreprise (until January 2017)

2015

- **Permanent representative** of VINCI on the Board of Directors of Eurovia

2014

- **Chairman:** Vinci Concessions Management SAS
- **Non-voting Director** on the Board of Directors of Aéroport de Paris*

(*) Listed company.

N.B. For information regarding independence criteria, please refer to this Universal Registration Document – page 112.

New candidates proposed to the General Meeting of May 5, 2020

Anette BRONDER

Nationality: German
Born on December 13, 1967
Business address: Swiss Re Management Ltd. – Mythenquai 50/60, 8022 Zürich – Switzerland

Career

A German citizen, Anette Bronder is a graduate of the University of Stuttgart (holder of a Master in Economics and Social Sciences). She started her career with Hewlett Packard GmbH in 1997, specializing in IT and Consulting, and held a number of senior management positions. In 2010, she was appointed Director of Enterprise Technology at Vodafone Germany, and became Director of Enterprise Technology for Vodafone Group worldwide in London in 2013. In 2015, Anette Bronder joined T-Systems International, a subsidiary of Deutsche Telekom, as Director Digital Division and a member of the Management Board, responsible for building up and managing the growth areas 'Internet of Things', 'Public Cloud' and 'Cybersecurity '. Since June 1st, 2019, Anette Bronder is the Group Chief Operating Officer of Swiss Re, a world leading provider of re-insurance, based in Zurich.

Positions and activities held during 2019

Positions or activities outside the Air Liquide Group

- **Chief Operating Officer:** Swiss Re (as of June 1st, 2019)
- **Director:** Elumeo SE (until September 2019)

Positions and activities held during the last five years and that have expired

2018

- **Director:** Ströer SE (until December 2018)

2017

- **Director Digital Division and Member of the Management Board:** T-Systems International

2014

- **Director Enterprise Technology:** Vodafone Group

Kim Ann MINK

Nationality: American
Born on December 4, 1959
Business address: 105 Cobblestone Blvd. – Monroe Township – NJ 08831 – United States

Career

An American citizen, Kim Ann Mink holds a bachelor's degree in chemistry from Hamilton College and a Ph.D. in Analytical Chemistry from Duke University, and is a graduate of the Executive Management Program at the Wharton School of the University of Pennsylvania. Dr. Mink spent most of her career in leading international groups in the chemical sector, where she held increasing managerial positions. She joined Innophos in 2015 as President and CEO and was named Chairman in 2017. Prior to joining Innophos, she served in senior executive positions at the Dow Chemical Company since 2009, most recently as business president of Elastomers, Electrical and Telecommunications. She had previously served for more than 20 years at the Rohm and Haas Company (which was acquired by Dow Chemical) where she held roles of increasing responsibility, including corporate vice president and general manager for the Ion Exchange Resins business.

Positions and activities held during 2019

Positions or activities outside the Air Liquide Group

- **President, Chairman and Chief Operating Officer:** Innophos *(a)
- **Director:** Eastman Chemical Company* ; PolyOne Corp.*

Positions and activities held during the last five years and that have expired

2016

- **Member of the Board of Trustees:** National ALS Association

2015

- **Member of the Board of Advisors:** Catalyst

(a) Until February 7, 2020.
(*) Listed company.

REMUNERATION OF L'AIR LIQUIDE S.A. EXECUTIVE OFFICERS AND DIRECTORS

This section includes a complete description of the components of the remuneration for the Corporate Officers of L'Air Liquide S.A., including in particular the information pursuant to Ordinance No. 2019-1234 of November 27, 2019 which implements Law No. 2019-486 of May 22, 2019 on business growth and transformation (known as the "PACTE Law"). Pursuant to the new regulation, the General Meeting of May 5, 2020 is invited to decide upon the following components:

- with regard to the Chairman and Chief Executive Officer and the Directors of L'Air Liquide S.A.: the components of remuneration presented in the Report on Corporate Governance pursuant to article L. 225-37-3-I of the French Commercial Code. These components are described at pages 148 to 165 of this Universal Registration Document and are the subject of the 10th resolution proposed to the General Meeting [(a)];
- with regard to the Chairman and Chief Executive Officer: the elements which make up the total remuneration and the benefits of all kinds paid during 2019 or awarded in respect of 2019. These elements are described at pages 171 to 177 of this Universal Registration Document and are the subject of the 9th resolution proposed to the General Meeting [(b)];
- with regard to all the Corporate Officers of L'Air Liquide S.A.: the remuneration policy for the Corporate Officers, which is presented at pages 178 to 186 of this Universal Registration Document and which is the subject of the 11th resolution proposed to the General Meeting [(c)].

The resolutions proposed to the General Meeting of May 5, 2020 are contained in Chapter 6 of this Universal Registration Document.

The application of the remuneration policy to the Executive Officer for the 2020 fiscal year is described at pages 166 to 170 for information purposes.

The information included in this document also takes into account the provisions of the AFEP/MEDEF Code of Corporate Governance for listed companies, as interpreted by the Haut Comité de Gouvernement d'Entreprise (French High Committee on Corporate Governance) (Application guide for the AFEP/MEDEF Code; Activity report of the Haut Comité de Gouvernement d'Entreprise of December 2019) and the AMF's recommendations included in the AMF Guide on the preparation of reference documents and the AMF Report on Corporate Governance and the remuneration of Executive Officers of listed companies dated December 3, 2019. For a summary of the application of the AFEP/MEDEF Code, see the table in the Report on Corporate Governance, at page 131 of this Universal Registration Document.

In accordance with the AFEP/MEDEF Code, the remuneration components of the Executive Officers are made public after the Board meeting during which they are approved.

(a) Pursuant to article L. 225-100-II of the French Commercial Code.
(b) Pursuant to article L. 225-100-III of the French Commercial Code.
(c) Pursuant to article L. 225-37-2-II of the French Commercial Code.

General principles taken into account for the determination of the remuneration of the Executive Officers

Traditionally, the remuneration policy determined by the Board of Directors includes **incentive elements reflecting the Group's strategy which is steered toward profitable long-term growth, while acting responsibly with regard to the corporate interest and the interests of all the stakeholders.** In a **highly capital-intensive industry,** profitable long-term growth requires constant attention to be paid to each investment decision and to the competitiveness of every transaction, while maintaining an on-going effort over time in favor, in particular, of **safety and security, innovation, employee training and development, together with the environment.** In this context, the elements taken into account for the determination of the remuneration are as follows:

- a **short-term component,** comprising a **fixed remuneration** and a **variable remuneration;**
- a **long-term incentive** (hereinafter the **"LTI"**) through the grant of share subscription options and/or performance shares, both tools being subject in full to all the same performance conditions calculated over three years;
- other benefits attached to the performance of the Executive Officers' term of office, including:
  - a defined benefit **pension plan** which applies to eligible senior managers and Executive Officers, subject to performance conditions for Benoît Potier since May 16, 2018 (the date of renewal of his term of office),
  - a collective **life insurance** plan,
  - a **death and disability benefits** plan,
  - commitments to pay an **indemnity in the event of the termination of duties** at the Company's initiative, in certain circumstances, subject to performance conditions calculated over a three-year period,
  - entitlement to **unemployment insurance for Company managers and Corporate Officers,** in the absence of an employment contract with the Group.

To determine the remuneration policy, the Board of Directors takes into account the principles of completeness, balance, comparability, consistency, comprehensibility and proportionality as recommended by the AFEP/MEDEF Code of Corporate Governance.

The remuneration policy reflects the level of responsibility of the Group's senior executive and is adapted to the Group context, remains competitive and is an incentive to promote the Group's performance over the medium to long-term, in compliance with the corporate interest and the interests of all the stakeholders.

The **changes** to the components of remuneration for **2020** are described at pages 166 et seq. together with the remuneration policy submitted for the vote of the General Meeting on May 5, 2020 (11th resolution). The proposed changes are principally intended (i) to provide for a new criterion linked to Carbon Intensity as a performance condition for the LTI and (ii) following the Ordinance No. 2019-697 of July 3, 2019, to replace the acquisition of conditional rights under the aforementioned defined benefit pension plan which Benoît Potier benefits from by a substitution mechanism with effect from January 1, 2020.

1. Summary of the remuneration of the Executive Officer

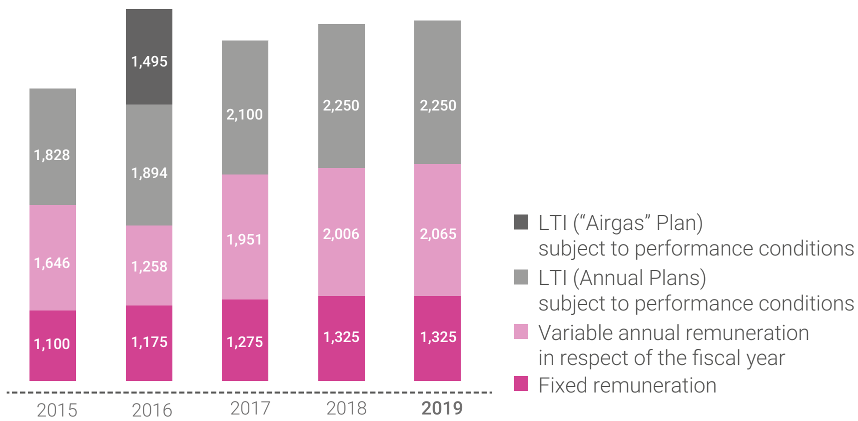
Table 1 below presents a summary of all remuneration components paid to the Executive Officer with regard to 2017, 2018 and 2019 fiscal years. They are then more fully described in the following tables.

TABLE 1 – SUMMARY OF THE REMUNERATION AND STOCK OPTIONS AND PERFORMANCE SHARES GRANTED TO THE EXECUTIVE OFFICER

(in thousands of euros, rounded off)	2017	2018	2019
Benoît Potier – Chairman and Chief Executive Officer:			
Remuneration granted in respect of the fiscal year (see breakdown in Table 2)	3,236	3,341	3,400
Value of stock options granted during the fiscal year (see breakdown in Table 4)	425	450	-
Value of performance shares granted during the fiscal year (see breakdown in Table 6):	1,675	1,800	2,250
TOTAL	**5,336**	**5,591**	**5,649**

BREAKDOWN OF THE REMUNERATION OF THE CHAIRMAN AND CHIEF EXECUTIVE OFFICER OVER THE LAST FIVE YEARS

(in thousands of euros, rounded off)



2. Remuneration of the Executive Officer (including information stated in paragraph I of article L. 225-37-3 of the French Commercial Code)

SUMMARY OF THE PRINCIPLES AND CRITERIA APPROVED BY THE GENERAL MEETING IN 2019

The principles and criteria for the determination, allocation and distribution of the fixed, variable and exceptional elements included in the remuneration and the benefits of all kinds, which are awarded to the Chairman and Chief Executive Officer because of his office, as decided upon by the Board of Directors on February 13, 2019 and presented in the Company's 2018 Reference Document (pages 156 to 163) were **approved by the General Meeting on May 7, 2019** (9th resolution).

It is noted that the **repositioning of the remuneration policy** for the Chairman and Chief Executive Officer in order to reflect the increased level of responsibility of the Group's senior executive following the change in the Group's size linked to the Airgas acquisition was **completed in 2018. The Board of Directors therefore maintained the fixed remuneration for 2019 at the same level as for 2018 and thus stabilized the level of the total annual target remuneration.**

The principal elements of the remuneration policy are as follows:

- In accordance with a recurring practice at Air Liquide, **the fixed remuneration represents approximately 25%, the variable remuneration 35% and the long-term incentive (hereafter "LTI") 40% of the total annual remuneration. Accordingly, the weight of the variable remuneration and the LTI, which are subject to performance conditions, represents approximately 75% of this remuneration.**
- **Criteria for the variable remuneration and the LTI:** with effect from 2019, taking into account the remarks made by shareholders and on the recommendation of the Remuneration Committee, the Board has modified the performance criteria to which these two remuneration tools are subject. Accordingly, the **EPS** criterion is now only taken into account for one remuneration tool: it continues to be a criterion for the annual **variable remuneration,** but no longer forms part of the performance criteria for the LTI. Furthermore, the **ROCE** has become a criterion for the **long-term** remuneration (LTI) as a replacement for the EPS. The revenue criterion is maintained as a criterion for the variable remuneration.
- **Variable remuneration:**
  - the variable part is expressed as a **target variable remuneration and as a maximum** (as a % of the fixed remuneration). For the quantifiable criteria, the target variable remuneration corresponds to an achievement of 100% of the target objective set at the start of the year. The fixed target objectives are demanding and are completely consistent with the trajectory of the NEOS company program;
  - a **greater relative weight is given to the quantifiable criteria** as compared to the qualitative criteria. For 2019, the quantifiable criteria included the EPS and revenue, which are some of the strategic objectives in the NEOS company program;
  - a **weighting continues to be given to each of the qualitative criteria** in order to meet the expectations of certain shareholders.
- **LTI:**
  - **Limits on the grants to Executive Officers:** the General Meeting on May 7, 2019 renewed the authorizations for the grant of stock options and performance shares (13th and 14th resolutions). On this occasion and following remarks made by shareholders, each of the **sub-limits on the grants to the Executive Officers** was **reduced by one-third** in order to bring them closer to the historical levels of grants by the Board. Consequently, the number of performance shares granted to the Executive Officers may not exceed 0.1% of the share capital (instead of 0.15% previously) and the number of stock options granted if any to the Executive Officers may not exceed 0.2% of the share capital (instead of 0.3% previously). As before, the Board of Directors also sets **annual limits for the grants,** which remain well below these sub-limits, it being noted, moreover, that, as stated above, the LTI must represent approximately 40% of the annual remuneration for the Executive Officer.
  - The **other principles which apply to the LTI are also unchanged** (the proration of the LTI in the event of the Executive Officer's departure during the period of assessment of the performance conditions, the level of requirement of the objectives, the rules which apply to the Executive Officers as described in paragraph 2.2.1 § C to G).

Finally, for 2019, the Board of Directors decided on September 30, 2019 only to grant performance shares (instead of a mix of stock options and performance shares as previously) to all the beneficiaries, in order to simplify and standardize the LTI plan.

The elements of Benoît Potier's remuneration in respect of 2019, as determined by the Board of Directors pursuant to the principles and criteria approved by the General Meeting on May 7, 2019, are described below.

2.1. SHORT-TERM BENEFITS

The gross annual remuneration before tax of the Chairman and Chief Executive Officer*, including the benefits in kind, amounts, for 2017, 2018 and 2019 fiscal years, to the figures shown in the following Table 2:

TABLE 2 – SUMMARY OF THE EXECUTIVE OFFICER'S REMUNERATION

	For information, reminder of previous years:					
	2017		2018		2019	
(in thousands of euros, rounded off)	Amounts awarded	Amounts paid	Amounts awarded	Amounts paid	Amounts awarded	Amounts paid
Benoît Potier **Chairman-Chief Executive Officer** (a) (b)						
■ Fixed remuneration	1,275	1,275	1,325	1,325	1,325	1,325
including remuneration in respect of his term of office as Director	-	-	-	-	-	-
■ Variable annual remuneration	1,951	1,258	2,006	1,951	2,065	2,006 (c)
■ Benefits in kind	10	10	10	10	10	10
TOTAL	**3,236**	**2,543**	**3,341**	**3,286**	**3,400**	**3,341**

(a) Pursuant to the recommendations of the AFEP/MEDEF Code of Corporate Governance, Benoît Potier resigned from his employment contract in May 2010. Benoît Potier receives all of his remuneration for his corporate office.
(b) During 2019, with respect to that fiscal year, the Group paid contributions to third parties, for the benefit of Benoît Potier, pursuant to the supplementary defined contribution pension plan (9,689 euros), pursuant to the collective death and disability benefit plan (3,307 euros) and pursuant to the collective life insurance contract (214,553 euros). The total sum of these contributions amounts to 227,549 euros. In terms of the collective life insurance contract, the amount to be paid in 2020 in respect of 2019 is 218,830 euros. Details of these plans are set forth below.
(c) Amount already approved by the General Meeting of May 7, 2019 (8th resolution).

Within the fixed remuneration and the variable remuneration in respect of 2019, after recording the achievement of the criteria for the variable remuneration in respect of the 2019 fiscal year by the Board meeting of February 10, 2020, the fixed remuneration represents 39% and the variable remuneration represents 61%**. For the record, in respect of 2018, the fixed remuneration represented 40% and the variable remuneration paid in 2019 represented 60%.

2.1.1. Fixed remuneration for 2019

In accordance with the principles and criteria determined by the Board of Directors on February 13, 2019 and approved by the General Meeting on May 7, 2019, the fixed remuneration was determined taking account of the level of responsibilities, the experience in executive management duties and market practices.

As announced, the Executive Officer's fixed remuneration for 2019 amounts to **1,325,000 euros, which is stable by comparison with 2018.**

2.1.2. Variable remuneration for 2019 for the Chairman and Chief Executive Officer

The principles and criteria for the variable remuneration, as decided upon by the Board of Directors on February 13, 2019 were approved by the General Meeting on May 7, 2019 (9th resolution).

On the proposal of the Remuneration Committee, the Board of Directors on February 10, 2020 assessed the performance of the Executive Officer in 2019.

The criteria for the variable remuneration, their weighting and their rate of achievement are detailed in the following summary table.

* *The Chairman and Chief Executive Officer does not receive any remuneration from Group companies other than L'Air Liquide S.A.*

** *As approved by the General Meeting on May 7, 2019 and in accordance with a recurring practice at Air Liquide, the fixed remuneration represents approximately 25%, the variable remuneration 35% and the LTI 40% of the total annual remuneration. After the Board meeting of February 10, 2020 recorded the achievement of the criteria for the variable remuneration for the 2019 fiscal year, the fixed remuneration represents approximately 23%, the variable remuneration 37% and the LTI 40% of the total annual remuneration (the LTI being subject to performance conditions over three years).*

A. (Quantifiable) financial criteria

In accordance with the remuneration policy approved by the General Meeting of May 7, 2019, the variable remuneration for 2019 is based on two financial criteria: increase in recurring net earnings per share (hereinafter **"recurring EPS"**) and comparable growth in consolidated **revenue.** Details of these criteria are contained in the following summary table (page 152).

Following remarks from shareholders and on the recommendation of the Remuneration Committee, the Board meeting of February 13, 2019 considered that the ROCE is more a long-term indicator and that it is more appropriate to include it as a performance criterion for the LTI. Consequently, the Board decided that the ROCE would no longer form part of the criteria for the annual variable remuneration.

The increase in the **recurring EPS** criterion makes it possible to take into account **all the items in the income statement.** The criterion of an **increase in sales** reflects the **momentum of the activity.** The two criteria, growth in revenue and the recurring EPS reflect the Group's ambition to achieve **profitable growth.** Moreover, the **NEOS company program** also incorporates **efficiency objectives,** the achievement of which contributes to the increase in the recurring EPS.

For each criterion, the Board of Directors had defined a target objective. The **target objectives were exacting** and were **completely consistent with the trajectory of the NEOS company program** which targets, for the period 2016-2020, at an average annual **growth in Group revenue** of **+6% to +8%,** including a scope impact linked to the consolidation of Airgas corresponding to +2% as an annual average.

A formula adopted by the Board makes it possible to calculate the amount of the variable remuneration due (within a maximum limit) by taking into account, on the basis of the consolidated financial statements for the fiscal year, the value achieved for the criterion as compared to the target objective set. Thus, in the event of a performance that exceeds the objective set, the value of the variable remuneration is adjusted upward within the maximum limit set for each criterion. **In the event of a performance that is below the lower limit set for each objective, the fraction of the variable remuneration corresponding to this criterion is equal to zero.**

The objectives are not made public for confidentiality reasons. Nevertheless, the rate of achievement of each objective for the variable remuneration (as a percentage of the fixed remuneration and as a percentage of the target variable remuneration allocated to that criterion) is communicated in the summary table at page 152.

The results for **2019** were **above the target for the recurring EPS criterion and below the target for the revenue criterion** (see the summary table at page 152).

B. (Qualitative) personal criteria

Pursuant to the remuneration policy approved by the General Meeting on May 7, 2019, the variable remuneration for 2019 is also based on the following (qualitative) personal criteria:

- **Corporate Social Responsibility** (hereinafter "CSR"):
  - Safety and reliability – continue efforts to improve safety (lost time accident frequency rate, road traffic accidents and job-related accidents),
  - Continue the roll-out of the sustainable development strategy (implementation of the Group's Climate Objectives – Air Liquide Foundation – Diversity);
- **Organization/Human Resources** (talent development, succession plans);
- **Individual performance:** this criterion responds to the Board of Directors' desire to keep a part of the variable remuneration subject to the Board's assessment, in order to take account of the unpredictability of the environment. This may be beneficial to the Executive Officer, if the Company is facing an unfavorable environment which was not anticipated at the time the objectives were set, or disadvantageous if the environment ultimately turns out to be more favorable than anticipated.

A weighting is given to each of the (qualitative) personal criteria, which is identical for both the target and maximum weight.

For 2019, the performance, concerning the (qualitative) personal objectives, was held to be excellent. After a detailed analysis by the Remuneration Committee of the achievements for the fiscal year, the Board of Directors noted the following elements:

CSR:

- **Safety and reliability:**

  In terms of **safety,** based on the estimated number of hours worked, the lost-time accident frequency rate of Group employees was 1.2 which represents the lowest frequency rate in 20 years. There were no deadly accidents among Group employees in 2019.

  In terms of **safety/industrial reliability,** the Group's **IMS** (Industrial Management System) program, which was introduced 15 years ago, has helped **improve the management** of industrial risks. Building on the experience acquired, a major project was launched in 2018 to adapt the IMS, in order to improve its efficiency. Content for this new IMS and tools for its implementation on the ground were prepared in 2019. Pilot schemes were launched during the summer at two clusters and the roll-out to all Group operations has been scheduled across the 2020-2021 period.

  In 2019, **road safety** was one of management's key focuses via an ambitious plan to roll out new technologies in trucks, to help improve the safe driving behavior of drivers. This plan is now well underway and is producing its first positive effects.

- **Continue the roll-out of the Sustainable Development strategy:**

  The Environment and Society Committee met three times in 2019. It reviewed the governance implemented to monitor the roll-out of the Climate Objectives announced by the Group in November 2018, as well as updates to the environmental and societal risks and to the Vigilance Plan.

  In terms of **meeting Climate Objectives,** and in particular the 30% decrease in the Group's Carbon Intensity between 2015 and 2025, this decrease continued in 2019. All of the Group's industrial clusters have drawn up their **Climate roadmaps** through to 2025, which include detailed action plans for each of the three criteria: Assets / Customers / Ecosystems. Within each of these clusters, a Climate Champion is responsible for promoting this subject and voluntary Climate Ambassadors lead **local initiatives** and share **best practices.**

  On December 2, 2019, the Group signed an **amendment to its 2 billion euro syndicated credit facility** to include a **correlation mechanism between its financial expenses and three of its CSR objectives** relating to Carbon Intensity, gender diversity, and safety. This initiative highlights the Group's commitment to combining performance and responsibility.

  The Group's efforts have also been recognized by investors and shareholders who awarded Air Liquide with the **Boursorama Sustainable Investment Award** (more than 100,000 voters).

  Benoît Potier is co-Chairman of the **Hydrogen Council.** This Council, founded in 2017, brings together 60 leaders in the energy, transport and industry sectors, to promote hydrogen with a view to achieving climate change-related objectives. Last June, the Hydrogen Council was invited to take part in official G20 events which took place in Japan, to promote the benefits of hydrogen in the energy transition.

  In 2019, the **Foundation** significantly stepped up its activity, doubling the amount of grants paid for projects. 44 **local development** projects, one **scientific education** project and six scientific research projects were approved. In November, the Council adopted a **new strategy** and new ways of operating to **increase the Foundation's impact** and develop **sustainable action.** In the area of scientific research of air quality and respiratory diseases, the Foundation now favors a pro-active, co-construction approach with the best European teams and long-term support. In territories affected by a high rate of unemployment and technical jobs with shortages, the Foundation is developing **innovative professional integration projects** in partnership with the Group's local teams and local non-profit organizations. The first two projects, one in Les Mureaux in the field of welding and the other a digital project in Johannesburg, have already been launched.

  The implementation of a **diversity** policy has continued within all Group entities (a detailed description of actions and results are included on pages 297 et seq. of this Universal Registration Document). As part of regular reviews of high-potential talent, the diversity of profiles is taken into account with the aim of continuing to strengthen it within key positions at the Group to better value the various cultures on which the Group is based and to improve gender equality.

Organization and Human Resources:

As a continuous program, the Group's **talent development** policy has been pursued, with regular reviews of our talent and their development. These reviews are carried out from the operational cluster level through to the Executive Committee level. The identification, development and recognition by the rest of the Group of the talent at **Airgas** has progressed well, with several dedicated reviews carried out within our Americas hub.

Regular reviews of our **high-potential talent** have been carried out with the Appointments and Governance Committee.

The **Executive Committee** was strengthened on September 1, 2019 with the appointment of **four new members** with a **diverse** range of expertise and experience in order to step up the implementation of our transformation strategy. The Executive Committee now has **14 members, including five women,** who boast **highly international** careers and are of **key nationalities** for the Group (France, USA, Germany).

Moreover, in 2019, we adapted our **technical talent development** program (TCL – Technical Career Leaders) by adding a **new technical field** focused on **IT** and **Digital** skills which drive fundamental innovation and performance. The first international experts have been recognized and two fellows (one of the program's highest levels of recognition) were appointed in the Digital field and in Industrial IT.

Individual performance:

Individual performance was considered to be excellent. The Board of Directors highlighted the capacity of the Executive Officer, within a **more fluctuating and contrasting global context** than expected, to steer the Group successfully, particularly in terms of **performance** and **efficiency**, which have **improved considerably**, significantly ahead of the target. The Committee also noted the Executive Officer's major involvement in the development of the **digitization** program and in the Group's **innovation** approach, sources of future development.

SUMMARY TABLE OF THE VARIABLE REMUNERATION FOR 2019

	Approved elements by the General Meeting in 2019:						
	Cible [(a)]		Maximum		Rate of achievement [(d)]		
Indicator	*As a % of the fixed remuneration*	*As a % based on 100*	*As a % of the fixed remuneration*	*As a % based on 100*	*As a % of the target remuneration for this criterion*	*As a % of the fixed remuneration*	*As a % based on 100*
Financial criteria (quantifiable) including:	**105**	**70**	**122**	**73**	**-**	**112**	**72**
Increase in recurring earnings per share (recurring EPS) [(b)]	75	50	87	52	116	87	56
Comparable growth in consolidated revenue [(c)]	30	20	35	21	84	25	16
Personal criteria (qualitative) including:	**45**	**30**	**45**	**27**	**-**	**44**	**28**
CSR: ■ Safety and reliability: continue efforts to improve safety (lost time accident frequency rate, road traffic accidents and job-related accidents) ■ Continue the roll-out of the sustainable development strategy (implementation of the Group's Climate Objectives – Air Liquide Foundation – Diversity)	15	10	15	9	95	14	9
Organization / Human Resources (talent development, succession plans)	15	10	15	9	95	14	9
Individual performance: assessment by the Board of Directors, notably in light of the external environment for the year	15	10	15	9	100	15	10
TOTAL (FINANCIAL AND PERSONAL CRITERIA)	**150**	**100**	**167**	**100**	**-**	**156**	**100**

(a) The target corresponds to 100% achievement of the performance criterion.
(b) Excluding the foreign exchange impact and significant exceptional items. Excluding the effect of applying the IFRS16 standard as from January 1, 2019.
(c) Excluding significant scope impact, foreign exchange impact and energy.
(d) As per decision of the Board of Directors on February 10, 2020.

The total amount of the variable remuneration is above the target and amounts to 2,064,913 euros, up by +2.9% as compared to the variable remuneration for 2018.

The total amount of the variable remuneration due for the 2019 fiscal year will be paid in 2020, after approval of the financial statements by the General Meeting, it being noted that its payment is conditional on the approval by a General Meeting of the elements of remuneration paid during or awarded in respect of 2019 fiscal year to Benoît Potier.

2.1.3. Total fixed and variable remuneration 2019 – Changes

Benoît Potier's total fixed and variable remuneration for 2019 is up by +1.8% as compared to 2018.

2.1.4. Other elements of annual remuneration for 2019

The benefits in kind paid for the benefit of the Executive Officer in 2019 include the use of a Company car and the contributions to the unemployment insurance for Company managers and corporate officers.

In addition, the Group paid to third parties, for Benoît Potier, the contributions to the supplementary defined contribution pension plan, to the collective life insurance plan and the additional death and disability benefits plan. The amount of these contributions is stated in the footnotes to Table 2 (page 149).

2.2. LTI: STOCK OPTIONS AND PERFORMANCE SHARES

2.2.1. 2019 performance share plans

A. Principles of grant for 2019

For the Executive Officer, the grant for 2019 forms part of the 2019 remuneration policy defined by the Board of Directors on February 13, 2019 and approved by the General Meeting on May 7, 2019 (see policy described on page 148).

The grant of LTI to Benoît Potier in 2019 represents an IFRS value of **2,249,563 euros,** which is **stable as compared to 2018,** as announced.

Moreover, for 2019, the Board of Directors on September 30, 2019 decided **to grant only performance shares** (instead of a mix of stock options and performance shares as before) to all the beneficiaries, in order to simplify and standardize the LTI plan.

B. Performance conditions of the 2019 Plans

All the performance shares granted to any beneficiary are subject to performance conditions which are calculated over three years.

The performance conditions, which apply to the plans decided upon in the autumn, are set by the Board of Directors at the start of the year, at the February meeting, in order to comply with a reference period of three full years.

For reasons of confidentiality, the exact objectives set for each performance condition are made public ex post, at the end of the Board of Directors' meeting in February following the end of the three fiscal years during which the performance must be achieved. The rate of achievement of the performance conditions and the percentage of performance shares definitively awarded are also published at the end of this Board meeting. **The percentage of performance shares definitively awarded may in no event exceed 100% of the initial grant.**

The performance conditions applicable to the performance share plans implemented in 2019 were adopted by the Board of Directors on February 13, 2019.

Accordingly, the number of performance shares definitively awarded pursuant to the 2019 Plans will depend:

(i) for 60% of the performance shares granted, on the rate of achievement of an objective, set by the Board, consisting of the Return on Capital Employed after tax ("ROCE") [(a)] recorded at the end of the 2021 fiscal year.

At the objective set, the grant is 100%, and then decreases on a straight-line basis to a lower limit below which there will be no grant. This lower limit corresponds to a ROCE level which is 200 basis points less than the objective set, which provides a degree of flexibility, making it possible to take advantage of external growth opportunities.
The objective has been set within the trajectory of the NEOS company program which aims at a ROCE of more than 10% in 2021-2022;

(ii) for 40% of the performance shares granted:

- for 50% of the performance shares referred to in sub-paragraph (ii): on an objective of Total Shareholder Return, defined as the average annual growth rate of an investment in Air Liquide shares, reinvested dividends, for 2019, 2020 and 2021 fiscal years **("AL TSR").** The objective of absolute TSR is set in accordance with historic performances. At the objective set, the grant is 100%, then decreases on a straight-line basis, to a lower limit,
- for 50% of the performance shares referred to in sub-paragraph (ii): on the rate of Total Shareholder Return from an investment in Air Liquide shares, reinvested dividends – sourced from Bloomberg **("B TSR"),** as compared to the CAC 40 TSR index, reinvested dividends (sourced from Bloomberg), for 2019, 2020 and 2021 fiscal years,

  The rate of achievement will be **0%, if the average of the Air Liquide TSR is lower than the average of the CAC 40 TSR,** 50% if it is equal to the average of the CAC 40 TSR and 100%, if it is at least higher than 2% of the average of the CAC 40 TSR on the basis of a straight-line change.

  Any grant for a performance lower than the average of the CAC 40 TSR is impossible.

The rate of achievement of the performance conditions will be recorded by the Board at the time when the financial statements are adopted for the 2021 fiscal year. The result achieved and the percentage of performance shares definitively awarded will also be made public.

(a) The Return on Capital Employed after tax ("ROCE") will be calculated as follows: ((Net profit after tax before deduction of minority interests and excluding IFRS16 impact – net cost of debt after taxes) for the period 2021) / (weighted average of (shareholders' equity excluding IFRS16 + minority interests + net debt) at the end of the last three half years (H2 2021, H1 2021, H2 2020)), these aggregates being adjusted for the impact of the currency variation as compared to the exchange rate for 2018.

DIAGRAM SHOWING THE PERFORMANCE CONDITIONS APPLICABLE TO THE PERFORMANCE SHARES IN 2019

60% ROCE	40% TSR over 3 years	
	50% AL TSR	50% TSR B (AL TSR/CAC 40 TSR)

C. Rules applying to the Executive Officers

The grant to the Executive Officers is examined by the Remuneration Committee at the same time as the allocation to Group employees and is decided by the Board of Directors. It is made within the scope of plans, adopted at pre-established periods in the autumn, in the form of share subscription options granted without any discount, and/or performance shares.

The grant of LTI is examined in light of the total amount of the Executive Officer's annual remuneration, taking into account several external market surveys and ensuring that the interests of the shareholders are respected.

Every year, before the grant of LTI, it is verified that the conditions provided for in articles L. 225-186-1 and L. 225-197-1 of the French Commercial Code aimed at involving all the staff in France in the Company's performance are satisfied. In 2019, over 99% of all the employees in the Company and in the Group's French entities are covered by an incentive plan or a special or voluntary profit-sharing plan.

D. Limits on grants to the Executive Officers

Within the scope of the sub-limits authorized for 38 months by the General Meeting, the Board of Directors sets lower annual limits for the grants to the Executive Officers, expressed (i) as a percentage of the share capital and (ii) as a multiple of their remuneration, in accordance with the recommendations of the AFEP/MEDEF Code.

The limits set by the Board of Directors for 2019 are identical to those for 2018 and are as follows (no subscription option having been attributed in 2019):

(i) the total number of performance shares granted to the sole Executive Officer in 2019 cannot give rise to a number of shares in excess of 0.012% of the share capital (it being understood that an allocation sub-limit of 0.1% of the share capital for 38 months was set by the General Meeting on May 7, 2019);

(ii) the maximum aggregate IFRS value of the performance shares granted to the Executive Officer cannot exceed approximately 1.5 times the amount of the Executive Officer's maximum gross annual remuneration (fixed + variable maximum), it being noted that the performance shares granted represent approximately 40% of the total target annual remuneration.

E. Proration principle

Pursuant to the decision made by the Board on February 13, 2019 and the policy approved by the General Meeting on May 7, 2019, the 2019 grant of LTI to the Executive Officer remains subject to the principle of a pro rata calculation.

In practice, if the Executive Officer leaves the Group for a reason other than his resignation or removal from office for serious cause [(a)], the total allocation rate (after applying the performance conditions) would be reduced pro rata the number of months' actual presence of the Executive Officer at the Group during the period of assessment of the performance criteria. Furthermore, no grant is made to the Executive Officer at the time of this departure, in accordance with the AFEP/MEDEF Code.

The Executive Officer will remain subject to all the provisions of the plans and, more specifically, those relating to the duration of the vesting, lock-up and holding periods in respect of the shares and stock options granted.

F. Shareholding and share ownership obligations

Shareholding obligation pursuant to the French Commercial Code

On the recommendation of the Remuneration Committee, the Board defined the shareholding obligations resulting from articles L. 225-185 and L. 225-197-1 of the French Commercial Code applicable to the shares resulting from the exercise of stock options and performance shares respectively as from September 28, 2015, as follows:

For each stock option/performance share plan granted to the Executive Officers with effect from September 28, 2015, the Executive Officers shall hold, in registered form, until the termination of their duties, a minimum quantity of shares corresponding to 50% of the capital gain on acquisition, net of social security charges and tax, resulting from each exercise of stock options/each definitive award of performance shares.

(a) Situations which will result in the loss of the LTI.

However, this percentage will be lowered to 5%, as soon as the quantity of shares held by the Executive Officer resulting from the exercise of stock options or the definitive award of performance shares (all plans combined since the 2007 plan for Benoît Potier) represents a minimum amount equal to at least three times the Executive Officer's gross annual fixed remuneration.

This rule is regularly reviewed by the Board at the time of each grant. In 2019, the Board of Directors decided to maintain this rule in identical form.

The previous obligations to hold shares resulting from the exercise of stock options, decided by the Board of Directors on May 9, 2007, which apply with effect from the grant of stock options on May 9, 2007 for Benoît Potier, remain in force with regard to the relevant stock options plans, up until the September 22, 2014 stock option plan inclusive.

The application of this rule was reported to the Board of Directors on February 10, 2020.

Additional shareholding obligation – Recommendation made by the AFEP/MEDEF Code

In addition, the internal rule defined by the Board of Directors since 2008 remains in effect, pursuant to which the Executive Officers must hold, in a registered share account, a number of shares equivalent to twice his gross annual fixed remuneration for the Chairman and Chief Executive Officer and one time the gross annual fixed remuneration for a Senior Executive Vice President. This obligation will remain in force, until it is exceeded by the effect of the aforementioned rules resulting from the French Commercial Code. The number of shares required to be held is assessed as of January 1 and July 1 of each year. The Board noted that the valuation of the shares held as at January 1 and July 1, 2019 and as at January 1, 2020 by the Chairman and Chief Executive Officer was much greater than the amounts required and concluded that the shareholding obligation was complied with by the Executive Officer.

Recommendations encouraging the ownership of a minimum number of Company shares equivalent to 0.5 times their gross fixed annual remuneration, have also been made to members of the Executive Committee since 2009.

G. Other rules applicable to the Executive Officers

- Obligations regarding the restriction on the exercise of stock options and the sale of performance shares during the "black-out periods" prior to the publication of the financial statements. These abstention periods start 30 days prior to the announcement of annual and half-year consolidated results and 15 calendar days prior to the publication of quarterly financial information. They end on the date of publication of the information at close of business.
- Commitment not to carry out hedging transactions with regard to the risk concerning the performance shares awarded/options arising from the exercise of options, throughout the length of their term of office.

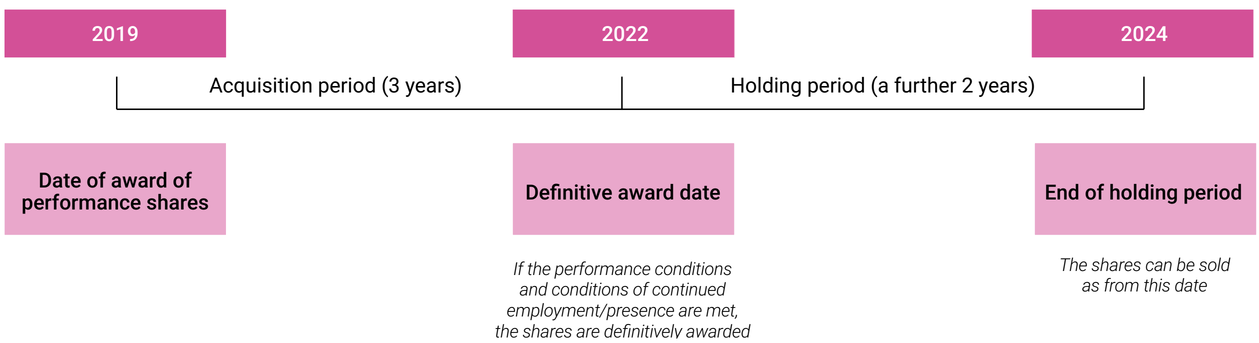
2.2.2. Grants to the Executive Officer within the scope of the September 30, 2019 plans

Plan Regulations

The grant to the Executive Officer is governed by the September 30, 2019 "France" performance share plan which applies to all the beneficiaries in France. This Plan contains:

- a three-year vesting period;
- followed by a two-year holding period during which the shares cannot be sold.

DIAGRAM OF THE PERFORMANCE SHARE MECHANISM – FRANCE PLAN



The condition of continued presence required in order to be able to benefit from the performance shares at the end of the vesting period is, for an Executive Officer, aligned with that applicable to him in the stock option plans, the loss of rights occurring in the event of resignation or removal from office for serious cause.

The Executive Officer is also subject to additional conditions as described above.

Volume

The table below shows the number and value of the performance shares awarded to Benoît Potier on September 30, 2019 in compliance with the authorization given to the Board of Directors by the General Meeting of May 7, 2019 (14th resolution).

TABLE 6 – PERFORMANCE SHARES AWARDED DURING THE 2019 FISCAL YEAR TO THE EXECUTIVE OFFICER

	Plan grant date	Number of performance shares awarded	Value of the performance shares (pursuant to IFRS2) [(a)] *(in euros)*	Definitive award date	Availability date	Performance conditions
Benoît Potier	09/30/2019	18,650	2,249,563	09/30/2022	09/30/2024	Two performance conditions calculated over three years: ■ ROCE ■ Total Shareholder Return, including an element of relative comparison

(a) As at September 30, 2019.

The performance shares awarded to Benoît Potier on September 30, 2019 represent 0.0044% of the number of shares making up the share capital. This award is made by the Company to the exclusion of any other Group company.

2.2.3. Options exercised/remaining to be exercised in 2019 by the Executive Officer – Performance shares that became available in 2019*

Stock option plan mechanism

As the Board of Directors did not attribute share subscription options in 2019, the chart below illustrates previous plans.

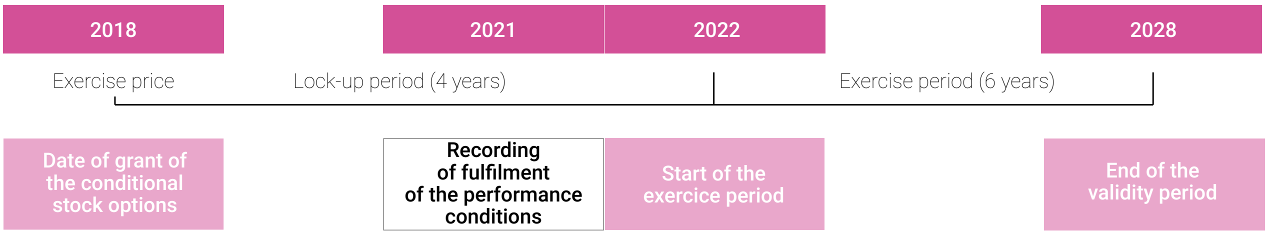


TABLE 4 - SHARE SUBSCRIPTION OPTIONS GRANTED DURING THE 2019 FISCAL YEAR TO THE EXECUTIVE OFFICER

Not applicable (no stock options granted in 2019)

TABLE 5 – SHARE SUBSCRIPTION OPTIONS EXERCISED DURING THE 2019 FISCAL YEAR BY THE EXECUTIVE OFFICER

	Plan grant date	Number of options exercised during the fiscal year	Exercise price [(a)] *(in euros)*
Benoît Potier	10/14/2011	30,000	63.18

(a) Exercise price on the date of exercise.

TOTAL ADJUSTED STOCK OPTIONS REMAINING TO BE EXERCISED BY THE EXECUTIVE OFFICER AS AT DECEMBER 31, 2019

	Total number of outstanding adjusted options	Average price *(in euros)*
Benoît Potier	629,101	74.21

For more details on the adjusted number of stock options by plan, see table page 190.

TABLE 7 – PERFORMANCE SHARES THAT BECAME AVAILABLE DURING THE 2019 FISCAL YEAR FOR THE EXECUTIVE OFFICER

Not currently applicable; the first performance share plan for which the Executive Officers were beneficiaries was implemented in 2015: the performance shares resulting from this plan will become available in 2020.

* *For information purposes.*

2.2.4. Recording of the achievement of the performance conditions under the September 20, 2017 stock option and performance share plans and the July 29, 2016 "Airgas" Plan*

A. Recording of the achievement of the performance conditions under the September 20, 2017 plans

On the basis of the financial statements for the 2019 fiscal year submitted for the approval of the General Meeting of May 5, 2020, the Board of Directors on February 10, 2020 recorded the rate of achievement of the performance conditions, which apply to the whole of the performance shares and stock options awarded to any beneficiary and were determined at the time of the grant of the September 20, 2017 performance share and stock option plans.

The **annual 2017 plans** provided that the number of stock options which could effectively be exercised out of the total number of stock options granted, together with the number of performance shares definitively awarded, would depend on the rate of achievement of the following objectives:

(i) **for 65% of the stock options/performance shares granted,** an objective of the average annual increase in the undiluted Recurring Earnings Per Share excluding the impact of foreign exchange and significant exceptional items **"recurring EPS"** for the 2017, 2018 and 2019 fiscal years set at +6% (a) in order to be able to exercise all the stock options and (b) in order for all the shares to be awarded, and then decreasing on a straight-line basis to 0% growth.

In order to take account of the impact of the Airgas acquisition and its financing, it had been decided to calculate the increase in recurring EPS for 2017 on the basis of estimated financial statements for 2016 incorporating Airgas as at January 1 and excluding any held-for-sale activities and making it possible to take comparable data into account.
The Board of Directors recorded that the average annual growth of the recurring EPS over the aforementioned period amounted to 10.0%, i.e. an objective achieved as to 100%;

(ii) **for 35% of the stock options/performance shares granted,** an objective of **Total Shareholder Return**:

- for 50% of the stock options/performance shares referred to in sub-paragraph (ii): an objective defined as the average annual growth rate of an investment in Air Liquide shares, with dividends reinvested, for the 2017, 2018 and 2019 fiscal years ("AL TSR"), set at +6% (a) in order to be able to exercise all the stock options and (b) in order for all the shares to be awarded, and then decreasing on a straight-line basis to +2%.

  The Board of Directors recorded that this growth, over the aforementioned period, amounted to 18.4% per annum, i.e. an objective achieved as to 100%,

- for 50% of the stock options/performance shares referred to in sub-paragraph (ii): on the rate of Total Shareholder Return from an investment in Air Liquide shares, reinvested dividends – sourced from Bloomberg ("B TSR"), as compared to the CAC 40 TSR index, reinvested dividends (sourced from Bloomberg), for 2017, 2018 and 2019 fiscal years.

  The applicable formula provided that the rate of achievement of this performance condition was 0% if the average Air Liquide TSR was lower than the average CAC 40 TSR, was 50% if it was equal to the average CAC 40 TSR and was 100% if it was at least 2% higher than the average CAC 40 TSR on the basis of a straight-line change. Any grant for a performance lower than the average of the CAC 40 TSR was impossible.

  The rate of return for Air Liquide over the aforementioned period is 16.24%. That of the CAC 40 index over the same period is 11.62%. Consequently, the difference between the rate of return for Air Liquide and the average rate of return for the CAC 40 is 4.62%, i.e. an objective achieved as to 100%.

Consequently, the Board of Directors recorded that the rate of achievement of the performance conditions for the September 20, 2017 stock option and share performance plans amounts to 100%. For further details on the definitive award to Benoît Potier, see tables at pages 190 and 193 of the 2019 Universal Registration Document.

B. Recording of the achievement of the performance condition which is specific to Benoît Potier under the July 29, 2016 "Airgas" performance share plan

The Board of Directors, at its meeting on July 29, 2016, decided to make a specific grant of performance shares to mark the Company's recognition for the work carried out by all the teams which contributed to the successful completion of the Airgas acquisition.

For each of these "Airgas" Plans ("France" Plan and "World" Plan), the Board adopted performance conditions calculated over three fiscal years and identical to those for the November 29, 2016 stock option and performance share plans.

On the basis of the financial statements for the 2018 fiscal year submitted for the approval of the General Meeting of May 7, 2019, the Board of Directors on February 13, 2019 recorded the rate of achievement of the performance conditions, which apply to the whole of the performance shares granted to any beneficiary and which were determined at the time of the grant of the July 29, 2016 Airgas performance share plans which amounts to 82.87%.

Pursuant to the decision of the Board of Directors on July 27, 2017, **specifically for Benoît Potier,** an additional performance condition was added, based on the **rate of achievement of the synergies following the Airgas acquisition.** The Board of Directors on February 10, 2020 recorded that the **level of achievement of this additional performance condition** is 100%. As a result, the total proportion of performance shares acquired by Benoît Potier under the "Airgas" France plan amounts to 82.87%. For further details on the definitive award to Benoît Potier, see tables on page 193 of this 2019 Universal Registration Document.

* *For information purposes.*

2.3. REMUNERATION RATIOS – ANNUAL VARIATION IN THE REMUNERATION, PERFORMANCES AND RATIOS

Pursuant to Ordinance No. 2019-1234 of November 27, 2019, the ratios between the level of remuneration of the Chairman and Chief Executive Officer and of the Senior Executive Vice President (for the period of exercise of this mandate) and the average and median* remunerations of L'Air Liquide S.A.'s employees are communicated below as well as their annual change and the change in the Company's performances and in the average remuneration of the Company's employees over the five most recent fiscal years.

REMUNERATION RATIOS [(a)]

Chairman and CEO	**2014**	**2015**	**2016**	**2017**	**2018**	**2019** [(b)]
Remuneration ratio compared to the Company employee **average** [(c)]	46	45	57	50	50	50
N/N-1 change in %		*-2.2%*	*26.7%*	*-12.3%*	*0.0%*	*0.0%*
Remuneration ratio compared to the Company employee **median** [(c)]	63	62	79	72	73	72
N/N-1 change in %		*-1.6%*	*27.4%*	*-8.9%*	*1.4%*	*-1.4%*

Senior Executive Vice President	**2014**	**2015**	**2016**
Remuneration ratio compared to the Company employee average [(c)]	27	27	22
N/N-1 change in %		*0.0%*	*-18.5%*
Remuneration ratio compared to the Company employee median [(c)]	37	37	31
N/N-1 change in %		*0.0%*	*-16.2%*

(a) Per the AFEP guidelines, the remuneration is presented in respect of the year in question and includes:
- ***For Executives and employees:***
  base salary, variable component in respect of the year (paid in year N+1), benefits in kind, attribution of performance shares/stock options valued in accordance with the IFRS standard at their attribution date.
- ***For employees:***
  individual bonuses (seniority bonuses, study bursary, vacation, accommodation, transportation, and other bonuses), profit-sharing bonus, incentives, and employer's contribution on profit-sharing/incentives.

(b) The data for 2019 is presented as an estimate, based on the nominal/target variable component (value of variable components in respect of 2019 not known for the entire perimeter of the Company at the date of publication).

(c) L'Air Liquide S.A. is the listed company, which has more than 1,000 employees (Head Office, R&D, Innovation, European Projects). The calculation takes into account employees continuously in post over two consecutive years from 2014 to 2019.

COMPARATIVE CHANGES IN REMUNERATIONS AND PERFORMANCES

						CAGR [(d)] 5 years
	2015/2014	**2016/2015** [(a)]	**2017/2016** [(a)]	**2018/2017** [(a)]	**2019/2018** [(b)]	**2014–2019**
Chairman and CEO	2.8%	27.2%	-8.5%	4.8%	-0.3%	4.6%
Senior Executive Vice President	4.0%	-16.6%	-	-	-	-
Company employee average	5.7%	1.4%	2.6%	5.1%	0.0%	2.9%

						CAGR [(d)] 5 years
	2015/2014	**2016/2015** [(a)]	**2017/2016** [(a)]	**2018/2017** [(a)]	**2019/2018**	**2014–2019**
Published growth in revenue	3.0%	14.6%	12.2%	3.3%	4.0%	7.3%
Published growth in net profit[(c)]	5.5%	5.0%	10.0%	4.1%	5.6%	6.0%

(a) Impact of the acquisition of Airgas completed in May 2016

(b) The data for 2019 is presented as an estimate, based on the nominal/target variable component (value of variable components in respect of 2019 not known for the entire perimeter of the Company at the date of publication).

(c) Net profit recurring in 2017 (excluding exceptional non-cash items linked to the US tax reform).

(d) CAGR: Compound Annual Growth Rate

The compound annual growth rate of the **Executive Officer's total remuneration** over five years is **+4.6%** and **+3.8% for the fixed remuneration.** Over the same period, as a compound annual growth rate, the Group's performance in terms of **consolidated sales growth and net profit indicators** was significantly higher, respectively **+7.3%** and **+6%.**

* *On a full-time equivalent basis.*

2.4. COMPANY'S PENSION AND SIMILAR BENEFIT OBLIGATIONS

The commitments set out below which Benoît Potier benefits from are taken into account for the determination of his total remuneration.

In addition to the mandatory basic and supplementary pension schemes (Agirc/Arrco) with which he is, or was affiliated, Benoît Potier has been authorized to benefit from various supplementary social benefit schemes set up by L'Air Liquide S.A.

2.4.1. Defined benefit pension plan

Pursuant to PACTE Law No. 2019-486 of May 22, 2019 and Ordinance No. 2019-697 of July 3, 2019 on supplementary professional pension plans, **the defined benefit pension plan described below can no longer grant a right to acquire supplementary conditional rights as from January 1, 2020.** The conditional rights to which Benoît Potier is entitled pursuant to this plan for the period running up until December 31, 2019 shall continue to be subject to the plan's regulations, including in particular the condition that he ends his professional career with the Company.

Description of the defined benefit pension plan

Pursuant to articles L. 911-1 and L. 911-2 of the French Social Security Code, and in accordance with article L. 137-11 of the same Code, L'Air Liquide S.A. set up a collective defined benefit pension plan "S" for the benefit of the **senior managers and executives and Executive Officers:**

(i) whose remuneration exceeds 24 times the annual social security ceiling (PASS);

(ii) who have a total of three years' length of service with the Air Liquide Group, in accordance with the AFEP/MEDEF Code of Corporate Governance; and

(iii) who do not have the capacity of a participant under the supplementary defined benefit pension plan with guaranteed cover ("garantie de ressources") which was closed in 1996.

Benoît Potier's rights under this plan:

(i) may be applied for, if the beneficiary **definitively ends his professional career with the Company** and decides to claim his mandatory basic and supplementary pension (Arrco/Agirc) entitlements, whether or not at the full rate.

In the event of the termination of his corporate office at the Company's initiative, a beneficiary who is over 55 years of age and has at least five years' length of service shall retain his rights, if he does not resume any professional activity until his retirement. The condition of ending his career at the Company is then considered to be met, as he has not performed any activity after leaving the Company. This rule, which is in line with the position of the social security administration reflects the Human Resources policy at Air Liquide, for which long careers within the Group constitute a key element; given the length of service of the potential beneficiaries of this plan, some of whom have spent the whole of their career at the Group, it would not be justified for them to lose the benefit of this plan in the event of a forced departure (except in the event of gross or willful misconduct) at the end of their careers.

Furthermore, in accordance with the position of the social security administration, the rules also provide for the maintenance of the potential rights of the beneficiaries in the event of a disability of the 2nd or 3rd category;

(ii) will be equal to **1% for each year of service** of the average of the three best years in the last five years of remuneration exceeding 24 times the annual social security ceiling ("PASS") (the "Reference Remuneration"). The basis for calculation of the pension annuity will be limited to the fixed and variable remuneration only, to the exclusion of any other form of remuneration, whether paid by the Company or by any French or foreign subsidiary. For this calculation, the average of the total variable portions taken into account cannot exceed 100% of the average of the total fixed portions taken into account. Where applicable, an annuity equal to 60% of the aforementioned benefits will be paid to the surviving spouse, subject to certain conditions, notably with regard to age;

(iii) will be capped, in all cases, as they are for all the senior managers and executives benefiting from the defined benefit plan, and for all pension plans combined, whether public or private, in France or abroad, at 45% of the Reference Remuneration. Should this ceiling be reached, the amount paid under the defined benefit plan would be reduced accordingly;

(iv) have been the subject of:

- contributions paid to an insurance body, that are deductible from the corporate income tax base, and
- provisions in the Group's consolidated financial statements;

(v) are estimated, as at December 31, 2019, at 639,267 euros gross per year, Benoît Potier having a total of 38.6 years' length of service in the Group;

(vi) will be subject to the employer's contribution due on pension annuities provided for by article L. 137-11 of the French Social Security Code at a rate of 32%.

The application of this plan to Benoît Potier has been authorized by decisions of the Board of Directors on February 12, 2010 and February 17, 2014 and approved, in resolutions specific to Benoît Potier, by the General Meeting on May 5, 2010 (9th resolution) and May 7, 2014 (10th resolution).

At the time of renewal of his office as Chairman and Chief Executive Officer, pursuant to article L. 225-42-1 of the French Commercial Code, as amended by Law No. 2015-990 of August 6, 2015, the Board of Directors on February 14, 2018 decided to make the increase, in respect of each fiscal year, in his conditional pension rights under the defined benefit pension plan S which Benoît Potier benefits from, subject to conditions relating to Benoît Potier's performance assessed in light of the Company's performance (see description below). This commitment was approved by the General Meeting on May 16, 2018 in a resolution specific to Benoît Potier (10th resolution).

Performance conditions applicable to the annual increase in Benoît Potier's conditional rights

Between the renewal of his office as Chairman and Chief Executive Officer on May 16, 2018 and December 31, 2019 (the date from which the defined benefit pension plan no longer provides the acquisition of additional conditional rights), the increase, in respect of each fiscal year, in Benoît Potier's conditional rights under the defined benefit pension plan S which he benefits from, depends, and the amount of that increase is adjusted in accordance with, the average annual gap between the Return on Capital Employed (ROCE) and the Weighted Average Cost of Capital (WACC) (net equity method), calculated (on the basis of the certified consolidated financial statements, approved by the General Meeting) for the last three fiscal years prior to the said fiscal year.

For the purposes of this calculation, the gap between the ROCE and the WACC is measured for each fiscal year and the average of the three annual gaps will be calculated for the last three fiscal years prior to the said fiscal year.

The proportion of the annual increase in the conditional rights is determined as shown in the table below, with a growth of the increase per linear segments between each of the thresholds between 100 bps and 300 bps inclusive:

Average of the annual gaps (ROCE – WACC) over three years in bps [(a)]	Proportion of increase
≥ 300	100%
250	66%
200	50%
100	25%
< 100	0%

(a) bps: basis points.

It is specified that the Air Liquide pension plan S was more restrictive than the new article L. 225-42-1 paragraph 8 of the French Commercial Code. Pursuant to this article, the conditional rights could not increase annually by an amount which was 3% higher than the annual remuneration used as a reference for the calculation of the annuity paid under this plan, whilst Air Liquide's plan S provides that the pension rights will be equal to 1% per year of service (see the description of the plan set forth above).

Compliance with the conditions set forth above is verified on an annual basis, before the Ordinary General Meeting convened to approve the financial statements for the last completed fiscal year, by the Board of Directors which shall determine the increase, in respect of that fiscal year, in the conditional rights which the Chairman and Chief Executive Officer benefits from.

The decision of the Board of Directors on February 14, 2018 which makes the increase in Benoît Potier's pension rights under the defined benefit pension plan subject to performance conditions has no effect on the conditional rights which had been granted to Benoît Potier up until the renewal of his office as Chairman and Chief Executive Officer on May 16, 2018.

Pursuant to article L. 225-42-1 of the French Commercial Code, this decision was published on the Company's website on February 16, 2018.

In respect of 2019, the Board of Directors recorded, on February 10, 2020, that the performance condition had been 100% achieved with an increase of 1% in the conditional rights, corresponding to a potential acquisition of an additional 1% of the Reference Remuneration for the relevant year.

2.4.2. Defined contribution pension plans

- Pursuant to articles L. 911-1 and L. 911-2 of the French Social Security Code, and in accordance with article L. 242-1, paragraphs 6 and 7 of the same Code, the Air Liquide Group has set up, at several companies including L'Air Liquide S.A. a **defined contribution pension plan for the benefit of all the employees.**

  The Board authorized the application of this defined contribution pension plan to Benoît Potier in his capacity as Chairman and Chief Executive Officer.

  The pension entitlements of Benoît Potier under this plan:

  - may be applied for, at the earliest, when he has claimed his pension entitlements under the French general social security scheme;
  - are or have been financed by monthly contributions broken down as follows: 50% borne by the Company and 50% borne by the beneficiary;
  - these contributions are assessed on bracket 1 (formerly bracket A) (the portion of remuneration that is less than one PASS) at a rate of 2.32%, and on bracket 2 (formerly brackets B and C) (those portions of remuneration amounting, respectively, to between one PASS and eight times the PASS) at a rate of 6.50%. Furthermore, they are deductible from the corporate income tax base, are subject to the social levy at the rate of 20%, and are excluded from the basis for assessment of the social security contributions, within the limit of the higher of the following two values: 5% of the PASS or 5% of the remuneration taken into account within the limit of five times the PASS;
  - are estimated, as at December 31, 2019, at 7,548 euros gross per year.

  The individual application of this plan to Benoît Potier was authorized by a decision of the Board of Directors on February 12, 2010, in accordance with the regulated agreements and commitments procedure, and approved by the General Meeting on May 5, 2010 (9th resolution).

  The amount paid by the Company, in 2019 for that fiscal year, to the third party responsible for managing the aforementioned supplementary defined contribution pension plan for the benefit of Benoît Potier is stated in the footnotes to Table 2 (see page 149).

- In addition, pursuant to articles L. 911-1 and L. 911-2 of the French Social Security Code, and in accordance with article L. 242-1, sections 6 and 7 of the same Code, L'Air Liquide S.A. set up a **defined contribution pension plan for the benefit of the senior managers and executives,** defined by reference to a collective bargaining agreement coefficient, and of Executive Officers who have at least one year's length of service.

  Since 2015, **Benoît Potier no longer benefits from this defined contribution pension plan** set up for the benefit of the senior managers and executives, the contribution paid for his benefit having been transferred to the life insurance plan (see below).

  Benoît Potier's pension entitlements under this plan:

  - may be applied for, at the earliest, when he has claimed his pension entitlements under the French general social security scheme;
  - were financed by annual contributions paid in their entirety by the Company. These contributions were last set at 2.5% of the portion of remuneration that is lower than eight times the PASS. Furthermore, they were subject to the same tax and social security treatment as those paid pursuant to the defined contribution pension plan set up for the benefit of all the staff (see above);
  - are estimated, as at December 31, 2019, at 186,545 euros gross per year.

2.4.3. Life insurance plan

As the Executive Officers are no longer beneficiaries of the defined contribution pension plan for senior managers and executives (see above), L'Air Liquide S.A. has entered into a collective life insurance contract which enables them to create savings which are available at any time.

The insurance contract provides that the beneficiaries can ask for the payment of a single capital sum or conversion of the capital into a life annuity.

In the event of a conversion of the capital into a life annuity, Benoît Potier's rights under this plan:

- are estimated, as at December 31, 2019, at 59,983 euros gross per year;
- are, or were, financed by contributions paid by the Company to an insurance body and which concern the brackets of remuneration ranging from 0 to 24 times the PASS.

  The opening of this plan, for the third bracket (16 to 24 times the PASS) and then the second bracket (8 to 16 times the PASS), and finally its extension to the first bracket (0 to 8 times the PASS) of the Reference Remuneration, at an unchanged cost for the Company, responded to a concern for good management. The contributions paid by the Company to the third-party plan manager are assessed on the basis of the portions of the Reference Remuneration of the beneficiaries corresponding to each of the three brackets, in accordance with conditions identical to those of the previous plan.

  These contributions are deductible from the corporate income tax base and are subject to social security contributions.

For Benoît Potier, the signature of this contract, for the third and then the second bracket, was authorized by the Board of Directors on November 20, 2012 and February 13, 2013, in accordance with the regulated agreements and commitments procedure, and approved by the General Meeting on May 7, 2013 in a specific resolution (7th resolution). The extension of the plan to the first bracket concerning the band of Reference Remuneration amounting to between 0 and 8 times the annual social security ceiling was authorized by a decision made by the Board of Directors on November 20, 2014, in accordance with the regulated agreements and commitments procedure, and approved by the General Meeting on May 6, 2015 in a specific resolution for Benoît Potier (7th resolution).

The amount paid by the Company in 2019 for fiscal year 2018 to the insurance body pursuant to the life insurance plan for the benefit of Benoît Potier is disclosed in the footnotes to Table 2 (see page 149). The amount which will be paid in 2020 in respect of 2019 is also stated in these notes.

2.4.4. Death and disability benefits plan

Benoît Potier benefits from the additional "incapacity, disability, death" benefits plan, unified as from January 1, 2015, covering all the personnel and the Executive Officers who are duly authorized to benefit from such plan, which provides in particular for:

- the grant to the beneficiaries:
  - of additional daily indemnities in the event of incapacity and a disability annuity set, all benefits combined, at a maximum annual amount of 453,868 euros, and
  - of a death benefit, the maximum amount of which is set at 120 times the PASS in the event of an accident.

  The life insurance contract entered into with the insurer specifies the limits of the incapacity/disability and death benefits for the same insured party;
- the payment in full, by the Company, of the contributions calculated as a percentage of the Reference Remuneration which is capped at:
  - 16 times the PASS for the incapacity and disability cover, and
  - 24 times the PASS for the death cover.

The contribution rate amounts to 0.85% of the Reference Remuneration up to 16 PASS and to 0.65% between 16 and 24 PASS. These contributions are deductible from the corporate income tax base, are subject to the social levy at a rate of 8%, and are excluded from the basis for assessment of the social security contributions, within the limit of an amount equal to the sum of 6% of the PASS and 1.5% of the remuneration taken into account within the limit of 12% of the PASS.

The individual application to Benoît Potier of this unified benefit plan covering all the personnel, in respect of his duties as Chairman and Chief Executive Officer, was authorized by decision of the Board of Directors on November 20, 2014, in accordance with the regulated agreements and commitments procedure, and approved by the General Meeting on May 6, 2015 in a specific resolution (7th resolution).

The amount of the contribution paid in 2019 for that fiscal year by L'Air Liquide S.A. in respect of the benefit plan for the benefit of Benoît Potier, is disclosed in the footnotes to Table 2 (see page 149).

2.5. COMMITMENTS RELATING TO TERMINATION OF DUTIES

The commitments set out below which Benoît Potier benefits from are taken into account for the determination of his total remuneration.

2.5.1. Termination indemnities

In accordance with article L. 225-42-1 of the French Commercial Code and the AFEP/MEDEF Code of Corporate Governance, the Board of Directors, at its meeting on February 14, 2018 [(a)], set the terms of the commitment applicable to Benoît Potier, along the following main lines:

- only the cases of forced departure of Benoît Potier from his terms of office as Chairman and Chief Executive Officer (removal from office, request for resignation) related to a change of strategy or a change in control (in the latter case, the termination indemnity is due, if the departure occurs within six months of the change of control) may give rise to an indemnity;
- the amount of the indemnity in any of these cases is set at 24 months of gross fixed and variable remuneration;
- the amount of the indemnity due decreases gradually as Benoît Potier, in his capacity as Chairman and Chief Executive Officer, approaches the age limit defined in the Company's articles of association; in the event of a forced departure in the 24 months preceding the date of departure due to the age limit set by the articles of association, the amount of the indemnity due will be capped at the number of months' gross remuneration separating the date of forced departure from the date when he reaches such age limit; in any event, no indemnity shall be paid should the beneficiary claim his pension entitlements on the date of his forced departure;
- the right to payment of the indemnity is subject to the achievement of the performance conditions, the proportion of the indemnity due decreasing depending on the rate of achievement of such conditions (see below for details of the performance conditions).

(a) For the record, in order to take account of the expectations of certain shareholders, the Board of Directors on February 14, 2018 amended the terms of the agreement applicable to Benoît Potier before the renewal of his term of office in 2018. The Board thus decided (i) to remove the non-renewal of office from the list of events of forced departure which grant an entitlement to the indemnity; (ii) that when the departure is related to a change of control, the termination indemnity is only due if the departure occurs within six months of the change of control, as compared to 24 months previously; (iii) to review the performance conditions, the thresholds for an increase having been made more exacting than before.

Performance conditions applicable to the termination indemnity

The Board of Directors decided that the payment of the termination indemnity concerning Benoît Potier is subject to compliance, duly acknowledged by the Board of Directors at the time of or subsequent to the termination of his duties, with conditions related to the beneficiary's performance assessed in light of the Company's performance, defined as of today as follows:

Entitlement to the indemnity referred to above shall depend on, and the amount of the indemnity paid will be adjusted on the basis of the average of the annual gap between the Return on Capital Employed after tax (ROCE) and the Weighted Average Cost of Capital (WACC) (assessed using the net equity method), calculated (on the basis of the certified consolidated financial statements, approved by the General Meeting) with respect to the last three fiscal years prior to the fiscal year during which the departure occurred. For the purposes of this calculation, the gap between the ROCE and the WACC will be measured with regard to each fiscal year, and the average of the three annual gaps for the last three fiscal years prior to the fiscal year during which such departure takes place will be calculated.

Given the fundamental importance, in the highly capital-intensive industrial gas industry, of the management and control of investment processes, this gap makes it possible to measure the regular creation of value over the three years prior to the departure.

The proportion of the indemnity due will be established as indicated in the table set forth below, with an increase in the indemnity by straight-line segments between each of the thresholds between 100 bps and 300 bps inclusive:

Average over three years of the annual (ROCE – WACC) gaps in bps [a]	Proportion of indemnity due
≥ 300	100%
250	66%
200	50%
100	25%
< 100	0%

(a) bps: basis points.

The decision of the Board of Directors on February 14, 2018 relating to this indemnity was made in accordance with the regulated agreements and commitments procedure and published on the Company's website on February 16, 2018. It was approved by the General Meeting on May 16, 2018 in the context of a specific resolution (9th resolution).

2.5.2. Unemployment insurance for Company managers and corporate officers

Pursuant to a decision made by the Board of Directors in May 2006, Benoît Potier benefits, in his capacity as an Executive Officer, from the unemployment insurance for Company managers and corporate officers taken out by the Company. The contributions paid by the Company are added back to Benoît Potier's remuneration as benefits in kind.

This decision had been approved by the General Meeting on May 9, 2007, in accordance with the regulated agreements procedure (7th resolution).

The Board of Directors confirmed, at its meeting on May 16, 2018, that Benoît Potier continues to benefit from this unemployment insurance within the scope of the latest renewal of his duties.

3. Remuneration of the non-executive Directors (including information stated in paragraph I of article L. 225-37-3 of the French Commercial Code)

The remuneration referred to below are paid to the non-executive Directors pursuant to article L. 225-45 paragraph 1 of the French Commercial Code.

3.1. REMUNERATION PAID IN 2017, 2018 AND 2019

TABLE 3 – REMUNERATION RECEIVED BY THE GROUP'S NON-EXECUTIVE AND NON-EMPLOYEE DIRECTORS

(in euros)		Amounts paid in 2018 in respect of 2017	Amounts paid in 2019 in respect of 2018	Amounts paid in 2020 in respect of 2019
Thierry Desmarest [(a)]	**Total**	**46,666**	**N/A**	**N/A**
	% fixed remuneration	*46*	*N/A*	*N/A*
	% variable remuneration	*54*	*N/A*	*N/A*
Thierry Peugeot	**Total**	**68,250**	**71,500**	**71,750**
	% fixed remuneration	*29*	*28*	*28*
	% variable remuneration	*71*	*72*	*72*
Karen Katen	**Total**	**65,250**	**76,750**	**82,750**
	% fixed remuneration	*31*	*26*	*24*
	% variable remuneration	*69*	*74*	*76*
Jean-Paul Agon [(b)]	**Total**	**101,083**	**99,000**	**101,500**
	% fixed remuneration	*43*	*51*	*49*
	% variable remuneration	*57*	*49*	*51*
Siân Herbert-Jones [(c)]	**Total**	**88,250**	**91,500**	**91,750**
	% fixed remuneration	*45*	*44*	*44*
	% variable remuneration	*55*	*56*	*56*
Sin Leng Low	**Total**	**96,000**	**83,250**	**91,750**
	% fixed remuneration	*21*	*24*	*22*
	% variable remuneration	*79*	*76*	*78*
Annette Winkler	**Total**	**80,500**	**89,750**	**95,250**
	% fixed remuneration	*25*	*22*	*21*
	% variable remuneration	*75*	*78*	*79*
Geneviève Berger	**Total**	**66,750**	**76,000**	**82,250**
	% fixed remuneration	*30*	*26*	*24*
	% variable remuneration	*70*	*74*	*76*
Brian Gilvary	**Total**	**73,750**	**70,500**	**77,500**
	% fixed remuneration	*27*	*28*	*26*
	% variable remuneration	*73*	*72*	*74*
Xavier Huillard [(d)]	**Total**	**44,583**	**73,333**	**71,000**
	% fixed remuneration	*30*	*32*	*42*
	% variable remuneration	*70*	*68*	*58*
Pierre Dufour [(e)]	**Total**	**58,250**	**80,000**	**98,750**
	% fixed remuneration	*34*	*38*	*30*
	% variable remuneration	*66*	*63*	*70*
TOTAL		**789,332**	**811,583**	**864,250**

(a) Term of office ended on May 3, 2017. The disclosed amounts include additional remuneration of 10,000 euros for acting as Chairman of the Appointments and Governance Committee and the remuneration (20,000 euros) for acting as Lead Director (pro rata in respect of 2017).

(b) The disclosed amounts include additional remuneration of 10,000 euros for acting as Chair of the Remuneration Committee until 2018 (pro rata in respect of 2018) and, as from 2017, for acting as Chair of the Appointments and Governance Committee (pro rata in respect of 2017). As from 2017, the amounts also include an additional remuneration of 20,000 euros for acting as Lead Director (pro rata in respect of 2017).

(c) The disclosed amounts include additional remuneration of 20,000 euros for acting as Chair of the Audit and Accounts Committee.

(d) Term of office begun on May 3, 2017. As from 2018, the disclosed amounts include additional remuneration of 10,000 euros for acting as Chair of the Remuneration Committee (pro rata in respect of 2018).

(e) Pierre Dufour receives Directors' fees since July 14, 2017, the date on which his executive duties in the Group ended.

The non-executive Directors did not receive any remuneration other than that mentioned in the above table.

The Chairman and Chief Executive Officer does not receive any remuneration pursuant to article L. 225-45 paragraph 1 in respect of his office as Director so long as he performs executive duties at L'Air Liquide S.A.

Within the scope of the agreement entered into with the various stakeholders and pursuant to the provisions in force at the Group, which apply to all employees who serve on the Boards of Directors of Group companies, it was agreed that the employee Director would not receive any remuneration for his office as Director [(a)].

3.2. CRITERIA

The maximum amount of the sum to be allocated in total to the members of the Board of Directors was set by the General Meeting on May 16, 2018 at 1.15 million euros per fiscal year (14th resolution) [(b)].

The allocation formula for the remuneration of the Directors is regularly reviewed and readjusted, as applicable, in order to ensure that the **remuneration is competitive internationally,** in order to **be able to benefit from the best and most appropriate skills for the industry and the geographical area,** and to ensure the **preservation of the values which have made the Group successful over the long-term.**

Moreover, it comprises fixed remuneration and variable remuneration based on lump-sum amounts per meeting, thereby taking into account the **actual participation of each Director in the work of the Board and its Committees/working group,** as well as a fixed amount per trip for Directors travelling from abroad. **The variable remuneration for participation at the Board and Committee meetings is more important than the fixed remuneration.**

For **2019,** on the recommendation of the Remuneration Committee, the Board of Directors determined the amount of the remuneration to be allocated to the Directors who take part in the **joint session between the Audit and Accounts Committee and the Environment and Society Committee,** which was held for the first time in 2019. The amounts adopted can be broken down as follows:

3.2.1. Fixed remuneration (for an entire fiscal year)

- Each member receives fixed annual remuneration set at 20,000 euros.
- The Chairman of the Audit and Accounts Committee receives additional fixed annual remuneration of 20,000 euros.
- The Chairmen of the Appointments and Governance Committee, the Remuneration Committee and the Environment and Society Committee receive additional fixed annual remuneration of 10,000 euros.
- The Lead Director receives additional fixed annual remuneration of 20,000 euros.

3.2.2. Variable remuneration

Attendance at the various meetings is remunerated as follows:

■ a meeting of the Board of Directors	5,500 euros
■ a meeting of the Audit and Accounts Committee	4,500 euros
■ a meeting of the Appointments and Governance Committee	3,500 euros
■ a meeting of the Remuneration Committee	3,500 euros
■ a meeting of the Environment and Society Committee	3,500 euros
■ a joint session of the Audit Committee and the Environment and Society Committee	3,500 euros
■ a meeting of the "Shareholder Relations" working group	3,000 euros
■ one trip for a non-resident:	
– in Europe	3,000 euros
– Intercontinental	6,000 euros

Participation by telephone is remunerated at one-half of the lump-sum amounts set for each meeting.

Travel expenses incurred by non-French residents at the time of their trips to meetings are reimbursed by the Company.

(a) The employee Director receives a remuneration pursuant to his employment contract with the subsidiary Air Liquide Advanced Technologies.
(b) For information, on the recommendation of the Remuneration Committee, the Board of Directors decided to submit to the General Meeting of May 5, 2020 a draft resolution to increase this maximum amount to 1.3 million euros per fiscal year, as from 2020.

4. 2020: Remuneration of the Executive Officer

4.1. PRINCIPLES OF REMUNERATION WHICH APPLY TO THE CHAIRMAN AND CHIEF EXECUTIVE OFFICER

The remuneration policy for Executive Officers, which applies to Benoît Potier, is in line, in terms of principles and structure, with the policy approved by the General Meeting of May 7, 2019.

It was drawn up by the Board of Directors on February 10, 2020, upon the recommendation of the Remuneration Committee which had carried out in-depth analyses on the subject on which it reported to the Board of Directors. The Chairman and Chief Executive Officer does not attend deliberations by the Remuneration Committee that relate to his personal case and does not take part in the deliberations and vote by the Board of Directors on the remuneration components that concern him.

For 2020, the Board of Directors decided to maintain the fixed remuneration at the same level as for 2018 and 2019. The level of the total annual target remuneration is therefore unchanged.

The structure and principles which apply to the remuneration are in line with that for previous fiscal years, some adjustments having been made following remarks from shareholders. Furthermore, modifications have been made to the pension mechanism following the PACTE Law of May 22, 2019 and Ordinance No. 2019-697 of July 3, 2019.

- The remuneration policy provides for a **proportionate balance between the three components of the total annual remuneration** (fixed remuneration, variable remuneration and elements of long-term motivation, comprising performance shares and/or stock options, hereinafter the "LTI").

  The fixed remuneration represents approximately 25%, the variable remuneration 35% and the LTI 40% of the total annual remuneration. The components which are subject to **performance conditions** therefore represent **75% of this total remuneration.** The commitments related to the termination of the executive office (collective pension insurance contract and termination indemnity) are also subject to performance conditions.

  The **variable remuneration** continues to be expressed as a target variable remuneration (as a percentage of the fixed remuneration) with a maximum. The total target variable remuneration represents approximately 90% of the total maximum variable remuneration, for a very good performance. Consequently, for a fixed remuneration of 100, the target is 150% and the maximum is 167%.

  Concerning the weighting of the various criteria used (see table below):

  – A **greater relative weight is still given to the quantifiable criteria** as compared to the qualitative criteria.

  – Quantifiable criteria: as before, each quantifiable criterion is given a target weighting (expressed as a percentage of the fixed remuneration) corresponding to a 100% achievement of the target objective set at the start of the year, and a maximum weighting (expressed as a percentage of the fixed remuneration).

  – Qualitative criteria:
    - a **weighting is given to each of the qualitative criteria;**
    - the qualitative criteria continue to be based, as to two-thirds, on three to four categories or sub-categories of objectives which are defined each year and, as to one-third, on an assessment of the individual performance.

  – The target weighting and the maximum weighting are made public ex ante; the actual weight of each criterion in determining the variable remuneration due in respect of the fiscal year shall be established in accordance with the performance measured for each criterion in light of the target objective, based on applying a formula for the financial criteria and on the assessment of the Executive Officer's performance by the Board of Directors on the recommendation of the Remuneration Committee for the qualitative criteria. The rate of achievement of the objectives for the variable remuneration, expressed as a percentage of the fixed remuneration and as a percentage of the target variable remuneration for this criterion, will be made public ex post.

- For the period 2016-2020, the performance conditions were set in line with the principal objectives of the **NEOS company program** which incorporate sales growth and the ROCE, and thus reflect the Company's **commercial strategy.**

  Accordingly, the **quantifiable components** of the annual variable remuneration include a **criterion of an increase in the recurring EPS** which makes it possible to take into account all the items in the income statement. The criterion of an **increase in sales** in turn reflects the **momentum of the activity.** The two criteria, growth in revenue and the recurring EPS reflect **the Group's ambition to achieve profitable growth.** Moreover, the NEOS company program also incorporates efficiency objectives, the achievement of which contributes to the increase in the recurring EPS.

  The LTI performance conditions in turn incorporate the **ROCE,** which is a key objective of the NEOS company program, which makes it possible to measure the return on capital employed and is relevant in a highly capital-intensive industry. The Total Shareholder Return **(TSR)** in turn makes it possible to **align the Company's performance with the regular profits expected by its shareholders.** Moreover, in order to take into account remarks from shareholders and in keeping with the Group's **responsible growth** approach, the LTI plans incorporate with effect from 2020 a new performance condition linked to the Group's **Carbon Intensity** (see definition § 4.2.3 B). The objective of this condition is consistent with the trajectory of the Group's **Climate Objectives** announced at the end of 2018 and which aim to reduce the Carbon Intensity by 30% between 2015 and 2025.

The performance conditions which apply to the long-term commitments (termination indemnity and collective pension insurance contract) are based on the gap between the **ROCE** and the **WACC** (average gap over three years) which makes it possible to **measure the regular value creation** given the fundamental importance, in the highly capital-intensive industrial gas industry, of the management and control of investment processes.

The **qualitative components** of the annual variable remuneration incorporate the pursuit of long-term objectives related to **safety, sustainable development, Human Resources** and the preparation of the **succession** plans, thus supporting **the Company's long-term future.**

These **incentive elements** thus reflect **the Group's strategy** which is steered toward profitable long-term growth, while acting responsibly with regard to all stakeholders. In a highly capital-intensive industry, profitable long-term growth requires constant attention to be paid to each investment decision and to the competitiveness of every transaction, while maintaining an ongoing effort over time in favor, in particular, of safety, innovation, employee training and development, together with the environment.

The selection of the components for the remuneration of the Executive Officer by the Board of Directors on the recommendation of the Remuneration Committee is made by taking into account **the conditions of remuneration and employment of the Company's employees.** Accordingly, the quantifiable and qualitative components of the variable remuneration for the Company's senior managers and executives and Executive Officers are identical. These objectives are also reflected in those for the Company's employees who have a short-term variable remuneration. Moreover, the LTI performance conditions are **identical for all the employee beneficiaries** (for the record, approximately 1,800 Group employees each year) **and for the Executive Officers.** These alignments provide for coherence of efforts in **achieving the Company's performance objectives.** The importance given to the safety objectives helps implement a high-quality working environment for the employees that has a direct impact on their engagement and performance. The variable remuneration also incorporates objectives of talent development, the achievement of which requires in particular the implementation of various, relevant programs for the training and **development of employees** throughout their career.

- Finally, the **other principles which apply to the LTI are also unchanged** (the proration of the LTI in the event of the Executive Officer's departure from the Group during the period of assessment of the performance conditions, the level of requirement of the objectives, the rules which apply to the Executive Officers as described in paragraph 4.2.3 C, the upper limits on grants).
- Specifically for Benoît Potier, a **collective pension insurance contract** with individual and optional subscription is set up as from January 1, 2020, to replace the acquisition of rights under the defined benefit pension plan with effect from such date pursuant to the PACTE Law of May 22, 2019 and Ordinance No. 2019-697 of July 3, 2019 (see details below).

4.2. IMPLEMENTATION FOR THE 2020 REMUNERATION

Applying the principles and objectives noted above, on the recommendation of the Remuneration Committee, the Board of Directors, at its meeting on February 10, 2020, took the following decisions regarding components of Benoît Potier's remuneration for 2020:

4.2.1. Fixed remuneration

The fixed remuneration is set at 1,325,000 euros, **identical to that for 2018 and 2019.**

4.2.2. Variable remuneration

The Board of Directors, on the recommendation of the Remuneration Committee, decided that the criteria for the variable remuneration for 2020 would be as follows:

- **two quantifiable financial criteria,** identical to those already included in the criteria for the variable remuneration for 2019:
  - the increase in recurring net earnings (excluding exceptional and significant transactions which do not impact the recurring operating income) excluding foreign exchange impact and per share (hereinafter **"recurring EPS"**),
  - comparable growth in **consolidated revenue** (excluding significant scope impact and the impact of foreign exchange and energy).

  The weighting of each criterion is shown in the table below.

  For each criterion, the Board of Directors has defined a target objective, which is not made public for confidentiality reasons. Nonetheless, the rate of achievement of the objectives for the variable remuneration as a percentage of the fixed remuneration and as a percentage of the target variable remuneration allocated to that criterion, will be made public ex post.

  The **target objectives set are demanding.** They are **completely consistent with the trajectory of the NEOS company program** which aims, for the period 2016-2020, at an average annualized **growth in Group revenue** of **+6% to +8%,** including a scope impact linked to the consolidation of Airgas corresponding to +2% as an annual average.

  For each financial criterion, a formula adopted by the Board makes it possible to calculate the amount of the variable remuneration due (within a maximum limit) by taking into account, on the basis of the consolidated financial statements for the fiscal year, the value achieved for the criterion as compared to the target objective set. Thus, in the event of a performance that exceeds the objective set, the value of the variable part is adjusted upward within the maximum limit set for each criterion. **In the event of a performance that is below the lower limit set for each objective, the fraction of the variable remuneration corresponding to this criterion is equal to zero;**

- **(qualitative) personal criteria,** a weighting being allocated to each of them. They are detailed in the table below and relate:
  - as to one-third, to **Corporate Social Responsibility** (hereinafter "CSR"),
  - as to one-third, to **organization and to Human Resources,**
  - as to one-third, to **individual performance.** This criterion responds to the Board of Directors' desire to keep a part of the variable remuneration subject to the Board's assessment, in order to take account of the unpredictability of the environment. This may be beneficial to the Executive Officer if the Company is facing an unfavorable environment which was not anticipated at the time the objectives were set, or disadvantageous if the environment ultimately turns out to be more favorable than anticipated.

  An identical target and maximum weight is set for each qualitative criterion.

The summary table below provides details of the criteria for the variable remuneration, together with the target and maximum weights for each element.

	Target [a]		Maximum	
Indicator	*As a % of the fixed remuneration*	*As a % based on a 100*	*As a % of the fixed remuneration*	*As a % based on a 100*
Financial criteria (quantifiable) including:	**105**	**70**	**122**	**73**
Increase in recurring net earnings [b] excluding the foreign exchange impact, per share (recurring EPS)	75	50	87	52
Comparable growth in consolidated revenue [c]	30	20	35	21
Personal criteria (qualitative) including:	**45**	**30**	**45**	**27**
CSR: ■ Safety and reliability: continue efforts to improve safety (lost time accident frequency rate, road traffic accidents and job-related accidents) ■ Continue the roll-out of the Sustainable Development strategy (Implementation of the Group's Climate Objectives – Air Liquide Foundation – Contribution to the development of the hydrogen ecosystem)	15	10	15	9
Organization / Human Resources (talent development, succession plans, diversity policy)	15	10	15	9
Individual performance: assessment by the Board of Directors, notably in light of the external environment for the year	15	10	15	9
TOTAL (FINANCIAL AND PERSONAL CRITERIA)	**150**	**100**	**167**	**100**

(a) The target corresponds to the 100% achievement of the performance criterion.
(b) Excluding significant exceptional transactions that do not impact the operating income recurring.
(c) Excluding significant scope impact, foreign exchange impact and energy.

The total amount of the variable remuneration due for the 2020 fiscal year will be paid in 2021, after approval of the financial statements by the General Meeting, it being noted that its payment is conditional on the approval by an Ordinary General Meeting of the elements of Benoît Potier's remuneration, under the conditions provided by article L. 225-100-III paragraph 1 of the French Commercial Code.

4.2.3. Long-term remuneration components (LTI)

A. Principles of grant

The LTI plans are aimed, in addition to the grant of incentives and profit-sharing, at involving the employees more in the Company's performance and constitute a long-term motivation factor, aligned with the interests of the shareholders for value creation over time.

The following principles were adopted by the Board of Directors on February 10, 2020 for the allocation programmed for the autumn of 2020:

- The Board confirmed that, according to the principle applied since 2016, the award of LTI to the Executive Officer and the changes therein over time will be assessed in terms of the IFRS value (and not in terms of the volumes granted). For 2020, the Board of Directors intends to grant to Benoît Potier LTI representing an IFRS value of approximately 2.25 million euros, which is stable by comparison with the 2018 and 2019 grants, representing 40.4% of the total target remuneration for 2020, in accordance with the weighting defined above.
- All the LTI granted are subject to **performance conditions** calculated over a period of **three years.** The performance conditions, which apply to the plans decided upon in the autumn, are set by the Board of Directors at the start of the year, at the February meeting, in order to comply with a reference period of three full years.

  The Board maintained the **criterion of the ROCE** and the Total Shareholder Return **(AL TSR and relative TSR).** It also added, on the recommendation of the Remuneration Committee, a criterion linked to the Group's **Carbon Intensity** for the reasons stated above.

For each performance condition, a formula adopted by the Board makes it possible to determine, at the end of the three fiscal years during which the performance must be achieved, the percentage of performance shares vested/ options which can be exercised.

The **demanding objectives** set for each performance condition are made public ex post, at the end of the Board meeting in the month of February following the end of the three fiscal years during which the performance has to be achieved. The rate of achievement for the performance conditions and the percentage of LTI acquired/that can be exercised are also published at the end of this Board meeting.

B. Performance conditions

As a consequence of the above, the performance conditions which apply to all the beneficiaries of the LTI Plans which will be allocated in 2020 have been determined by the Board of Directors on February 10, 2020. The number of LTI which are definitively allocated/can be exercised pursuant to the 2020 Plans will depend:

(i) **for 50% of the LTI granted,** on the rate of achievement of an objective, set by the Board, consisting of the Return on capital employed after tax (**"ROCE"** [(a)]) recorded at the end of the 2022 fiscal year.

At the objective set, the grant is 100%, then decreases on a straight-line basis, to a **lower limit** below which there will be no grant. This lower limit corresponds to a ROCE level which is **200 basis points less** than the objective set, which provides a degree of flexibility, making it possible to take advantage of external growth opportunities.
The objective has been set within the **trajectory of the NEOS company program** which aims at a ROCE of more than 10% in 2021-2022;

(ii) **for 40% of the LTI granted:**

- for 50% of the LTI referred to in sub-paragraph (ii): on an objective of Total Shareholder Return set by the Board, defined as the average annual growth rate of an investment in Air Liquide shares, reinvested dividends, for 2020, 2021 and 2022 fiscal years **("AL TSR").** The objective of absolute TSR is set in accordance with historic performances. At the objective set, the grant is 100%, then decreases on a straight-line basis, to a lower limit,
- for 50% of the LTI referred to in sub-paragraph (ii): on the rate of Total Shareholder Return from an investment in Air Liquide shares, reinvested dividends – sourced from Bloomberg **("B TSR"),** as compared to the **CAC 40 TSR index, reinvested dividends (sourced from Bloomberg),** for 2020, 2021 and 2022 fiscal years,

The rate of achievement will be **0%, if the average of the Air Liquide TSR is lower than the average of the CAC 40 TSR,** 50% if it is equal to the average of the CAC 40 TSR and 100%, if it is at least 2% higher than the average of the CAC 40 TSR on the basis of a straight-line change. Any grant for a performance lower than the average of the CAC 40 TSR is impossible;

(iii) **for 10% of the LTI granted, on the reduction in Air Liquide's Carbon Intensity,** defined as the following ratio, recorded as at December 31, 2022: Greenhouse gas emissions of the Air Liquide Group for the year 2022 in kg-equivalent CO_2/2022 EBITDA (calculated at constant exchange rate on the basis of the 2015 foreign exchange rates) expressed in euros. Greenhouse gas emissions include direct emissions (Scope 1) and indirect emissions (Scope 2). The objective of this policy was determined **within the trajectory of the Group's Climate Objectives** announced at the end of 2018 which aim to reduce the Carbon Intensity by 30% between 2015 and 2025.

The rate of achievement of the performance conditions will be recorded by the Board at the time when the financial statements are adopted for the 2022 fiscal year.

C. Rules applicable to the Executive Officers

The rules applicable to the Executive Officers are unchanged compared to 2019. For more details, see pages 154-155 §C to G.

4.2.4. Long-term commitments and commitments relating to termination of duties

Benoît Potier benefits from long-term commitments and commitments relating to termination of duties as described on pages 159 et seq. The Board of Directors decided to maintain these commitments for 2020, apart from the defined benefit pension plan which was impacted by the PACTE Law and Ordinance No. 2019-697 of July 3, 2019. Pursuant to these texts, the supplementary pension plans which make the acquisition of rights conditional upon the beneficiaries' presence at the Company at the time of retirement can no longer grant supplementary conditional rights as from January 1, 2020.

For the period up until this date, Benoît Potier's rights under the defined benefit pension plan (Plan "S") will remain unchanged subject to the pension plan regulations (see pages 159-160).

As from January 1, 2020, **a collective pension insurance contract with individual and optional subscription** is established to replace the acquisition of rights under the defined benefit pension plan with effect from this date. Pursuant to the PACTE Law and Ordinance No. 2019-1234 of November 27, 2019, the implementation of this new system for the benefit of Benoît Potier is subject to the approval of the General Meeting of May 5, 2020 as part of the remuneration policy (11th resolution).

Pursuant to this new mechanism, the amount paid by the Company shall be split between a payment to the insurer and a payment to Benoît Potier intended to cover the social security contributions and taxes due on the payments made to the insurer. This amount shall be paid in arrears every year for the period until the end of the executive office.

(a) For the purposes hereof, the Return on Capital Employed after tax ("ROCE") will be calculated as follows: ((Net profit after tax before deduction of minority interests – net cost of debt after taxes) for the period 2022) / (weighted average of (shareholders' equity + minority interests + net indebtedness) at the end of the last three half years (H2 2022, H1 2022, H2 2021)).

Benoît Potier **cannot apply** for the entitlements under this pension insurance contract **before the age at which he becomes entitled to claim his pension entitlements under the French general social security scheme.**

This new mechanism is **specific to Benoît Potier and adapted to his individual situation** in light of his seniority **and the fact that the new** mechanism is only intended to apply up until the end of his career as an Executive Officer. It **is without prejudice to the mechanism which would apply in the future to a new Executive Officer.**

This new mechanism was selected from among several alternatives and represents **the lowest cost for the Company, over 20% less than that of the previous plan.** For **Benoît Potier,** it simply **supplements the rights** accumulated under the existing plan and makes it possible to **maintain rights which are equivalent** to those which would have existed under such plan, if it had been possible to maintain them for Benoît Potier. Although, pursuant to the new legislation, this pension insurance contract is not subject to a condition of the beneficiary's presence at the Company at the end of his career, in any event, with regard to Benoît Potier, the application of this condition under the defined benefit pension plan has become very theoretical: a beneficiary who is over 55 years of age and has at least five years' length of service (which is the case for Benoît Potier) shall retain his rights, if he does not resume any professional activity until his retirement. Consequently, the fact that this condition does not apply to the new mechanism is neutral in this specific situation.

The gross annual contribution will amount to approximately 10% of the annual target fixed and variable remuneration for 2020, subject to the achievement of **similar performance conditions** to those of the defined benefit pension plan, which had been determined by the Board of Directors and approved by the General Meeting of May 16, 2018 in its 10th resolution. Consequently, the amount of contributions for a fiscal year will depend on the **average annual gap** between the Return on Capital Employed **(ROCE)** and the Weighted Average Cost of Capital **(WACC)** (net equity method), calculated (on the basis of the certified consolidated financial statements, approved by the General Meeting) for the last three fiscal years prior to the said fiscal year. For the purposes of this calculation, the gap between the ROCE and the WACC will be measured for each fiscal year and the average of the three annual gaps will be calculated for the last three fiscal years prior to the said fiscal year.

The performance coefficient applied to the nominal amount pursuant to the collective pension insurance contract will be determined as shown in the table below, with a growth of the increase per linear segments between each of the thresholds between 100 bps and 300 bps inclusive:

Average of the annual gaps (ROCE – WACC) over three years in bps*	Performance coefficient applied to the nominal amount
≥ 300	100%
250	66%
200	50%
100	25%
< 100	0%

* *bps: basis points*

Finally, the new mechanism will be taken into account when determining the upper limit of 45% of the Reference Remuneration that applies to the defined benefit pension plan (see page 159), this upper limit being not reached.

TABLE 8 (SEE PAGE 189), TABLE 9 (SEE PAGES 190-191) AND TABLE 10 (PAGE 192)

TABLE 11

The table shown below presents a summary of the commitments relating to the termination of the duties of the Executive Officer, as set out above.

Executive Officer	Employment contract	Supplementary pension plan (see details above)	Indemnities or benefits due or that may be due on termination or a change of duties (see details above)	Indemnity relating to a non-competition clause
Benoît Potier Chairman and Chief Executive Officer Start date of term of office: 2006 Date of renewal of term of office: 2018 Date of end of term of office: 2022	NO	Defined benefit pension plan for senior managers and executives and Executive Officers: YES (acquisition of conditional rights up until December 31, 2019) (a) Defined contribution pension plan for the benefit of all the employees and Executive Officers: YES Defined contribution pension plan for senior managers and executives: NO	Termination indemnity: YES ■ Applicable in the event of a forced departure related to a change of strategy or control; ■ Maximum amount of 24 months of gross fixed and variable remuneration; ■ Subject to performance conditions; ■ Reduction as he approaches the age limit in the articles of association, exclusion if the beneficiary claims his pension entitlements on the date of forced departure.	NO

(a) For information regarding the new mechanism applying as from January 1st, 2020, see page 169.

NB: the stock options and the performance shares are lost in the event of a resignation or removal from office for serious cause during the vesting period. In other cases of departure, the principle of proration applies depending on the Executive Officer's actual presence during the period of assessment of the performance conditions (see page 154).

5. Elements of the 2019 remuneration of the Executive Officer on which the General Meeting of May 5, 2020 is invited to vote

(Pursuant to article L. 225-100-III of the French Commercial Code)

ELEMENTS OF THE TOTAL REMUNERATION AND BENEFITS OF ANY KIND PAID DURING OR AWARDED IN RESPECT OF THE FISCAL YEAR ENDED DECEMBER 31, 2019 TO BENOÎT POTIER AND ON WHICH THE GENERAL MEETING OF MAY 5, 2020 IS INVITED TO VOTE

	Amounts awarded in respect of the past fiscal year or accounting valuation	Comments
Fixed remuneration	€1,325,000	In accordance with the principles and criteria determined by the Board of Directors on February 13, 2019 and approved by the General Meeting on May 7, 2019, the fixed remuneration was determined taking account of the level of responsibilities, the experience in executive management function and market practices. As announced, the amount of the 2019 fixed remuneration for the Executive Officer was **1,325,000 euros, stable compared to 2018.**
Annual variable remuneration	€2,064,913	**Variable remuneration in respect of 2019:** **The target variable remuneration is equal to 150% of the fixed remuneration.** The variable remuneration is limited to 167% of the fixed remuneration. The target variable remuneration is linked in 2019: ■ For 105% of the fixed remuneration (with a maximum of 122% of the fixed remuneration), to two (quantifiable) **financial criteria** which are based on: (i) for 75% (a max. of 87%) of the fixed remuneration, an objective of increase in the recurring earnings per share (excluding foreign exchange impact and significant exceptional items and excluding the impact of the application of IFRS16 as from January 1, 2019 (hereinafter the "recurring EPS")); (ii) for 30% (a max. of 35%) of the fixed remuneration, an objective of comparable growth in consolidated revenue (excluding significant scope impact, foreign exchange impact and energy). The increase in **EPS** criterion makes it possible to take into account **all the items in the income statement.** The criterion of an **increase in sales** reflects the **momentum in the activity.** These two criteria, growth in revenue and the recurring EPS, reflect the Group's ambition to achieve **profitable growth.** Moreover, the NEOS company program also incorporates **efficiency objectives,** the achievement of which contributes to the increase in recurring EPS. For each criterion, the Board of Directors had defined an **exacting target objective** which is completely consistent with the trajectory of the **NEOS company program.** For each criterion, a formula makes it possible to calculate the amount of the variable remuneration due (within a maximum limit) by taking into account the value achieved for the criterion as compared to the target objective set (the target variable remuneration corresponding to a 100% achievement of the target objective set). The objectives are not made public for confidentiality reasons. Nevertheless, the rate of achievement of each objective for the variable remuneration (as a % of the fixed remuneration and as a % of the target variable remuneration for this criterion) is communicated hereafter; ■ For 45% of the fixed remuneration (target variable and maximum remuneration), to **(qualitative) personal criteria** linked: (i) as to one-third, to **Corporate Social Responsibility** (hereinafter "CSR") (Safety and reliability – continue efforts to improve safety (lost time accident frequency rate, road traffic accidents and job-related accidents / Continue the roll-out of the sustainable development strategy – Implementation of the Group's Climate Objectives – Air Liquide Foundation – Diversity); (ii) as to one-third, to **organization/Human Resources** (talent development, succession plans); and (iii) as to one-third, to **individual performance** (this criterion responds to the Board of Directors' desire to keep a part of the variable remuneration subject to the Board's assessment, in order to take account of the unpredictability of the environment. This may be beneficial to the Executive Officer if the Company is facing an unfavorable environment which was not anticipated at the time the objectives were set, or disadvantageous if the environment ultimately turns out to be more favorable than anticipated.)

Amounts awarded in respect of the past fiscal year or accounting valuation	Comments
	Assessment for 2019: Concerning the (quantifiable) financial criteria, the results for 2019 were above the target for the recurring EPS and below the target for the revenue criteria. The amount of the variable remuneration relating to these criteria is as follows: ■ **Recurring EPS:** 87% of the fixed remuneration, representing 116% of the target remuneration for this criterion, ■ **Revenue:** 25% of the fixed remuneration, representing 84% of the target remuneration for this criterion. The performance concerning the (qualitative) personal objectives was held to be excellent. The amount of the variable remuneration relating to these criteria is as follows: ■ **CSR:** 14% of the fixed remuneration, representing 95% of the target remuneration for this criterion, ■ **Organization/Human Resources:** 15% of the fixed remuneration, representing 95% of the target remuneration for this criterion, ■ **Individual performance:** 15% of the fixed remuneration, representing 100% of the target remuneration for this criterion. The amount of the variable remuneration relating to the personal objectives is thus 44% of the fixed remuneration, representing 96.7% of the target remuneration for the personal objectives. Performance with regard to (qualitative) personal objectives was held to be excellent. The Board of Directors noted the following elements: ■ **CSR:** – **Safety and reliability:** In terms of **safety,** based on the estimated number of hours worked, the lost-time accident frequency rate of Group employees was 1.2, which represents the lowest frequency rate in 20 years. There were no deadly accidents among Group employees in 2019. In terms of **safety/industrial reliability,** the Group's **IMS** (Industrial Management System) program, which was introduced 15 years ago, has helped **improve the management** of industrial risks. Building on the experience acquired, a major project was launched in 2018 to adapt the IMS, in order to improve its efficiency. Content for this new IMS and tools for its implementation on the ground were prepared in 2019. Pilot schemes were launched during the summer at two clusters and the roll-out to all Group operations has been scheduled across the 2020-2021 period. In 2019, **road safety** was one of management's key focuses via an ambitious plan to roll out new technologies in trucks, to help improve the safe driving behavior of drivers. This plan is now well underway and is producing its first positive effects. – **Continue the roll-out of the Sustainable Development strategy:** The Environment and Society Committee met three times in 2019. It reviewed the governance implemented to monitor the roll-out of the Climate Objectives announced by the Group in November 2018, as well as updates to the environmental and societal risks and to the Vigilance Plan. In terms of **meeting Climate Objectives,** and in particular the 30% decrease in the Group's Carbon Intensity between 2015 and 2025, this decrease continued in 2019. All of the Group's industrial clusters have drawn up their **Climate roadmaps** through to 2025, which include detailed action plans for each of the three criteria: Assets / Customers / Ecosystems. Within each of these clusters, a Climate Champion is responsible for promoting this subject and voluntary Climate Ambassadors lead **local initiatives** and share **best practices.** On December 2, 2019, Air Liquide signed an **amendment to its 2 billion euro syndicated credit facility** to include a **correlation mechanism between its financial expenses and three of its CSR objectives** relating to Carbon Intensity, gender diversity, and safety. This initiative highlights the Group's commitment to combining performance and responsibility. The Group's efforts have also been recognized by investors and shareholders who awarded Air Liquide with the **Boursorama Sustainable Investment Award** (more than 100,000 voters). Benoît Potier is co-Chairman of the **Hydrogen Council.** This Council, founded in 2017, brings together 60 leaders in the energy, transport and industry sectors, to promote hydrogen with a view to achieving climate change-related objectives. Last June, the Hydrogen Council was invited to take part in official G20 events which took place in Japan, to promote the benefits of hydrogen in the energy transition.

Amounts awarded in respect of the past fiscal year or accounting valuation	Comments
	In 2019, the **Foundation** significantly stepped up its activity, doubling the amount of grants paid for projects. 44 **local development** projects, one **scientific education** project and six scientific research projects were approved. In November, the Council adopted a **new strategy** and new ways of operating to **increase the Foundation's impact** and develop **sustainable action.** In the area of scientific research of air quality and respiratory diseases, the Foundation now favors a pro-active, co-construction approach with the best European teams and long-term support. In territories affected by a high rate of unemployment and technical jobs with shortages, the Foundation is developing **innovative professional integration projects** in partnership with the Group's local teams and local non-profit organizations. The first two projects, one in Les Mureaux in the field of welding and the other a digital project in Johannesburg, have already been launched. The implementation of a **diversity** policy has continued within all Group entities. As part of regular reviews of high-potential talent, the diversity of profiles is taken into account with the aim of continuing to strengthen it within key positions at the Group to better value the various cultures on which the Group is based and to improve gender equality. – **Organization and Human Resources:** As a continuous program, the Group's **talent development** policy has been pursued, with regular reviews of our talent and their development. These reviews are carried out from the operational cluster level through to the Executive Committee level. The identification, development and recognition by the rest of the Group of the talent at **Airgas** has progressed well, with several dedicated reviews carried out within our Americas hub. Regular reviews of our **high-potential talent** have been carried out with the Appointments and Governance Committee. The **Executive Committee** was strengthened on September 1, 2019 with the appointment of **four new members** with a **diverse** range of expertise and experience in order to step up the implementation of our transformation strategy. The Executive Committee now has **14 members, including five women,** who boast **highly international** careers and are of **key nationalities** for the Group (France, USA, Germany). Moreover, in 2019, we adapted our **technical talent development** program (TCL – Technical Career Leaders) by adding a **new technical field** focused on **IT** and **Digital** skills which drive fundamental innovation and performance. The first international experts have been recognized and two fellows (one of the program's highest levels of recognition) were appointed in the Digital field and in Industrial IT. – **Individual performance:** Individual performance was considered to be excellent. The Board of Directors highlighted the capacity of the Executive Officer, within a more fluctuating and contrasting global context than expected, to steer the Group successfully, particularly in terms of performance and efficiency, which have improved considerably, significantly ahead of the target. The Committee also noted the Executive Officer's major involvement in the development of the digitization program and in the Group's innovation approach, sources of future development. The total amount of the variable remuneration is above the target, up by +2.9% as compared to the variable remuneration for 2018. The total amount of the variable remuneration due for the 2019 fiscal year will be paid in 2020, after approval of the financial statements by the General Meeting, it being noted that its payment is conditional on the approval by a General Meeting of the elements of remuneration paid during or awarded in respect of 2019 fiscal year to Benoît Potier. The variable remuneration paid in 2019 **in respect of 2018** totaled 2,005,653 euros. It was paid following approval of the resolution relating to elements of remuneration paid or awarded to Benoît Potier for 2018 (8th resolution) by the General Meeting of May 7, 2019.
There is no deferred annual variable remuneration mechanism, multi-annual variable remuneration mechanism or exceptional remuneration.	

	Amounts awarded in respect of the past fiscal year or accounting valuation	Comments
Stock options, performance shares or any other long-term element of remuneration	0 stock option Accounting valuation of the options (according to IFRS2 norm): €0 18,650 performance shares Accounting valuation of the performance shares (according to IFRS2 norm): €2,249,563	**September 30, 2019 plans (performance shares)** **Principles of grant for 2019** For the Executive Officer, the grant for 2019 forms part of the 2019 remuneration policy defined by the Board of Directors on February 13, 2019 and approved by the General Meeting on May 9, 2019. The allocation of performance shares to Benoît Potier in 2019 represents an IFRS value of approximately 2.25 million euros, stable as compared to 2018 as announced. For 2019, the Board of Directors on September 30, 2019 decided to grant only performance shares (as opposed a mix of stock options and performance shares as previously) to all the beneficiaries, in order to simplify and standardize the scheme. **Limits on the grants to Executive Officers** Within the scope of the sub-limits authorized by the General Meeting for 38 months, the Board of Directors sets lower annual limits for the grants to the Executive Officers, expressed (i) as a percentage of the share capital and (ii) as a multiple of their remuneration, in accordance with the recommendations of the AFEP/MEDEF Code. The limits set by the Board of Directors for 2019 are identical to those for 2018 and are as follows: (i) the total number of performance shares granted in 2019 to the sole Executive Officer cannot give rise to a number of shares exceeding 0.012% of the share capital (it being understood that an allocation sub-limit of 0.1% of the share capital for 38 months was set by the General Meeting on May 7, 2019); (ii) the maximum aggregate IFRS value of the performance shares granted to the Executive Officer cannot exceed approximately 1.5 times the amount of the Executive Officer's maximum gross annual remuneration (fixed and variable maximum), it being noted that the performance shares granted represent approximately 40% of the total target annual remuneration. **Performance conditions** The performance shares awarded are all accompanied by **performance conditions** calculated over three years. They are based in 2019 on: (i) **as to 60% of the performance shares granted,** the rate of achievement of the objective, consisting of the Return on Capital Employed after tax **("ROCE")** [(a)] recorded at the end of the 2021 fiscal year. At the objective set, the grant is 100% and then decreases on a straight-line basis to a lower limit below which there will be no grant. This lower limit corresponds to a ROCE level which is 200 bps less than the objective set, which provides a degree of flexibility, making it possible to take advantage of external growth opportunities. The objective has been set within the trajectory of the NEOS company program which aims at a ROCE of more than 10% in 2021-2022; (ii) **as to 40% of the performance shares granted:** – for 50% of the performance shares referred to in sub-paragraph (ii): of an objective of Total Shareholder Return set by the Board, defined as the average annual growth rate of an investment in Air Liquide shares, with dividends reinvested, for the 2019, 2020 and 2021 fiscal years **("AL TSR").** The objective of absolute TSR is set in accordance with historic performances. At the objective set, the grant is 100% and then decreases on a straight-line basis to a lower limit, – for 50% of the performance shares referred to in sub-paragraph (ii): of the rate of Total Shareholder Return from an investment in Air Liquide shares, reinvested dividends – sourced from Bloomberg **("B TSR"),** as compared to the CAC 40 TSR index, reinvested dividends (sourced from Bloomberg) for the 2019, 2020 and 2021 fiscal years, The rate of achievement will be **0% if the average Air Liquide TSR is lower than the average CAC 40 TSR,** 50% if it is equal to the average CAC 40 TSR and 100% if it is at least higher than 2% of the average CAC 40 TSR on the basis of a straight-line change. Any grant for a performance lower than the average CAC 40 TSR is impossible.

(a) The Return on Capital Employed after tax ("ROCE") will be calculated as follows: ((Net profit after tax before deduction of minority interests and excluding the IFRS16 impact – net cost of financial debt after taxes) for the period 2021) / (average of (shareholders' equity excluding IFRS16 + minority interests + net debt) at the end of the last three half years (H2 2021, H1 2021, H2 2020)), these aggregates being adjusted for the impact of the currency variation as compared to the exchange rate for 2018.

	Amounts awarded in respect of the past fiscal year or accounting valuation	Comments
		Other conditions/shareholding obligation **The shareholding obligation** defined pursuant to the French Commercial Code is completed by an internal rule which requires Benoît Potier to hold a number of shares which is equivalent to twice his annual fixed remuneration. Benoît Potier has made a commitment not to carry out any hedging transactions during his term of office. Plan Regulations: The France performance share plan comprises (i) a three-year vesting period; (ii) followed by a two-year holding period during which the shares cannot be transferred, as well as a condition of continued presence.
Other elements	N/A	No allocation.
Remuneration as a Director	N/A	Benoît Potier does not receive any remuneration in respect of his term of office as Director.
Other benefits	€10,234	The benefits in kind (accounting valuation) include the use of a company car and the payment to a third-party of the unemployment insurance contributions for company managers and corporate officers.
Termination indemnity	€0 received	The terms of the commitment applicable to Benoît Potier, since the renewal of his office as Chairman and Chief Executive Officer in 2018 are as follows: (i) only the cases of forced departure related to a change of strategy or a change in control may give rise to an indemnity; (ii) the amount of the indemnity is set at 24 months of gross fixed and variable remuneration; (iii) it decreases gradually as he approaches the age limit defined in the articles of association; (iv) the entitlement to the indemnity is subject to performance conditions which were amended in 2018, the thresholds for increases having been made more exacting: the amount of the indemnity paid will be adjusted on the basis of the average annual gap between the Return on Capital Employed after tax (ROCE) and the Weighted Average Cost of Capital (WACC) (assessed using the net equity method) with respect to the last three fiscal years prior to the departure. This gap, in a highly capital-intensive business activity, makes it possible to measure the regular creation of value. An average gap of 300 basis points between ROCE and WACC over three years is required to be able to benefit from the total indemnity. The proportion of the indemnity due shall be established as follows, with an increase by straight-line segments between each of the thresholds inclusive: **Average over three years of the annual (ROCE – WACC) gaps in bps (a)** — **Proportion of indemnity due** ≥ 300 — 100% 250 — 66% 200 — 50% 100 — 25% < 100 — 0% *(a) bps: basis points.* The decision of the Board of Directors on February 14, 2018 taken in accordance with the regulated agreements and commitments procedure of the "TEPA" Law was approved by the General Meeting on May 16, 2018 in a specific resolution (9th resolution).
Non-competition indemnity: there is no commitment with regard to a non-competition indemnity.		

	Amounts awarded in respect of the past fiscal year or accounting valuation	Comments
Supplementary pension plans	€0 received	**Pension commitment pursuant to a defined benefit pension plan**

For that portion of the remuneration which exceeds 24 times the annual social security ceiling (PASS), pursuant to a defined benefit pension plan, Benoît Potier potentially benefits from a supplemental pension annuity equal to 1% for each year of service of the Reference Remuneration paid by the Company. The defined benefit pension plan only applies, if the beneficiary is still with the Company at the time of his retirement and decides to claim his pension entitlements, whether or not at the full rate; in the event of the termination of the term of office at the Company's initiative (except in the event of gross or wilful misconduct), a beneficiary may retain his rights, if he is over 55 years of age and if he does not resume any professional activity until he retires. This rule, which reflects the Human Resources policy at Air Liquide, encouraging long careers within the Group, is in line with the position of the social security administration. Benoît Potier joined the Group in 1981.

The total pension benefits, under all plans combined, are capped at 45% of the Reference Remuneration. Should this ceiling be reached, the amount paid under the defined benefit pension plan would be reduced accordingly.

The application of this plan to Benoît Potier has been authorized by decisions of the Board of Directors on February 12, 2010 and February 17, 2014 and approved, in resolutions specific to Benoît Potier, by the General Meeting on May 5, 2010 (9th resolution) and May 7, 2014 (10th resolution).

At the time of renewal of his office as Chairman and Chief Executive Officer, pursuant to article L. 225-42-1 of the French Commercial Code, the Board of Directors on February 14, 2018 decided to make the increase, in respect of each fiscal year, in Benoît Potier's conditional pension rights under the defined benefit pension plan S which he benefits from, subject to conditions relating to Benoît Potier's performance assessed in light of the Company's performance (see description below). This commitment was approved by the General Meeting on May 16, 2018 in a resolution specific to Benoît Potier (10th resolution).

Performance conditions applicable to the annual increase in Benoît Potier's conditional rights

Since the renewal of his office as Chairman and Chief Executive Officer in 2018, the increase, in respect of each fiscal year, in Benoît Potier's conditional rights under the defined benefit pension plan S which he benefits from, depends, and the amount of that increase is adjusted in accordance with, the average annual gap between the Return on Capital Employed after tax (ROCE) and the Weighted Average Cost of Capital (WACC) (net equity method), calculated (on the basis of the certified consolidated financial statements, approved by the General Meeting) for the last three fiscal years prior to the said fiscal year.

For the purposes of this calculation, the gap between the ROCE and the WACC is measured for each fiscal year and the average of the three annual gaps will be calculated for the last three fiscal years prior to the said fiscal year.

The proportion of the annual increase in the conditional rights is determined as shown in the table below, with a growth of the increase per linear segments between each of the thresholds between 100 bps and 300 bps inclusive:

Average over three years of the annual (ROCE – WACC) gaps in bps (a)	Proportion of indemnity due
≥ 300	100%
250	66%
200	50%
100	25%
< 100	0%

(a) bps: basis points.

In respect of 2019, the Board of Directors recorded, on February 10, 2020, that the performance condition had been 100% achieved with an increase of 1% in conditional rights, corresponding to a potential acquisition of an additional 1% of the Reference Remuneration for the relevant year.

Pension commitment pursuant to a defined contribution pension plan

Benoît Potier benefits from the **defined contribution pension plan which applies to all the employees and the Executive Officers,** the contribution to which is paid in equal shares by the employer and the beneficiary on the remuneration which does not exceed eight times the PASS. The application of this plan to Benoît Potier was authorized by the Board of Directors on February 12, 2010 and approved by the General Meeting on May 5, 2010 (9th resolution).

The amount of the contributions paid in 2019 (for that fiscal year) under the supplementary defined contribution pension plan for the benefit of Benoît Potier amounts to 9,689 euros.

	Amounts awarded in respect of the past fiscal year or accounting valuation	Comments
Collective life insurance plan	€0 received	Since the Executive Officers are no longer beneficiaries of the defined contribution pension plan for senior managers, a collective life insurance plan was entered into which makes it possible to create savings for the benefit of the beneficiary which are available at any time. The contributions paid by the Company are calculated on identical terms to those of the previous plan. The opening of this plan, for the third bracket (16 to 24 times the PASS) and then the second bracket (8 to 16 times the PASS), and finally its extension to the first bracket (0 to 8 times the PASS) of the Reference Remuneration, at an unchanged cost for the Company, responded to a concern for good management. For Benoît Potier, the signature of this contract was authorized by decisions of the Board of Directors on November 20, 2012 and February 13, 2013, in accordance with the regulated agreements and commitments procedure, and approved by the General Meeting on May 7, 2013 in a specific resolution for Benoît Potier (7th resolution). The extension of the plan to the first bracket was authorized by decision of the Board of Directors on November 20, 2014, in accordance with the regulated agreements and commitments procedure, and approved by the General Meeting on May 6, 2015 in a specific resolution for Benoît Potier (7th resolution). **The amount of the contributions paid in 2019 (in respect of 2018) pursuant to the life insurance plan for the benefit of Benoît Potier is 214,553 euros. The amount of contributions to be paid in 2020 (in respect of 2019) will total 218,830 euros.**
Collective death and disability plan	€0 received	Benoît Potier benefits from the supplementary death and disability plan, unified with effect from January 1, 2015, covering the whole of the personnel and the Executive Officers who are duly authorized to benefit from it, in which (a) the remuneration taken into account for the calculation of the contributions is capped at (i) 16 times the annual social security ceiling for the incapacity and disability cover, (ii) 24 times the annual social security ceiling for the death cover; and (b) the rate of the employer's contribution was reduced in 2018 and amounts to 0.85% up to 16 PASS and to 0.65% between 16 and 24 PASS. The individual application to Benoît Potier, in respect of his duties as Chairman and Chief Executive Officer, of this unified death and disability benefits plan covering all the personnel, was authorized by decision of the Board of Directors on November 20, 2014, in accordance with the regulated agreements and commitments procedure, and approved by the General Meeting on May 6, 2015 in a specific resolution for Benoît Potier (7th resolution). **The amount of the contribution paid in 2019 (in respect of this fiscal year) under the death and disability plan for the benefit of Benoît Potier is 3,307 euros.**

6. Remuneration policy applicable to Corporate Officers

(submitted for the approval of the General Meeting pursuant to article L. 225-37-2-II of the French Commercial Code)

This remuneration policy for the Corporate Officers of L'Air Liquide S.A. is in line, in terms of principles and structure, with the policy approved by the General Meeting of May 7, 2019 relating to Executive Officers. In accordance with article L. 225-37-2, I of the French Commercial Code [(a)], this remuneration policy also applies, for the sections that affect them and in line with previous practices, to Directors of the Company.

It was drawn up by the Board of Directors on February 10, 2020, upon the recommendation of the Remuneration Committee which had carried out in-depth analyses on the subject on which it reported to the Board of Directors. The Chairman and Chief Executive Officer does not attend deliberations by the Remuneration Committee relating to his personal case and does not take part in deliberations or votes by the Board of Directors on the remuneration components that concern him. The decision-making process followed to determine the policy is also applicable when said policy is reviewed and implemented.

To determine the remuneration policy, the Board of Directors takes into account the principles of completeness, balance, comparability, consistency, comprehensibility and proportionality as recommended by the AFEP/MEDEF Code of Corporate Governance.

Pursuant to article L. 225-37-2-II of the French Commercial Code, the remuneration policy set out in this section is submitted for the approval of the General Meeting on May 5, 2020, in the 11th resolution.

6.1. GENERAL PRINCIPLES AND STRUCTURE OF THE TOTAL REMUNERATION OF THE EXECUTIVE OFFICERS

6.1.1. General principles

The elements compromising the remuneration for the Executive Officers are as follows:

- an annual short-term component, comprising a fixed remuneration and a variable remuneration;
- a long-term incentive through the grant of share subscription options and/or performance shares, both tools being subject in full to the same performance conditions calculated over three years;
- other benefits attached to the performance of the Executive Officer's term of office, including:
  - a supplementary pension mechanism [(b)], consisting specifically for Benoît Potier, from January 1, 2020, of a collective pension insurance contract subject to performance conditions, which from this date has replaced the defined benefit pension plan which applies to eligible senior managers and Executive Officers and is applicable for the period up to December 31, 2019,
  - a collective life insurance plan,
  - a death and disability benefits plan,
  - commitments to pay an indemnity in the event of the termination of duties at the Company's initiative, in certain circumstances, subject to performance conditions calculated over a three-year period,
  - entitlement to unemployment insurance for Company managers and corporate officers, in the absence of an employment contract with the Group.

The remuneration policy reflects the increased level of responsibility of the Group's senior executive and is adapted to the Group's context, remains competitive and is an incentive to promote the Group's performance over the medium to long-term, in compliance with the Company's interests and the interests of all the stakeholders.

This remuneration policy, which is applicable to the Chairman and Chief Executive Officer, applies whether the Group's senior Executive Officer acts as the Chairman and Chief Executive Officer or, if circumstances so require, the Chief Executive Officer of the Company. In such circumstances, a Chairman who does not also have the duties of Chief Executive Officer would receive fixed remuneration to the exclusion of any variable remuneration.

There are no employment contracts between the Executive Officer and any of the Group's companies [(c)].

Furthermore, if such a situation were to arise, the remuneration policy applicable to a Senior Executive Vice President would be determined on the basis of the policy applicable to a Chief Executive Officer of the Company, after taking account, however, of the difference in the level of responsibility, consistent with the earlier practices applied at the Company for this type of Executive Officer.

(a) In its drafting pursuant to Ordinance No. 2019-1234 dated November 27, 2019.

(b) Which supplements the defined contribution pension plan which applies to all the employees and corporate officers.

(c) In the event that an Executive Officer holding such an employment contract is appointed, proceedings shall be carried out in accordance with the recommendations of the AFEP/MEDEF Code.

6.1.2. Structure of the total remuneration for the Executive Officers

The structure and principles which apply to the remuneration are in line with earlier fiscal years, although some adjustments have been made taking into account remarks from shareholders. Moreover, amendments have been made to the pension mechanism following the PACTE Law of May 22, 2019 and Ordinance No. 2019-697 of July 3, 2019.

- The remuneration policy provides for a **proportionate balance between the three components of the total annual remuneration** (i.e. the fixed remuneration, the variable remuneration and the long-term incentives, comprising performance shares and/or stock options, hereinafter "LTI").

  The fixed remuneration represents approximately 25%, the variable remuneration 35% and the LTI 40% of the total annual remuneration. The components which are subject to **performance conditions** therefore represent **75% of this total remuneration.** The commitments related to the termination of the executive office (collective pension insurance contract and termination indemnity) are also subject to performance conditions.

  The **variable part** continues to be expressed as a target variable remuneration (as a percentage of the fixed remuneration) with a maximum. The total target variable remuneration which is determined represents approximately 90% of the total maximum variable remuneration, for a very good performance. Consequently, for a fixed remuneration of 100, the target is 150% and the maximum is 167%.

  Concerning the weighting of the various criteria adopted (see table below):

  - A **greater relative weight is still given to the quantifiable criteria** as compared to the qualitative criteria.
  - Quantifiable criteria: as before, each quantifiable criterion is assigned a target weighting (expressed as a percentage of the fixed remuneration) corresponding to a 100% achievement of the target objective set at the beginning of the year, and a maximum weighting (expressed as a percentage of the fixed remuneration).
  - Qualitative criteria:
    - a **weighting is allocated to each of the qualitative criteria;**
    - the qualitative criteria continue to be based, as to two-thirds, on three to four categories or sub-categories of objectives which are defined each year and, as to one-third, on an assessment of the individual performance.
  - The target weighting and the maximum weighting are made public ex ante; the actual weight of each criterion for the determination of the variable remuneration due in respect of the fiscal year will be established on the basis of the performance measured for each criterion in light of the target objective, on the basis of the application of a formula for the financial criteria and the assessment of the Executive Officer's performance by the Board of Directors upon the recommendation of the Remuneration Committee for the qualitative criteria. The rate of achievement of the objectives for the variable remuneration as a percentage of the fixed remuneration and, hence as a percentage of the target variable remuneration for this criterion, will be made public ex post.

- For the period 2016-2020, the performance conditions were set in line with the principal objectives of the **NEOS company program** which incorporate sales growth and the ROCE, and thus reflect the Company's **commercial strategy.**

  Accordingly, the **quantifiable components** of the annual variable remuneration include a **criterion of an increase in the recurring EPS** which makes it possible to take into account all the items in the income statement. The criterion of an **increase in sales** in turn reflects the **momentum of the activity.** The two criteria, growth in revenue and the recurring EPS reflect **the Group's ambition to achieve profitable growth.** Moreover, the **NEOS** company program also incorporates efficiency objectives, the achievement of which contributes to the increase in the recurring EPS.

  The LTI performance conditions in turn incorporate the **ROCE,** which is the key objective of the NEOS company program, which makes it possible to measure the Return on Capital Employed and is relevant in a highly capital-intensive industry. The Total Shareholder Return **(TSR)** in turn makes it possible to **align the Company's performance with the regular profits expected by its shareholders.** Moreover, in order to take into account remarks from shareholders and consistent with the Group's **responsible growth** approach, the LTI plans incorporate with effect from 2020 a new performance condition linked to the Group's **Carbon Intensity** (see definition § 6.2.4 B). The objective of this condition is consistent with the trajectory of the Group's **Climate Objectives** announced at the end of 2018 and which aim to reduce the Carbon Intensity by 30% between 2015 and 2025.

  The performance conditions which apply to the long-term commitments (termination indemnity and collective pension insurance contract) are based on the gap between the **ROCE** and the **WACC** (average gap over three years) which makes it possible to **measure the regular value creation** given the fundamental importance, in the highly capital-intensive industrial gas industry, of the management and control of investment processes.

  The **qualitative components** of the annual variable remuneration incorporate the pursuit of long-term objectives related to **safety, Corporate Sustainability Program, Human Resources** and the preparation of the **succession** plans, thus supporting **the Company's sustainability.**

  These **incentive elements** thus reflect **the Group's strategy** which is steered toward profitable long-term growth, while acting responsibly with regard to all stakeholders. In a highly capital-intensive industry, profitable long-term growth requires constant attention to be paid to each investment decision and to the competitiveness of every transaction, while maintaining an ongoing effort over time in favor, in particular, of safety and security, innovation, employee training and development, together with the environment.

The selection of the components for the remuneration of the Executive Officers by the Board of Directors on the recommendation of the Remuneration Committee is made by taking into account **the conditions of remuneration and employment of the Company's employees.** Accordingly, the quantifiable and qualitative components of the variable remuneration for the Company's senior managers and executives and Executive Officers are identical. These objectives are also reflected in those for the Company's employees who have a short-term variable remuneration. Moreover, the LTI performance conditions are **identical for all the employee beneficiaries** (for the record, approximately 1,800 Group employees each year) **and for the Executive Officers.** These alignments provide for greater **coherence** of efforts in **achieving the Company's performance objectives.** The importance given to the safety objectives helps implement a high-quality working environment for the employees that has a direct impact on their engagement and performance. The variable remuneration also incorporates objectives of talent development, the achievement of which requires in particular the implementation of varied, relevant programs for the training and **development of employees** throughout their career.

- Finally, the **other principles which apply to the LTI are also unchanged** (the proration of the LTI in the event of the Executive Officer's departure from the Group during the period of assessment of the performance conditions, the level of requirement of the objectives and the rules which are specific to the Executive Officers as described below, the limits on grants).
- Specifically for Benoît Potier, a **collective pension insurance contract** with individual and optional subscription is set up as from January 1, 2020, to replace the acquisition of rights under the defined benefit pension plan with effect from such date pursuant to the PACTE Law and Ordinance No. 2019-697 of July 3, 2019 (see details below).

6.2. IMPLEMENTATION FOR THE DETERMINATION OF THE 2020 REMUNERATION

By applying the principles defined above, the criteria for the determination, distribution and allocation of the elements which make up the Executive Officer and Director's total remuneration for 2020 are as follows:

6.2.1. Fixed remuneration

The fixed remuneration is determined on the basis of the level of responsibility, the experience in the executive management function and market practices.

The fixed remuneration will represent approximately 25% of the total target annual remuneration.

6.2.2. Variable remuneration

The variable remuneration will be based on:

- **two quantifiable financial criteria,** which were already included in the criteria for the variable remuneration for 2019:
  - increase in the recurring net earnings (excluding exceptional and significant transactions which do not impact the recurring operating income) excluding foreign exchange impact, per share (hereinafter **"recurring EPS"**),
  - comparable growth in **consolidated revenue** (excluding significant scope impact and the impact of foreign exchange and energy).

  The weighting of each criterion is shown in the table below.

  For each criterion, the Board of Directors has defined a target objective, which is not made public for confidentiality reasons. Nonetheless, the rate of achievement of the objectives for the variable remuneration as a percentage of the fixed remuneration and as a percentage of the target variable remuneration allocated to that criterion, will be made public ex post.

  For each financial criterion, a formula adopted by the Board makes it possible to calculate the amount of the variable remuneration due (within a maximum limit) by taking into account, on the basis of the consolidated financial statements for the fiscal year, the value achieved for the criterion as compared to the target objective set. Thus, in the event of a performance that exceeds the objective set, the value of the variable part is adjusted upward within the maximum limit set for each criterion. **In the event of a performance that is below the lower limit set for each objective, the fraction of the variable remuneration corresponding to this criterion is equal to zero;**
- **(qualitative) personal criteria,** a weighting being allocated to each of them. They are detailed in the table below and relate:
  - as to one-third, to **Corporate Social Responsibility** (hereinafter "CSR"),
  - as to one-third, to **organization and to Human Resources,**
  - as to one-third, to **individual performance.** This criterion responds to the Board of Directors' desire to keep a part of the variable remuneration subject to the Board's assessment, in order to take account of the unpredictability of the environment. This may be beneficial to the Executive Officer, if the Company is facing an unfavorable environment which was not anticipated at the time the objectives were set, or disadvantageous if the environment ultimately turns out to be more favorable than anticipated.

  An identical target and maximum weight is set for each qualitative criterion.

The allocation key for the quantifiable/qualitative criteria and, within each category, the target and the maximum weights for each element, determined by applying the principles set forth above, is as follows:

Indicator	Target [a] As a % of the fixed remuneration	Target [a] As a % based on 100	Maximum As a % of the fixed remuneration	Maximum As a % based on 100
Financial criteria (quantifiable) including:	**105**	**70**	**122**	**73**
Increase in recurring net earnings [b] excluding foreign exchange impact, per share (recurring EPS)	75	50	87	52
Comparable growth in consolidated revenue [c]	30	20	35	21
Personal criteria (qualitative) including:	**45**	**30**	**45**	**27**
CSR: ■ Safety and reliability: continue efforts to improve safety (frequency rate of lost-time accidents, road-traffic accidents and job-related accidents) ■ Continue the roll-out of the Sustainable Development strategy (Implementation of the Group's Climate Objectives – Air Liquide Foundation – Contribution to the development of the hydrogen ecosystem)	15	10	15	9
Organization / Human Resources (talent development, succession plans, diversity policy)	15	10	15	9
Individual performance: evaluation of the Board of Directors, in light in particular of the external environment for the year	15	10	15	9
TOTAL (FINANCIAL AND PERSONAL CRITERIA)	**150**	**100**	**167**	**100**

(a) The target means the 100% achievement of the performance criterion.
(b) Excluding exceptional and significant transactions which do not impact the recurring operating income.
(c) Excluding significant scope impact, and the impact of foreign exchange and energy.

The total amount of the variable remuneration due for the 2020 fiscal year in respect of the term of office will be paid in 2021, after approval of the financial statements by the General Meeting, it being noted that its payment is conditional on approval by a General Meeting of the elements of Benoît Potier's remuneration for 2020, under the conditions provided for in article L. 225-100-III paragraph 1 of the French Commercial Code.

6.2.3. Other elements of annual remuneration

The benefits in kind include the use of a Company car as well as contributions to the unemployment insurance for Company managers and corporate officers. By way of information, these benefits traditionally amount to around 10,000 euros.

In accordance with the Group's internal practice, the Chairman of the Board of Directors, like any other Executive Officer, does not receive any remuneration in respect of his office as Director, if he holds executive duties at L'Air Liquide S.A.

6.2.4. Long-term remuneration components

A. Principles of grant

- In accordance with the principle that has been adopted since 2016, the Board confirmed that the award of performance shares and stock options to the Executive Officer and the changes therein over time will be assessed in terms of the IFRS value (and not in terms of the volumes granted), for all stock option and performance share plans combined.
- All the LTI granted are subject to **performance conditions** that apply to all the LTI plans and are calculated over a period of **three years.** The performance conditions applicable to the plans decided upon in the autumn are set by the Board of Directors at the start of the year, at the Board meeting in February, in order to comply with a reference period of three full years.

  The Board maintained the **criterion of the ROCE** and the Total Shareholder Return **(AL TSR and relative TSR).** It also added, on the recommendation of the Remuneration Committee, a criterion linked to the Group's **Carbon Intensity** for the reasons stated above.
- For each performance condition, a formula adopted by the Board makes it possible to determine, following the end of the three fiscal years during which the performance has to be achieved, the percentage of performance shares definitively awarded / stock options that can be exercised.

  The **objectives** set for each performance condition are made public ex post, at the close of the Board of Directors' meeting in February following the end of the three fiscal years during which the performance must be achieved. The rate of achievement of the performance conditions and the percentage of LTI definitively awarded/that can be exercised are also published at the end of this Board meeting.
- For the Executive Officers who are beneficiaries of the "France" performance share Plan, the vesting period is three years from the meeting of the Board of Directors which decided upon their grant. This period, at the end of which the performance shares vest, is followed by a two-year holding period. The stock options are in principle subject to a four-year lock-up period, followed by a six-year exercise period.

B. Performance conditions

As a consequence of the above, the performance conditions which apply to all the beneficiaries of the LTI Plans which will be allocated in 2020 have been determined by the Board of Directors on February 10, 2020. The number of LTI that will be definitively awarded/can be exercised pursuant to the 2020 Plans will depend:

(i) **for 50% of the LTI granted,** on the rate of achievement of an objective, set by the Board, consisting of the Return on Capital Employed after tax **("ROCE")** [(a)] recorded at the end of the 2022 fiscal year.

At the objective set, the grant is 100%, and then decreases on a straight-line basis to a **lower limit** below which there will be no grant. This lower limit corresponds to a ROCE level which is **200 basis points less** than the objective set, which provides a degree of flexibility, making it possible to take advantage of external growth opportunities.
The objective has been set within the **trajectory of the NEOS company program** which aims at a ROCE of more than 10% in 2021-2022;

(ii) **for 40% of the LTI granted:**

- for 50% of the LTI referred to in sub-paragraph (ii): on an objective of Total Shareholder Return set by the Board, defined as the average annual growth rate of an investment in Air Liquide shares, reinvested dividends, for fiscal years 2020, 2021 and 2022 **("AL TSR").** The objective of an absolute TSR is set in accordance with historic performances. At the objective set, the grant is 100%, then decreases on a straight-line basis, to a lower limit,
- for 50% of the LTI referred to in sub-paragraph (ii): on the rate of Total Shareholder Return from an investment in Air Liquide shares, reinvested dividends – sourced from Bloomberg **("B TSR"),** as compared to the **CAC 40 TSR index, reinvested dividends (sourced from Bloomberg),** for fiscal years 2020, 2021 and 2022,

  The rate of achievement will be 0%, if the average of the Air Liquide TSR is lower than the average of the CAC 40 TSR, 50% if it is equal to the average of the CAC 40 TSR and 100%, if it is at least 2% higher than the average of the CAC 40 TSR on the basis of a straight-line change. Any grant for a performance lower than the average of the CAC 40 TSR is impossible;

(iii) **for 10% of the LTI granted, on the reduction in Air Liquide's Carbon Intensity,** defined as the following ratio, recorded as at December 31, 2022: Greenhouse gas emissions of the Air Liquide Group for the year 2022 in kg-equivalent CO_2/2022 EBITDA (calculated at constant exchange rate on the basis of the 2015 foreign exchange rates) expressed in euros. For the purposes of this policy, greenhouse gas emissions include direct emissions (Scope 1) and indirect emissions (Scope 2). The objective was determined **within the trajectory of the Group's Climate Objectives announced at the end of 2018** which aim to reduce the Carbon Intensity by 30% between 2015 and 2025.

The rate of achievement of the performance conditions will be recorded by the Board at the time when the financial statements are adopted for the 2022 fiscal year.

C. Rules specific to the Executive Officers

The grant to the Executive Officers is examined by the Remuneration Committee at the same time as the allocation to Group employees and is decided by the Board of Directors. It is made within the scope of plans, adopted at pre-established periods in the autumn, in the form of performance shares and/or share subscription options granted without any discount.

Limits on the grants to Executive Officers

Within the scope of the sub-limits authorized by the General Meeting [(b)], the Board of Directors sets lower annual limits for the grants to the Executive Officers, expressed (i) as a percentage of the share capital and for each Executive Officer (ii) as a multiple of their remuneration, in accordance with the recommendations of the AFEP/MEDEF Code. Accordingly, the total aggregate IFRS value of the LTI granted cannot exceed 1.5 times the amount of the Executive Officer's maximum gross annual remuneration, it being noted moreover that, in accordance with the remuneration policy referred to above, the grant of LTI represents approximately 40% of the Executive Officer's total annual remuneration.

Shareholding and share ownership obligations

Shareholding obligation pursuant to the French Commercial Code

On the recommendation of the Remuneration Committee, the Board defined the shareholding obligations resulting from articles L. 225-185 and L. 225-197-1 of the French Commercial Code applicable to the shares resulting from the exercise of stock options and performance shares respectively as from September 28, 2015. They lead to the obligation, for the Executive Officer, to hold, in registered form, until the termination of his duties, a minimum quantity of shares corresponding to 50% of the capital gain on acquisition, net of social security charges and tax, resulting from each exercise of stock options/each definitive award of performance shares.

This percentage will be lowered to 5%, as soon as the quantity of shares held by the Executive Officer represents an amount equal to at least three times the Executive Officer's gross annual fixed remuneration.

(a) For the purposes hereof, Return on Capital Employed after tax ("ROCE") will be calculated as follows: ((Net profit after tax before deduction of minority interests – net cost of debt after taxes) for the period 2022) / (weighted average of (shareholders' equity + minority interests + net indebtedness) at the end of the last three half years (H2 2022, H1 2022, H2 2021)).

(b) Last submitted for the approval of the Combined General Meeting on May 7, 2019 (13th and 14th resolutions).

Additional shareholding obligation – Recommendation made by the AFEP/MEDEF Code

In addition, the internal rule defined by the Board of Directors since 2008, pursuant to which the Chairman and Chief Executive Officer must hold in a registered share account a number of shares equivalent to twice his gross annual fixed remuneration (one time the annual fixed remuneration for a Senior Executive Vice President) remains in effect. This obligation will remain in force until it is exceeded by the effect of the aforementioned rules resulting from the French Commercial Code. The number of shares required to be held is assessed as of January 1 and July 1 of each year.

Other rules applicable to the Executive Officer

- **Condition of presence:** loss of the stock options/rights to the performance shares in the process of being acquired, in the event of resignation or removal from office for serious cause.
- **Principle of a proration on the basis of the actual presence of the Executive Officer:** in the event of a departure from the Group of an Executive Officer for a reason other than resignation or removal from office for serious cause [(a)], the total allocation rate (after applying the performance conditions) will be reduced on a prorated basis to the number of months' actual presence of the Executive Officer at the Group during the period of assessment of the performance criteria. In addition, no grant will be made to an Executive Officer at the time of this departure, in accordance with the AFEP/MEDEF Code.

  The Executive Officer will remain subject to all the provisions of the plans and, more specifically, those relating to the duration of the vesting, lock-in and holding periods in respect of the shares and stock options granted.
- **Obligation regarding the restriction** on the exercise of stock options and the sale of performance shares during the "black-out periods" prior to the publication of the financial statements. These abstention periods open 30 days before the announcement of the annual and half-yearly consolidated results and 15 calendar days before publication of the quarterly financial information. They end on the date of publication of the information at close of business.
- **Commitment not to carry out hedging transactions** with regard to the risk concerning stock options/shares resulting from the exercise of stock options and concerning the performance shares awarded, throughout the length of their term of office.

6.2.5. Long-term commitments and commitments relating to termination of duties

The Board of Directors takes into account, in the overall assessment and determination of the Executive Officers' remuneration, the other commitments relating to the elements of remuneration described below, some of which have been submitted for the approval of the General Meeting within the scope of the regulated agreements and commitments procedure.

At the Company, the long-term commitments and commitments relating to termination of duties for the Executive Officers are usually as follows:

- a supplementary pension mechanism [(b)], comprising specifically for Benoît Potier, and with effect from January 1, 2020, a collective pension insurance contract subject to performance conditions, which from this date has replaced the defined benefit pension plan which applies to eligible senior managers and Executive Officers and is applicable for the period up to December 31, 2019;
- a collective life insurance plan;
- a death and disability benefits plan;
- commitments to pay an indemnity in the event of the termination of duties at the Company's initiative, in certain circumstances, subject to performance conditions calculated over a three-year period;
- entitlement to unemployment insurance for company managers and corporate officers, in the absence of an employment contract with the Group.

In the case of Benoît Potier, these commitments are as follows:

A. Long-term commitments

The Company's pension obligations

Benoît Potier has been authorized to benefit from various supplementary social protection schemes set up by L'Air Liquide S.A., as follows:

- Pursuant to the PACTE Law and Ordinance No. 2019-697 of July 3, 2019, the supplementary pension plans which make the vesting of rights conditional upon the beneficiaries' presence at the Company at the time of retirement can no longer grant a right to acquire supplementary conditional rights as from January 1, 2020.

  For the period up until this date, Benoît Potier's rights under the defined benefit pension plan ("plan S") will remain subject in their entirety to the pension plan regulations.

  As from January 1, 2020, **a collective pension insurance contract with individual and optional subscription** has been established to replace the acquisition of rights under the defined benefit pension plan. Pursuant to the PACTE Law and Ordinance No. 2019-1234 of November 27, 2019, the implementation of this new system for the benefit of Benoît Potier is subject to the approval of the General Meeting of May 5, 2020 pursuant to the remuneration policy (11th resolution).

  Pursuant to this new mechanism, the amount paid by the Company shall be split between a payment to the insurer and a payment to Benoît Potier intended to cover the social security contributions and taxes due on the payments made to the insurer. This amount shall be paid in arrears every year for the period until the end of the executive office.

(a) *Which are cases that result in loss of LTIs.*
(b) *Which supplements the defined contribution pension plan which applies to all the employees and corporate officers.*

Benoît Potier **cannot apply** for the entitlements under this pension insurance contract **before the age at which he becomes entitled to claim his pension entitlements under the French general social security scheme.**

This new mechanism is **specific to Benoît Potier and adapted to his individual situation** in light of his seniority and the fact that the new mechanism is only intended to apply up until the end of his career as an Executive Officer. It is **without prejudice to the mechanism which would apply in the future to a new Executive Officer.**

This new mechanism was selected from among several alternatives and represents **the lowest cost for the Company, being over 20% less than that of the previous plan.** For **Benoît Potier,** it simply **supplements the rights** accumulated under the existing plan and makes it possible to **maintain rights which are equivalent** to those which would have existed under such plan, if it had been possible to maintain them for Benoît Potier. Although, pursuant to the new legislation, this pension insurance contract is not subject to a condition of the beneficiary's presence at the Company at the end of his career, in any event, with regard to Benoît Potier, the application of this condition under the defined benefit pension plan has become very theoretical: a beneficiary who is over 55 years of age and has at least five years' length of service (which is the case for Benoît Potier) shall retain his rights, even if his term of office is terminated provided that he does not resume any professional activity until his retirement. Consequently, the fact that this condition does not apply to the new mechanism is neutral in this specific situation.

The gross annual contribution will amount to approximately 10% of the annual target fixed and variable remuneration for 2020, subject to the achievement of **similar performance conditions to those which apply to the defined benefit pension plan,** which had been determined by the Board of Directors and approved by the General Meeting of May 16, 2018 in its 10th resolution. Consequently, the amount of contributions for a fiscal year will depend on the **average annual gap** between the Return on Capital Employed after tax **(ROCE)** and the Weighted Average Cost of Capital **(WACC)** (net equity method), calculated (on the basis of the certified consolidated financial statements, approved by the General Meeting) for the last three fiscal years prior to the said fiscal year. For the purposes of this calculation, the gap between the ROCE and the WACC will be measured for each fiscal year and the average of the three annual gaps will be calculated for the last three fiscal years prior to the said fiscal year.

The performance coefficient applied to the nominal amount pursuant to the collective pension insurance contract will be determined as shown in the table below, with a growth of the increase per linear segments between each of the thresholds between 100 bps and 300 bps inclusive:

Average of the annual gaps (ROCE – WACC) over three years in bps*	Performance coefficient applied to the nominal amount
≥ 300	100%
250	66%
200	50%
100	25%
< 100	0%

* *bps: basis points*

Finally, the new mechanism will be taken into account when determining the upper limit of 45% of the Reference Remuneration that applies to the defined benefit pension plan, this upper limit being not reached.

Defined contribution pension plan

Benoît Potier benefits from the defined contribution pension plan which applies to all the employees and the Executive Officers, the contribution to which is paid in equal shares by the employer and the beneficiary on that part of the remuneration which does not exceed eight times the PASS. For information purposes, contributions paid in 2019 by the Company for Benoît Potier totaled 9,689 euros.

The individual application of this plan to Benoît Potier was authorized by decision of the Board of Directors on February 12, 2010, in accordance with the regulated agreements and commitments procedure, and approved by the General Meeting on May 5, 2010 (9th resolution).

Other benefits

Life insurance plan

As Benoît Potier is no longer a beneficiary of the defined contribution pension plan for senior managers, a collective life insurance policy was entered into which enables them to create savings on behalf of the beneficiary which are available at any time.

The contract provides that the beneficiaries can request the payment of a single capital sum or the conversion of the capital into a life annuity.

The Executive Officer's rights under this plan are financed by contributions paid by the Company to an insurance body and concern the brackets of remuneration ranging from 0 to 24 times the PASS.

The opening of this plan, for the third bracket (16 to 24 times PASS) and then the second bracket (8 to 16 times PASS), and finally its extension to the first bracket (0 to 8 times PASS) of the Reference Remuneration, at an unchanged cost for the Company, responded to a concern for good management. The contributions paid to the third-party plan manager are assessed on the basis of the portions of the beneficiaries' Reference Remuneration which correspond to each of the three brackets, in accordance with conditions which are identical to those of the previous plan The contributions are reviewed each year on the basis of the amount of the PASS. For information purposes, in 2019, they amounted to 214,553 euros.

For Benoît Potier, the signature of this contract, for the third and then the second bracket, was authorized by decisions of the Board of Directors on November 20, 2012 and February 13, 2013 in accordance with the regulated agreements and commitments procedure, and approved by the General Meeting on May 7, 2013 in a specific resolution (7th resolution). The extension of the plan to the first bracket concerning the band of Reference Remuneration amounting to between 0 and 8 times the annual social security ceiling was authorized by decision of the Board of Directors on November 20, 2014, in accordance with the regulated agreements and commitments procedure, and approved by the General Meeting on May 6, 2015 in a specific resolution for Benoît Potier (7th resolution).

Death and disability benefits plan

Benoît Potier benefits from the additional "incapacity, disability, death" benefits plan, unified as from January 1, 2015, covering all the personnel and the Executive Officers duly authorized to benefit from such plan in which the remuneration taken into account for the calculation of the contributions is capped at (i) 16 times the annual social security ceiling for the incapacity and disability cover, (ii) 24 times the annual social security ceiling for the death cover. For information purposes, contributions paid in 2019 by the Company for Benoît Potier totaled 3,307 euros.

The individual application to Benoît Potier, in respect of his duties as Chairman and Chief Executive Officer, of this unified death and disability benefits plan covering all the personnel, was authorized by decision of the Board of Directors on November 20, 2014, in accordance with the regulated agreements and commitments procedure, and approved by the General Meeting on May 6, 2015 in a specific resolution for Benoît Potier (7th resolution).

B. Commitments relating to termination of duties

Termination indemnities

In accordance with article L. 225-42-1 of the French Commercial Code and the AFEP/MEDEF Code of Corporate Governance, the Board of Directors, at its meeting on February 14, 2018, set the terms of the commitment applicable to Benoît Potier, along the following main lines:

- only the cases of forced departure of Benoît Potier from his terms of office as Chairman and Chief Executive Officer (removal from office, request for resignation) related to a change of strategy or a change in control (in the latter case, the termination indemnity is due, if the departure occurs within six months of the change of control) may give rise to an indemnity;
- the amount of the indemnity in any of these cases is set at 24 months of gross fixed and variable remuneration;
- the amount of the indemnity due decreases gradually as Benoît Potier, in his capacity as Chairman and Chief Executive Officer, approaches the age limit defined in the Company's articles of association; in the event of a forced departure in the 24 months preceding the date of departure due to the age limit set by the articles of association, the amount of the indemnity due will be capped at the number of months' gross remuneration separating the date of forced departure from the date when he reaches such age limit; in any event, no indemnity shall be paid should the beneficiary claim his pension entitlements on the date of his forced departure;
- the right to payment of the indemnity is subject to the achievement of the performance conditions, the proportion of the indemnity due decreasing depending on the rate of achievement of such conditions (see below for details of the performance conditions).

The decision of the Board of Directors on February 14, 2018 relating to this indemnity was made in accordance with the regulated agreements and commitments procedure and published on the Company's website on February 16, 2018. It was approved by the General Meeting on May 16, 2018 in a specific resolution (9th resolution).

Performance conditions applicable to the termination indemnity

The Board of Directors decided that the payment of the termination indemnity concerning Benoît Potier is subject to compliance, duly acknowledged by the Board of Directors at the time of or subsequent to the termination of his duties, with conditions related to the beneficiary's performance assessed in light of the Company's performance, defined as of today as follows:

Entitlement to the indemnity referred to above shall depend on, and the amount of the indemnity paid will be adjusted on the basis of, the average of the annual gap between the Return on Capital Employed after tax (ROCE) and the Weighted Average Cost of Capital (WACC) (assessed using the net equity method), calculated (on the basis of the certified consolidated financial statements, approved by the General Meeting) with respect to the last three fiscal years prior to the fiscal year during which the departure occurs. For the purposes of this calculation, the gap between the ROCE and the WACC will be measured with regard to each fiscal year, and the average of the three annual gaps for the last three fiscal years prior to the fiscal year during which such departure takes place will be calculated.

The proportion of the indemnity due will be established as indicated in the table below, with an increase in the indemnity by straight-line segments between each of the thresholds between 100 bps and 300 bps inclusive:

Average over three years of the annual (ROCE – WACC) gaps in bps (a)	Proportion of indemnity due
≥ 300	100%
250	66%
200	50%
100	25%
< 100	0%

(a) *bps: basis points.*

Unemployment insurance for the Company managers and corporate officers

By decision of the Board of Directors in May 2006, Benoît Potier benefits, in his capacity as Executive Officer, from the unemployment insurance for Company managers and corporate officers taken out by the Company. The contributions paid by the Company are added back to Benoît Potier's remuneration as benefits in kind (which for 2019 were 10,234 euros, for illustrative purposes).

This decision had been approved by the General Meeting on May 9, 2007, in accordance with the regulated agreements procedure (7th resolution).

The Board of Directors confirmed, at its meeting in May 2018, that Benoît Potier continues to benefit from this unemployment insurance within the scope of the latest renewal of his duties.

The commitments described above may be terminated according to common law.

6.3. REMUNERATION POLICY FOR THE DIRECTORS

The remuneration policy for the Directors aims to determine, pursuant to the total package voted by the General Meeting, a **remuneration** which is **competitive internationally,** in order to be able to benefit from the best and most appropriate **skills and expertise,** in compliance with the Group's diversity policy.

First of all, it provides for **fixed remuneration** (prorated if the term of office commences or comes to an end during the course of the year) allocated to the Directors. This remuneration is multiplied by two for the Lead Director, and an additional fixed remuneration is allocated to the Chairs of the four Board Committees, in order to take account of the level of responsibilities incurred and the work involved as a result of these duties.

It also includes a **variable remuneration, which is the highest part,** on the basis of **each Director's attendance** at the meetings of the Board and the Committees/working group, in accordance with the AFEP/MEDEF Code, in the form of the allocation of a fixed amount for each attendance at a meeting. Attendance by video conference or telephone is remunerated by payment of half the said fixed amounts.

In order to take account of the distance for Directors coming from abroad, a fixed amount per trip is added to the variable remuneration for such Directors (the remuneration for intercontinental travel being twice that provided for intracontinental travel). Travel expenses are refunded by the Company.

This policy promotes the **regular and effective attendance in person** by the Directors in the work of the Board and Committees, which fosters **dialogue** between the Directors, **contacts** between such Directors and the **management team,** and, in general, a complete **understanding by the members of the Company's activities and issues,** including any **social and environmental issues,** which ensures a robust **governance for the Company's sustainability.**

The recognition of the **role of the Lead Director,** who receives additional remuneration in this regard, **reflects the importance accorded by the Group to his governance tasks** assisting the combined executive management functions, in connection with the meetings of the Board and the Appointments and Governance Committee, and in an informal manner between such meetings, thus promoting best governance practices. The consideration, in the remuneration policy, of the **work of the four specialist Committees** is evidence of the importance accorded to the preparation of the principal Board decisions, whether in terms of the proper running of the governing bodies, the review of the financial statements and the financial situation, the risk analysis, the consideration of the societal and environmental issues across all the Group's activities, or indeed the determination of an incentivizing remuneration policy for the Executive Officers, including objectives in line with those of the Company.

Accordingly, the remuneration policy, which is balanced and incentivizing, contributes to the **quality of the Board's work,** the latter being thus able to determine the orientations of the Company's activity and its **strategy** in the best interests of the **Company, its employees** and all the **stakeholders.**

It is stated that the **Executive Officers** do not receive **remuneration** in respect of their office as Director or as Chair of a Committee/working group while they perform executive duties at L'Air Liquide S.A. Moreover, pursuant to the provisions in force at the Group which apply to all the employees who perform duties on the Group companies' Boards of Directors, and in agreement with the various stakeholders, the employee Directors do not receive remuneration in respect of their office as Director. Travel expenses are refunded by the Company.

* *And the working group, if chaired by a member other than an Executive Officer.*

DESCRIPTION OF THE STOCK OPTION AND PERFORMANCE SHARE PLANS

1. Allotment policy

The Company attributes annually, in principle, performance shares and/or stock options (hereinafter referred to as "LTIs") in favor of its Executive Officers and employees. Performance share plans for its employees have been in place since 2008, and have been open to the Executive Officers and the members of the Executive Committee since 2015.

These attributions are decided upon by the Board of Directors pursuant to the authorizations granted by the General Meeting, and most recently by the Combined General Meeting of May 7, 2019 for a period of 38 months.

The introduction of performance share plans in 2008 has enabled the Company to have a medium-term instrument of remuneration with complimentary features to those of the long-term instrument of remuneration constituted by the stock options, and to expand the scope of the beneficiaries. In 2019, the Board of Directors decided to attribute performance shares only (instead of a mix of stock options and performance shares as before) to all beneficiaries, in order to simplify and standardize the scheme.

The system for the LTI plans is aimed at three sets of beneficiaries:

- the Company's Executive Officers, for whom the attribution of LTIs and changes to them over time continue to be valued in terms of the IFRS valuation (and not as attributed volumes), who benefit from all mixed stock option and performance share plans;
- the members of the Executive Committee and the Group's managers who hold positions with a high level of responsibility or who make special contributions to the Group, all of whom benefit, beginning in 2015 for the Executive Committee and 2019 for the other beneficiaries, from attribution exclusively in the form of performance shares;
- the specific contributors, such as those employees distinguished by the quality of their conduct in exceptional situations, the inventors and innovators, the middle managers, as well as an expanded category of new employee beneficiaries.

The criteria used to draw up the lists of the beneficiary employees reflect the jobs and the geographical areas in which the Group carries out its activities and the specific contribution, the particular potential, or indeed the individual or collective conduct of the persons concerned, which has been noted in exceptional situations. The lists of beneficiary employees are also drawn up with the desire to ensure a certain rotation and an expansion of the beneficiary population. Accordingly, around a third of the beneficiaries of the Plans dated September 30, 2019 are employees who had not been awarded stock options/performance shares during the last five years.

ALLOTMENTS OF STOCK OPTIONS AND PERFORMANCE SHARES ON SEPTEMBER 30, 2019

Total number of performance shares	**349,173**
% of the share capital	0.07%
Number of grants [(a)]	1,812
% of employees	2.7%

(a) Including 1,747 distinct beneficiaries.

Performance conditions apply to all the stock options and performance shares which are awarded to all the beneficiaries. They are described on page 153.

The aggregate total as at December 31, 2019 of the outstanding performance shares for which the definitive attribution date has not yet occurred and the outstanding stock options which have not yet been exercised corresponds to a number of shares representing less than 0.93% of the share capital on that same date.

2. Stock option plans

(Information to be regarded as the Special Report of the Board of Directors within the meaning of article L. 225-184 of the French Commercial Code)

Pursuant to the decisions of the Board of Directors, following the authorizations of the General Meeting and on the recommendation of the Remuneration Committee, the Company has adopted plans granting a certain number of stock options to certain employees of the Company and its subsidiaries worldwide, including the Executive Officers.

Stock options are granted for a minimum price which cannot be lower than the average opening market price over the 20 trading days preceding the attribution date. The maximum exercise period is 10 years since the stock option plan dated October 14, 2011.

The stock options cannot be exercised before a minimum period of four years after they are awarded. The Board of Directors has the power to terminate this lock-in period if there is a takeover bid for the Company's shares or a merger or takeover of the Company.

The outstanding stock options thus attributed by the Board of Directors in the context of the authorizations voted by the General Meetings and which have not yet been exercised amounted, after adjustment, to 2,829,394 stock options (at an average price of 75.14 euros) as at December 31, 2019, i.e. 0.60% of the shares which make up the capital, including 629,101 stock options (at an average price of 74.21 euros) awarded, during their term of office, to the Executive Officer present as at December 31, 2019.

Of the total stock options authorized for issue by the General Meeting of May 7, 2019, there was still a potential attribution of 9,462,110 stock options as at December 31, 2019 (no stock options were attributed in 2019, as the Board of Directors decided to attribute performance shares only).

TABLE 8 – SUMMARY OF THE ONGOING STOCK OPTION PLANS IN 2019

	2011	2012	2012	2013	2014	2015	2016	2017	2018	Total
Date of authorization by the EGM	05/05/10	05/05/10	05/05/10	05/07/13	05/07/13	05/07/13	05/12/16	05/12/16	05/12/16	-
Date of Board meeting	10/14/11	05/11/12 (e)	09/27/12	09/26/13	09/22/14	09/28/15	11/29/16	09/20/17	09/25/18	-
Total number of share subscription options granted (d)	675,680	6,000	704,791	768,866	868,385	467,194	143,240	73,540	73,380	-
Benoît Potier (a)	*88,000*	-	*88,000*	*100,000*	*100,000*	*70,000*	*60,000*	*23,100*	*23,690*	-
Pierre Dufour (a)	*50,000*	-	*50,000*	*57,000*	*57,000*	*39,900*	-	-	-	-
Of which the top ten employee beneficiaries (excluding executive officers)	*172,000*	-	*183,000*	*208,000*	*212,000*	*92,090*	*23,160*	*7,160*	*6,540*	-
Number of beneficiaries	578	1	672	727	863	399	243	204	217	-
% of share capital represented by each grant	0.24%	NS	0.23%	0.25%	0.25%	0.14%	0.04%	0.02%	0.02%	-
Rate of achievement of performance conditions (f)	98%	100%	90.50%	94.90%	83.38%	82.50%	82.87%	100%	To be recorded in Feb. 2021	-
Option exercise period start date	10/14/15	05/11/16	09/27/16	09/26/17	09/22/18	09/28/19	11/29/20	09/20/21	09/25/22	-
Expiration date	10/13/21	05/10/22	09/26/22	09/25/23	09/21/24	09/27/25	11/28/26	09/19/27	09/24/28	-
Subscription price in euros	87.00	97.00	96.61	102.00	97.00	105.00	93.00	104.00	107.00	-
As of 12/31/19, subscription price in euros (b)	57.28	63.87	70.14	74.06	77.67	84.08	76.47	85.52	97.02	-
At 12/31/19, adjusted number of stock options (b)	918,801	8,265	908,817	992,409	1,027,568	568,096	170,958	89,372	80,989	-
At 12/31/19, number of shares subscribed (d)	559,357	8,265	314,173	262,921	177,371	27,545	731	-	-	-
Number of stock options cancelled (b) (c)	77,555	-	93,431	61,198	197,248	118,773	33,128	3,285	900	-
NUMBER OF STOCK OPTIONS REMAINING (B)	**281,889**	**-**	**501,213**	**668,290**	**652,949**	**421,778**	**137,099**	**86,087***	**80,089**	**2,829,394***
							As of % of the share capital			**0.60%**
										473,105,514

(a) Stock options granted (historical data).
(b) Adjusted to take into account share capital increases through free share issues (2019, 2017, 2014, 2012) and the share capital increase in cash on October 11, 2016.
(c) Loss of exercise rights.
(d) Number of shares or stock options (historical data).
(e) Pursuant to a delegation by the Board of Directors on May 9, 2012.
(f) The stock options granted to the Executive Officers depend on the following performance conditions:
– the objectives set are made public ex post. For the 2017 plan, the objectives set are described on page 157;
– the May 2012 plan, which concerns one employee, is based on an objective of an average gap between ROCE and WACC (weighted average cost of capital) over seven years.
* Number of stock options after applying the rate of achievement of the performance conditions recorded by the Board on February 10, 2020 (2017 plan). As of December 31, 2019 the outstanding options which have not yet been exercised amounted to 2,829,394 options; after applying the rate of achievement of the performance conditions, it amounts to 2,829,394 options.

DETAIL OF THE ONGOING OPTION PLANS IN 2019 FOR BENOÎT POTIER

	2011	2012	2013	2014	2015	2016	2017	2018
Number of stock options granted [(a)]	88,000	88,000	100,000	100,000	70,000	60,000	23,100	23,690
Adjusted number of stock options granted **before** applying the rate of achievement of the performance conditions [(b)]	97,024	97,052	110,283	102,700	79,263	66,161	28,092	26,127
Rate of achievement of the performance conditions	98.00%	90.50%	94.90%	83.38%	82.50%	82.87%	100%	To be recorded in February 2021
Number of stock options after applying the rate of achievement of the performance conditions	**94,986**	**87,832**	**104,659**	**85,631**	**65,391**	**54,827**	**28,092**	**-**
Adjustments impact after applying the rate of achievement of the performance conditions	32,766	21,870	26,048	18,501	6,728	5,643	0	-
Adjusted total number of stock options granted **after** applying the rate of achievement of the performance conditions	127,752	109,702	130,707	104,132	72,119	60,470	28,092	-

(a) *Stock options granted (historical data).*
(b) *To take into account, if applicable, capital increase through free share issues (2019, 2017, 2014, 2012) and the capital increase in cash in October 11, 2016.*

N.B: See on page 156 the adjusted number of stock options remaining to be exercised by the Executive Officer as at December 31, 2019.

2.1. STOCK OPTIONS GRANTED IN 2019

No stock options were attributed in 2019. The Board of Directors' meeting of September 30, 2019 decided to attribute performance shares only (instead of a mix of stock options and performance shares as before) to all beneficiaries, in order to simplify and standardize the LTI scheme.

TABLE 9

TABLE 9.1 – OPTIONS GRANTED TO THE 10 EMPLOYEES (EXCLUDING EXECUTIVE OFFICERS) WHO WERE GRANTED THE HIGHEST NUMBER OF STOCK OPTIONS

Not applicable.

2.2. STOCK OPTIONS EXERCISED IN 2019

Part of the stock options granted between 2011 and 2016 by the Board of Directors were exercised during the 2019 fiscal year for a total of 517,359 shares at an average price of 74.69 euros.

TABLE 9.2 – STOCK OPTIONS EXERCISED BY THE 10 EMPLOYEES OF L'AIR LIQUIDE S.A. AND ITS SUBSIDIARIES (EXCLUDING EXECUTIVE OFFICERS) WHO HAD THE HIGHEST NUMBER OF OPTIONS EXERCISED

Grant date	Number of stock options exercised	Average price *(in euros)*
10/14/2011	68,010	63.18
09/27/2012	17,387	77.36
09/26/2013	27,385	81.68
09/22/2014	13,011	85.66
09/28/2015	516	84.08
TOTAL	**126,309**	**71.54**

TABLE 9.3 – STOCK OPTIONS EXERCISED BY THE 10 EMPLOYEES OF L'AIR LIQUIDE S.A (EXCLUDING EXECUTIVE OFFICERS) WHO HAD THE HIGHEST NUMBER OF OPTIONS EXERCISED

Grant date	Number of stock options exercised	Average price *(in euros)*
10/14/2011	40,547	63.18
09/27/2012	4,533	77.36
09/26/2013	11,200	81.68
09/22/2014	1,662	85.66
09/28/2015	467	92.73
TOTAL	**58,409**	**68.70**

Rate of achievement of the performance conditions for the stock options plan dated September 20, 2017

Based on the financial statements adopted for the 2019 fiscal year subject to the approval of the next General Meeting, the Board of Directors' meeting of February 10, 2020 recorded the rate of achievement of the performance conditions defined at the time of the attribution of the stock option plan dated September 20, 2017. As a result, the total proportion of stock options that may be exercised is 100% (for more details on the achievement of performance conditions, see page 157 – the performance conditions are identical to the performance share plans of September 20, 2017).

3. Performance share plans

(Information to be regarded as the Special Report of the Board of Directors within the meaning of article L. 225-197-4 of the French Commercial Code)

3.1. DESCRIPTION

Since 2008, performance share attributions have been designed to retain and motivate talented employees more dynamically and to reward performance over the medium term.

The Extraordinary General Meeting of May 7, 2019 authorized the Board to attribute performance shares to the Group's employees, within an upper attribution limit equal to 0.5% of the share capital over 38 months; pursuant to this upper limit, it fixed the limit on the number of shares that can be attributed to the Executive Officers over the same period, which amounts to 0.1% of the share capital.

For each attribution, the Board determines two different plan regulations (the "France" Plan and the "World" Plan) which govern the attribution of performance shares to the beneficiaries determined by the Board of Directors. The "France" and "World" Plans mainly differ in the number of years of service required – paragraph a) below, and to the correlative absence of any holding requirement for the "World" Plan – paragraph c) below.

The performance shares are accompanied by:

a. a condition of presence during the vesting period: the shares granted to a beneficiary will only be definitively acquired if they continue to be an employee or Executive Officer of a Group company during a vesting period, which is calculated from the attribution date – three years for the beneficiaries of the "France" Plan and four years for the beneficiaries of the "World" Plan. In the event of retirement, the beneficiary retains their rights, being no longer required to satisfy the continued service requirement;
b. performance conditions which relate, since the first attribution in 2008, to all performance shares awarded to any beneficiary; see the performance conditions in the summary table for attribution of performance shares below;
c. a holding requirement: with effect from the definitive attribution date, the beneficiaries of the "France" Plan have an obligation to hold the shares for an additional two years during which the said shares cannot be transferred (other than in the event of a death or disability).

To date, the performance shares delivered have been treasury shares issued as part of the Company's buyback program (see pages 326-327).

The outstanding performance shares attributed by the Board of Directors pursuant to the authorizations voted by the General Meetings, for which the definitive attribution date has not yet occurred amounted, after adjustment, to 1,573,278 shares as at December 31, 2019, i.e., 0.33% of the shares that make up the share capital.

Out of the total performance shares for which attribution has been authorized by the General Meeting of May 7, 2019 for 38 months, 2,016,355 performance shares remained potentially available for attribution as at December 31, 2019.

TABLE 10 – SUMMARY OF THE ONGOING PERFORMANCE SHARE PLANS IN 2019

	Performance shares 2014	Performance shares 2015	PPR Plan Performance shares 2015	"Airgas" Plan performance shares 2016	Performance shares 2016	Performance shares 2017	Performance shares 2018	Performance shares 2019	Total
Date of authorization by the EGM	05/07/2013	05/06/2015	05/06/2015	05/12/2016	05/12/2016	05/12/2016	05/12/2016	05/07/2019	
Date of award by the Board meeting	09/22/2014	09/28/2015	09/28/2015	07/29/2016	11/29/2016	09/20/2017	09/25/2018	09/30/2019	
Total number of performance shares awarded (a)	140,472	287,172	1,132	75,230	426,346	416,579	393,774	349,173	
Benoît POTIER		*10,000*		*20,000*	*17,800*	*17,980*	*18,230*	*18,650*	
Pierre DUFOUR		*5,700*		*10,000*					
of which the top ten employee beneficiaries (excluding executive officers) receiving the highest number of shares	*2,500*	*36,166*	*1,132*	*22,425*	*63,046*	*71,363*	*69,100*	*57,120*	
Share capital represented by each award	0.04%	0.08%	0.00%	0.02%	0.11%	0.11%	0.09%	0.07%	
Number of beneficiaries	1,248	1,744	5	89	1,955	1,832	1,734	1,812	
Performance conditions ("France" and "World" Plans), over a period of three years	Objective of growth in recurring EPS for FY 2016 as compared to 2013	■ EPS ■ TSR, including an element of relative comparison	Annual gap between Return on Capital Employed (ROCE) and weighted average cost of capital (WACC)	■ Recurring EPS ■ TSR, including an element of relative comparison	■ Recurring EPS ■ TSR, including an element of relative comparison	■ Recurring EPS ■ TSR, including an element of relative comparison	■ Recurring EPS ■ TSR, including an element of relative comparison	■ Recurring EPS ■ TSR, including an element of relative comparison	
Number of performance shares cancelled before definitive award	21,459	78,256	-	11,928	109,802	21,457	6,938	1,821	
Rate of achievement of the performance conditions (b) (d)	97.12%	82.50%	100%	82.87%	82.87%	100%	To be recorded in 2021	To be recorded in 2022	
"France" Plan									
Definitive award date	09/22/2017	09/28/2018	09/28/2018	07/29/2019	11/29/2019	09/20/2020	09/25/2021	09/30/2022	
End of holding period	09/22/2019	09/28/2020	09/28/2020	07/29/2021	11/29/2021	09/20/2022	09/25/2023	09/30/2024	
Number of performance shares after definitive award	39,962	80,660	1,132	26,355	139,848	18	-	-	
Adjusted number of performance shares after definitive award (c)	39,962	91,612	1,270	29,887	170,505	18	-	-	
Adjusted number of performance shares in acquisition period (c)	-	-	-	**24,977**	-	**197,646**	**180,533**	**155,276**	
"World" Plan									
Definitive award date (no additional holding period)	09/22/2018	09/28/2019	-	07/29/2020	11/29/2020	09/20/2021	09/25/2022	09/30/2023	
Number of performance shares after definitive award	82,912	134 270	-	-	-	-	-	-	
Adjusted number of performance shares after definitive award (c)	95,103	152,612	-	-	-	-	-	-	
Adjusted number of performance shares in acquisition period (c)	-	-	-	**22,918**	**228,099**	**287,679**	**247,306**	**228,844**	
ADJUSTED NUMBER OF PERFORMANCE SHARES DEFINITIVELY AWARDED ("FRANCE" AND "WORLD") (c)	**135,065**	**244,224**	**1,270**	**29,887**	**170,505**	**18**	**-**	**-**	
ADJUSTED NUMBER OF PERFORMANCE SHARES IN ACQUISITION PERIOD ("FRANCE" AND "WORLD") (c)	**-**	**-**	**-**	**47,895**	**228,099**	**485,325***	**427,839**	**384,120**	**1,573,278***

(a) Number of performance shares expressed in historical data.
(b) The objectives set are made public ex post. For the 2017 plans, the objectives set are described page 157.
(c) Adjusted to take into account share capital increases through free share issues (2019, 2017) and the share capital increase in cash on October 11, 2016.
(d) The number of performance shares definitively awarded depends upon rate of achievement of the performance conditions which ranges from 0% to 100%. If the objective set is achieved or exceed, the award is 100% (no additional award in the event of an overperformance).
** Number of performance shares after applying the rate of achievement of the performance conditions recorded by the Board on February 10, 2020 (2017 plans). As of December 31, 2019 the outstanding performance shares which have not yet been definitively awarded amounted to 1,573,278 shares; after applying the rate of achievement of the performance conditions, it amounts to 1,573,278 shares.*

DETAIL OF THE PERFORMANCE ACTION PLANS UNDERWAY IN 2019 FOR BENOÎT POTIER

	Performance shares 2015	"Airgas" Plan performance shares 2016	Performance shares 2016	Performance shares 2017	Performance shares 2018	Performance shares 2019
Number of performance shares awarded [(a)]	10,000	20,000	17,800	17,980	18,230	18,650
Adjusted number of performance shares awarded, before applying the rate of achievement of the performance conditions [(b)]	11,324	24,977	21,299	21,864	20,106	20,569
Rate of achievement of performance conditions	82.50%	82.87%*	82.87%	100%	To be recorded in February 2021	To be recorded in February 2022
Adjusted number of performance shares on the definitive award date	9,342	20,698	17,937	21,864	-	-

(a) *Number of shares (historical data).*
(b) *In order to take into account share capital increases through free share issues (2019, 2017) and the share capital increase in cash on October 11, 2016,*
* *Rate of achievement taking account of the assessment of the additional performance condition applying specifically to Benoît Potier (see hereafter).*

3.2. PERFORMANCE SHARE PLANS DATED SEPTEMBER 30, 2019

Pursuant to the authorization of the Combined General Meeting of May 7, 2019, in connection with the "France" and "World" Plans dated September 30, 2019, the Board of Directors made a conditional allocation of a total of 349,173 shares representing 0.07% of the share capital in terms of the number of shares to 1,747 distinct beneficiaries (141,042 shares allocated to the beneficiaries of the "France" Plan and 208,131 shares allocated to the beneficiaries of the "World" Plan).

The IFRS individual fair value for these performance shares amounts to 120,62 euros for the "France" Plan and to 116,25 euros for the "World" Plan (see details of this IFRS value in Note 22.5 "Share-based payments" in the consolidated financial statements).

Subject to the satisfaction of the presence and performance conditions, these shares will definitively be vested in the beneficiaries on September 30, 2022 for the "France" Plan (but cannot be sold prior to September 30, 2024) and on September 30, 2023 for the "World" Plan.

For both these Plans, the Board adopted performance conditions calculated over three fiscal years (for a full description, see page 153).

The rate of achievement of the performance conditions will be recorded by the Board of Directors at its meeting to approve the financial statements for the 2021 fiscal year.

DISTRIBUTION BETWEEN THE VARIOUS CATEGORIES OF BENEFICIARIES (2019 PERFORMANCE SHARES PLANS)

September 30, 2019	Number of beneficiaries	Number of shares
Executive officers of L'Air Liquide S.A.	1	18,650
Senior managers (who are not Executive Officers of L'Air Liquide S.A.), managers and special contributors	135	133,729
Other employees, new beneficiaries	1,676	196,794

SHARES ALLOCATED TO THE 10 EMPLOYEES (EXCLUDING EXECUTIVE OFFICERS OF L'AIR LIQUIDE S.A.) WHO HAVE BEEN AWARDED THE HIGHEST NUMBER OF SHARES

September 30, 2019	Number of shares
For L'Air Liquide S.A.	34,270
For L'Air Liquide S.A. and its subsidiaries	57,120

3.3. RATE OF ACHIEVEMENT OF THE PERFORMANCE CONDITIONS FOR THE PLANS DATED SEPTEMBER 20, 2017 (ANNUAL PLANS) AND JULY 29, 2016 (AIRGAS PLAN)

Plans dated September 20, 2017 (Annual Plans)

Based on the financial statements adopted for the 2019 fiscal year, subject to the approval of the next General Meeting, the Board of Directors' meeting of February 10, 2020 recorded the rate of achievement of the performance conditions defined at the time of the attribution of the annual performance share plans dated September 20, 2017. Consequently, the total proportion of shares subject to conditions which are definitively vested in the beneficiaries is 100% (for more details, see page 157).

"Airgas" performance share plan dated July 29, 2016 – specific condition for Mr. Benoît Potier

The Board of Directors, at its meeting on July 29, 2016, decided to make a specific attribution of performance shares intended to show the Company's recognition of the work carried out by all the teams who contributed to the successful completion of the Airgas acquisition.

For each of these **"Airgas" Plans** ("France" Plan and "World" Plan), the Board adopted performance conditions calculated over three fiscal years and identical to those used for the November 29, 2016 stock option and performance share plans.

On the basis of the financial statements adopted for the 2018 fiscal year, subject to the approval of the General Meeting of May 7, 2019, the Board of Directors' meeting of February 13, 2019 recorded the rate of achievement of the performance conditions, which apply to all performance shares attributed to any beneficiary and which were determined at the time of attribution of the July 29, 2016 Airgas performance share plans. This rate amounts to 82.87%.

Pursuant to the decision of the Board of Directors on July 27, 2017 concerning **Benoît Potier specifically,** an **additional performance condition** was added, based on the rate of achievement of the synergies following the Airgas acquisition. The Board of Directors' meeting of February 10, 2020 found that the level of achievement of this additional performance condition is 100%. As a result, the total proportion of performance shares acquired by Benoît Potier under the "Airgas" France Plan amounts to 82.87%.

EMPLOYEE SAVINGS AND SHARE OWNERSHIP

For many years, Air Liquide has pursued an active policy promoting employee profit-sharing and incentive schemes in connection with the Group's growth and the development of employee share ownership in the Company's capital.

1. Profit-sharing

Profit-sharing and incentive schemes have been organized for many years in Group companies in France and paid almost 48 million euros for 2018 performance. This year these schemes cover over 98% of employees in France.

Under the main Company Savings Plans, Group employees in France can make payments to dedicated and diversified investment funds, managed by equal-representation supervisory boards, on a voluntary basis or based on profit-sharing, incentives and, where applicable, contributions, and thus benefit from the preferential tax regime applicable in consideration for locking-in their assets over a period of five years.

In 2019, L'Air Liquide S.A. paid 6.65 million euros to 1,186 beneficiaries in respect of profit-sharing and incentives. Company contributions to the Company Savings Plan are negotiated every year and amounted to nearly 1.03 million euros in 2019. These payments correspond to an average amount of 6,581 euros per employee excluding employer contribution.

In 2019, L'Air Liquide S.A. employees invested 83% of their profit-sharing and incentives in savings plans, respectively in bond-weighted assets (37%) and equity-weighted assets (63%).

A total of 37% of employee savings was invested in corporate mutual fund holding only Air Liquide shares instaed of 30% last year.

2. Employee share ownership

The Group is keen to involve its employees in its development. These employees share ownership transactions contribute significantly to increasing employee motivation and sense of belonging to the Group.

Since 1986, the Company has regularly performed share capital increases reserved for Group employees, for which subscription is offered at a preferential rate. The most recent capital increase, conducted in November 2018, resulted in the subscription of 1,049,529 shares by 19,078 Group employees, representing 29.4% of the eligible employees in 72 countries.

In France, the shares subscribed in these capital increases are also eligible for the preferential tax regime applicable provided that they are blocked over a period of five years, while those held abroad are governed by the legal regulations prevailing in each relevant country.

At the end of 2018, the share of capital held by Group employees and former employees was estimated at 2.4%, of which 1.7% corresponds (within the meaning of article L. 225-102 of the French Commercial Code) to shares subscribed by employees under employee-reserved capital increases or held through mutual funds. The percentage of Group employees holding L'Air Liquide S.A. shares totaled around 40% of the workforce.

Air Liquide wishes to pursue this strategy and further the development of its employee share ownership, by regularly offering share capital increases to employees.

TRANSACTIONS INVOLVING COMPANY SHARES PERFORMED BY EXECUTIVE OFFICERS IN ACCORDANCE WITH ARTICLE L. 621-18-2 OF THE FRENCH MONETARY AND FINANCIAL CODE

In 2019, the following transactions involving Company shares were performed by Executive Officers and members of Executive Management, pursuant to article L. 621-18-2 of the French Monetary and Financial Code:

Average price	Nature of the transactions	Date of transaction	Average price *(in euros)*
Brian Gilvary	Purchase of 546 shares of L'Air Liquide S.A.	March 25, 2019	111.80
Xavier Huillard	Purchase of 3,500 shares of L'Air Liquide S.A.	April 29, 2019	117.85
Annette Winkler	Purchase of 1,000 shares of L'Air Liquide S.A.	May 10, 2019	113.66
Pierre Dufour	Exercise of 53,818 options of L'Air Liquide S.A.	June 24, 2019	85.66
Pierre Dufour	Sale of 53,818 shares of L'Air Liquide S.A.	June 24, 2019	122.4132
Benoît Potier	Exercise of 30,000 options of L'Air Liquide S.A.	June 26, 2019	63.18
Benoît Potier	Sale of 29,800 shares of L'Air Liquide S.A.	June 26, 2019	121.45
Pierre Dufour	Definitive free share award of 9,384 shares of L'Air Liquide S.A.	July 29, 2019	
Fabienne Lecorvaisier	Definitive free share award of 5,630 shares of L'Air Liquide S.A.	July 29, 2019	
Fabienne Lecorvaisier	Exercise of 23,316 options of L'Air Liquide S.A.	September 11, 2019	63.18
Fabienne Lecorvaisier	Sale of 23,316 shares of L'Air Liquide S.A.	September 11, 2019	124.8275
Benoît Potier	Definitive free share award of 17,937 shares of L'Air Liquide S.A.	November 29, 2019	
Fabienne Lecorvaisier	Definitive free share award of 9,876 shares of L'Air Liquide S.A.	November 29, 2019	

FACTORS THAT MAY HAVE AN IMPACT IN THE EVENT OF A TAKEOVER BID

Pursuant to article L. 225-100-3 of the French Commercial Code, the factors that may have an impact in the event of a takeover bid are set forth below.

1. Board of Directors' powers

The share buyback authorization currently granted to the Company excludes any buybacks during a period of bidding on the Company's shares.

Furthermore, the following delegations of authority granted to the Board of Directors are suspended during periods of takeover bids:

- the delegation of authority granted to the Board of Directors by the General Meeting of May 16, 2018 (16th resolution) to increase the share capital through capitalization of additional paid-in capital, reserves, profits or any other amounts; which would replace it subject to the Approval of the General Meeting of May 5, 2020;
- the delegation of authority granted to the Board of Directors by the General Meeting of May 7, 2019 (11th resolution) to increase the share capital via the issuance of ordinary shares or marketable securities.

Some provisions relating to the regulations of the stock options plans are also applicable in the event of a takeover bid launched on the Company's shares – page 188 of this Universal Registration Document.

2. Agreements that may be modified or terminated in the event of a change of control of the Company

Several bond issues under the Group's EMTN program include a clause providing that, under certain circumstances, the early repayment of such bonds may be requested in the event of a change of control of the Company:

- private placement issued in January 2008 maturing in January 2038 (15 billion yen, or 123,0 million euros equivalent [a]);
- bond issued in June 2010 maturing in June 2020 (500 million euros);
- bond issued in October 2012 maturing in October 2021 (500 million euros);
- bond issued in March 2013 maturing in September 2023 (300 million euros);
- private placement issued in January 2014 maturing in January 2026 (150 million euros);
- private placement issued in March 2014 maturing in March 2029 (100 million euros);
- bond issued in June 2014 maturing in June 2024 (500 million euros);
- private placement issued in September 2014 maturing in September 2022 (130 million swiss francs, or 119.7 million euros equivalent [a]);
- bond issued in January 2015 maturing in January 2022 (500 million renminbis, or 63.9 million euros equivalent [a]);
- bond issued in June 2015 maturing in June 2025 (500 million euros);
- bond issued in April 2016 maturing in April 2022 (300 million euros);
- bonds issued in June 2016 maturing in June 2020 (500 million euros), maturing in June 2022 (500 million euros), maturing in June 2024 (500 million euros), maturing in June 2028 (1,000 million euros);
- bond issued in March 2017 maturing in March 2027 (600 million euros);
- bond issued in June 2019 maturing in June 2030 (600 million euros);

(a) Closing rate as of December 31, 2019 as follow 1 EUR = 121.94 JPY, 1 EUR = 1.1234 USD, 1 EUR = 7.8205 CNY and 1 EUR = 1.0854 CHF.

Three bonds (or private placements) issued outside of the Group's EMTN program include a clause providing that, under certain circumstances, the early repayment of such bonds may be requested in the event of a change of control of the Company:

- US Private Placements issued in September 2012, maturing in September 2022 (400 million US dollars, or 356.0 million euros equivalent [(a)]), September 2024 (200 million US dollars, or 178.0 million euros equivalent [(a)]) and September 2027 (100 million US dollars, or 89.0 million euros equivalent [(a)]);
- US public bond (144a format) issued in September 2016 maturing in September 2021 (1,000 million US dollars, or 890.1 million euros equivalent [(a)]), maturing in September 2023 (750 million US dollars, or 667.6 million euros equivalent [(a)]), maturing in September 2026 (1,250 million US dollars, or 1,112.7 million euros equivalent [(a)]) and maturing in September 2046 (750 million US dollars, or 667.6 million euros equivalent [(a)]);
- US public bond (144a format) issued in September 2019 maturing in September 2029 (500 million US dollars, or €445.0 million equivalent [(a)].

Two bonds issued by Airgas, Inc include a clause providing that, under certain circumstances, the early repayment of such bonds may be requested in the event of a change of control of Airgas, Inc.:

- bond issued in November 2012 maturing in November 2022 ($250 million, or 222.5 million euros equivalent [(a)]);
- bond issued in July 2014 maturing in July 2024 (300 million dollars, or 267.0 million euros equivalent [(a)]).

Some credit agreements of the Group include a clause providing that, under certain circumstances, the early repayment of the advances made under those credit agreements may be requested in the event of a change of control of the Company.

3. Agreements providing indemnities for Board members or employees if they resign or are dismissed without good and sufficient cause or if their employment ends due to a takeover bid

The indemnities granted to the Company's corporate officers in the event of a termination of their office are detailed on pages 185 et seq. of this Universal Registration Document.

(a) Closing rate as of December 31, 2019 as follow 1 EUR = 121.94 JPY, 1 EUR = 1.1234 USD, 1 EUR = 7.8205 CNY and 1 EUR = 1.0854 CHF.

4

FINANCIAL STATEMENTS

CONSOLIDATED FINANCIAL STATEMENTS

Consolidated income statement

For the year ended December 31

(in millions of euros)	Notes	2018	2019
Revenue	**(4)**	**21,011.1**	**21,920.1**
Other income	(5)	188.4	200.9
Purchases	(5)	(8,276.4)	(8,153.9)
Personnel expenses	(5)	(4,145.8)	(4,410.9)
Other expenses	(2, 5)	(3,562.5)	(3,624.7)
Operating income recurring before depreciation and amortization		**5,214.8**	**5,931.5**
Depreciation and amortization expense	(2, 5)	(1,766.3)	(2,137.7)
Operating income recurring		**3,448.5**	**3,793.8**
Other non-recurring operating income	(6)	4.6	1.5
Other non-recurring operating expenses	(6)	(166.4)	(189.0)
Operating income		**3,286.7**	**3,606.3**
Net finance costs	(7)	(303.4)	(361.6)
Other financial income	(7)	13.6	8.4
Other financial expenses	(2, 7)	(62.9)	(114.5)
Income taxes	(2, 8)	(730.7)	(801.7)
Share of profit of associates	(15)	4.1	0.7
PROFIT FOR THE PERIOD		**2,207.4**	**2,337.6**
■ Minority interests		94.0	96.1
■ Net profit (Group share)		2,113.4	2,241.5
Basic earnings per share *(in euros)*	**(9)**	**4.49**	**4.76**
Diluted earnings per share *(in euros)*	**(9)**	**4.47**	**4.73**

Accounting principles and notes to the financial statements begin on page 207.

Statement of net income and gains and losses recognized directly in equity

For the year ended December 31

(in millions of euros)	2018	2019
Profit for the period	2,207.4	2,337.6
Items recognized in equity		
Change in fair value of financial instruments	(60.7)	(10.6)
Change in foreign currency translation reserve	384.9	315.8
Items that may be subsequently reclassified to profit	**324.2**	**305.2**
Actuarial gains / (losses)	36.1	(120.1)
Items that may not be subsequently reclassified to profit	**36.1**	**(120.1)**
Items recognized in equity, net of taxes	**360.3**	**185.1**
Net income and gains and losses recognized directly in equity	2,567.7	2,522.7
■ Attributable to minority interests	98.6	105.7
■ Attributable to equity holders of the parent	2,469.1	2,417.0

Consolidated balance sheet

For the year ended December 31

ASSETS *(in millions of euros)*	**Notes**	**2018**	**2019**
Goodwill	(11)	13,345.0	13,943.0
Other intangible assets	(12)	1,598.7	1,555.0
Property, plant and equipment	(2, 13)	19,248.2	21,117.8
Non-current assets		**34,191.9**	**36,615.8**
Non-current financial assets	(14)	524.9	646.0
Investments in associates	(15)	142.1	154.4
Deferred tax assets	(16)	282.8	256.6
Fair value of non-current derivatives (assets)	(26)	75.9	26.3
Other non-current assets		**1,025.7**	**1,083.3**
TOTAL NON-CURRENT ASSETS		**35,217.6**	**37,699.1**
Inventories and work-in-progress	(17)	1,460.1	1,531.5
Trade receivables	(18)	2,500.4	2,477.9
Other current assets	(20)	892.0	803.0
Current tax assets		140.7	98.0
Fair value of current derivatives (assets)	(26)	44.2	31.3
Cash and cash equivalents	(21)	1,725.6	1,025.7
TOTAL CURRENT ASSETS		**6,763.0**	**5,967.4**
TOTAL ASSETS		**41,980.6**	**43,666.5**

EQUITY AND LIABILITIES *(in millions of euros)*	**Notes**	**2018**	**2019**
Share capital		2,361.8	2,602.1
Additional paid-in capital		2,884.5	2,572.9
Retained earnings		10,544.4	11,582.7
Treasury shares		(121.0)	(128.8)
Net profit (Group share)		2,113.4	2,241.5
Shareholders' equity		**17,783.1**	**18,870.4**
Minority interests		**424.3**	**454.0**
TOTAL EQUITY [(a)]	**(22)**	**18,207.4**	**19,324.4**
Provisions, pensions and other employee benefits	(23, 24)	2,410.7	2,521.2
Deferred tax liabilities	(16)	1,955.9	2,051.9
Non-current borrowings	(25)	11,709.6	11,567.2
Non-current lease liabilities	(2,13)	-	1,087.8
Other non-current liabilities	(27)	250.0	261.6
Fair value of non-current derivatives (liabilities)	(26)	18.4	45.8
TOTAL NON-CURRENT LIABILITIES		**16,344.6**	**17,535.5**
Provisions, pensions and other employee benefits	(23, 24)	325.1	268.4
Trade payables	(28)	2,714.5	2,566.6
Other current liabilities	(27)	1,639.8	1,629.0
Current tax payables		171.2	200.1
Current borrowings	(25)	2,550.9	1,831.8
Current lease liabilities	(2,13)	-	243.6
Fair value of current derivatives (liabilities)	(26)	27.1	67.1
TOTAL CURRENT LIABILITIES		**7,428.6**	**6,806.6**
TOTAL EQUITY AND LIABILITIES		**41,980.6**	**43,666.5**

(a) A breakdown of changes in shareholders' equity and minority interests is presented on pages 205 and 206.

Consolidated cash flow statement

For the year ended December 31

(in millions of euros)	Notes	2018	2019
Operating activities			
Net profit (Group share)		**2,113.4**	**2,241.5**
Minority interests		**94.0**	**96.1**
Adjustments:			
■ Depreciation and amortization	(2, 5)	1,766.3	2,137.7
■ Changes in deferred taxes [(a)]		55.3	67.9
■ Changes in provisions		(89.5)	(106.0)
■ Share of profit of associates	(15)	(4.1)	(0.7)
■ Profit/loss on disposal of assets		(9.6)	35.1
■ Net finance costs		212.4	249.2
■ Other non cash items [(b)]	(2)	-	138.6
Cash flows from operating activities before changes in working capital		**4,138.2**	**4,859.4**
Changes in working capital	(19)	612.9	(36.7)
Other cash items [(b)]		(34.7)	(110.5)
Net cash flows from operating activities		**4,716.4**	**4,712.2**
Investing activities			
Purchase of property, plant and equipment and intangible assets	(12, 13)	(2,249.2)	(2,636.4)
Acquisition of consolidated companies and financial assets		(129.2)	(536.9)
Proceeds from sale of property, plant and equipment and intangible assets		98.0	584.0
Proceeds from sale of financial assets		5.1	0.4
Dividends received from equity affiliates		5.1	4.1
Net cash flows used in investing activities		**(2,270.2)**	**(2,584.8)**
Financing activities			
Dividends paid [(c)]			
■ L'Air Liquide S.A.		(1,159.4)	(1,163.0)
■ Minority interests		(75.3)	(73.7)
Proceeds from issues of share capital [(c)]		138.1	39.2
Purchase of treasury shares [(c)]		(63.6)	(148.1)
Net financial interests paid		(167.1)	(225.4)
Increase (decrease) in borrowings		(1,149.8)	(891.0)
Lease liabilities repayments	(2)	-	(248.0)
Net interests paid on lease liabilities	(2)	-	(38.9)
Transactions with minority shareholders		(1.4)	(31.3)
Net cash flows from (used in) financing activities		**(2,478.5)**	**(2,780.2)**
Effect of exchange rate changes and change in scope of consolidation		65.2	0.7
Net increase (decrease) in net cash and cash equivalents		**32.9**	**(652.1)**
NET CASH AND CASH EQUIVALENTS AT THE BEGINNING OF THE PERIOD		**1,515.7**	**1,548.6**
NET CASH AND CASH EQUIVALENTS AT THE END OF THE PERIOD		**1,548.6**	**896.5**

(a) Changes in deferred taxes reported in the consolidated cash flow statement do not include changes in deferred taxes relating to disposals of assets and capitalized finance costs.

(b) From 2019 onwards, Other items are split between Other non cash items and Other cash items. The adjustment for income and expenses with no cash impact related to IAS19 and IFRS2 is reclassified on the Other non cash items line. In 2018, these two lines would have respectively been 104.1 million euros and -138.8 million euros.

(c) A breakdown of dividends paid, share capital increases and treasury share purchases is provided on pages 205 and 206.

The analysis of net cash and cash equivalents at the end of the period is as follows:

(in millions of euros)	Notes	2018	2019
Cash and cash equivalents	(21)	1,725.6	1,025.7
Bank overdrafts (included in current borrowings)		(177.0)	(129.2)
NET CASH AND CASH EQUIVALENTS		**1,548.6**	**896.5**

Consolidated statement of changes in equity

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY FROM JANUARY 1, 2019 TO DECEMBER 31, 2019

(in millions of euros)	Notes	Share capital	Additional paid-in capital	Retained earnings (including net profit)	Fair value of financial instruments	Translation reserves	Treasury shares	Shareholders' equity	Minority interests	Total equity
Equity and minority interests as of January 1, 2019		**2,361.8**	**2,884.5**	**13,664.1**	**(258.5)**	**(747.8)**	**(121.0)**	**17,783.1**	**424.3**	**18,207.4**
Profit for the period				**2,241.5**				**2,241.5**	**96.1**	**2,337.6**
Items recognized directly in equity				(120.1)	(10.6)	306.2		175.5	9.6	185.1
Net income and gains and losses recognized directly in equity [(a)]				**2,121.4**	**(10.6)**	**306.2**		**2,417.0**	**105.7**	**2,522.7**
Increase (decrease) in share capital		2.9	34.5					37.4	1.8	39.2
Free share attribution		242.6	(242.6)							
Distribution	(10)			(1,163.8)				(1,163.8)	(73.7)	(1,237.5)
Cancelation of treasury shares [(c)]		(5.2)	(103.5)				108.7			
Purchases/Disposals of treasury shares [(c)]							(147.9)	(147.9)		(147.9)
Share-based payments				8.8			31.4	40.2		40.2
Transactions with minority shareholders recognized directly in equity				7.3				7.3	(4.0)	3.3
Others [(e)]				(102.9)				(102.9)	(0.1)	(103.0)
EQUITY AND MINORITY INTERESTS AS OF DECEMBER 31, 2019		**2,602.1 [(b)]**	**2,572.9 [(d)]**	**14,534.9**	**(269.1)**	**(441.6)**	**(128.8) [(c)]**	**18,870.4**	**454.0**	**19,324.4**

(a) The statement of net income and gains and losses recognized directly in equity is presented on page 202.

(b) Share capital as of December 31, 2019 was made up of 473,105,514 shares at a par value of 5.50 euros. During the fiscal year, movements affecting share capital were as follows:

- *on October 9, 2019, share capital increase by capitalizing share premiums, and attribution of 44,117,721 free shares at an exchange rate of one new share for 10 existing shares and one new share for 100 existing registered shares held continuously from December 31, 2016 to October 8, 2019 inclusive;*
- *creation of 430,376 shares in cash with a par value of 5.50 euros resulting from the exercise of options before the attribution of free shares;*
- *creation of 86,983 shares in cash with a par value of 5.50 euros resulting from the exercise of options after the attribution of free shares;*
- *share capital decrease by canceling 953,000 shares, bought under the approval of the Combined Shareholders' Meeting of May 16, 2018 before the attribution of free shares.*

(c) The number of treasury shares as of December 31, 2019 totaled 1,616,458 (including 1,380,893 held by L'Air Liquide S.A.). During the fiscal year, movements affecting treasury shares were mainly as follows:

- *acquisitions, net of disposals, of 1,298,900 shares before the attribution of free shares;*
- *disposals, net of acquisitions, of 4,505 shares after the attribution of free shares;*
- *creation of 170,453 shares related to the attribution of free shares;*
- *allocation of 351,894 shares as part of performance shares to employees and Group management;*
- *cancelation of 953,000 shares by capital decrease.*

(d) During the fiscal year, movements affecting "Additional paid-in capital" were as follows:

- *increase related to capital increases for 34.5 million euros;*
- *decrease related to the cancelation of treasury shares for -103.5 million euros.*

(e) Including the effects of the 1st application of IFRIC23 and of hyperinflation in Argentina.

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY FROM JANUARY 1, 2018 TO DECEMBER 31, 2018

(in millions of euros)	Share capital	Additional paid-in capital	Retained earnings (including net profit)	Fair value of financial instruments	Translation reserves	Treasury shares	Shareholders' equity	Minority interests	Total equity
Equity and minority interests as of January 1, 2018	**2,356.2**	**2,821.3**	**12,602.8**	**(197.8)**	**(1,128.1)**	**(136.5)**	**16,317.9**	**400.5**	**16,718.4**
Profit for the period			**2,113.4**				**2,113.4**	**94.0**	**2,207.4**
Items recognized directly in equity			36.1	(60.7)	380.3		355.7	4.6	360.3
Net income and gains and losses recognized directly in equity [(a)]			**2,149.5**	**(60.7)**	**380.3**		**2,469.1**	**98.6**	**2,567.7**
Increase (decrease) in share capital	9.2	123.0					132.2	5.9	138.1
Distribution			(1,160.0)				(1,160.0)	(75.3)	(1,235.3)
Cancelation of treasury shares	(3.6)	(59.8)				63.4			
Purchases/Disposals of treasury shares						(63.3)	(63.3)		(63.3)
Share-based payments			30.9			15.4	46.3		46.3
Transactions with minority shareholders recognized directly in equity			(37.8)				(37.8)	(5.4)	(43.2)
Others			78.7				78.7		78.7
EQUITY AND MINORITY INTERESTS AS OF DECEMBER 31, 2018	**2,361.8**	**2,884.5**	**13,664.1**	**(258.5)**	**(747.8)**	**(121.0)**	**17,783.1**	**424.3**	**18,207.4**

(a) The statement of net income and gains and losses recognized directly in equity is presented on page 202.

Accounting principles

BASIS FOR PREPARATION OF THE CONSOLIDATED FINANCIAL STATEMENTS

Due to its listing on the Paris Stock Exchange and pursuant to EC Regulation No. 1606/2002 of July 19, 2002, the consolidated financial statements of the Air Liquide Group for the year ended December 31, 2019 have been prepared in accordance with IFRS (International Financial Reporting Standards), as endorsed by the European Union as of December 31, 2019, and with IFRSs without use of the carve-out option, as published by the IASB (International Accounting Standards Board). The IFRS standards and interpretations as adopted by the European Union are available at the following website:

https://ec.europa.eu/info/law/international-accounting-standards-regulation-ec-no-1606-2002/amending-and-supplementary-acts/acts-adopted-basis-regulatory-procedure-scrutiny-rps_en

Except for amendments to IFRS9, IAS39, and IFRS7 "Interest Rate Benchmark Reform", the Group has not anticipated any new standards, amendments to existing standards or new interpretations published by the IASB but not yet approved or not yet mandatory in the European Union, as of December 31, 2019.

The financial statements are presented in millions of euros. They were approved by the Board of Directors on February 10, 2020. They will be submitted for approval to the General Meeting on May 5, 2020.

NEW IFRS AND INTERPRETATIONS

1. Standards, interpretations and amendments endorsed by the European Union whose application is mandatory as of January 1, 2019

The Group applies IFRS16 "Leases" beginning from January 1, 2019. Pursuant different transition options for the first application of IFRS16, the Group has opted for modified retrospective transition method, which consists in recognition at the date of initial application:

- on the one hand, of the lease liability measured at the present value of the remaining lease payments, using the discount rates at the transition date;
- and on the other hand, of the right-of-use asset for the amount equal to the lease liability, adjusted by the amount of any prepaid or accrued lease payments as well as of any provision for onerous leases recognized in the balance sheet as of December 31, 2018.

According to modified retrospective method, the Group did not perform restatement of prior year's financial statements.

The accounting principles relating to leases under IFRS16 are described in section 5.g of the accounting policies. The quantitative impacts of the application of IFRS16 on the annual consolidated financial statements for the year ended December 31, 2019 are detailed in note 2.

The Group applies IFRIC23 "Uncertainty over Income Tax Treatments" beginning from January 1, 2019. This interpretation clarifies how to apply the recognition and measurement requirements in IAS12 when there is uncertainty over income tax treatments. Pursuant different transition options, the Group recognized the cumulative effect of initial application in equity (see consolidated statement of changes in equity page 205), without restatement of comparative information. The impact is not material in respect of the amount of the shareholders' equity of the Group.

Additionally, the following texts have no material impact on the Group financial statements:

- amendments to IFRS9 "Prepayment Features with Negative Compensation", issued on October 12, 2017;
- amendments to IAS28 "Long-term Interests in Associates and Joint Ventures", issued on October 12, 2017;
- annual improvements to IFRSs 2015-2017 Cycle, issued on December 12, 2017;
- amendments to IAS19 "Plan Amendment, Curtailment or Settlement", issued on February 7, 2018.

2. Standards, interpretations and amendments endorsed by the European Union whose application is optional in 2019

The Group has opted for early application of amendments to IFRS9, IAS39, and IFRS7 "Interest Rate Benchmark Reform", issued on September 26, 2019. These amendments allow to have no impact on qualification of hedging relationships of the Group.

Except for these amendments, the Group financial statements for the year ended December 31, 2019 do not include any potential impacts from the standards, interpretations and amendments endorsed by the European Union as of December 31, 2019 for which adoption is only mandatory as of fiscal years beginning after January 1, 2019. These texts are as follows:

- amendments to IAS1 and IAS8 "Disclosure Initiative – Definition of Material", issued on October 31, 2018;
- amendments to references to the Conceptual Framework in IFRS Standards, issued on March 29, 2018.

3. Standards, interpretations and amendments not yet endorsed by the European Union

The impacts on the financial statements of texts published by the IASB as of December 31, 2019 and not yet endorsed by the European Union are currently being analyzed. These texts are as follows:

- amendments to IFRS3 "Definition of a business", issued on October 22, 2018.

Additionally, the following texts are not applicable to the Group:

- IFRS17 "Insurance Contracts", issued on May 18, 2017.

USE OF ESTIMATES AND ASSUMPTIONS

The preparation of the financial statements requires Group or subsidiary management to make estimates and use certain assumptions which have a significant impact on the carrying amounts of assets and liabilities recorded in the consolidated balance sheet, in the notes related to these assets and liabilities, in the profit and expense items in the income statement and in the commitments relating to the period-end. Balance sheet, income statement and cash flow statement line items could differ should the subsequent actual results differ from the estimates. The most significant estimates and assumptions concern namely:

- the estimated useful life of property, plant and equipment used for calculation of depreciation and amortization: these estimates are described in section 5.e of the accounting policies;
- the assumptions used to determine provisions for employee retirement benefit obligations: the actuarial assumptions used (employee turnover, mortality, retirement age, salary increase, etc.), and the discount rates used to determine the present value of obligations, as described in section 11.b of the accounting policies and in note 24.3;
- the estimates and assumptions concerning assets' impairment tests, as described in section 5.f. of the accounting policies and in note 11.2;
- the methods used to recover deferred tax assets on the balance sheet;
- the risk assessment to determine the amount of provisions for contingencies and losses;
- the accounting methods for the margin of the Engineering & Construction contracts that are set out in section 3.b of the accounting policies;
- the assumptions retained to evaluate the lease liability (IFRS16): lease term and discount rate. They are described in section 5.g of the accounting principles.

ACCOUNTING POLICIES

The consolidated financial statements were prepared under the historical cost convention, except for financial assets and liabilities measured at fair value through profit or loss or through other comprehensive income in accordance with IAS32/39. The carrying amount of other assets and liabilities hedged against fair value risk is adjusted to take into account the changes in fair value attributable to the hedged risks. In addition, the principles of fairness, going concern, and consistency were applied.

1. CONSOLIDATION METHODS

The consolidation methods used are:

- full consolidation method for subsidiaries;
- assets, liabilities, expenses and revenue of joint operations are recognized in relation to the Group's interest in these entities;
- equity method for joint ventures and associates.

a. Subsidiaries

All the subsidiaries or companies in which the Air Liquide Group exercises exclusive control are fully consolidated. Control exists when all the following conditions are met:

- the Group has existing rights that give it the current ability to direct the relevant activities;
- the Group is exposed, or has rights, to variable returns from its involvement with the entity;
- the Group has the ability to use its power over the entity so that it affects the amount of the returns.

Companies are fully consolidated from the date the Group obtains control and until the date on which control is transferred outside the Group.

b. Joint operations

Joint operations are joint arrangements whereby the Air Liquide Group has joint control with one or several parties through a contractual agreement, which gives it rights to the assets and obligations for the liabilities of the entity.

Assets, liabilities, expenses and revenue of joint operations are recognized in relation to the Group's interest in these entities. These amounts are recorded on each relevant line of the financial statements as for the consolidated entities.

c. Joint ventures

Joint ventures are joint arrangements whereby the Air Liquide Group has joint control with one or several parties through a contractual agreement, which gives it rights to the net assets of the entity.

Joint ventures are consolidated using the equity method. Under this one, the net assets and net profit of a company are recognized pro rata to the interest held by the Group in the share capital.

On acquisition of an investment in a joint venture, goodwill relating to the joint venture is included in the carrying amount of the investment.

d. Associates

Associates are investments over which the Air Liquide Group has significant influence (generally when the Group has more than 20% of interest), but no control.

Associates are consolidated using the equity method. Under this one, the net assets and net profit of a company are recognized pro rata to the interest held by the Group in the share capital.

On acquisition of an investment in an associate, the goodwill relating to the associate is included in the carrying amount of the investment.

The financial statements of subsidiaries, joint arrangements and associates are prepared as of December 31.

e. Inter-company transactions

All inter-company receivables and payables, income and expenses and profits or losses are eliminated.

2. TRANSLATION OF THE FINANCIAL STATEMENTS OF COMPANIES WHOSE FUNCTIONAL CURRENCY IS NOT THE EURO

The functional currency of an entity is the currency of the primary economic environment in which it carries out its operations. In the majority of cases, the functional currency corresponds to the local currency. However, a functional currency other than the local currency can be retained for certain entities, provided that it represents the currency of the main transactions carried out by the entity and that it ensures faithful representation of its economic environment.

At the balance sheet date, the financial statements of companies whose functional currency is not the euro are translated into euros as follows:

- balance sheet items, at the official year-end exchange rates;
- income statement and cash flow statement items, using the average exchange rate over the period for each currency.

Exchange differences are recognized under a separate item "Translation reserves" in gains and losses recognized directly in equity.

Cumulative foreign exchange gains and losses as of January 1, 2004 arising from the translation into euros of the financial statements of subsidiaries whose functional currency is not the euro have been maintained as a separate component of equity.

On removal from the scope of consolidation, the cumulative exchange differences of a company whose functional currency is not the euro are recognized in the income statement.

Since July 1, 2018, Argentina appears among hyperinflationary countries. The impacts of hyperinflation of this country for 2019 financial year are not significant for the Group.

3. REVENUE RECOGNITION

The analysis of revenue recognition is based on the Group's activities, as follow:

a. Gas & Services

The supply of gas involves local production in order to limit transport costs. Therefore, Air Liquide gas production units are located throughout the world and can supply several types of customers and industries, with the relevant volumes and services required:

Large Industries

This business is characterized by the supply of large quantities of gas contracted for a period of 15 years or longer with a limited number of customers. The Group guarantees a high level of reliability and availability of gas supply with continued service, over the long-term. In return, these contracts include guaranteed minimum volumes through firm purchase clauses (take-or-pay). Due to the volume of gas to be supplied, Air Liquide supplies its Large Industries customers directly by pipelines, from a dedicated plant or different plants connected by a network.

These plants represent significant investments that are generally made in a way to share the production assets with the other business lines of the Group, particularly the Industrial Merchant business, or intended to serve the customers in an industrial basin that is connected on a pipeline network. In these cases, the assets are not identified under the meaning of IFRS16 "Leases" and no lease contract is contained in the contracts with customers. When the customer's gas supply comes from a dedicated plant, the Group may decide on the use of these plants under the meaning of IFRS16 "Leases". Consequently, the gas supply contracts for the Large Industries business do not contain leases.

Customers of the Large Industries business simultaneously receive and consume the benefits granted by the gas supply service or its availability. As a result, the revenue recognition related to these contracts occurs when the gas is supplied or when the reserved capacity is made available.

Industrial Merchant, Healthcare and Electronics

The Industrial Merchant business relies mainly on the gas production capacity of Large Industries and thereafter develops its own distribution logistics. This business is characterized by a wide range of customers and markets. The contract terms can be up to five years for cylinders and liquid gas supply and up to 15 years for small on-site gas generators.

Healthcare business supplies medical gases, hygiene products, services as well as medical devices to hospitals and patients in their homes. It also produces and distributes healthcare specialty ingredients for the cosmetics, pharmaceutical and vaccine markets.

The Electronics business supplies its customers with (i) carrier gases with a business model based on long-term contracts and on guaranteed minimum volumes with take-or-pay type clauses, (ii) electronics specialty materials in the form of pure or mixed gases, (iii) advanced materials, (iv) equipment and installations and (v) services notably on-site quality control and fluid management services.

For safety and quality reasons, Air Liquide supplies gas with its own equipment (small generators, storage tanks, cylinders). Customers have no right of control on the identified assets under the meaning of IFRS16 "Leases". Consequently, the gas supply contracts for these businesses do not contain leases and the revenue recognition occurs as follows:

- gas supply: the revenue recognition occurs when the gas is supplied or when the reserved capacity is made available;
- sale of standard equipment and materials: the revenue recognition occurs when the control of these equipment and materials is transferred, which generally takes place at their delivery;
- specific equipment and installations: the transfer of control occurs over the time, together with their construction. Consequently, the revenue recognition occurs based on the stage of completion of the contracts at the balance sheet date;
- service: the revenue recognition occurs when the service is provided.

b. Engineering & Construction

Air Liquide enters into contracts to design and build production units worldwide for the Group's own account and for third-party customers.

The control of installations is transferred progressively with their design / construction. Consequently, the revenue recognition is based on the stage of completion of the contracts at the balance sheet date. The costs associated are recognized as an expense in the period when incurred. The stage of completion is assessed by using the ratio of contract costs incurred at the balance sheet date versus total estimated contract costs.

The margin realized at the stage of completion is recognized only when it can be reliably measured. When it is probable that total contract costs will exceed total contract revenue, the expected loss is immediately recognized as a provision for onerous contracts.

c. Global Markets & Technologies

The Global Markets & Technologies business focuses on new markets requiring a global approach. This business is growing mainly within the following markets:

- new markets relating to the energy transition, as well as space, aerospace, and extreme cryogenics markets. As a consequence of its nature, the analysis of the revenue recognition on these markets is done on a case-by-case basis depending on the nature of performance obligations.
- gas usages by the actors in the maritime sector, namely offshore oil and gas platforms, offshore wind turbines, or cryogenic transportation by sea. The analysis carried out for Industrial Merchant is applicable to this market.

4. TAXES

a. Income tax expense

The tax rate is calculated on the basis of the fiscal regulations enacted or substantively enacted at the fiscal year closing date in each of the countries where the Group's companies carry out their business.

The Group's applicable tax rate corresponds to the average of the theoretical tax rates in force in each of the countries, weighted according to profit obtained in each of these countries.

The average effective tax rate is calculated as follows: (current and deferred income tax expense) / (net profit before tax less share of profit of associates, dividends received and net profit from discontinued operations).

b. Deferred taxes

Deferred taxes are recognized for all temporary differences between the carrying amount of assets and liabilities and their tax base (excluding non-deductible goodwill and the other exceptions provided in IAS12), the tax loss carryforwards and the unused tax credits. Deferred tax assets are recognized on all deductible temporary differences provided that it is highly probable that the tax benefits will be realized in future years.

Deferred taxes are calculated at the tax rate applicable when the temporary difference is reversed and allowed under local regulations at the period-end date. The liability method is applied and any changes to the tax rates are recognized in the income statement, except those related to items directly recognized in equity.

Deferred tax assets and liabilities are offset if the entities have a legally enforceable right to offset and if they relate to income tax levied by the same taxation authority. Deferred taxes are not discounted.

Deferred taxes are mainly due to temporary differences between the tax and economic depreciation of assets, the carryforward of tax losses and provisions not immediately deductible for tax purposes, such as employee benefit provisions.

When the Group decides not to distribute profits retained by the subsidiary within the foreseeable future, no deferred tax liability is recognized.

5. NON-CURRENT ASSETS

a. Goodwill and business combinations

Business combinations as of January 1, 2010

The Group has prospectively applied IFRS3 revised and IAS27 revised since January 1, 2010.

When the Group obtains control of an acquiree, the business combination is accounted for by applying the acquisition method on the acquisition date, in accordance with IFRS3 revised:

- the identifiable assets acquired and the liabilities and contingent liabilities assumed are measured at fair value;
- any minority interests in an acquiree are measured as the minority interest's proportionate share of the acquiree's net identifiable assets or at fair value. This option is applied on a case-by-case basis;
- the consideration transferred and any contingent consideration are measured at fair value;
- acquisition-related costs are recorded as expenses in the periods in which they are incurred.

For a business combination achieved in stages, any previously held equity interests in the acquiree are measured at the acquisition-date fair value. Any resulting gains or losses are recognized in profit or loss.

The measurement period of a business combination shall not exceed 12 months as of the acquisition date. Any adjustments, after the measurement period, of the consideration transferred and the fair values of acquired assets and assumed liabilities are recorded in the income statement.

On the acquisition date, goodwill is recognized in the consolidated balance sheet as the difference between:

- the consideration transferred plus the amount of minority interests in the acquiree and the fair value of the previously held equity interest; and,
- the fair value of the identifiable assets acquired and the liabilities and contingent liabilities assumed.

Negative goodwill is recognized immediately through profit or loss.

Goodwill is allocated to cash-generating units (CGUs) or groups of cash-generating units that benefit from business combination synergies. Subsequently, goodwill is not amortized but is tested for impairment annually or more frequently if there are any indications of impairment, in accordance with the method described in section 5.f.

Business combinations prior to January 1, 2010

Business combinations achieved prior to January 1, 2010 have been accounted for in accordance with the former versions of IFRS3 and IAS27. These standards had already adopted the acquisition method in the version published by the IASB in March 2004. The main provisions that differed from the revised standards are as follows:

- minority interests were measured based on their share of the net identifiable assets of the acquiree and the fair value measurement option did not exist;
- earn-outs were included in the acquisition cost, without time limits, when the payment was deemed probable and the amount could be reliably measured;
- acquisition-related costs were recorded in the cost of the business combination.

For an acquisition achieved in stages, the fair value remeasurement of any previously held net asset was recognized in equity.

For an acquisition of minority interests in a previously held company, the difference between the acquisition cost and the net carrying amount of the minority interests was recorded in goodwill.

At the time of the transition to IFRS and in accordance with the exemption offered by IFRS1, the Group decided not to apply IFRS3 "Business combinations" retrospectively for acquisitions that took place prior to January 1, 2004.

b. Research and Development expenditures

Research and Development expenditures include all costs related to the scientific and technical activities, patent work, education and training necessary to ensure the development, manufacturing, start-up, and commercialization of new or improved products or processes.

According to IAS38, development costs shall be capitalized if, and only if, the Group can meet all of the following criteria:

- the project is clearly identified and the related costs are itemized and reliably monitored;
- the technical and industrial feasibility of completing the project is demonstrated;
- there is a clear intention to complete the project and to use or sell the intangible asset arising from it;
- the Group has the ability to use or sell the intangible asset arising from the project;
- the Group can demonstrate how the intangible asset will generate probable future economic benefits;
- the Group has adequate technical, financial and other resources to complete the project and to use or sell the intangible asset.

When these conditions are not satisfied, development costs generated by the Group are recognized as an expense when incurred.

Research expenditure is recognized as an expense when incurred.

c. Internally generated intangible assets

Internally generated intangible assets primarily include the development costs of information management systems. These costs are capitalized only if they satisfy the criteria as defined by IAS38 and described above.

Internal and external development costs on management information systems arising from the development phase are capitalized. Significant maintenance and improvement costs are added to the initial cost of assets if they specifically meet the capitalization criteria.

Internally generated intangible assets are amortized over their useful lives.

d. Other intangible assets

Other intangible assets include separately acquired intangible assets such as software, licenses, and intellectual property rights. They also include the technology, brands and customer contracts valued upon the acquisition of companies in accordance with IFRS3 "Business Combinations".

With the exception of certain brands, intangible assets are amortized using the straight-line method over their useful lives. Information management systems are generally amortized over a period comprised between five and eight years and customer contracts over a maximum period of 25 years, considering the probabilities of renewal.

e. Property, plant and equipment

Land, buildings and equipment are carried at their acquisition cost less any accumulated depreciation and impairment losses.

In the event of mandatory dismantling or asset removals, related costs are added to the initial cost of the relevant assets and provisions are recognized to cover these costs.

Interest costs on borrowings to finance the construction of property, plant, and equipment are capitalized during the period of construction when they relate to the financing of industrial projects over a twelve-month construction period, or longer.

Where parts of an item of property, plant and equipment have different useful lives, they are accounted separately and depreciated over their own useful lives.

Repair and maintenance costs are recognized as expenses when incurred. The costs of major inspections and overhauls are recognized as a separate component of the asset and are depreciated over the period between two major overhauls.

Depreciation is calculated according to the straight-line method over the estimated useful lives as follows:

- buildings: 20 to 30 years;
- cylinders: 10 to 40 years;
- production units: 15 to 20 years;
- pipelines: 15 to 35 years;
- other equipment: 5 to 30 years.

The estimated useful lives are reviewed regularly and changes in the estimates are recorded prospectively from the date of change.

Land is not depreciated.

f. Impairment of assets

The Group regularly assesses whether there are any indications of asset impairment. If such indications exist, an impairment test is performed to assess whether the carrying amount of the asset is greater than its recoverable amount, defined as the higher of the fair value less costs to sell (net fair value) and the value in use.

Impairment tests are performed systematically once a year for goodwill and intangible assets with indefinite useful lives.

Assets that do not generate largely independent cash flows are grouped according to the cash-generating units (CGUs) to which they belong. A cash-generating unit is an identifiable group of assets that generates cash inflows that are largely independent of the cash inflows of other assets or groups of assets. They are mainly determined on a geographical basis and by reference to the markets in which the Group operates.

In practice, the Group performs impairment tests at various levels pursuant to these principles:

- dedicated and on-site plants are tested individually;
- pipelines and plants that provide these pipelines are tested at the network level;
- liquid gas and hydrogen/CO plants are grouped together according to the plants' customer market;
- other assets are allocated to cash-generating units or groups of cash-generating units.

The cash-generating units of the Gas & Services activity are determined on a geographical basis. The other activities are managed at a worldwide level (Engineering & Construction and Global Markets & Technologies).

Goodwill is allocated to cash-generating units or groups of cash-generating units that benefit from business combination synergies and which represent the levels at which goodwill is monitored by the Group.

When performing impairment tests on cash-generating units or groups of cash-generating units comprising goodwill, the Group uses the market multiples approach to determine if the goodwill is subject to impairment. Insofar as the fair value is not significantly greater than the net carrying amount of the cash-generating unit or group of cash-generating units, the Group confirms the recoverable amount of the cash-generating unit or group of cash-generating units using the estimated cash flow approach (value in use).

For other cash-generating units or groups of cash-generating units, and assets whose value is tested on an individual basis, the Group determines the recoverable amount using the estimated cash flow approach (value in use).

The market multiples used are determined based on the market value of the Air Liquide Group. The differences between the resulting multiples and those of comparable companies are not material.

The growth rates, taken into account with respect to the cash flow estimates for cash-generating units or groups of cash-generating units, are determined based on the activity and geographical location of the CGU considered.

In assessing value in use for property, plant and equipment, the estimated future cash flows are discounted to their present value. Cash flows are measured over the asset's estimated period of use, taking into account customer contract terms and technical obsolescence.

The discount rate depends on the nature, the location of the asset and the customer market. It is determined according to the minimum level of profitability expected from the investment considering industrial and commercial risks and credit terms.

When the recoverable amount of an asset, a cash-generating unit or a group of cash-generating units is lower than its carrying amount, an impairment loss is recognized immediately through profit and loss. An impairment loss of a cash-generating unit is first allocated to goodwill.

When the recoverable amount exceeds the carrying amount again, the previously recognized impairment loss is reversed to the income statement, with the exception of impairment losses on goodwill, which cannot be reversed.

g. Leases

In the course of its activity, the Group enters as a lessee in contracts mainly for the following types of assets:

- land, buildings and offices;
- transportation equipment, in particular for Industrial Merchant and Healthcare business lines;
- other equipment.

According to IFRS16, a contract (apart from exceptions mentioned below) containing a lease leads to recognition on the lessee's balance sheet of a right-of-use of the leased asset and a lease liability related to the present value of the commitments for future lease payments (lease liability).

A contract is, or contains, a lease if it conveys to the Group the right to control the use of an identified asset for a period of time in exchange of consideration. In particular, the Group has concluded that transportation contracts which confer to the supplier the substantive right to substitute the vehicle throughout the period of use and/or the control on the choice of the route, the driver and maintenance policy, are service contracts and do not meet the definition of a lease under IFRS16.

In addition, the Group has chosen not to apply IFRS16:

- to the lease contracts having a lease terms of 12 months or less;
- to the lease contracts for which the underlying asset is of low value, in particular, office and telephony equipment, computers and small IT equipment. Lease contracts for data centers are analyzed on a case-by-case basis.

The main assumptions used to measure the right-of-use and the lease liability are:

- lease term. It corresponds to the non-cancellable period for which a lessee has the right to use an underlying asset, together with periods covered by an option to extend or to terminate the lease if the Group is reasonably certain to exercise (for options to extend) or not to exercise (for options to terminate) such options. The probability to exercise or not an option is determined by type of contracts or on a case-by-case basis according to contractual terms, regulatory environment and the nature of the underlying asset (in particular, its technical specificity and strategic location);
- the discount rate used for evaluation of the lease liability. The discount rate retained is the lessee's incremental borrowing rate. Due to the centralized financing in the Group, it corresponds for each subsidiary to the interest rate for intragroup borrowings determined according to the currency of the lease contract, the country and the lease term taking into account the repayment profile (linear amortization of the lease liability).

Deferred taxes related to the right-of-use asset and the lease liability from single transaction are accounted for on a net basis.

6. FINANCIAL INSTRUMENTS

a. Non-current financial instruments

Non-consolidated investments

Investments in non-consolidated companies that are not accounted for using the equity method are classified as assets measured at fair value. These investments are not held for trading, consequently, at initial recognition, the Group may make an irrevocable election to present in other comprehensive income subsequent changes in the fair value. In this case, changes in fair value are not reclassified to net result upon disposal of these investments.

Dividends from these investments are recognized in other financial income.

Loans and other financial assets

Loans and other financial assets are initially recognized at their fair value and subsequently carried at amortized cost. Impairment tests are performed at each closing date. Any impairment losses are recognized immediately in the income statement.

b. Trade and other receivables

Trade and other receivables are measured at their transaction price upon initial recognition and then at amortized cost less any impairment losses based on expected credit losses model.

Expected credit losses are estimated on the basis of a matrix consisting in using historical loss rates adjusted depending on actual observable conditions. Expected credit losses are estimated at each closing date in the following manner:

- segregating trade receivables into appropriate groups, in particular depending on the activities of the Group, type and size of client and its market segment;
- within each group of trade receivables, determining of age-bands;
- for each age-band identification of losses realized in previous financial year;
- adjusting if necessary historical loss rate depending on actual observable conditions in order to take into account, in particular, current market conditions, type of client, credit management practices of the Group as well as specific information concerning individual customers;
- application of loss rates estimated in this way to each age-band of trade receivables.

For all construction contracts in progress at the year-end, the gross amounts payable by and to customers represent the sum of costs incurred plus profits recognized using the percentage of completion method, equivalent to total revenue recorded using the percentage of completion method, less the amount of advances received.

Amounts payable by customers are presented in trade receivables. Amounts due to customers are presented in other current liabilities.

Assignments of trade receivables

Assignments of trade receivables are derecognized in the balance sheet when:

- the Group transfers the contractual rights to receive the cash flows related to these receivables to the assignee; or
- the Group retains the contractual rights to receive the cash flows related to these receivables, but assumes a contractual obligation to pay the cash flows to the assignee in an arrangement that cumulatively meets the following three conditions:
  - the Group has no obligation to pay to the assignee unless it collects the equivalent amount,
  - the Group is prohibited from selling or pledging the receivables other than as security for the obligation to pay cash flows to the assignee,
  - the Group has an obligation to remit any cash flows it collects on behalf of the assignee without material delay;
- and the Group transfers substantially all the risks and awards of ownership of the receivables, in particular credit risk and risk of late payment.

c. Cash and cash equivalents

Cash and cash equivalents include cash balances, current bank accounts, and short-term highly liquid investments that are readily convertible into cash and do not present a material risk of a change in value.

Short-term investments include temporary cash investments maturing in less than three months (commercial paper, certificates of deposit and money market funds) whose minimum long-term rating is A (S&P) or A2 (Moody's).

As cash investments maturing in less than three months are exposed to a negligible risk of a change in value, they are recognized at historical cost (including accrued interest) which is considered to approximate fair value.

d. Current and non-current borrowings

Borrowings include bonds and other bank borrowings (including the put options granted to minority shareholders).

At inception, borrowings are recognized at fair value corresponding to the net proceeds collected. At each balance sheet date, except for put options granted to minority shareholders (see section 10 "Minority Interests"), they are measured at amortized cost using the effective interest rate (EIR) method. Under this method, the borrowing cost includes the redemption premiums and issuance costs initially deducted from the nominal amount of the borrowing in liabilities.

Borrowings maturing in less than one year are classified as current borrowings.

Borrowings hedged by interest rate swaps are recognized on a hedge accounting basis.

e. Derivative assets and liabilities

Derivative financial instruments are used to manage exposures to foreign exchange, interest rate and commodity risks relating to the Group's financial and operating activities. For all these transactions, the Group applies hedge accounting and documents, at the inception of the transaction, the type of hedging relationship, the hedging instruments, and the nature and term of the hedged item.

Applying hedge accounting has the following consequences:

- fair value hedges for existing assets and liabilities: the hedged portion of the item is carried at fair value in the balance sheet. Any changes in fair value are recognized in the income statement, where they are offset by the corresponding changes in fair value of the hedging instruments (except for the impact of premiums/ discounts);
- future cash flow hedges: the effective portion of the change in fair value of the hedging instrument is recorded directly in equity (items that may be subsequently reclassified to income statement), while the change in the fair value of the hedged item is not recognized in the balance sheet. The change in fair value of the ineffective portion is recognized in other financial income or expenses. When the hedged transactions occur and are recorded, amounts recorded in other comprehensive income are reclassified in the income statement;
- hedges of net investments in a foreign entity: the effective portion of the changes in fair value of the derivative instrument is recognized in gains and losses recognized directly in equity under "Translation reserves". The ineffective portion of changes in fair value is recognized in "Other financial income and expenses". Once the foreign entity subject to the net investment hedge is sold, the loss or profit initially recognized in translation reserves is recognized in profit or loss, within the gain or loss generated.

However, in limited circumstances, certain types of derivatives do not qualify for hedge accounting; they are carried at fair value through "Other financial income and expenses" with an offsetting entry in financial assets and financial liabilities.

The fair value of assets, liabilities and derivatives is based on the market price at the balance sheet date.

7. ASSETS HELD FOR SALE AND DISCONTINUED OPERATIONS

a. Assets classified as held for sale

Non-current assets or disposal groups are classified as held for sale if their carrying amount will be recovered principally through a sale transaction rather than through continuing use. This classification occurs when the Group takes the decision to sell them and that the sale is considered highly probable.

The assets and liabilities held for sale are presented on different lines of the balance sheet. They are measured at the lower of their carrying amount or fair value less costs to sell. Assets classified as held for sale are no longer depreciated (amortized) as of the date they are classified as assets or disposal groups held for sale.

When a sale involving the loss of control of the subsidiary is considered highly probable, all the assets and liabilities of this subsidiary are classified as being held for sale, independently of whether or not the Group retains a residual interest in the entity after its sale.

b. Discontinued operations

A discontinued operation is a clearly identifiable component that the Group either has abandoned or has classified as held for sale:

- representing a separate major line of business or geographical area of operations;
- being part of a single coordinated plan to dispose of a separate major line of business or geographical area of operations; or,
- being a subsidiary acquired exclusively with a view to resale.

Once the criteria are met, the profit and loss and the cash flow from discontinued operations are presented separately in the income statement and in the consolidated cash flow statement for each period.

8. INVENTORIES AND WORK-IN-PROGRESS

Inventories are measured at the lower of cost or net realizable value. Cost includes raw materials, direct and indirect labor costs and other costs incurred in bringing the inventories to their present location and condition.

Net realizable value is the estimated selling price in the normal course of business less the estimated costs of completion and the estimated costs necessary to make the sale.

9. SHARE CAPITAL, RESERVES AND TREASURY SHARES

Air Liquide's share capital is composed of ordinary shares.

Retained earnings include the following items:

- translation reserves: exchange differences arising from the translation into euros of financial statements prepared by foreign subsidiaries whose functional currency is not the euro are recorded in translation reserves. Fair value changes in net investment hedges of these foreign subsidiaries are also recorded in this reserve;
- fair value of financial instruments: this item records accumulated fair value changes in the effective portion of cash flow hedge derivatives (transactions not yet recognized in the accounts);
- actuarial gains and losses: all actuarial gains and losses and adjustments arising from the asset ceiling, net of deferred taxes, are recognized in consolidated reserves in the period in which they occur.

When the Group buys back its own shares, they are classified as treasury shares at the purchase price and presented as a deduction from equity for the consideration paid. The profit or loss from the sale of treasury shares is recognized directly in equity, net of tax.

Furthermore, acquisitions or disposals of minority interests, without change in control, are considered as transactions with the Group's shareholders. Thus, the difference between the price paid to increase the percentage of interest in entities that are already controlled and the additional share of equity acquired is recognized in Shareholders' equity. Similarly, a decrease in the Group's percentage interest in a controlled entity is accounted for as an equity transaction with no impact on profit or loss.

Disposals of shares with loss of control give rise to the recognition in disposal gains or losses of the change in fair value calculated for the total investment at the date of disposal. Any investments retained, where applicable, will be measured at fair value at the date when control is lost.

10. MINORITY INTERESTS

Transactions with minority interests, without impact on the control, are considered as transactions with the Group's shareholders and are registered in shareholders' equity.

In accordance with IAS32, put options granted to minority shareholders are recorded as borrowings at the option's estimated strike price.

The share in the net assets of subsidiaries is reclassified from "Minority interests" to "Borrowings".

Due to the absence of any specific IFRS guidance, the Group has elected to recognize the consideration for the difference between the strike price of the option granted and the value of the minority interests reclassified as borrowings in shareholders' equity – Group share.

Minority interests in profit and loss do not change and still reflect present ownership interests.

11. PROVISIONS

a. Provisions

Provisions are recognized when:

- the Group has a present obligation as a result of a past event;
- it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation;
- a reliable estimate can be made of the amount of the obligation.

Restructuring provisions include only the direct costs arising from the restructuring and are recognized in the period in which the Group has approved a detailed and formal restructuring plan and the restructuring has either begun or been announced. When these plans involve termination benefits, the resulting provisions are recognized at the earlier of the following dates:

- when the Group can no longer withdraw the offer of those benefits;
- when the provision of the related restructuring is recognized.

A provision for losses on contracts is recognized when the expected benefits from the contract are lower than the cost of satisfying the obligations under the contract.

b. Pensions and employee benefits

The Group provides its employees with various pension plans, termination benefits, jubilees and other post-employment benefits for both active and retired employees. The characteristics of each plan vary according to the laws and regulations applicable in each country as well as each subsidiary policy.

These benefits are covered by two types of plan:

- defined contribution plans;
- defined benefit plans.

The Group grants both defined benefit and defined contribution plans.

Defined contribution plans are plans under which the employer's sole obligation is to pay regular contributions. The employer's obligation is limited to payment of the planned contributions. The employer does not grant any guarantees on the future level of benefits paid to the employee or retiree (means-based obligation). The annual pension expense is equal to the contribution paid during the fiscal year which relieves the employer from any further obligation. It is recognized in "Personnel expenses".

Defined benefit plans are those by which the employer guarantees the future level of benefits defined in the agreement, most often depending on the employee's salary and seniority ("result-based obligation"). Defined benefit plans can be:

- either financed by contributions to a fund specialized in managing the amounts received;
- or managed internally.

In the case of defined benefit plans, retirement and similar obligations are measured by independent actuaries, according to the projected unit credit method. The actuarial calculations mainly take into account the following assumptions: salary increase, employee turnover, retirement date, life expectancy, inflation and appropriate discount rate for each country.

Defined benefit plans are covered by external pension funds in certain cases. The assets of these plans are mostly invested in bonds or equities carried at their fair value.

All actuarial gains and losses as well as any adjustment arising from the asset ceiling are recognized in the period in which they occur.

Actuarial assumptions used vary according to the demographic and economic conditions prevailing in each country where the Group has pension plans.

Discount rates used to measure the present value of the Company's obligations and the net interest cost are determined by reference to market yields on High-Quality corporate bonds. Where there is no deep market in such bonds, the market yields on government bonds with the same maturity at the valuation date shall be used. In the Euro zone, in the United States, in the United Kingdom and in Canada, discount rates were determined using tools designed by independent actuaries. Their database uses several hundred different corporate bonds with a minimum AA-rating and maturities ranging from one to 30 years. Cash flows of expected benefits are subsequently discounted using rates associated to each maturity.

Valuations are carried out annually by independent actuaries for significant plans and every three years for other plans unless there are material changes in assumptions or major events that necessitate a new calculation.

Impacts related to defined benefit plans are registered as follows:

- the service cost, the gain relating to curtailments and settlements, and the actuarial gains and losses from other long-term benefits are recognized in "Personnel expenses";
- net interest cost for defined benefits is registered in "Other financial income and expenses";
- past service cost is recorded in profit or loss according to the nature of the change to the plan that generated it (i.e. either in "Personnel expenses" or in "Other financial income and expenses");
- actuarial gains and losses from defined benefit plans, retirement termination payments, and medical plans are recorded in "Gains and losses recognized directly in equity".

12. FOREIGN CURRENCY TRANSACTIONS AND BALANCES

Foreign currency transactions are recognized according to the following principles:

- foreign currency transactions are translated by each company into its functional currency at the exchange rate prevailing on the date of the transaction;
- at year-end, monetary assets and liabilities denominated in foreign currencies are translated into the functional currency at the closing exchange rate.

Exchange differences relating to commercial transactions are recognized in operating income. For financial transactions, exchange differences are recognized in financial income and expenses except for differences resulting from the hedge of a net investment in a foreign entity that are directly recognized in equity until the net investment is removed from the consolidation scope.

13. CONTINGENT ASSETS AND LIABILITIES

Contingent assets and liabilities arise from past events, the outcome of which depends on future uncertain events.

Contingent liabilities represent:

- possible obligations arising from past events whose existence will be confirmed only by the occurrence of uncertain future events not wholly within the control of the entity; or,
- present obligations that arise from past events, but that are not recognized because it is not probable that an outflow of resources embodying economic benefits will be required to settle the obligation or because the amount of the obligation cannot be measured with sufficient reliability.

Contingent assets and liabilities that are material are disclosed in the notes to the consolidated financial statements, except for contingent liabilities assumed in a business combination, which are recognized in accordance with IFRS3 revised.

14. GOVERNMENT GRANTS

Government grants received are initially recognized in "Other non-current liabilities". They are then recognized as income in the income statement for the period:

- on the same basis as the subsidized assets are depreciated in the case of government grants related to assets;
- deducted from the costs intended to be compensated in the case of government grants other than those related to assets.

The Group analyzes the substance of government incentives delivered through the tax system and selects an accounting treatment coherent with such substance.

15. SHARE-BASED PAYMENTS

The Group grants stock options and performance shares to Executive Officers and some employees.

Stock options and performance shares are measured at fair value on the grant date. Their fair value is recognized as a "Personnel expense" in the income statement with a corresponding increase in equity, and amortized on a straight-line basis over the vesting period.

The valuation is performed by an independent expert, using mathematical models appropriate to the characteristics of each plan. It takes into account the market vesting conditions associated to each one. The fair value measured at the grant date is not subject to re-evaluation due to changes in market conditions.

Vesting conditions, other than market ones, have no impact on the fair value measurement of services received but adjust the expense that is recognized according to the number of equity instruments actually granted.

The dilution effect of non-vested stock option plans and performance share allocations is reflected in the calculation of diluted earnings per share.

For employee savings plans, the capital increases reserved for employees and performed under conditions that differ from market conditions result in the recognition of an expense. This expense corresponds to the contribution paid by the entity and the discount on the share price less the cost of non-transferability for the employees.

Share subscription option plans

Options are valued using the following main underlying assumptions:

- volatility: implicit;
- risk-free interest rate: zero-coupon benchmark rate at the plan issue date and matching the various maturities retained;
- dividend growth rate: based on the historical average annual growth rate;
- employee resignation rate: the rate of individuals belonging to the same age group as the plan beneficiaries. The resignation rate is used to extrapolate the number of options which will not be exercised due to the resignation of beneficiaries;
- the probability of achieving the market vesting conditions.

Performance shares allocation plans

Performance shares are measured at fair value, taking into account a discount on non-transferable shares. The cost of non-transferability is measured as the cost of a two-step strategy consisting in the forward sale of shares being non-transferable for four years (or five years depending on the plan) and the purchase on the spot market of the same number of shares funded by an amortizable loan with an in fine capital repayment.

Valuation is based upon the following main underlying assumptions:

- risk-free interest rate: four-year zero-coupon benchmark rate (or five-year depending on the plan) at the plan issue date plus a credit margin that would be proposed to employees;
- dividend growth rate: based on the historical average annual growth rate;
- employee resignation rate: the rate of individuals belonging to the same age group as the plan beneficiaries. This resignation rate is used to extrapolate the shares which will not be allocated due to the resignation of beneficiaries;
- the probability of achieving the market vesting conditions.

16. GREENHOUSE GAS EMISSION QUOTAS

In certain countries, the Group is subject to greenhouse gas emission quota systems.

In the absence of any specific IFRS guidance, the Group has elected to apply the ANC Regulation No. 2012-03. The Group does not buy CO_2 quotas for the purpose of generating profits from fluctuations in price; therefore, at each closing date:

- a liability is recognized if the greenhouse gas emissions are higher than the CO_2 quotas held by the Group. It corresponds to the cost of CO_2 quotas in shortfall to cover the greenhouse gas already emitted; or,
- an asset is recognized if the greenhouse gas emissions are lower than the CO_2 quotas held by the entity. It corresponds to the CO_2 quotas available to cover the future greenhouse gas emissions, valued at historical cost.

Basis for presentation of financial information

1. SEGMENT INFORMATION

The Group is structured according to the following activities: Gas & Services, Engineering & Construction and Global Markets & Technologies.

The Group's main operational decision-making body is the Executive Management assisted by the Executive Committee.

The Gas & Services activity is organized by geographical area, which is the responsible level for operations management and performance monitoring. These geographical areas are as follows:

- Europe;
- Americas;
- Asia Pacific;
- Middle East and Africa.

Within the Gas & Services segment, the geographical areas determine sales policies and development projects in liaison with the four business lines (Large Industries, Industrial Merchant, Healthcare and Electronics).

The Engineering & Construction segment is managed separately on a worldwide scale. The segment designs, develops and builds industrial gas production plants for the Group and third parties. It also designs and manufactures plants in the traditional, renewable and alternative energy sectors.

The Global Markets & Technologies segment is also managed separately on a worldwide scale. It focuses on new markets which require a global approach, drawing on science, technologies, development models, and usages related to digital transformation.

Research and Development and corporate activities do not meet the operating segments definition and are thus presented within reconciliation.

The information communicated in the tables covering segment information is presented according to the same accounting principles as those used for the Group consolidated financial statements.

Revenue is analyzed by geographical area of production (country of origin).

Inter-segment revenue between Gas & Services, Engineering & Construction and Global Markets & Technologies activities corresponds to the sales between these operating segments.

The Group operating performance is assessed on the basis of each segment's recurring operating income.

Segment assets include non-current assets, with the exception of "Deferred tax assets", "Investments in associates", "Fair value of non-current derivatives (assets)", as well as "Inventories and work-in-progress", "Trade receivables" and "Other current assets".

Segment liabilities correspond to "Provisions, pensions and other employee benefits", "Trade payables", "Other current liabilities" and "Other non-current liabilities".

Segment profits, assets and liabilities consist of amounts directly attributable to each segment, provided they can be allocated to the segment on a reasonable basis.

2. NET DEBT

The net debt includes:

- current and non-current borrowings, as defined in section 6.d of accounting policies, less the fair value of hedging derivative assets to cover borrowings;

reduced by:

- cash and cash equivalents, as defined in section 6.c of accounting policies, less the fair value of hedging derivative instruments recorded in liabilities to cover loans.

The net debt does not include lease liabilities as defined in section 5.g of accounting policies.

3. INFORMATION ON INTERESTS IN JOINT ARRANGEMENTS OR ASSOCIATES

The materiality of the interests in joint arrangements or associates is assessed according to the following criteria:

- contribution of the entity to the Group's operating income recurring;
- share of these interests in the Group's net assets;
- dividends paid to these interests.

4. INFORMATION ON MINORITY INTERESTS

The materiality of the minority interests is assessed according to an analysis of:

- the minority interests' share in the Group's net assets;
- the contribution to the Group's operating income recurring of the subsidiary having minority interests;
- dividends paid to minority interests.

5. OPERATING INCOME RECURRING

The Group's operating performance is measured based on operating income or loss recurring determined in accordance with ANC recommendation No. 2013-03.

6. OTHER NON-RECURRING OPERATING INCOME AND EXPENSES

Material non-recurring operations that could affect operating performance readability are classified under "Other non-recurring operating income" and "Other non-recurring operating expenses". They may include:

- gains or losses on the disposal of activities or groups of assets;
- acquisition-related and integration-related costs relating to business combinations;
- restructuring costs resulting from plans whose unusual and material nature distort the readability of the operating income recurring;
- significant provisions and impairment losses for property, plant and equipment and intangible assets;
- incurred or estimated costs relating to significant political risks or litigations.

7. NET EARNINGS PER SHARE

a. Basic earnings per share

Basic earnings per share are calculated by dividing net profit (Group share) attributable to ordinary shareholders of Air Liquide by the weighted average number of shares outstanding during the year, excluding ordinary shares purchased by Air Liquide and recognized in equity.

b. Diluted earnings per share

Diluted earnings per share take into account share subscription options and performance shares allocated to employees and Executive Officers if:

- the issue price, adjusted for unrecognized expenses at the year-end pursuant to IFRS2, is lower than the Air Liquide annual average share price;
- the performance requirements meet the criteria set out in IAS33 § 52.

Notes to the consolidated financial statements for the year ended December 31, 2019

Note 1 Significant events

There were no significant events during fiscal year 2019.

Note 2 Impacts of IFRS16 application

As of January 1, 2019, the impacts of IFRS16 are +1,353.9 million euros on Property, plant and equipment and +1,403.0 million euros on the net indebtedness. As a reminder, the difference of the impact between Property, plant and equipment and lease liabilities mainly comes from the adjustment of the right-of-use asset by any prepaid or accrued lease payments as well as provisions for onerous leases which were recognized in the balance sheet as of December 31, 2018.

As of December 31, 2019, the impacts of IFRS16 application in the financial statements are the following:

MAIN ITEMS OF THE INCOME STATEMENT *(in millions of euros)*	**2018**	**2019 (A)**	**IFRS16 Impact [a] (B)**	**2019 excl. IFRS16 C=(A)-(B)**
Other expenses	(3,562.5)	(3,624.7)	265.8	(3,890.5)
Operating income recurring before depreciation and amortization	**5,214.8**	**5,931.5**	**265.8**	**5,665.7**
Depreciation and amortization expense	(1,766.3)	(2,137.7)	(242.7)	(1,895.0)
Operating income recurring	**3,448.5**	**3,793.8**	**23.1**	**3,770.7**
Other net non-recurring operating expenses	(161.8)	(187.5)	(0.4)	(187.1)
Operating income	**3,286.7**	**3,606.3**	**22.7**	**3,583.6**
Other financial expenses	(62.9)	(114.5)	(41.7)	(72.8)
Income taxes	(730.7)	(801.7)	4.6	(806.3)
NET PROFIT – GROUP SHARE	**2,113.4**	**2,241.5**	**(14.4)**	**2,255.9**

(a) The IFRS16 impacts include the reintegration of leasing expenses less depreciation and others financial expenses booked in 2019 regarding IFRS16.

MAIN ITEMS OF THE CASH FLOW STATEMENT *(in millions of euros)*	**2018**	**2019 (A)**	**IFRS16 Impact [a] (B)**	**2019 excl. IFRS16 C=(A)-(B)**
Operating activities				
Net profit (Group share)	**2,113.4**	**2,241.5**	**(14.4)**	**2,255.9**
Adjustments:				
■ Depreciation and amortization	1,766.3	2,137.7	242.7	1,895.0
■ Changes in deferred taxes	55.3	67.9	(4.6)	72.5
■ Other non cash items	-	138.6	41.7	96.9
Cash Flows from operating activities before changes in working capital [a]	**4,138.2**	**4,859.4**	**265.4**	**4,594.0**
Financing activities				
Lease liability repayment	-	(248.0)	(248.0)	-
Net interests paid on lease liability	-	(38.9)	(38.9)	-
Net cash flows from (used in) financing activities [a]	**(2,478.5)**	**(2,780.2)**	**(286.9)**	**(2,493.3)**

(a) The implementation of IFRS16 has no impact on net cash and cash equivalents. The impact of the standard on cash flows from operating activities before changes in working capital differs from the impacts reported in net cash flows used in financing activities due in particular to cash outflows following the exercise of purchase options for assets which were previously leased, prepaid lease expenses or rent-free periods.

MAIN ITEMS OF THE BALANCE SHEET *(in millions of euros)*	**2018**	**2019 (A)**	**IFRS16 Impact (B)**	**2019 excl. IFRS16 C=(A)-(B)**
Property, plant and equipment	19,248.2	21,117.8	1,262.5	19,855.3
Non-current borrowings	11,709.6	11,567.2	(8.0)	11,575.2
Non-current lease liabilities	-	1,087.8	1,087.8	-
Current borrowings	2,550.9	1,831.8	(4.6)	1,836.4
Current lease liabilities	-	243.6	243.6	-

Note 3 Segment information

3.1 INCOME STATEMENT FOR THE YEAR ENDED DECEMBER 31, 2019

	Gas & Services								
(in millions of euros)	Europe	Americas	Asia Pacific	Middle East and Africa	Sub-total	Engineering & Construction	Global Markets & Technologies	Reconciliation	Total
Revenue	7,172.3	8,460.5	4,793.7	613.5	21,040.0	328.1	552.0		21,920.1
Inter-segment revenue						*380.7*	*454.4*	*(835.6)*	
Operating income recurring	**1,431.4**	**1,536.6**	**950.8**	**109.5**	**4,028.3**	**8.9**	**67.2**	**(310.6)**	**3,793.8**
incl. depreciation and amortization	*(645.6)*	*(876.0)*	*(436.2)*	*(72.1)*	*(2,029.9)*	*(26.4)*	*(46.5)*	*(34.9)*	*(2,137.7)*
Other non-recurring operating income									1.5
Other non-recurring operating expenses									(189.0)
Net finance costs									(361.6)
Other financial income									8.4
Other financial expenses									(114.5)
Income taxes									(801.7)
Share of profit of associates									0.7
Profit for the period									**2,337.6**
Purchase of intangible assets and property, plant and equipment	(815.3)	(945.7)	(588.1)	(61.6)	(2,410.7)	(8.6)	(191.4)	(25.7)	(2,636.4)

3.2 INCOME STATEMENT FOR THE YEAR ENDED DECEMBER 31, 2018

	Gas & Services								
(in millions of euros)	Europe	Americas	Asia Pacific	Middle East and Africa	Sub-total	Engineering & Construction	Global Markets & Technologies	Reconciliation	Total
Revenue	7,111.4	7,982.1	4,358.5	654.9	20,106.9	430.2	474.0		21,011.1
Inter-segment revenue						*241.7*	*366.5*	*(608.2)*	
Operating income recurring	**1,367.9**	**1,369.4**	**836.9**	**104.8**	**3,679.0**	**(3.7)**	**49.8**	**(276.6)**	**3,448.5**
incl. depreciation and amortization	*(581.1)*	*(676.9)*	*(355.9)*	*(66.2)*	*(1,680.1)*	*(18.2)*	*(36.0)*	*(32.0)*	*(1,766.3)*
Other non-recurring operating income									4.6
Other non-recurring operating expenses									(166.4)
Net finance costs									(303.4)
Other financial income									13.6
Other financial expenses									(62.9)
Income taxes									(730.7)
Share of profit of associates									4.1
Profit for the period									**2,207.4**
Purchase of intangible assets and property, plant and equipment	(675.9)	(861.2)	(461.2)	(73.3)	(2,071.6)	(6.1)	(133.0)	(38.5)	(2,249.2)

3.3 BALANCE SHEET AS OF DECEMBER 31, 2019

(in millions of euros)	Gas & Services					Engineering & Construction	Global Markets & Technologies	Reconciliation	Total
	Europe	Americas	Asia Pacific	Middle East and Africa	Sub-total				
Segment assets	**10,614.7**	**20,327.7**	**6,963.1**	**1,607.7**	**39,513.2**	**697.8**	**1,479.7**	**383.5**	**42,074.2**
Goodwill	3,087.1	8,993.3	1,397.3	101.7	13,579.4	237.0	126.6		13,943.0
Intangible assets and property, plant and equipment, net	5,788.8	10,036.6	4,408.9	1,174.4	21,408.7	258.1	748.2	257.8	22,672.8
Other segment assets	1,738.8	1,297.8	1,156.9	331.6	4,525.1	202.7	604.9	125.7	5,458.4
Non-segment assets									1,592.3
Total assets									**43,666.5**
Segment liabilities	**2,432.1**	**1,631.1**	**995.0**	**221.3**	**5,279.5**	**759.3**	**373.4**	**834.5**	**7,246.7**
Non-segment liabilities									17,095.4
Equity including minority interests									19,324.4
Total equity and liabilities									**43,666.5**

3.4 BALANCE SHEET AS OF DECEMBER 31, 2018

(in millions of euros)	Gas & Services					Engineering & Construction	Global Markets & Technologies	Reconciliation	Total
	Europe	Americas	Asia Pacific	Middle East and Africa	Sub-total				
Segment assets	**9,999.2**	**18,653.5**	**6,990.3**	**1,551.9**	**37,194.9**	**745.4**	**1,148.5**	**480.4**	**39,569.2**
Goodwill	3,056.2	8,524.8	1,316.1	99.0	12,996.1	231.4	117.5		13,345.0
Intangible assets and property, plant and equipment, net	5,262.7	8,871.4	4,469.6	1,129.6	19,733.3	196.9	564.7	352.0	20,846.9
Other segment assets	1,680.3	1,257.3	1,204.6	323.3	4,465.5	317.1	466.3	128.4	5,377.3
Non-segment assets									2,411.4
Total assets									**41,980.6**
Segment liabilities	**2,393.7**	**1,596.9**	**1,026.9**	**245.9**	**5,263.4**	**875.3**	**335.6**	**865.8**	**7,340.1**
Non-segment liabilities									16,433.1
Equity including minority interests									18,207.4
Total equity and liabilities									**41,980.6**

The Research and Development and Holdings activities (corporate) are presented in the “Reconciliation” column. Operating income recurring of the Engineering & Construction activity includes financial income generated from advances received from customers. It is included in net finance costs in the consolidated income statement. The adjustment arising from the presentation difference is included in the “Reconciliation” column.

3.5 OTHER INFORMATION ON GEOGRAPHICAL AREAS

2019 *(in millions of euros)*	France	Europe excl. France	United States	Americas excl. United States	Asia Pacific	Middle East and Africa	Total
Revenue	2,734.8	5,048.6	7,287.0	1,284.3	4,948.1	617.3	21,920.1
Non-current assets [(a)]	2,725.6	7,197.0	17,460.6	1,994.7	5,937.1	1,455.2	36,770.2
incl. Investments in associates	*25.8*	*5.7*	*8.5*	-	*18.8*	*95.6*	*154.4*

(a) Excluding non-current financial assets, deferred taxes and non-current derivative assets.

2018 *(in millions of euros)*	France	Europe excl. France	United States	Americas excl. United States	Asia Pacific	Middle East and Africa	Total
Revenue	2,718.0	4,960.8	6,905.2	1,223.5	4,548.7	654.9	21,011.1
Non-current assets [(a)]	2,541.7	6,776.2	16,035.5	1,716.5	5,902.2	1,361.9	34,334.0
incl. Investments in associates	*29.8*	*5.5*	*9.0*	-	*11.7*	*86.1*	*142.1*

(a) Excluding non-current financial assets, deferred taxes and non-current derivative assets.

Due to the substantial number of customers served by the Group (almost two million worldwide), their significant diversity in multiple sectors and their wide geographical dispersion, the Group's main customer represents only 1.5% of Air Liquide's revenue.

Note 4 Revenue

In 2019, consolidated revenue amounted to 21,920.1 million euros, up +4.3% compared to 2018. Revenue was up +2.2% after adjusting for the cumulative impact of foreign exchange fluctuations. The foreign exchange fluctuations essentially stemmed from the appreciation of the US dollar and to a lesser extent of the Yen and Singapore dollar against the Euro. Those effects are partly balanced by the depreciation of the Argentina peso against the Euro.

Note 5 Operating income recurring and expenses

Operating income recurring and expenses include purchases, personnel expenses, depreciation and amortization, other recurring income and other recurring expenses.

The Group purchases mainly consist of electricity, natural gas as well as industrial and medical products.

5.1 OTHER INCOME

Other income is primarily made up of net proceeds from the sale of property, plant, and equipment and intangible assets and various indemnities.

5.2 PERSONNEL EXPENSES

(in millions of euros)	2018	2019
Wages and social security charges	(3,992.5)	(4,252.6)
Defined contribution pension plans	(75.3)	(82.3)
Defined benefit pension plans	(38.4)	(35.8)
Share-based payments	(39.6)	(40.2)
TOTAL	**(4,145.8)**	**(4,410.9)**

Fully consolidated companies employed 67,200 individuals as of December 31, 2019 (66,000 individuals as of December 31, 2018).

5.3 OTHER OPERATING EXPENSES

Other operating expenses primarily include transport and distribution costs and sub-contracting costs.

The operating leases costs included in other operating expenses are not significant and correspond to the contracts that do not fall within the scope of IFRS16 (cf. paragraph 5.g. of the accounting principles).

5.4 RESEARCH AND DEVELOPMENT EXPENDITURES

In 2019, innovation costs amounted to 317.0 million euros (300.0 million euros in 2018) including Research and Development costs of 200.0 million (195.0 million euros in 2018).

5.5 DEPRECIATION AND AMORTIZATION EXPENSE

(in millions of euros)	2018	2019
Intangible assets	(173.1)	(172.2)
Property, plant and equipment (PP&E) [(a)] [(b)]	(1,593.2)	(1,965.5)
TOTAL	**(1,766.3)**	**(2,137.7)**

(a) *Including the depreciation expense after deduction of investment grants released to profit.*
(b) *The impacts of the first application of IFRS16 are detailed in note 2.*

Note 6 Other non-recurring operating income and expenses

(in millions of euros)	2018	2019
Expenses		
Reorganization, restructuring and realignment programs costs	(54.3)	(94.8)
Integration costs related to the acquisition of Airgas	(32.2)	(27.7)
Acquisition costs	(6.8)	(20.8)
Political risks and legal procedures	(31.1)	(6.4)
Net loss on the disposals of activities or group of assets and impairments of assets	(15.1)	(25.1)
Others	(26.9)	(14.2)
TOTAL OTHER NON-RECURRING OPERATING EXPENSES	**(166.4)**	**(189.0)**
Income		
Net gain on the disposals of activities or group of assets	4.0	1.5
Others	0.6	-
TOTAL OTHER NON-RECURRING OPERATING INCOME	**4.6**	**1.5**
TOTAL	**(161.8)**	**(187.5)**

In 2019, the Group recognized:

- impairment of assets and results from disposals for 25.1 million euros, mainly related to operations in China (including Air Liquide Fuzhou Co. Ltd sale), in the continuity of the strategic review of its activities and its assets portfolio initiated in 2017 in connection with NEOS company program;
- costs resulting from realignment programs for 94.8 million euros, mainly relating to Gas & Services;
- Airgas integration costs mainly corresponding to long-term incentives specifically implemented as part of this operation;
- acquisition costs mainly related to the acquisition of Tech Air in the United States.

In 2018, the Group recognized:

- Airgas integration costs mainly corresponding to long-term incentives specifically implemented as part of this operation;
- costs resulting from realignment programs for 54.3 million euros, mainly relating to Gas & Services;
- costs mainly related to the consequences of the early termination of contracts in Iran included in Political risks and legal procedures for 20.4 million euros.

Note 7 Net finance costs and other financial income and expenses

7.1 NET FINANCE COSTS

(in millions of euros)	2018	2019
Finance costs	(315.0)	(378.9)
Financial income from short-term investments and loans	11.6	17.3
TOTAL NET FINANCE COSTS	**(303.4)**	**(361.6)**

The average net finance costs stood at 3.0% in 2019. As a reminder, the average net finance costs stood at 3.0% in 2018, excluding the non-recurring gain generated by the unwinding of hedging instruments relating to the United States debt restructuring.

Capitalized finance costs amounted to 45.7 million euros in 2019 (56.4 million euros in 2018).

7.2 OTHER FINANCIAL INCOME AND EXPENSES

(in millions of euros)	2018	2019
Other financial income	13.6	8.4
TOTAL OTHER FINANCIAL INCOME	**13.6**	**8.4**
Other financial expenses	(43.5)	(51.9)
Interest expense on the net defined benefit liability	(19.4)	(20.9)
Interest on lease liabilities [a]	-	(41.7)
TOTAL OTHER FINANCIAL EXPENSES	**(62.9)**	**(114.5)**

(a) The impacts of the first application of IFRS16 are detailed in note 2.

Note 8 Income taxes

8.1 INCOME TAX EXPENSE

(in millions of euros)	2018	2019
Income tax expense payable	(656.8)	(722.1)
TOTAL CURRENT TAX	**(656.8)**	**(722.1)**
Temporary differences	(83.2)	(79.7)
Impact of tax rate changes	9.3	0.1
TOTAL DEFERRED TAX	**(73.9)**	**(79.6)**
TOTAL INCOME TAX EXPENSE	**(730.7)**	**(801.7)**

8.2 RECONCILIATION BETWEEN THE STANDARD TAX RATE AND THE GROUP EFFECTIVE TAX RATE

(in %)	2018	2019
Standard tax rate	**27.7**	**26.5**
Impact of transactions taxed at reduced rates [(a)]	(2.4)	(3.0)
Impact of tax rate changes	(0.3)	-
Impact of tax exemptions and others [(b)]	(0.1)	2.0
Average effective tax rate	**24.9**	**25.5**

(a) The increase compared to 2018 is mainly explained by the french reform enacted at the end of 2018 on patent revenue taxation.
(b) Including the tax impact of Air Liquide Fuzhou Co. Ltd sale in 2019.

The increase in average effective tax rate compared to 2018 is due in particular to tax impacts of operations in China mentioned in note 6.

In France, L'Air Liquide S.A. has elected to determine French income taxes on a consolidated basis. This scheme applies to all French subsidiaries complying with the legal requirements.

Foreign subsidiaries have elected to apply for similar rules wherever this is allowed under local regulations.

Note 9 Net earnings per share

9.1 BASIC EARNINGS PER SHARE

	2018	2019
Net profit (Group share) attributable to ordinary shareholders of the parent *(in millions of euros)*	2,113.4	2,241.5
Weighted average number of ordinary shares outstanding	470,562,802	471,214,966
Basic earnings per share *(in euros)*	**4.49**	**4.76**

The average number of outstanding ordinary shares and net earnings per share for 2018 include the impact of the free share attribution performed by L'Air Liquide S.A. on October 9, 2019.

9.2 DILUTED EARNINGS PER SHARE

	2018	2019
Net profit used to calculate diluted earnings per share *(in millions of euros)*	**2,113.4**	**2,241.5**
Weighted average number of ordinary shares outstanding	470,562,802	471,214,966
Adjustment for dilutive impact of share subscription options	885,109	971,354
Adjustment for dilutive impact of performance shares	1,410,388	1,485,534
Adjusted weighted average number of shares outstanding used to calculate diluted earnings per share	**472,858,299**	**473,671,854**
Diluted earnings per share *(in euros)*	**4.47**	**4.73**

Diluted earnings per share for the 2019 fiscal year and the average number of shares outstanding include the impact of the free share attribution performed by L'Air Liquide S.A. on October 9, 2019.

Every instruments issued by the Group are included in the calculation of diluted earnings per share.

The Group has not issued any other financial instruments that may result in further dilution of net earnings per share.

Note 10 Dividend per share

The 2018 dividend on ordinary shares declared and paid on May 22, 2019 to the Group shareholders was 1.163,9 million euros (including fidelity premium) and amounted to 2.65 euros per share and a fidelity premium of 0.26 euro per share.

A dividend payment of 2.70 euros per ordinary share and a fidelity premium of 0.27 euro per share amounting to 1,310.8 million euros (estimated amount taking into account share buybacks and cancelations) will be proposed to the Annual General Meeting in respect of the financial year ended December 31, 2019.

Note 11 Goodwill

11.1 MOVEMENTS DURING THE PERIOD

(in millions of euros)	As of January 1	Goodwill recognized during the period	Goodwill removed during the period	Foreign exchange differences	Other movements	As of December 31
2018	12,840.4	81.9	(2.9)	426.0	(0.4)	13,345.0
2019	**13,345.0**	**377.2**	**(2.9)**	**223.7**	**-**	**13,943.0**

The increase in Goodwill recognized during the period mainly comes from the acquisition of Tech Air in the United States closed on March 19, 2019. In compliance with IFRS3 (revised), the final valuation of the provisional goodwill booked following Tech Air acquisition will be finalized within twelve months of the acquisition date.

11.2 SIGNIFICANT GOODWILL

	2018	2019		
(in millions of euros)	Net carrying amount	Gross carrying amount	Impairment losses	Net carrying amount
Gas & Services	12,996.2	13,579.5	(0.1)	13,579.4
Europe	*3,056.3*	*3,087.1*	*(0.1)*	*3,087.0*
Americas [(a)]	*8,524.8*	*8,993.3*	-	*8,993.3*
Asia Pacific	*1,316.1*	*1,397.4*	-	*1,397.4*
Middle East and Africa	*99.0*	*101.7*	-	*101.7*
Engineering & Construction	231.4	237.0	-	237.0
Global Markets & Technologies	117.4	128.0	(1.4)	126.6
TOTAL GOODWILL	**13,345.0**	**13,944.5**	**(1.5)**	**13,943.0**

(a) Goodwill recognized within Gas & Services Americas mainly comes from the United States contributing up to 8,802.9 million euros as of December 31, 2019.

In the last two fiscal years, the Group has not recorded any goodwill impairment losses.

Impairment tests were carried out using the methods detailed in note 5.f of the Accounting Policies. The key model assumptions used, such as market multiples and the discount rate, took into account the stock market and world economic context.

The market multiples used were determined using the Air Liquide Group market value as of December 31, 2019. Multiples obtained do not materially differ from those of companies whose activity is similar to that of the Group.

The growth rates used for estimating the cash flows of cash-generating units or groups of cash-generating units were significantly lower than the Group's historical average growth rates. Growth rates are comprised between 1% and 3% in mature markets, and up to 5.5% in emerging markets.

The weighted average cost of capital used was 6.4% as of December 31, 2019 (6.0% as of December 31, 2018).

The weighted average cost of capital is adjusted for the activity and the geographical location of the cash-generating units being tested.

As of December 31, 2019 and December 31, 2018, the recoverable amounts of each cash-generating unit or groups of cash-generating units significantly exceeded their net carrying amounts.

Considering the activity of the Air Liquide Group, no reasonably possible change in key assumptions would result in an impairment. The Gas & Services activity favors synergies between the different business lines by pooling assets for a given geographical area. The geographical development of the activity is generally based on local industrial investments and external growth operations throughout the Large Industries business line. The supply of gas to clients of the Large Industries business is contracted for a minimum duration of 15 years. These customer contracts provide a good visibility and guarantee of future income.

Note 12 Other intangible assets

12.1 GROSS CARRYING AMOUNTS

2019 *(in millions of euros)*	As of January 1	Additions	Disposals	Foreign exchange differences	Acquisitions related to business combinations	Other movements (a)	As of December 31
Internally generated intangible assets	630.9	41.3	(47.9)	4.6	0.4	26.4	655.7
Other intangible assets	2,387.1	51.0	(22.2)	33.3	8.3	7.1	2,464.6
TOTAL GROSS INTANGIBLE ASSETS	**3,018.0**	**92.3**	**(70.1)**	**37.9**	**8.7**	**33.5**	**3,120.3**

(a) Other movements primarily include account reclassifications and changes in the scope of consolidation.

2018 *(in millions of euros)*	As of January 1	Additions	Disposals	Foreign exchange differences	Acquisitions related to business combinations	Other movements (a)	As of December 31
Internally generated intangible assets	585.5	28.3	(13.8)	5.4	-	25.5	630.9
Other intangible assets	2,265.3	62.1	(21.4)	53.0	6.9	21.2	2,387.1
TOTAL GROSS INTANGIBLE ASSETS	**2,850.8**	**90.4**	**(35.2)**	**58.4**	**6.9**	**46.7**	**3,018.0**

(a) Other movements primarily include account reclassifications and changes in the scope of consolidation.

12.2 AMORTIZATION AND IMPAIRMENT LOSSES

2019 *(in millions of euros)*	As of January 1	Charge for the period	Impairment losses	Disposals	Foreign exchange differences	Acquisitions related to business combinations	Other movements (a)	As of December 31
Internally generated intangible assets	(384.0)	(50.1)	14.3	9.9	(1.6)	-	(1.3)	(412.8)
Other intangible assets	(1,035.3)	(122.1)	(1.4)	11.5	(11.9)	-	6.7	(1,152.5)
TOTAL INTANGIBLE ASSET AMORTIZATION	**(1,419.3)**	**(172.2)**	**12.9**	**21.4**	**(13.5)**	**-**	**5.4**	**(1,565.3)**
TOTAL NET INTANGIBLE ASSETS (b)	**1,598.7**	**(79.9)**	**12.9**	**(48.7)**	**24.4**	**8.7**	**38.9**	**1,555.0**

(a) Other movements primarily include account reclassifications and changes in the scope of consolidation.
(b) Other intangible assets mainly include the Airgas trademark for 445.4 million euros as of December 31, 2019.

2018 *(in millions of euros)*	As of January 1	Charge for the period	Impairment losses	Disposals	Foreign exchange differences	Acquisitions related to business combinations	Other movements (a)	As of December 31
Internally generated intangible assets	(358.2)	(45.9)	(5.0)	6.2	(1.4)	-	20.3	(384.0)
Other intangible assets	(881.5)	(127.2)	(1.7)	12.8	(9.7)	-	(28.0)	(1,035.3)
TOTAL INTANGIBLE ASSET AMORTIZATION	**(1,239.7)**	**(173.1)**	**(6.7)**	**19.0**	**(11.1)**	**-**	**(7.7)**	**(1,419.3)**
TOTAL NET INTANGIBLE ASSETS (b)	**1,611.1**	**(82.7)**	**(6.7)**	**(16.2)**	**47.3**	**6.9**	**39.0**	**1,598.7**

(a) Other movements primarily include account reclassifications and changes in the scope of consolidation.
(b) Other intangible assets mainly include the Airgas trademark for 463.5 million euros as of December 31, 2018.

As of December 31, 2019, the Group had no material commitment to acquire intangible assets and was not subject to any restrictions over the use of existing intangible assets.

Note 13 Property, plant and equipment

13.1 GROSS CARRYING AMOUNTS

2019 *(in millions of euros)*	As of January 1	Additions	Disposals	Foreign exchange differences	Acquisitions related to business combinations	Other movements [(a)]	As of December 31
Land	444.7	1.2	(10.7)	8.2	0.6	(0.5)	443.5
Buildings	2,090.4	15.3	(18.6)	30.8	6.2	42.1	2,166.2
Equipment, cylinders, installations	35,675.7	413.2	(432.8)	513.4	81.8	819.3	37,070.6
Rights of use [(b)]	-	150.2	(20.1)	0.8	22.9	1,363.1	1,516.9
TOTAL PROPERTY, PLANT AND EQUIPMENT IN SERVICE	**38,210.8**	**579.9**	**(482.2)**	**553.2**	**111.5**	**2,224.0**	**41,197.2**
Construction in progress	1,852.9	2,143.8	-	14.2	-	(1,451.7)	2,559.2
TOTAL PROPERTY, PLANT AND EQUIPMENT	**40,063.7**	**2,723.7**	**(482.2)**	**567.4**	**111.5**	**772.3**	**43,756.4**

(a) *Other movements primarily include account reclassifications and changes in the scope of consolidation.*
(b) *The impacts of the first application of IFRS16 are detailed in note 2 and are presented above in the column "Other movements". The maturity of the corresponding liabilities is presented in the note 13.3.*

2018 *(in millions of euros)*	As of January 1	Additions	Disposals	Foreign exchange differences	Acquisitions related to business combinations	Other movements [(a)]	As of December 31
Land	443.8	0.7	(14.9)	14.0	0.2	0.9	444.7
Buildings	1,896.6	51.9	(23.9)	36.8	0.6	128.4	2,090.4
Equipment, cylinders, installations	33,505.7	604.5	(429.3)	296.6	28.4	1,669.8	35,675.7
TOTAL PROPERTY, PLANT AND EQUIPMENT IN SERVICE	**35,846.1**	**657.1**	**(468.1)**	**347.4**	**29.2**	**1,799.1**	**38,210.8**
Construction in progress	2,057.4	1,538.1	-	2.6	0.1	(1,745.3)	1,852.9
TOTAL PROPERTY, PLANT AND EQUIPMENT	**37,903.5**	**2,195.2**	**(468.1)**	**350.0**	**29.3**	**53.8**	**40,063.7**

(a) *Other movements primarily include account reclassifications and changes in the scope of consolidation.*

Purchases of property, plant and equipment and intangible assets presented in the consolidated statement of cash flows relate to the increase in property, plant and equipment and intangible assets adjusted for the change in the fixed asset suppliers' balance during the current year.

13.2 DEPRECIATION AND IMPAIRMENT LOSSES

2019 *(in millions of euros)*	As of January 1	Charge for the period	Impairment losses	Disposals	Foreign exchange differences	Acquisitions related to business combinations	Other movements [(a)]	As of December 31
Buildings	(993.1)	(96.1)	-	13.5	(14.3)	-	3.8	(1,086.2)
Equipment, cylinders, installations	(19,822.4)	(1,634.9)	2.6	367.3	(273.3)	-	62.7	(21,298.0)
Rights of use [(b)]	-	(242.7)	(0.5)	5.4	(0.1)	-	(16.5)	(254.4)
TOTAL PROPERTY, PLANT AND EQUIPMENT DEPRECIATION	**(20,815.5)**	**(1,973.7)**	**2.1**	**386.2**	**(287.7)**	**-**	**50.0**	**(22,638.6)**
TOTAL PROPERTY, PLANT AND EQUIPMENT, NET	**19,248.2**	**750.0**	**2.1**	**(95.9)**	**279.7**	**111.5**	**822.3**	**21,117.8**

(a) *Other movements primarily include account reclassifications and changes in the scope of consolidation.*
(b) *The impacts of the first application of IFRS16 are detailed in note 2.*

2018 *(in millions of euros)*	As of January 1	Charge for the period	Impairment losses	Disposals	Foreign exchange differences	Acquisitions related to business combinations	Other movements [(a)]	As of December 31
Buildings	(913.4)	(81.4)	-	21.3	(15.1)	-	(4.5)	(993.1)
Equipment, cylinders, installations	(18,464.2)	(1,520.5)	(1.8)	371.5	(187.1)	-	(20.3)	(19,822.4)
TOTAL PROPERTY, PLANT AND EQUIPMENT DEPRECIATION	**(19,377.6)**	**(1,601.9)**	**(1.8)**	**392.8**	**(202.2)**	**-**	**(24.8)**	**(20,815.5)**
TOTAL PROPERTY, PLANT AND EQUIPMENT, NET	**18,525.9**	**593.3**	**(1.8)**	**(75.3)**	**147.8**	**29.3**	**29.0**	**19,248.2**

(a) *Other movements primarily include account reclassifications and changes in the scope of consolidation.*

The charge for the period corresponds to the increase in depreciation, net of investment grants released to the income statement.

13.3 MATURITY OF LEASE LIABILITIES

As of December 31, 2019, the maturity of the lease liabilities related to rights-of-use is as follows:

2019 *(in millions of euros)*	Carrying amount	Maturity								
		< 1 year	≥ 1 year and ≤ 5 years				> 5 years			
			2021	2022	2023	2024	2025	2026	2027	> 2027
Non-current lease liabilities	1,087.8		222.1	166.5	143.1	112.5	87.8	64.7	62.5	228.6
Current lease liabilities	243.6	243.6								
TOTAL LEASE LIABILITIES	**1,331.4**	**243.6**	**222.1**	**166.5**	**143.1**	**112.5**	**87.8**	**64.7**	**62.5**	**228.6**

Note 14 Non-current financial assets

(in millions of euros)	2018	2019
Non-consolidated investments	139.9	251.2
Loans	53.3	56.7
Other long-term receivables	314.4	318.0
Employee benefits	17.3	20.1
NON-CURRENT FINANCIAL ASSETS	**524.9**	**646.0**

As of December 31, 2019, Other long-term receivables comprised the receivable related to the refund claim for the equalization charge paid for the period 2000 to 2004 in the amount of 70.6 million euros (compared to 69.6 million euros as of December 31, 2018). In connection with the litigation concerning the reimbursement of the receivable, the Administrative Court of Montreuil partially sided with Air Liquide on July 21, 2014. Following the court order, L'Air Liquide S.A. received 30.3 million euros in principal and 15.0 million euros in interest on arrears. The Group appealed the decision of the Administrative Court of Montreuil on September 19, 2014 for the recovery of the balance. The appeal decision had not been rendered as of the period-end date.

The significant increase in non-consolidated investments compared to December 31, 2018, mainly comes from the acquisition and the reevaluation at fair value of Hydrogenics shares during 2019, for an amount of 50.3 million euros.

Note 15 Investments in associates

15.1 FINANCIAL INFORMATION RELATED TO JOINT VENTURES AND ASSOCIATES

Group share of associates and joint ventures as of December 31, 2019 *(in millions of euros)*	Share of profit for the period	Share of equity [(a)]	Share of net income and gains and losses recognized directly in equity [(b)]
Joint ventures	12.4	115.6	11.6
Associates	(11.7)	38.8	13.9
TOTAL	**0.7**	**154.4**	**25.5**

(a) Including goodwill relating to associates and joint ventures.
(b) The share of net income and gains and losses recognized directly in equity primarily comprises the translation reserves.

Group share of associates and joint ventures as of December 31, 2018 *(in millions of euros)*	Share of profit for the period	Share of equity [(a)]	Share of net income and gains and losses recognized directly in equity [(b)]
Joint ventures	9.1	103.1	9.5
Associates	(5.0)	39.0	13.8
TOTAL	**4.1**	**142.1**	**23.3**

(a) Including goodwill relating to associates and joint ventures.
(b) The share of net income and gains and losses recognized directly in equity primarily comprises the translation reserves.

15.2 MOVEMENTS DURING THE YEAR

(in millions of euros)	As of January 1	Share of profit for the period	Dividend distribution	Foreign exchange differences	Other movements	As of December 31
2018	128.2	4.1	(5.2)	4.7	10.3	142.1
2019	**142.1**	**0.7**	**(7.3)**	**2.2**	**16.7**	**154.4**

None of the consolidated companies using the equity method of accounting is individually material.

Note 16 Deferred taxes

16.1 DEFERRED TAX ASSETS

The change in deferred tax assets over the fiscal year is as follows:

(in millions of euros)	2018	2019
AS OF JANUARY 1 [(a)]	**258.4**	**255.0**
Income (charge) to the income statement	15.5	(26.9)
Income (charge) to equity for the period [(b)]	14.0	32.4
Changes related to business combinations	1.3	0.3
Foreign exchange differences	(5.8)	3.7
Others [(c)]	(0.6)	(7.9)
AS OF DECEMBER 31	**282.8**	**256.6**

(a) As of January 1, 2019, deferred tax assets include the impact of the first application of IFRIC23.
(b) Relates to deferred taxes recognized in other items in the statement of net income and gains and losses recognized directly in equity: +12.5 million euros relate to changes in the fair value of derivatives and non-consolidated investments and +19.9 million euros relate to actuarial gains and losses. In 2018, the respective effects amounted to +19.6 million euros relating to changes in the fair value of derivatives and non-consolidated investments and -5.6 million euros relating to actuarial gains and losses.
(c) Other movements primarily include account reclassifications between accounts and changes in the scope of consolidation.

As of December 31, 2019, unrecognized deferred tax assets amounted to 155.4 million euros (140.6 million euros as of December 31, 2018).

16.2 DEFERRED TAX LIABILITIES

The change in deferred tax liabilities over the fiscal year is as follows:

(in millions of euros)	2018	2019
AS OF JANUARY 1 [(a)]	**1,807.7**	**2,037.7**
Charge (income) to the income statement	89.5	52.7
Charge (income) to equity for the period [(b)]	5.2	(27.6)
Changes related to business combinations	0.1	(19.5)
Foreign exchange differences	47.2	42.0
Others [(c)]	6.2	(33.4)
AS OF DECEMBER 31	**1,955.9**	**2,051.9**

(a) *As of January 1, 2019, deferred tax liabilities include the impact of the first application of IFRIC23.*
(b) *Relates to deferred taxes recognized in other items in the statement of net income and gains and losses recognized directly in equity: -0.3 million euros relate to changes in the fair value of derivatives and non-consolidated investments and -27.3 million euros relate to actuarial gains and losses. In 2018 the respective effects amounted to -2.6 million euros relating to changes in the fair value of derivatives and non-consolidated investments and +7.8 million euros relating to actuarial gains and losses.*
(c) *Other movements primarily include account reclassifications between accounts and changes in the scope of consolidation.*

16.3 DEFERRED TAX BY NATURE

The net deferred taxes are broken down as follows:

(in millions of euros)	2018	2019
Amortization/depreciation	(2,046.4)	(2,250.0)
Provisions, pensions and other employee benefits	345.5	412.5
Other provisions	195.8	222.3
Tax loss carryforwards	88.6	106.2
Others	(256.6)	(286.4)
TOTAL	**(1,673.1)**	**(1,795.4)**

Note 17 Inventories and work-in-progress

(in millions of euros)	2018	2019
Raw materials and supplies	339.5	385.5
Finished and semi-finished goods	1,014.1	1,044.5
Work-in-progress	106.5	101.5
NET INVENTORIES	**1,460.1**	**1,531.5**

(in millions of euros)	2018	2019
Write-down of inventories	(15.7)	(26.2)
Reversals of write-down	21.3	7.3
NET WRITE-DOWN RECOGNIZED IN THE INCOME STATEMENT	**5.6**	**(18.9)**

Note 18 Trade receivables

(in millions of euros)	2018	2019
Trade and other operating receivables	2,678.7	2,661.5
Provisions for impairment	(178.3)	(183.6)
TRADE RECEIVABLES	**2,500.4**	**2,477.9**

Trade and other operating receivables include gross amounts relating to Engineering & Construction contracts for 109.6 million euros (136.0 million euros as of December 31, 2018).

As of December 31, 2019, cumulative revenue recognized using the percentage of completion method and cumulative cash in over the past years from the beginning of the projects in progress amounted respectively to 1,651.3 million (2,163.3 million euros as of December 31,2018) and 1,618.4 million euros (2,135.4 million euros as of December 31, 2018).

18.1 BREAKDOWN OF TRADE AND OTHER OPERATING RECEIVABLES

(in millions of euros)	Gross carrying amount	Not yet due	Impaired and overdue	Not impaired and overdue
2018	2,678.7	1,963.3	146.7	568.7
2019	**2,661.5**	**1,898.4**	**166.0**	**597.1**

Trade receivables overdue and not impaired at the year-end mainly included receivables due within three months.

Non-recourse factoring of receivables is described in note 25.

The accounting principles relating to trade receivables impairment (expected credit losses) are described in section 6 of the accounting principles.

18.2 PROVISION FOR IMPAIRMENT

(in millions of euros)	As of January 1	Charges	Reversals	Foreign exchange differences	Other movements	As of December 31
2018	(182.0)	(57.2)	51.8	1.7	7.4	(178.3)
2019	**(178.3)**	**(49.9)**	**44.1**	**(1.5)**	**1.9**	**(183.6)**

Note 19 Working capital requirement

The increase in working capital requirement by 36.7 million euros, presented in the consolidated cash flow statement, mainly comes from:

- the increase in working capital requirement of Engineering & Construction by 57.8 million euros;
- the increase in working capital requirement of Global Market & Technologies by 32.7 million euros;
- offset by the decrease in working capital requirement of Holding and Gas & Services by -40.3 million euros and -13.5 million euros respectively.

Note 20 Other current assets

(in millions of euros)	2018	2019
Advances and down-payments made	240.9	149.0
Prepaid expenses	119.5	132.1
Other sundry current assets	531.6	521.9
OTHER CURRENT ASSETS	**892.0**	**803.0**

Note 21 Cash and cash equivalents

(in millions of euros)	2018	2019
Short-term loans	45.0	44.9
Short-term marketable securities	395.4	169.1
Cash in bank	1,285.2	811.7
CASH AND CASH EQUIVALENTS	**1,725.6**	**1,025.7**

As of December 31, 2019, cash and cash equivalents include 50 million euros subject to restrictions (88 million euros as of December 31, 2018), mainly in three countries: in Luxembourg (regulatory restrictions relating to the Group's captive reinsurance company), in Germany (joint venture company) and in Egypt (because of effective currency restrictions).

Furthermore, 37 million euros of cash and cash equivalents are held in countries in which a prior authorization is necessary to transfer funds abroad. These liquidities are at the Group's disposal within a reasonable time period, if preliminary formalities are respected. This amount stood at 45 million euros as of December 31, 2018.

Note 22 Shareholders' equity

22.1 SHARES

Number of shares

	2018	2019
NUMBER OF SHARES AS OF JANUARY 1	**428,397,550**	**429,423,434**
Free share attribution	-	44,117,721
Capital increase reserved for employees	1,049,529	-
Options exercised during the period	630,355	517,359
Cancelation of treasury shares	(654,000)	(953,000)
NUMBER OF SHARES AS OF DECEMBER 31	**429,423,434**	**473,105,514**

Shares have a par value of 5.50 euros each and are all issued and fully paid-up.

In 2019, a total of 1,294,395 shares were repurchased (net of disposals), of which net purchases for 1,298,900 shares before the attribution of free shares and net disposals for 4,505 shares after the attribution of free shares.

22.2 SHARE CAPITAL INCREASE RESERVED FOR EMPLOYEES

Benoît Potier as Chief Executive Officer and under the authority conferred to him by the Board of Directors of July 29, 2019, decided, on October 1, 2019, to create 42,890,081 new shares at a par value of 5.50 euros and ranking for dividends as of January 1, 2019. These shares were freely attributed to shareholders by capitalization of premiums, at a rate of one new share for ten existing shares.

In addition, pursuant to article 21 of the articles of the association, 1,227,640 new shares were created at a par value of 5.50 euros and ranking for dividends as of January 1, 2019. These shares were granted as free shares to shareholders at the parity of one share for one hundred existing shares on October 9, 2019 by capitalization of premiums. The shares subject to this additional free share attribution are the shares held in registered form continuously from December 31, 2016 to October 8, 2019 inclusive.

22.3 CAPITAL DECREASE

Under the authority of the 15th resolution adopted by the Annual General Meeting held on May 16, 2018, the Board of directors of May 7, 2019, carried out the capital decrease of 5,241,500.00 euros to bring the capital back from 2,361,913,658.50 euros to 2,356,672,158.50 euros by cancelling 953,000 shares.

22.4 COMPANY TREASURY SHARES

Treasury shares are Air Liquide shares held by the Group, including shares forming part of the liquidity contract in accordance with an Ethics Charter recognized by the French financial markets authority (Autorité des marchés financiers). As of December 31, 2019, the Group held 1,616,458 treasury shares (1,456,504 as of December 31, 2018) including 5,000 treasury shares under a liquidity contract (9,500 as of December 31, 2018). Changes in the number of treasury shares are explained in the consolidated statement of changes in equity.

22.5 SHARE-BASED PAYMENTS

Share subscription option plans

Pursuant to the decisions of the Board of Directors, following the approval by the Annual General Meeting and based on the recommendations of the Remuneration Committee, the Group had adopted share subscription plans for some of the senior executives of the Company and its subsidiaries worldwide, as well as corporate officers.

The purpose of these options is to provide an incentive to key executives, by rewarding the loyalty of high-performing executives and their actions in exceptional situations, as well as associating them with the long-term interests of shareholders.

Stock options are granted for a minimum price which cannot be lower than the average opening market price over the 20 trading days preceding the grant date. Options granted since October 14, 2011 must be exercised within ten years.

A four-year vesting period applies to stock options granted.

As of December 31, 2019, the number of outstanding share options granted by the Board of Directors under the plans approved by Annual General Meetings amounted to 2,829,394 options after adjustment (average price of 75.14 euros), or 0.60% of share capital, of which 629,101 options (average price of 74.21 euros) were granted to the Executive Officer present as of December 31, 2019.

Out of the total number of options issued pursuant to the approval by the Annual General Meeting on May 7, 2019, 9,462,110 options were retained for possible grant by the Board of Directors as of December 31, 2019.

Performance shares plans

An additional compensation system involving performance shares was set up in 2008 as a way to reward our best employees and associate their medium-term performance with the Company's objectives.

The 14th resolution adopted by the Extraordinary Annual General Meeting held on May 7, 2019 authorizes the Board of Directors to grant free shares to Group employees, up to a maximum of 0.5% of the Company's share capital over a 38-month period. As part of this maximum attribution, free shares representing up to 0.1% of the Group's share capital can be granted to corporate officers over the same period.

Under this authority, the Board of Directors adopted:

- two different general regulations on September 30, 2019 ("France" Plan and "World" Plan) governing the attribution of performance shares to beneficiaries determined by the Board of Directors. The differences between the "France" and "World" Plans mainly differ as to the number of years of service required – paragraph a) below, and to the correlative absence of any holding requirement for the "World" Plan – paragraph c) below.

The granted shares shall be either shares issued through a capital increase performed by the Company by no later than the definitive vesting date or shares bought back by the Company in the market prior to such date.

To date, performances shares granted are treasury shares bought back as part of the Company's shares buyback program.

The granted shares shall be of the same nature and category as those making up the Company's share capital at the date on which the plans are approved by the Board of Directors.

On September 30, 2019, the Board of Directors decided to grant 349,173 performance shares to employees (1,812 beneficiaries).

Subscription options and performance shares are subject to:

a) a continued service requirement during the vesting period:

   the shares granted to a beneficiary shall only finally vest if he or she has been an employee or corporate officer of a Group company during a vesting period, calculated as from the grant date, of three years for "France" Plan beneficiaries and four years for "World" Plan beneficiaries. In the event of retirement, the beneficiary retains his rights, being no longer required to satisfy the continued service requirement;

b) performance requirements for all performance shares allocated to all beneficiaries which are now identical to performance requirements applicable to stock-options;

c) a holding requirement for performance shares:

   as from the final grant date, the beneficiaries of the "France" Plan are required to hold their shares for two additional years during which such shares may not be transferred (except in the event of disability or death).

Options granted to the ten employees of the Company and its subsidiaries (excluding corporate officers) who were attributed the highest number of options

In 2019, no options have been granted.

Options exercised in 2019 by the ten employees of the Company and its subsidiaries (excluding corporate officers) with the highest number of options exercised

Year of grant	Number of options exercised	Average price *(in euros)* (a)
2011	68,010	63.18
2012	17,387	77.36
2013	27,385	81.68
2014	13,011	85.66
2015	516	84.08
TOTAL	**126,309**	**71.54**

(a) Historical data.

Options exercised in 2018 by the ten employees of the Company and its subsidiaries (excluding corporate officers) with the highest number of options exercised

Year of grant	Number of options exercised	Average price *(in euros)* (a)
2010	104,334	60.28
2011	41,297	63.18
2012	9,476	77.36
2013	10,441	81.68
2014	2,000	85.66
TOTAL	**167,548**	**63.60**

(a) Historical data.

Number of share subscription options and weighted average strike price

	2018		2019	
	Options [(a)]	Weighted average strike price *(in euros)*	Options	Weighted average strike price *(in euros)*
Total number of options outstanding as of January 1 *(adjusted number and price)*	**4,093,557**	**72.33**	**3,393,362**	**74.21**
Options granted during the period *(adjusted number and price)*	80,989	97.02	-	-
Options exercized during the period *(adjusted number and price)*	659,653	63.68	517,359	74.69
Options canceled during the period *(adjusted number and price)*	121,531	83.09	46,609	84.92
Total number of options as of December 31 *(adjusted number and price)*	**3,393,362**	**74.21**	**2,829,394**	**75.14**
Of which total number of options eligible for exercize	***2,604,402***	***71.27***	***2,526,119***	***74.02***

(a) The total number of outstanding options at the beginning of the period was adjusted following the capital increase in cash in 2019.

Information on the fair value of share subscription options and attribution of performance shares

Share subscription options

	2018	2019 [(c)]
	Plan 1 [(b)]	
	09/25/2018	
Duration of the option	10 years	
Fair value of the option *(in euros)*	18.98 [(a)]	

(a) Options attributed to employees for which the fair value depends for 65% on performance requirements related to the Group's results and 35% on shareholder's return.
(b) Fair value at the attribution date, not restated for the effect of the share capital increase with preferential subscription rights in the market and attributions of free shares.
(c) No options have been granted in 2019.

Attribution of performance shares

The achievement of performance conditions limited with Group result is not considered as an underlying assumption and was deemed to have been fully achieved at the valuation date.

	2018		2019	
	Plan 1 [(e)]		Plan 1 [(e)]	
	09/25/2018		09/30/2019	
Duration of performance shares	5 years [(a)]	4 years [(b)]	5 years [(c)]	4 years [(d)]
Fair value of performance shares *(in euros)*	98.75 [(a)]	94.81 [(b)]	120.62 [(c)]	116.25 [(d)]

(a) Performance share to employees for beneficiaries located in France for which the fair value depends for 65% on performance conditions linked to the Group's results and 35% on shareholder's return.
(b) Performance share to employees for beneficiaries located outside France for which the fair value depends for 65% on performance conditions linked to the Group's results and 35% on shareholder's return.
(c) Performance share to employees for beneficiaries located in France for which the fair value depends for 60% on performance conditions linked to the Group's results and 40% on shareholder's return.
(d) Performance share to employees for beneficiaries located outside France for which the fair value depends for 60% on performance conditions linked to the Group's results and 40% on shareholder's return.
(e) Fair value at the attribution date, not restated for the effect of the share capital increase with preferential subscription rights in the market and attributions of free shares.

An expense of 40.2 million euros (excluding taxes) relating to share subscription options and the attribution of performance shares was recognized in the income statement in 2019 compared to 39.7 million euros in 2018. The corresponding entry is recorded in equity.

Note 23 Provisions, pensions and other employee benefits

2019 *(in millions of euros)*	As of January 1	Increase	Utilized	Other reversals	Discounting	Foreign exchange differences	Acquisitions related to business combination	Other movements [(a)]	As of December 31
Pensions and other employee benefits	1,622.4	57.0	(107.4)		168.5	5.5		2.6	1,748.6
Restructuring plans	26.6	6.7	(12.9)	(2.2)		0.1		(2.3)	16.0
Guarantees and other provisions related to engineering contracts	78.9	36.8	(16.7)	(16.4)		0.3		0.1	83.0
Dismantling	220.3		(1.0)	(2.8)	6.7	1.9		4.4	229.5
Provisions and contingent liabilities as part of a business combination	244.0		(45.4)	(9.7)	2.6	4.8	12.7	8.6	217.6
Other provisions	543.6	114.5	(123.8)	(28.0)	2.1	2.0	3.0	(18.5)	494.9
TOTAL PROVISIONS	**2,735.8**	**215.0**	**(307.2)**	**(59.1)**	**179.9**	**14.6**	**15.7**	**(5.1)**	**2,789.6**

(a) Other movements correspond to account reclassifications, disposals and provisions for dismantling with no impact on the consolidated cash flow statement.

2018 *(in millions of euros)*	As of January 1	Increase	Utilized	Other reversals	Discounting	Foreign exchange differences	Acquisitions related to business combination	Other movements [(a)]	As of December 31
Pensions and other employee benefits	1,739.5	58.0	(137.5)		(37.6)	4.0		(4.0)	1,622.4
Restructuring plans	43.2	8.7	(25.3)			(0.1)		0.1	26.6
Guarantees and other provisions related to engineering contracts	60.2	44.8	(14.2)	(12.0)	0.1				78.9
Dismantling	222.1		(8.8)	(3.7)	7.2	(0.2)		3.7	220.3
Provisions and contingent liabilities as part of a business combination	279.8		(39.3)	(11.3)	1.8	11.8		1.2	244.0
Other provisions	581.2	102.4	(85.0)	(48.8)	0.3	1.9	5.5	(13.9)	543.6
TOTAL PROVISIONS	**2,926.0**	**213.9**	**(310.1)**	**(75.8)**	**(28.2)**	**17.4**	**5.5**	**(12.9)**	**2,735.8**

(a) Other movements correspond to account reclassifications, disposals and provisions for dismantling with no impact on the consolidated cash flow statement.

In the normal course of its operations, the Group is party to arbitration, judicial or administrative proceedings. The potential costs of such proceedings are provided for, when they are probable, only if the amount can be quantified or estimated within a reasonable range. In the latter case, the amount provided for represents the best estimate of the Group's management. Provisions are determined based on a case-by-case risk assessment and events occurring during ongoing proceedings may result in a risk reappraisal at any time. These litigations are by nature diverse and involve various Group subsidiaries. Contingency provisions recorded with respect to all Group litigations amounted to 167.9 million euros as of December 31, 2019 (182.6 million euros as of December 31, 2018) and are presented in "Other provisions". They include provisions for industrial disputes and for tax risks, excluding taxes on income, respectively for 96.3 and 71.6 million euros.

The Group does not provide the detail of these provisions, considering that disclosing the amount provided for each individual litigation could be prejudicial to the Group. Nevertheless, no single litigation is likely to have a material effect on the Group's financial position or its profitability.

Note 24 Employee benefit obligations

24.1 PENSION PLANS

The most significant pension plans relate to France, Germany and the United States.

In France, Air Liquide provides an additional retirement benefit based on the final salary which is paid in addition to other normal pension plans. On December 31, 1995, this plan was closed to employees under age 45 or with less than 20 years of service as of January 1, 1996; the latter being covered by a defined contribution plan. These plans are unfunded. The annual amounts paid with regards to additional benefits cannot exceed a threshold set originally at 12% of total payroll or 12% of pre-tax profits of companies involved. This 12% threshold will be proportionately reduced by comparing the number of plan beneficiaries for the year to the number of plan beneficiaries for the previous year. In 2017, this additional benefit was funded subsequently to the Article 50 of the law of January 20, 2014 securing the future and fairness of pensions plans.

IAS19 "Employee Benefits" provides a very restrictive definition of defined contribution plans; any plans not complying fully with the conditions required are defined benefit plans by default.

This restrictive definition of defined contribution plans requires Air Liquide to account for these additional benefits as a defined benefit plan in spite of the limited obligations for the Company and the nature of the obligations not being stable or continuous.

The qualification as a defined benefit plan results in the recognition of a provision with regards to the future obligations.

With the Company's obligations being limited, the valuation of what will actually be paid to retirees is uncertain. Since the effect of this threshold cannot be measured reliably, the provision recognized represents the actuarial value of the amounts to be paid out to retirees until the plan is closed, excluding any potential threshold effect. The additional retirement benefit paid by Air Liquide is aligned with the indexation of French statutory and supplementary pension plans up to a maximum annuity. Any additional annuity will not be subject to any indexation. The effects related to the revaluation cap and floor were accounted for in "Other financial expenses".

In Germany, there are two main Air Liquide pension plans.

The first plan provides the retirees of Lurgi (Engineering & Construction activity) with a lifetime annuity, based on the income and length of service vested in the plan at the time of retirement, the normal retirement age being 65. The plan also provides disability and widowhood pensions. This plan is now closed to new entrants, the latter benefiting from a defined contribution plan.

The second plan is an old plan covering employees of the Gas & Services activity. The plan provides a lifetime annuity, based on the average income earned over the employee's career and the length of service vested at the time of retirement, the normal retirement age being 65. The plan also provides disability, pre-retirement and widowhood pensions. It is now closed to new entrants, with new employees benefiting from another defined benefit plan. Providing a minimum length of service of ten years, the plan provides a lifetime annuity based on the average income earned over the employee's career and the length of service vested at the time of retirement, the normal retirement age being 65. The plan also provides disability, pre-retirement and widowhood pensions.

In accordance with common market practice in Germany, limited funding contributions are made to pension funds as both plans are mainly managed internally.

In the United States, Air Liquide grants retirees supplemental benefits in addition to the normal pension plans. The US plan provides a traditional final average pay benefit to those who continue to accrue benefits. A retiring employee may elect to receive their pension benefit as a lump sum or a lifetime annuity. This plan was closed to new participants in 2004 and was frozen in 2016. Therefore, employees who joined the Company before 2004 are no longer acquiring new rights on this defined benefit plan, but benefit from the defined contribution plan that has been opened since 2004 to new employees.

A new plan was implemented on January 1, 2017 (Supplemental Saving plan). This plan comes on top of the basic savings plan offering additional retirement benefits beyond the tax limit of the basic plan. It represents an annual cost of around 7 million dollars.

24.2 OBLIGATIONS

Group obligations related to pension plans and similar benefits as of December 31, 2019 are shown below:

2019 *(in millions of euros)*	Defined benefit plans	Retirement termination payments	Other long term benefits	Medical Plans	Total
A. Change in net liabilities					
Net liabilities at the beginning of the period	(1,367.4)	(175.5)	(23.7)	(38.5)	(1,605.1)
(Acquisition) divestiture / transfer	(0.2)				(0.2)
(Expense) income recognized	(43.2)	(10.9)	(2.4)	(0.2)	(56.7)
Employer contributions	96.9	5.0	1.7	2.5	106.1
Gains (losses) for the period	(149.2)	(17.2)		(1.6)	(168.0)
Exchange rate movements	(4.4)	0.3	(0.1)	(0.5)	(4.7)
Net liabilities at the end of the period	**(1,467.5)**	**(198.3)**	**(24.5)**	**(38.3)**	**(1,728.6)**
B. Expense recorded in 2019					
Service cost	27.7	9.1	1.7	0.5	39.0
Interest expense on the net defined benefit liability	18.0	2.0	0.2	0.7	20.9
Past service cost	(2.4)		(0.1)	(0.9)	(3.4) (a)
Actuarial (gains) losses			0.6		0.6
Curtailment / settlement	(0.1)	(0.2)		(0.1)	(0.4) (a)
Expense (income) recognized	**43.2**	**10.9**	**2.4**	**0.2**	**56.7**
C. Change in present value of obligations in 2019					
DBO at the beginning of the period	2,490.5	175.8	23.7	38.7	2,728.7
Acquisition (divestiture) / transfer	0.2				0.2
Service cost	27.7	9.1	1.7	0.5	39.0
Interest cost	48.4	2.1	0.2	0.7	51.4
Employee contributions	2.0				2.0
Plan amendments	(2.4)		(0.1)	(0.9)	(3.4) (a)
Curtailment / settlement	(0.2)	(0.2)		(0.1)	(0.5) (a)
Benefit payments	(145.5)	(5.0)	(1.7)	(2.5)	(154.7)
Actuarial (gains) losses	278.3	17.2	0.6	1.6	297.7
Exchange rate movements	39.3	(0.4)	0.1	0.5	39.5
Obligations at the end of the period	**2,738.3**	**198.6**	**24.5**	**38.5**	**2,999.9**
D. Change in plan assets in 2019					
Fair value of assets at the beginning of the period	1,123.1	0.3		0.2	1,123.6
Actual return on plan assets	159.5				159.5
Employer contributions	80.4	5.0	1.7	2.5	89.6
Employee contributions	2.0				2.0
Benefit payments	(129.0)	(5.0)	(1.7)	(2.5)	(138.2)
Settlement	(0.1)				(0.1)
Exchange rate movements	34.9				34.9
Fair value of assets at the end of the period	**1,270.8**	**0.3**	**-**	**0.2**	**1,271.3**
E. Funded status at the end of 2019					
Present value of obligations	(2,738.3)	(198.6)	(24.5)	(38.5)	(2,999.9)
Fair value of plan assets	1,270.8	0.3	-	0.2	1,271.3
Net liabilities	**(1,467.5)**	**(198.3)**	**(24.5)**	**(38.3)**	**(1,728.6)**
F. Actuarial (gains) and losses recognized directly in equity					
(Gains) and losses at the beginning of the period	1,135.4	43.1		5.9	1,184.4
(Gains) and losses on obligations	278.3	17.2		1.6	297.1
(Gains) and losses on plan assets	(129.0)				(129.0)
Change in surplus management reserve	(0.1)				(0.1)
Exchange rate movements	12.0	(0.3)		(0.3)	11.4
(Gains) and losses at the end of the period (b)	**1,296.6**	**60.0**		**7.2**	**1,363.8**

(a) Past service costs and plan amendments mainly relate to pension plans and medical costs in Switzerland.
(b) Losses (gains), net of tax, recognized in equity, amounted to 995.6 million euros as of December 31, 2019.

Group obligations related to pension plans and similar benefits as of December 31, 2018 are shown below:

2018 *(in millions of euros)*	Defined benefit plans	Retirement termination payments	Other long term benefits	Medical Plans	Total
A. Change in net liabilities					
Net liabilities at the beginning of the period	(1,505.2)	(166.0)	(24.2)	(40.2)	(1,735.6)
(Acquisition) divestiture / transfer	1.3	0.1	0.1	(0.1)	1.4
(Expense) income recognized	(42.1)	(10.1)	(1.5)	(4.1)	(57.8)
Employer contributions	127.3	6.7	2.0	5.6	141.6
Gains (losses) for the period	55.9	(7.3)		0.8	49.4
Exchange rate movements	(4.6)	1.1	(0.1)	(0.5)	(4.1)
Net liabilities at the end of the period	**(1,367.4)**	**(175.5)**	**(23.7)**	**(38.5)**	**(1,605.1)**
B. Expense recorded in 2018					
Service cost	25.7	8.5	1.7	3.4	39.3
Interest expense on the net defined benefit liability	16.8	1.7	0.2	0.7	19.4
Past service cost			(0.8)		(0.8) [(a)]
Actuarial (gains) losses			0.3		0.3
Curtailment / settlement	(0.4)	(0.1)	0.1		(0.4) [(a)]
Expense (income) recognized	**42.1**	**10.1**	**1.5**	**4.1**	**57.8**
C. Change in present value of obligations in 2018					
DBO at the beginning of the period	2,624.0	166.3	24.3	40.3	2,854.9
Acquisition (divestiture) / transfer	(1.3)	(0.1)	(0.1)	0.1	(1.4)
Service cost	25.7	8.5	1.7	3.4	39.3
Interest cost	42.1	1.8	0.2	0.7	44.8
Employee contributions	2.0				2.0
Plan amendments			(0.8)		(0.8) [(a)]
Curtailment / settlement	(2.5)	(0.1)	0.1		(2.5) [(a)]
Benefit payments	(151.6)	(6.8)	(2.0)	(5.6)	(166.0)
Actuarial (gains) losses	(84.7)	7.4	0.3	(0.8)	(77.8)
Exchange rate movements	36.8	(1.2)		0.6	36.2
Obligations at the end of the period	**2,490.5**	**175.8**	**23.7**	**38.7**	**2,728.7**
D. Change in plan assets in 2018					
Fair value of assets at the beginning of the period	1,129.1	0.3	0.1	0.1	1,129.6
Actual return on plan assets	(13.8)	0.1			(13.7)
Employer contributions	107.5	6.7	2.0	5.6	121.8
Employee contributions	2.0				2.0
Benefit payments	(131.8)	(6.7)	(2.0)	(5.6)	(146.1)
Settlement	(2.1)				(2.1)
Exchange rate movements	32.2	(0.1)	(0.1)	0.1	32.1
Fair value of assets at the end of the period	**1,123.1**	**0.3**		**0.2**	**1,123.6**
E. Funded status at the end of 2018					
Present value of obligations	(2,490.5)	(175.8)	(23.7)	(38.7)	(2,728.7)
Fair value of plan assets	1,123.1	0.3		0.2	1,123.6
Net liabilities	**(1,367.4)**	**(175.5)**	**(23.7)**	**(38.5)**	**(1,605.1)**
F. Actuarial (gains) and losses recognized directly in equity					
(Gains) and losses at the beginning of the period	1,174.8	36.7		6.2	1,217.7
(Gains) and losses on obligations	(84.7)	7.4		(0.8)	(78.1)
(Gains) and losses on plan assets	39.1	(0.1)			39.0
Change in surplus management reserve	(10.3)				(10.3)
Exchange rate movements	16.5	(0.9)		0.5	16.1
(Gains) and losses at the end of the period [(b)]	**1,135.4**	**43.1**		**5.9**	**1,184.4**

(a) Past service costs and plan amendments mainly relate to pension plans and medical costs in Switzerland.
(b) Losses (gains), net of tax, recognized in equity, amounted to 866.2 million euros as of December 31, 2018.

The amounts mentioned above can be broken down as follows by geographical area as of December 31, 2019:

2019 *(in millions of euros)*	**Obligations**	**Plan assets**	**Provisions in the balance sheet**	**Surplus management reserve**
Europe / Africa	(1,947)	389	(1,558)	-
Americas	(973)	822	(151)	-
Asia Pacific	(80)	60	(20)	-
TOTAL	**(3,000)**	**1,271**	**(1,729)**	**-**

The amounts mentioned above can be broken down as follows by geographical area as of December 31, 2018:

2018 *(in millions of euros)*	**Obligations**	**Plan assets**	**Provisions in the balance sheet**	**Surplus management reserve**
Europe / Africa	(1,801)	359	(1,442)	-
Americas	(850)	703	(147)	-
Asia Pacific	(78)	62	(16)	-
TOTAL	**(2,729)**	**1,124**	**(1,605)**	**-**

24.3 MAIN ASSUMPTIONS

The main discount rates used are as follows:

	2018	**2019**
Euro zone	1.6%	0.9%
Canada	3.8%	3.1%
Japan	0.4%	0.4%
Switzerland	0.9%	0.3%
United States	4.2%	3.2%
United Kingdom	2.7%	1.9%

Differences between expected returns on plan assets and the main discount rates are as follows:

2019	**Expected return on assets** [(a)]	**Discount rate 2018**	**Impact** *(in bp)*
Euro zone	3.0%	1.6%	(140)
Canada	4.4%	3.8%	(60)
Japan	3.0%	0.4%	(260)
Switzerland	3.1%	0.9%	(220)
United States	5.6%	4.2%	(140)
United Kingdom	5.4%	2.7%	(270)

(a) The expected return on long-term assets was determined by taking into account, in each country, the asset allocation in the portfolio.

2018	**Expected return on assets** [(a)]	**Discount rate 2017**	**Impact** *(in bp)*
Euro zone	3.0%	1.6%	(140)
Canada	4.4%	3.5%	(90)
Japan	3.0%	0.4%	(260)
Switzerland	3.5%	0.6%	(290)
United States	5.6%	3.6%	(200)
United Kingdom	5.0%	2.5%	(250)

(a) The expected return on long-term assets was determined by taking into account, in each country, the asset allocation in the portfolio.

24.4 BREAKDOWN OF GAINS AND LOSSES FOR THE PERIOD

(in millions of euros)	2018	2019
Experience gains and losses on present value of the obligation	6	15
Gains and losses on present value of the defined obligation related to changes in assumptions	72	(312)
Experience gains and losses on fair value of assets	(39)	129

Breakdown of experience gains and losses on financial assets

2019 *(in millions of euros)*	Interest income on financial assets	Actual return on assets	Gains and losses on assets
Europe / Africa	4.8	29.8	25.0
Americas	25.5	129.8	104.3
Asia Pacific	0.4	0.1	(0.3)
TOTAL	**30.7**	**159.7**	**129.0**

2018 *(in millions of euros)*	Interest income on financial assets	Actual return on assets	Gains and losses on assets
Europe / Africa	3.9	2.2	(1.7)
Americas	21.1	(16.5)	(37.6)
Asia Pacific	0.4	0.6	0.3
TOTAL	**25.4**	**(13.7)**	**(39.0)**

24.5 PENSION PLAN RISK ANALYSIS

Sensitivity to movements in discount rates and other variables

The present value of obligations related to defined benefit plans is measured by discounting future cash flows. Discount rates are determined based on Government bonds rates or, when the financial markets are sufficiently liquid, on "high-quality" corporate bond rates, which can vary from one period to another.

Changes in discount rates can materially change the present value of the Group's obligations and the expense recorded in the year.

The amount of obligations is affected to a lesser extent by revised wages and inflation indexes, as well as legal changes regarding retirement age or official mortality tables.

Impact of a -0.25% decrease in discount rates

	Impact on obligations as of December 31, 2019 *(in millions of euros)*	% of total obligations as of December 31, 2019
Europe / Africa	67	3.4%
Americas	30	3.1%
Asia Pacific	-	0.5%
TOTAL	**97**	**3.3%**

	Impact on obligations as of December 31, 2018 *(in millions of euros)*	% of total obligations as of December 31, 2018
Europe / Africa	61	3.4%
Americas	26	3.1%
Asia Pacific	1	1.6%
TOTAL	**88**	**3.2%**

Impact of a +0.25% increase in discount rates

	Impact on obligations as of December 31, 2019 *(in millions of euros)*	% of total obligations as of December 31, 2019
Europe / Africa	(65)	-3.3%
Americas	(29)	-3.0%
Asia Pacific	-	-0.5%
TOTAL	**(94)**	**-3.1%**

	Impact on obligations as of December 31, 2018 *(in millions of euros)*	% of total obligations as of December 31, 2018
Europe / Africa	(59)	-3.3%
Americas	(25)	-3.0%
Asia Pacific	(1)	-1.6%
TOTAL	**(85)**	**-3.1%**

Sensitivity of the value of plan assets to market conditions

For the Group's defined benefit plans subject to funding requirements, the fair value of plan assets is primarily dependent on interest rates, the performance of plan assets and amendments to local regulations. Any adverse movement in these variables would require additional Group contributions to the pension funds on a timely basis.

Plan assets consist of shares, bonds and other assets whose value is subject to market fluctuations. A downturn in the financial markets would increase the net liabilities of defined benefit plans. The plans' coverage ratios would decrease accordingly, requiring additional Group contributions on a timely basis.

2019 *(in millions of euros)*	Shares		Bonds		Real estate		Cash		Others		Total	
	Amounts	%	Amounts	%	Amounts	%	Amounts	%	Amounts	%	Amounts	%
Europe / Africa	81	20.8%	136	34.9%	103	26.5%	19	4.9%	50	12.9%	389	100.0%
Americas	199	24.2%	563	68.5%	25	3.0%	4	0.5%	31	3.8%	822	100.0%
Asia Pacific	13	21.7%	44	73.3%	1	1.7%	-	0.0%	2	3.3%	60	100.0%
TOTAL	**293**		**743**		**129**		**23**		**83**		**1,271**	

2018 *(in millions of euros)*	Shares		Bonds		Real estate		Cash		Others		Total	
	Amounts	%	Amounts	%	Amounts	%	Amounts	%	Amounts	%	Amounts	%
Europe / Africa	82	22.8%	134	37.3%	92	25.6%	2	0.6%	49	13.6%	359	100.0%
Americas	145	20.6%	508	72.3%	14	2.0%	6	0.9%	30	4.3%	703	100.0%
Asia Pacific	6	9.7%	49	79.0%	-	0.0%	-	0.0%	7	11.3%	62	100.0%
TOTAL	**233**		**691**		**106**		**8**		**86**		**1,124**	

Note 25 Borrowings

This note provides information on the breakdown of the Group's borrowings by instrument. For further information on financial instruments and the exposure to foreign exchange and interest rate risks, please refer to note 26.

Net debt calculation

(in millions of euros)	December 31, 2018	December 31, 2019
Non-current borrowings	(11,709.6)	(11,567.2)
Current borrowings	(2,550.9)	(1,831.8)
TOTAL GROSS DEBT	**(14,260.5)**	**(13,399.0)**
Cash and cash equivalents	**1,725.6**	**1,025.7**
TOTAL NET DEBT AT THE END OF THE PERIOD	**(12,534.9)**	**(12,373.3)**

Statement of changes in net debt

(in millions of euros)	December 31, 2018	December 31, 2019
Net debt at the beginning of the period	**(13,370.9)**	**(12,534.9)**
Net cash flows from operating activities	4,716.4	4,712.2
Net cash flows used in investing activities	(2,270.2)	(2,584.8)
Net cash flows from (used in) financing activities excluding changes in borrowings	(1,161.6)	(1,663.8)
Total net cash flows	**1,284.6**	**463.6**
Effect of exchange rate changes, opening net debt of newly acquired companies and others	(236.2)	(62.4)
Adjustment of net finance costs	(212.4)	(239.6)
Change in net debt	**836.0**	**161.6**
TOTAL NET DEBT AT THE END OF THE PERIOD	**(12,534.9)**	**(12,373.3)**

The Air Liquide Group net debt breaks down as follows:

	2018			2019		
	Carrying amount			Carrying amount		
(in millions of euros)	Non-current	Current	Total	Non-current	Current	Total
Bonds and private placements	11,072.7	1,334.2	12,406.9	10,978.1	1,123.6	12,101.7
Commercial paper programs		693.8	693.8		191.1	191.1
Bank debt and other financial debt	521.5	492.3	1,013.8	530.4	476.0	1,006.4
Finance leases [(a)]	8.0	4.6	12.6			
Put options granted to minority shareholders	107.4	26.0	133.4	58.7	41.1	99.8
TOTAL BORROWINGS (A)	**11,709.6**	**2,550.9**	**14,260.5**	**11,567.2**	**1,831.8**	**13,399.0**
Short-term loans		45.0	45.0		44.9	44.9
Short-term marketable securities		395.4	395.4		169.1	169.1
Cash in bank		1,285.2	1,285.2		811.7	811.7
TOTAL CASH AND CASH EQUIVALENTS (B)		**1,725.6**	**1,725.6**		**1,025.7**	**1,025.7**
NET DEBT (A) - (B)	**11,709.6**	**825.3**	**12,534.9**	**11,567.2**	**806.1**	**12,373.3**

(a) *In 2019, financial leases are included in leases liabilities and not in borrowings.*

In accordance with the Group's policy to diversify funding sources, long-term bonds and private placements are the primary sources of funding and represent 90% of gross debt as of December 31, 2019. Outstanding notes under these sources amounted to 12.1 billion euros at the end of 2019.

The carrying amount of commercial paper amounted to 0.2 billion euros as of December 31, 2019 versus 0.7 billion euros as of December 31, 2018.

Gross debt decreased by 0.9 billion euros; bonds matured in 2019 were partially renewed.

Two bonds were issued in 2019 by Air Liquide Finance, guaranteed by L'Air Liquide S.A.:

- a public bond issue of 600 million euros, maturity June 20, 2030, at a reoffer yield of 0.721% (0.625% coupon);
- a bond issue of 500 million US dollars (445 million euros), maturity September 10, 2029, at a reoffer yield of 2.362% (2.25% coupon). Interest rate had been hedged for 200 million US dollars.

In consideration thereof:

- the private placement of 200 million US dollars (178 million euros) was repaid on March 1, 2019;
- the bond issue of 250 million euros was repaid on June 17, 2019;
- the bond issue of 750 million US dollars (668 million euros) was repaid on September 27, 2019;
- the private placement of 15.5 billion Japanese yen (127 million euros) was repaid on December 16, 2019;
- the bond issue of 275 million US dollars (245 million euros) was repaid by Airgas on December 30, 2019 by anticipation.

The carrying amount of borrowings in the balance sheet is as follows:

	2018	2019		
(in millions of euros)	**Carrying amount**	**Amount issued** (a)	**Amortized cost adjustments** (b)	**Carrying amount** (a)+(b)
Bonds in the EMTN program	6,773.4	6,363.9	33.9	6,397.8
Bonds not in the EMTN program	4,223.0	4,554.1	17.2	4,571.3
Private placements in the EMTN program	794.0	492.8	11.3	504.1
Private placements not in the EMTN program	616.5	623.1	5.4	628.5
TOTAL BONDS AND PRIVATE PLACEMENTS	**12,406.9**	**12,033.9**	**67.8**	**12,101.7**
Commercial paper programs	693.8	191.1		191.1
Bank debt and other financial debt	1,013.8	987.9	18.5	1,006.4
Finance leases (c)	12.6			-
Put options granted to minority shareholders	133.4	99.8		99.8
LONG-TERM BORROWINGS	**14,260.5**	**13,312.7**	**86.3**	**13,399.0**

(a) *Nominal amount.*
(b) *Amortized cost including accrued interest.*
(c) *In 2019, financial leases are included in leases liabilities and not in borrowings.*

25.1 CARRYING AMOUNT AND FAIR VALUE OF FINANCIAL ASSETS AND LIABILITIES

Financial assets or liabilities with a carrying amount differing from their fair value are unhedged fixed-rate borrowings.

	2018		2019	
(in millions of euros)	**Carrying amount**	**Fair value**	**Carrying amount**	**Fair value**
FINANCIAL LIABILITIES				
Non-current borrowings	11,709.6	11,592.2	11,567.2	11,814.3

The Group's financial instruments are measured at fair value to the extent that available financial market data enables a reliable estimate of their market value, assuming the absence of any intentions or needs to liquidate.

25.2 MATURITY OF BORROWINGS

It is the Group policy to spread over time the maturity of long-term debt (bonds, private placements and bank credit facilities) in order to limit the annual refinancing needs.

2019 *(in millions of euros)*	Nominal amount	Carrying amount	Maturity									
			On demand	< 1 year	≥ 1 year and ≤ 5 years				> 5 years			
					2021	2022	2023	2024	2025	2026	2027	> 2027
Bonds and private placements	12,033.9	12,101.7		1,123.6	1,565.3	1,559.2	1,067.0	1,441.7	498.7	1,256.2	683.1	2,906.9
Commercial paper programs	191.1	191.1		191.1								
Bank debt and other financial debt	987.9	1,006.4		476.0	110.8	124.3	113.8	113.6	27.6	17.5	13.3	9.5
Put options granted to minority shareholders	99.8	99.8	22.8	41.1	2.3	3.0		30.6				
TOTAL BORROWINGS	**13,312.7**	**13,399.0**	**22.8**	**1,831.8**	**1,678.4**	**1,686.5**	**1,180.8**	**1,585.9**	**526.3**	**1,273.7**	**696.4**	**2,916.4**

2018 *(in millions of euros)*	Nominal amount	Carrying amount	Maturity									
			On demand	< 1 year	≥ 1 year et ≤ 5 years				> 5 years			
					2020	2021	2022	2023	2024	2025	2026	>2026
Bonds and private placements	12,337.3	12,406.9		1,334.2	1,229.0	1,544.7	1,542.0	1,052.6	1,432.7	498.4	1,234.3	2,539.0
Commercial paper programs	694.2	693.8		693.8								
Bank debt and other financial debt	1,007.6	1,013.8		492.3	100.0	103.4	101.8	96.8	86.8	22.8	7.4	2.4
Finance leases [(a)]	12.6	12.6		4.6	3.6	2.3	1.3	0.4	0.1	0.1	0.2	
Put options granted to minority shareholders	133.4	133.4	133.4									
TOTAL BORROWINGS	**14,185.1**	**14,260.5**	**133.4**	**2,524.9**	**1,332.6**	**1,650.4**	**1,645.1**	**1,149.8**	**1,519.6**	**521.3**	**1,241.9**	**2,541.4**

(a) In 2019, financial leases are included in leases liabilities and not in borrowings.

25.3 NET DEBT BY CURRENCY

The Group ensures a natural hedge and reduces its exposure to currency fluctuations by raising debt mainly in the currency of the cash flows that are generated to repay the debt. In most countries, and especially outside the euro, US dollar, Japanese yen and Chinese renminbi zones, financing is raised in either local or foreign currency (EUR or USD) when sales contracts are indexed to foreign currency. Debt in other currencies is mainly denominated in Canadian dollar, British pound sterling, Singapore dollar and Brazilian real.

As part of intra-group multi-currency financing, the Central Treasury Department converts the debt raised in financial markets into various currencies to finance subsidiaries in their functional currencies or their cash flow currencies. The breakdown of this hedging portfolio is shown in the table below.

Accordingly, a portion of the euro debt raised was converted (1,256.1 million euros) to other currencies to finance foreign subsidiaries. Out of the Group's US dollar initial debt amounting to 5,199.9 million euros, 10.7 million was converted to euros using currency swap contracts, and 232.3 million euros were in cash or cash equivalent, leading to an adjusted net debt in US dollars of 4,956.9 million euros.

2019 *(in millions of euros)*	**Gross debt – original issue**	**Cash and cash equivalents**	**Interest rate and currency swaps**	**Ajusted net debt**
EUR	6,982.7	(144.3)	(1,256.1)	5,582.3
USD	5,199.9	(232.3)	(10.7)	4,956.9
JPY	126.9	(10.7)	129.0	245.2
CNY	445.2	(339.1)	(115.2)	(9.1)
Other currencies	644.3	(299.3)	1,253.0	1,598.0
TOTAL	**13,399.0**	**(1,025.7)**	**-**	**12,373.3**

2018 *(in millions of euros)*	**Gross debt – original issue**	**Cash and cash equivalents**	**Interest rate and currency swaps**	**Ajusted net debt**
EUR	7,327.8	(1,120.5)	(607.1)	5,600.2
USD	5,510.0	(194.9)	(629.8)	4,685.3
JPY	243.7	(7.7)	93.8	329.8
CNY	434.1	(134.7)	117.1	416.5
Other currencies	744.9	(267.8)	1,026.0	1,503.1
TOTAL	**14,260.5**	**(1,725.6)**	**-**	**12,534.9**

25.4 FIXED-RATE PORTION OF GROSS DEBT

Portion of fixed-rate gross debt *(as % of total debt)*	**2018**	**2019**
EUR debt	75%	92%
USD debt	100%	98%
CNY debt	99%	100%
JPY debt	100%	100%
Total debt	90%	93%

As of December 31, 2019, fixed-rate debt represented 93% of the total debt.

To secure the fixed-rate portion of gross debt in the future, protecting the Group against a potential increase in euro rates until the refinancing of a euro bond issue, maturing in June 2020, three firm hedges for 100 million euros each were contracted.

25.5 BREAKDOWN OF AVERAGE NET FINANCE COSTS

	2018			2019		
(in millions of euros)	Average outstanding debt	Net interests	Average net finance costs	Average outstanding debt	Net interests	Average net finance costs
EUR	5,349.8	103.4	1.9%	5,595.2	94.1	1.7%
USD	5,704.7	157.1	2.8%	5,471.0	167.6	3.1%
JPY	449.7	6.9	1.5%	441.7	7.1	1.6%
CNY	607.7	40.8	6.7%	243.3	28.8	11.8%
Other currencies	1,623.7	106.0	6.5%	1,696.4	109.7	6.5%
TOTAL	**13,735.6**	**414.2**	**3.0%**	**13,447.6**	**407.3**	**3.0%**
Income of debt restructuring		(54.4)				
Capitalized interests		(56.4)			(45.7)	
TOTAL COST OF DEBT		**303.4**			**361.6**	

The average net finance costs, excluding the non-recurring gain generated in 2018 by the anticipated unwinding of hedging instruments relating to the United States debt restructuring for 54.4 million euros, is stable at 3.0% in 2019.

25.6 OTHER INFORMATION

Other financing information

Financial covenants are associated to two bank debt facilities exceeding 50 million euros:

- a long-term loan used by Air Liquide Arabia (Saudi Arabia) with an outstanding amount of 56.4 million US dollars (equivalent to 50.2 million euros) as of December 31, 2019. Financial covenants were all met as of December 31, 2019;
- a long-term loan used by Air Liquide Arabia (Saudi Arabia) with an outstanding amount of 510.2 million Saudi riyals (equivalent to 121.3 million euros) as of December 31, 2019. Financial covenants were all met as of December 31, 2019.

The amount of bank credit facilities subject to financial covenants represents around 3.7% of the Group's gross debt as of December 31, 2019.

Bonds issued by L'Air Liquide S.A., Air Liquide Finance and Airgas and making up the carrying amount of bonds as of December 31, 2019, include a change of control clause.

Information relating to non-recourse assignments of trade receivables

Non-recourse factoring, carried out in Asia, in Americas and in Europe, amounted to 1,133.3 million euros compared to 1,053.1 million euros at the end of 2018.

The European program, set up in December 2015 for 500 million euros, was extended until February 28, 2021. The assigned receivables, in the amount of 367 million euros, were derecognized as of December 31, 2019 (376 million euros as of December 31, 2018).

The American program hold by Airgas and set up in December 2018, covers 700 million US dollars (623 million euros). 606 million US dollars (540 million euros) were derecognised as of December 31, 2019.

Other non-recourse factoring programs exist in various countries and activities, mainly in Asia and Healthcare.

Almost all the risks and rewards were transferred to the assignees.

Note 26 Financial risk policy and management

26.1 FINANCIAL RISK MANAGEMENT

Risk management is a priority for the Group. Consequently, the Finance Department governance relies on Strategic Finance Committees and Operational Finance Committees.

The Finance Department centrally manages the main financial risks, in accordance with decisions taken by the Strategic Finance Committee to which it reports on a regular basis. The Finance Department also performs country and customer risks analyses associated with investment decisions and attends Investment Committee meetings.

The financial policy adopted by Air Liquide, the purpose of which is to minimize the risks incurred by the Group and its subsidiaries, enables the Group to ensure sustainable funding sources. To minimize the refinancing risk related to debt maturity schedules, the Group diversifies financing sources and spreads maturities over several years. In 2019, the average debt maturity was 6.2 years. As of December 31, 2019, the long-term debt ratio (gross debt maturing in more than one year / total gross debt) represented 86% of the overall Group debt, compared to 82% as of December 31, 2018.

Interest rate and foreign currency hedging strategies validated by the Operational Finance Committee are set up depending on market opportunities with a concern for optimization, while complying with prudence and risk limitation principles.

The Group also pays particular attention to its bank and customer counterparty risks by regularly monitoring ratings and the level of risk associated with these counterparties. An internal ratings system, set-up in 2018, is used when no leading credit ratings agency information is available.

a) Foreign exchange risk

Principles

Financial instruments are only used to hedge transaction-based foreign exchange risk. The risk is attached on the one hand to financial cash flows arising from royalties, dividends, intra-group loans and borrowings denominated in foreign currencies and on the other hand to foreign currency commercial cash flows from operating entities. Commercial cash flows denominated in foreign currencies do not represent significant amounts compared to consolidated revenue.

Foreign exchange risk related to royalties, dividend flows and intra-group loans and borrowings in foreign currencies is hedged by the Central Treasury Department using currency forwards or options with an overall term of less than 18 months. Currency hedging of intra-group loans and borrowings uses currency forwards, except in the rare cases that qualify as net investments in a foreign entity.

Foreign currency commercial cash flows from operating entities are hedged either as part of the annual budgetary process for subsidiaries with recurring flows in foreign currency or at the signing date of a sale or purchase contract for non-recurring flows for the Engineering & Construction business line. Around a hundred subsidiaries are exposed to foreign exchange risk. These subsidiaries mainly use currency forwards set up by Air Liquide Finance (internal counterparty for hedging transactions) except in countries where it is prohibited by local regulations. The majority of these contracts have short maturities (three to twelve months) and market transactions are regulated by master agreements of the French Banking Federation ("FBF") or by master agreements of the International Swaps and Derivative Association ("ISDA") for local hedging operations.

When preparing their budget at the year-end, subsidiaries report their foreign exchange risk exposure to the Central Treasury Department in order to hedge the commercial cash flows expected in the following year. In each case, the Central Treasury Department monitors the adequacy of the hedges with the identified risks and performs a full revaluation of all hedges, every six months.

The foreign exchange translation risk (consolidation in euros of the assets and liabilities in currencies) was not subject to hedging. Indeed, investments are essentially funded in the currency in which the cash flows are generated, thus creating a natural currency hedging.

Sensitivity of income statement and balance sheet items to foreign currency fluctuations

The table below sets out the effect of the translation of balance sheet items and the income statement of subsidiaries with a functional currency of USD, CNY, JPY, or CAD assuming a 1% increase against the euro (foreign exchange translation risk) on the following items:

(in millions of euros)	Revenue	% Total group	Operating income recurring	% Total group	Net profit	% Total group	Equity	% Total group
USD	75.3	0.34%	13.9	0.37%	9.1	0.41%	110.2	0.58%
CNY	20.7	0.09%	4.6	0.12%	2.6	0.12%	18.0	0.10%
JPY	10.9	0.05%	2.0	0.05%	1.3	0.06%	9.7	0.05%
CAD	6.5	0.03%	1.4	0.04%	0.9	0.04%	1.1	0.01%

The foreign currency risk sensitivity analysis shows that a 1% increase in the four major currencies as of December 31, 2019 would result in changes to revenue, operating income recurring, net profit and equity, as indicated above.

A 1% decrease in the above currencies as of December 31, 2019, would have the equivalent but opposite effects as those presented above, assuming that all other variables remained constant.

Sensitivity of derivatives and their underlying hedged tems to foreign currency fluctuations

The table below shows the effect of a 1% fluctuation in hedging currency exchange rates on the recognition of the foreign exchange derivatives portfolio in the Group's net profit and equity as of December 31, 2019. The sensitivity of net profit and equity primarily reflects the effect of foreign exchange swaps relating to the intragroup financing activity of the subsidiary Air Liquide Finance, and currency forward hedging instruments contracted at head office level.

	Foreign exchange risk			
	+1%		-1%	
(in millions of euros)	P&L impact	Equity impact	P&L impact	Equity impact
Foreign exchange derivatives and their hedged underlying items	0.0	4.5	0.0	(4.5)

b) Interest rate risk

Principles

Air Liquide centrally manages interest rate risk on the main currencies: euro, US dollar, Chinese renminbi and Japanese yen which represented 87% of the Group's total net debt as of December 31, 2019. Regarding other currencies, the Finance Department provides subsidiaries with advice as to the different types of bank loans and/or hedging transactions to enter into according to the characteristics of local financial markets.

The Group policy is to maintain the major portion of total debt at fixed rates and to protect the residual balance using optional hedging instruments. This approach enables the Group to limit the effect of interest rate fluctuations on financial expenses.

Consequently, at the 2019 year-end, 93% of the total debt was fixed-rate debt. The fixed-rate/floating-rate breakdown is reviewed on a regular basis by the Finance Committees, depending on interest rate fluctuations and the level of Group debt.

Sensitivity to interest rate fluctuations on floating-rate debt

The Group net debt exposed to interest rate fluctuations amounted to around 114 million equivalent euros as of December 31, 2019, for an average outstanding amount of 0.5 billion equivalent euros (total debt adjusted for interest rate hedging instruments and short-term securities) stable compared to December 31, 2018 (0.5 billion equivalent euros).

An increase or decrease in interest rates by 100 basis points (±1%) on all yield curves would have an effect of approximately ±1 million euros on the Group's annual financial expenses before tax, assuming outstanding debt remains constant.

Sensitivity to interest rate fluctuations on derivatives and their underlying hedged items

The table below shows the effect of a 0.5% fluctuation of interest rates in all foreign currencies on the interest rate derivatives portfolio in the Group's net profit and equity, as of December 31, 2019.

	Interest rate risk			
	+0.5%		-0.5%	
(in millions of euros)	P&L impact	Equity impact	P&L impact	Equity impact
Interest rate derivatives and their hedged underlying items	0.8	38.1	0.8	(41.6)

To protect the Group against a potential increase in euro rates until the refinancing of a euro bond issue, maturing in June 2020, three firm hedges for 100 million euros each were set up. Similarly, to protect the Group against an increase in dollar rates at date of refinancing of a US dollar bond issue maturing in September 2021, a firm hedge for 100 million US dollars was set up.

All hedging instruments used for interest rate or foreign exchange risk management purposes relate to identified risks and were set up to comply with the Group's financial policy. The effect on equity primarily stems from the fixed-rate hedging instruments contracted by the subsidiary Air Liquide Finance.

c) Counterparty risk

Counterparty risks for Air Liquide potentially include customers and bank counterparties.

The Group's subsidiaries serve a large number of customers (over two million worldwide) located in extremely diverse markets: chemicals, steel, refining, food, pharmaceuticals, metals, automotive, manufacturing, healthcare, research laboratories, photovoltaic, etc. In 2019, the Group's main customer represents around 1.5% of revenue, the Group's 10 main customers around 10% of sales, and the Group's 50 main customers around 24% of sales. The geographical risk is limited by the Group's sustainable coverage in 80 countries on all continents. This diversity reduces customer and market risk.

To better assess its exposure, the Group has implemented procedures to regularly monitor the financial situation of its major customers as well as a monthly reporting for the Group's 170 main transnational customers in order to monitor the related consolidated risk.

Moreover, customer risk assessment and in particular the quality of the customer's site is an important component of the investment decision process.

Bank counterparty risk relates to the outstanding amounts of deposits, market values of derivatives and to the credit lines contracted with each bank. Pursuant to its financial policy, in the majority of cases, the Group requires a long-term Standard & Poor's "A" credit rating or a Moody's "A2" rating from its counterparties to accept commitments on financial instruments. The Group's credit lines are also spread among several banks from various geographical areas to avoid the risk of concentration while complying with the same credit rating requirements. The Operational Finance Committee regularly reviews and approves the list of bank counterparties related to investments and the list of financial instruments. With regards to short-term investments, outstandings are subject to strict limits per counterparty and are monitored daily.

IFRS13 Fair Value Measurement specifies that the valuation of currency, interest rate and commodity hedging instruments must take into account the counterparty credit risk attached to these transactions. Considering the aforementioned counterparty selection criteria, the effect on the periodic valuations, by applying the historical default probabilities method is immaterial.

d) Liquidity risk

It is Group financial policy to spread over time the maturity of long-term debt in order to avoid concentration of annual refinancing needs. Liquidity risk is also reduced by the stability of cash flows generated from operations as well as by having confirmed credit lines in place. The financial covenants attached to the current financing arrangements described in note 25.6 do not affect the Group's access to liquidity.

The carrying amount of short-term financing in the form of commercial paper amounted to 191 million euros as of December 31, 2019, a decrease of 503 million euros compared to the end of 2018. The average amount of commercial paper amounted to 763 million euros in 2019, compared to 699 million euros in 2018. The Group policy requires that commercial paper in issue be backed by confirmed long-term credit lines. In 2019, this requirement was met, with an amount of confirmed credit lines of 3,600 million euros largely exceeding outstanding commercial paper.

The table below presents the maturities of the bilateral and syndicated credit lines:

(in millions of euros)	2020	2021	2022	2023	2024	2025	Total
Bilateral lines and syndicated credit lines	-	300.0	200.0	100.0	3,000.0	-	3,600.0

On December 2019, five credit facilities were cancelled and included in the syndicated credit facility negotiated in 2018. In addition, a first extension option was exercised. The syndicated credit facility was thus extended to 2.5 billion euros and will mature in December 2024, with a second extension option. An amendment was signed on December 2, 2019 so as to include a correlation scheme between its financial costs and three of its CSR (Corporate Social Responsibility) targets regarding its carbon intensity, gender diversity and safety.

When the Group makes short-term financial investments other than bank deposits, it systematically favors monetary instruments with a short-term maturity in order to limit the risk of non-liquidity or high volatility.

The following tables represent the future cash flows related to the main balance sheet items and to the derivative financial instruments recognized at the end of the last two periods. Interest flows are calculated in accordance with IFRS7 and represent the interest payable for each relevant period. Interest flows related to floating interest rate or foreign currency instruments were calculated using the closing interest and exchange rates as of December 31, 2018 and 2019. The flows related to debt repayment obligations differ from the amounts recognized in the Group's balance sheet due to the accounting treatment applied to borrowings and the exclusion of hedging instruments.

2019 *(in millions of euros)*	Book value as of December 31, 2019	Cash Flow < 1 year		Cash flow ≥ 1 year and ≤ 5 years		Cash Flow > 5 year	
		Interest	Capital refund	Interest	Capital refund	Interest	Capital refund
Derivative instruments							
Assets							
Fair value of derivatives (assets)	57.6	19.8	464.9	42.5	945.6	21.6	343.2
Liabilities							
Fair value of derivatives (liabilities)	(112.9)	(54.8)	(319.1)	(134.9)	(930.2)	(54.1)	(342.9)
SUB-TOTAL DERIVATIVE INSTRUMENTS		**(34.9)**	**145.7**	**(92.5)**	**15.4**	**(32.5)**	**0.3**
Assets							
Loans and other non-current receivables	374.7				374.7		
Trade receivables	2,477.9		2,419.7		58.2		
Cash and cash equivalents	1,025.7	0.2	1,025.5				
SUB-TOTAL ASSETS		**0.2**	**3,445.2**		**432.9**		
Liabilities							
Non-current borrowings	(11,567.2)	(228.0)		(684.2)	(6,155.8)	(761.9)	(5,412.9)
Other non-current liabilities	(261.6)				(261.6)		
Trade payables	2,566.6		2,529.2		37.4		
Current borrowings	(1,831.8)	(31.1)	(1,660.1)				
SUB-TOTAL LIABILITIES		**(259.1)**	**869.1**	**(684.2)**	**(6,380.0)**	**(761.9)**	**(5,412.9)**

2018 *(in millions of euros)*	Book value as of December 31, 2018	Cash Flow < 1 year		Cash flow ≥ 1 year and ≤ 5 years		Cash Flow > 5 year	
		Interest	Capital refund	Interest	Capital refund	Interest	Capital refund
Derivative instruments							
Assets							
Fair value of derivatives (assets)	120.1	12.4	237.5	29.5	1,254.9	7.7	250.9
Liabilities							
Fair value of derivatives (liabilities)	(45.5)	(53.9)	(237.5)	(138.1)	(1,254.9)	(59.7)	(250.9)
SUB-TOTAL DERIVATIVE INSTRUMENTS		**(41.5)**	**-**	**(108.6)**	**-**	**(52.0)**	**-**
Assets							
Loans and other non-current receivables	367.8				367.8		
Trade receivables	2,500.4		2,468.2		32.2		
Cash and cash equivalents	1,725.6	0.3	1,725.3				
SUB-TOTAL ASSETS		**0.3**	**4,193.5**		**400.0**		
Liabilities							
Non-current borrowings	(11,709.6)	(247.5)		(741.7)	(5,805.4)	(797.7)	(5,795.7)
Other non-current liabilities	(250.0)				(250.0)		
Trade payables	(2,714.5)		(2,697.2)		(17.3)		
Current borrowings	(2,550.9)	(138.7)	(2,412.2)				
SUB-TOTAL LIABILITIES		**(386.2)**	**(5,109.4)**	**(741.7)**	**(6,072.7)**	**(797.7)**	**(5,795.7)**

Cash and cash equivalents decreased at the end of 2019. The carrying amount of non-current borrowings has decreased, the bond issues of the year being less important than the reclassification in current borrowing. The carrying amount of current borrowings has strongly decreased, mostly following the decrease in outstanding commercial paper.

e) Hierarchy of financial instruments fair value

(in millions of euros)	2018	2019
Level 1	**26.3**	**92.7**
Non-consolidated shares (listed shares)	26.3	92.7
Level 2	**74.6**	**(55.3)**
Derivative instruments	74.6	(55.3)
Level 3	**133.4**	**99.8**
Put options granted to minority shareholders	133.4	99.8

f) Commodity risk (energy contracts)

Most of Air Liquide's energy supplies are obtained through forward purchase contracts at a fixed or indexed price.

IFRS9 provides for the inclusion within its scope of forward purchases and sales of non-financial assets as soon as these transactions are deemed similar to derivative instruments.

However, IFRS9 considers that forward contracts for non-financial assets should not be considered as derivatives when they have been entered into to meet the Company's "normal" business requirements, resulting in the delivery upon maturity of the underlying item for use in the Company's industrial process. As Air Liquide does not purchase electricity or natural gas for speculation or arbitrage on commodity price trends purposes, no forward contracts relating to energy meet the definition of a derivative instrument. The contracts enter into as part of the Company's normal business to be used in the industrial process and do not meet the definition of a derivative instrument.

Furthermore, in a global context of highly volatile electricity and natural gas market prices, Air Liquide continues to index long-term customer contracts to hedge these risks. For natural gas and electricity prices, the opening of some markets led the Group, under these circumstances, to replace the price indices used during the regulated period by indices relevant to each local market.

Nonetheless, a few isolated contracts remain for which price indexation alone cannot guarantee a total and effective hedge against the risk of energy prices fluctuations. These risks are therefore hedged by Air Liquide, particularly by Air Liquide Finance, using adequate commodity derivatives, which are mainly swaps with maturities of generally less than two years.

The fair value recognition of these derivative instruments had no material impact on Group equity or profits as of December 31, 2019.

26.2 INFORMATION ON DERIVATIVE INSTRUMENTS

The Group policy consists in using financial derivatives only when hedging actual financial flows. As a result, the majority of derivative financial instruments used by the Group benefit from hedge accounting. Derivative instruments that do not benefit from hedge accounting are not used for speculative purposes.

Impact of the fair value recognition of derivative instruments on the balance sheet:

2019 *(in millions of euros)*	IFRS classification	Assets					Equity and liabilities						
				Fair value of derivatives							Fair value of derivatives		
		Deferred tax assets	Trade receivables	Non current	Current	Total	Net income recognized in equity	Profit for the period	Borrowings	Trade payables	Non current	Current	Total
Foreign exchange risk													
Currency forwards hedging future cash flows	CFH [(a)]	4.7		4.2	7.2	16.1	(11.0)				11.0	16.1	16.1
Currency forwards hedging transactions recorded in the accounts and Cross Currency Swaps	FVH [(b)]	0.3	2.0	32.7	23.1	58.1		(0.7)	14.2	1.1	26.2	17.3	58.1
Other derivatives [(c)]		(0.3)			1.1	0.8	0.8						0.8
Interest rate risk													
Interest rate swaps	FVH [(b)]				0.1	0.1		0.1					0.1
Swaps, options and Cross Currency Swaps	CFH [(a)] and NIH [(d)]	16.4		(10.8)	(0.2)	5.4	(34.6)				8.6	31.4	5.4
Commodity risk (Energy)													
Forwards hedging future cash flows	CFH [(a)]	0.6		0.2		0.8	(0.9)	(0.6)				2.3	0.8
TOTAL		**21.7**	**2.0**	**26.3**	**31.3**	**81.3**	**(45.7)**	**(1.2)**	**14.2**	**1.1**	**45.8**	**67.1**	**81.3**

(a) CFH: Cash Flow Hedge.
(b) FVH: Fair Value Hedge.
(c) Derivative instruments not benefiting from hedge accounting.
(d) NIH: Net Investment Hedge.

2018 *(in millions of euros)*	IFRS classification	Assets					Equity and liabilities						
				Fair value of derivatives							Fair value of derivatives		
		Deferred tax assets	Trade receivables	Non current	Current	Total	Net income recognized in equity	Profit for the period	Borrowings	Trade payables	Non current	Current	Total
Foreign exchange risk													
Currency forwards hedging future cash flows	CFH [(a)]	0.1		1.9	16.4	18.4	(0.2)				2.9	15.7	18.4
Currency forwards hedging transactions recorded in the accounts and Cross Currency Swaps	FVH [(b)]	(0.5)	2.4	73.0	23.8	98.7		1.2	75.9	2.5	8.3	10.8	98.7
Other derivatives [(c)]		0.1			0.1	0.2	(0.3)	0.1				0.4	0.2
Interest rate risk													
Interest rate swaps	FVH [(b)]	(0.1)		0.3		0.2		0.2					0.2
Swaps, options and Cross Currency Swaps	CFH [(a)] and NIH [(d)]	0.9		0.7	3.2	4.8	(1.6)				6.8	(0.4)	4.8
Commodity risk (Energy)													
Forwards hedging future cash flows	CFH [(a)]	0.1			0.7	0.8	0.2	(0.4)			0.4	0.6	0.8
TOTAL		**0.6**	**2.4**	**75.9**	**44.2**	**123.1**	**(1.9)**	**1.1**	**75.9**	**2.5**	**18.4**	**27.1**	**123.1**

(a) CFH: Cash Flow Hedge.
(b) FVH: Fair Value Hedge.
(c) Derivative instruments not benefiting from hedge accounting.
(d) NIH: Net Investment Hedge.

Note 27 Other liabilities (non-current/current)

27.1 OTHER NON-CURRENT LIABILITIES

(in millions of euros)	2018	2019
Investment grants	60.5	60.3
Advances and deposits received from customers	38.6	34.3
Other non-current liabilities	150.9	167.0
TOTAL OTHER NON-CURRENT LIABILITIES	**250.0**	**261.6**

27.2 OTHER CURRENT LIABILITIES

(in millions of euros)	2018	2019
Advances received	305.2	243.8
Advances and deposits received from customers	84.9	88.3
Other payables	1,011.8	1,113.3
Accruals and deferred income	237.9	183.6
TOTAL OTHER CURRENT LIABILITIES	**1,639.8**	**1,629.0**

Amounts payable to customers under Engineering & Construction contracts and amounting to 76.7 million euros are included in other current liabilities as of December 31, 2019 (108.1 million euros in 2018).

Note 28 Trade payables

(in millions of euros)	2018	2019
Operating suppliers	2,392.2	2,233.7
Property, plant and equipment and intangible assets suppliers	322.3	332.9
TOTAL TRADE PAYABLES	**2,714.5**	**2,566.6**

Note 29 Related party disclosures

29.1 TRANSACTIONS WITH COMPANIES INCLUDED IN THE SCOPE OF CONSOLIDATION

The consolidated financial statements include the financial statements of L'Air Liquide S.A. and all the subsidiaries listed on pages 260 to 262. L'Air Liquide S.A. is the ultimate parent company.

Due to the activities and legal organization of the Group, only executives, associates and joint ventures are considered to be related parties to the Group. Transactions performed between these individuals or these companies and Group subsidiaries are not material.

Information related to associates and joint ventures is disclosed in note 15.

29.2 REMUNERATION ALLOCATED TO MEMBERS OF THE BOARD OF DIRECTORS AND MANAGEMENT BODIES

The remuneration of Group executives includes the remuneration allocated to the Board of Directors and the Company's management bodies as compensation for their duties within the entire Group as employees and corporate officers for the respective fiscal years. The Company's management bodies include all the members of Executive Management and the Executive Committee. The amounts expensed in this respect are as follows:

(in thousands of euros)	2018	2019
Short-term benefits	13,994	16,900
Post-employment benefits	2,012	2,549
Termination benefits	-	508
Share-based payments	8,499	9,034
TOTAL	**24,505**	**28,991**

Short-term benefits

Short-term benefits include fixed remuneration, variable remuneration, benefits in kind and Directors' fees. The entire variable remuneration portion due for any given year is paid the following year after the financial statements have been approved.

The remuneration policy for members of the executive team takes into account market practices. It includes a substantial variable portion depending on the achievement of earnings and individual performance objectives.

Post-employment benefits

Post-employment benefits include the contributions paid to external pension funds. Retirement commitments amounted to 37,225 thousand euros in 2019 and 30,703 thousand euros in 2018.

Share-based payments

Stock options and performance shares granted to Executive Management and to the Executive Committee have the following expiry dates and strike prices:

Year	Expiry date	Strike price (a) *(in euros)*	Number 2018	Strike price (b) *(in euros)*	Number 2019 (b)
2011 (October 14)	10/13/2021	63.18	226,499	57.28	137,105
2012 (September 27)	09/26/2022	77.36	236,221	70.14	231,936
2013 (September 26)	09/25/2023	81.68	289,474	74.06	277,175
2014 (September 22)	09/21/2024	85.66	253,267	77.67	255,668
2015 (September 28)			17,281		
2015 (September 28)	09/27/2025	92.73	136,387	84.08	139,193
2016 (July 29)			42,126		34,294
2016 (November 29)	11/28/2026	84.34	73,307	76.47	67,605
2016 (November 29)			84,688		24,557
2017 (September 20)	09/19/2027	94.32	25,471	85.52	28,092
2017 (September 20)			98,510		102,400
2018 (September 25)	09/24/2028	107.00	23,690	97.02	26,127
2018 (September 25)			87,330		91,693
2019 (September 30)					91,160

(a) Adjusted for share capital increases by attributions of free shares (2017, 2014, 2012) and for the share capital increase in cash of October 11, 2016.
(b) 2019 data adjusted for the share capital increase by attribution of free shares in 2019.

The fair value of performance shares granted in 2019 is disclosed in note 22.

These amounts are expensed over the lock-in period of the option and performance shares. The amounts that will be recognized in future periods in respect of the granted stock options and performance shares totaled 19,017 thousand euros as of December 31, 2019 (17,215 thousand euros as of December 31, 2018).

The 2019 plan performance shares granted to corporate officers and Executive Committee members cannot be exercised unless certain performance conditions are achieved.

No stock options or performance shares were granted to other non-executive Directors under these plans.

Note 30 Commitments

Commitments are given in the normal course of the Group's business.

(in millions of euros)	2018	2019
Firm purchase orders for fixed assets	799.4	1,280.5
Lease commitments which cannot be terminated	1,279.4	-
Other commitments related to operating activities	4,794.6	4,865.4
Commitments relating to operating activities	**6,873.4**	**6,145.9**
Commitments relating to financing operations and consolidation scope	**245.7**	**235.3**
TOTAL	**7,119.1**	**6,381.2**

Commitments have decreased as of December 31, 2019 compared to December 31, 2018. It is mostly due to the first application of IFRS16. The difference between the amount of non-cancelable operating lease commitments as of the end of December 2018 and the amount of lease liabilities recognized following IFRS16 application can be explained by taking into account renewal options in the estimation of contracts duration and by the effect of discounting. The total amount of not restated operating lease commitments (leases of 12 months or less and leases of low value assets) is not material.

Air Liquide owns a 13.7% stake in Exeltium S.A.S. amounting to 24.5 million euros.

On March 24, 2010, Exeltium and EDF entered into an industrial partnership agreement under which Exeltium can acquire rights to a portion of EDF's electronuclear production. In consideration, Exeltium and its shareholder clients signed long-term electricity supply contracts. The contract signed by Air Liquide has a 20-year term and can be suspended by Air Liquide after 10 years. This contract provides long-term visibility over the price of the electricity to be supplied. This project was approved by the European Commission.

The Group's energy purchase commitments amounted to 1,261.1 million euros as of December 31, 2019 (1,125.8 million euros as of December 31, 2018). This amount includes the energy purchase commitments relating to the Exeltium contract.

Almost all of these commitments are covered by mutual commitments received from clients in connection with long-term gas supply contracts. These commitments are not disclosed in the table above.

Commitments to purchases of molecules as part of take-or-pay contracts amounted to 4,461.5 million euros as of December 31, 2019 (4,453.6 as of 31 December 31, 2018), and are reported in other commitments related to operating activities. These amounts include Helium purchase commitments.

Confirmed credit lines are shown in note 26.

Commitments related to associates amounted to 51.6 million euros as of December 31, 2019.

Note 31 Contingent liabilities

To the best of the Group's knowledge, there is no exceptional event or litigation which has affected in the recent past or which is likely to materially affect its financial situation or profitability.

In September 2010, the Brazilian competition authority ("CADE") fined the major industrial gas companies operating in Brazil, including Air Liquide Brazil, for unfair trade practices prior to 2004. Air Liquide Brazil was fined 197.6 million Brazilian reals before interest on arrears amounting to 173.9 million Brazilian reals as of December 31, 2019 (equivalent to 43.8 million euros for the fine and 38.5 million euros for interest on arrears).

Air Liquide Brazil has strongly contested this decision and has consequently filed an application to annul the fine before the Brasilia Federal Court. In May 2014, the CADE ruling was annulled in first instance by this Court. In September 2014, the CADE filed an appeal against this decision, which was rejected by the Court in November 2015. Recently, the CADE and the Procurator's Office had both filed a new appeal against this decision in the second instance before the Superior Court and the Supreme Court of Justice. At this stage, the Group considers it probable that Air Liquide Brazil will prevail and consequently no provision has been recorded.

Note 32 Greenhouse gas emission quotas

The ETS (Emission Trading Scheme) European Directive which established a quota system for greenhouse gas emissions in the European Union has entered its third phase (2013-2020), which will feature an expanded scope for industrial plants subject to the ETS and a gradual reduction in the free allocation of quotas.

With phase III, the Group is required to obtain CO_2 quotas for the portion of emissions from hydrogen production sites not covered by free allocations, as well as for all emissions from cogeneration sites. As the Group manages CO_2 quotas solely to cover its industrial needs, they are classified as a commodity and managed as such. The quotas are therefore valued at acquisition cost and presented in inventories.

The Group recognizes a provision when the year-end quotas covering greenhouse gas emissions are insufficient, based on the best estimate of the outflow of resources required to settle the obligation.

As of December 31, 2019, the amounts recognized in assets and liabilities are immaterial.

Note 33 Post-balance sheet events

There are no significant post-balance sheet events.

Foreign exchange rates and main consolidated companies

FOREIGN EXCHANGE RATES

Main foreign exchange rates used

Average rates

Euros for 1 currency	2018	2019
USD	0.85	0.89
CNY	0.13	0.13
CAD	0.65	0.67
Yen (1,000)	7.67	8.20

Closing rates

Euros for 1 currency	2018	2019
USD	0.87	0.89
CNY	0.13	0.13
CAD	0.64	0.69
Yen (1,000)	7.95	8.20

MAIN CONSOLIDATED COMPANIES

Companies marked with JO are consolidated by joint operation and those marked with E by the equity method. Other companies are fully consolidated.

The total Group interest is given after the name of each company.

Main consolidated companies	Country	Integration	% interest
GAS & SERVICES			
EUROPE			
Air Liquide Austria GmbH	AUT		100.00%
L'Air Liquide Belge S.A.	BEL		100.00%
Air Liquide Industries Belgium S.A.	BEL		100.00%
Air Liquide Large Industry S.A.	BEL		100.00%
Air Liquide Medical S.A.	BEL		100.00%
Air Liquide Bulgaria EOOD	BGR		100.00%
Carbagas S.A.	CHE		100.00%
Air Liquide CZ, s.r.o.	CZE		100.00%
Air Liquide Deutschland GmbH	DEU		100.00%
Air Liquide Electronics GmbH	DEU		100.00%
Air Liquide Industriegase GmbH & Co. KG	DEU		100.00%
Energieversorgungscenter Dresden-Wilschdorf GmbH & Co. KG [(a)]	DEU		40.00%
Schülke & Mayr GmbH	DEU		100.00%
VitalAire GmbH	DEU		100.00%
Zweite Energieversorgungscenter Dresden-Wilschdorf GmbH & Co. KG	DEU		50.00%
Air Liquide Danmark A/S	DNK		100.00%
Air Liquide España S.A.	ESP		99.90%
Air Liquide Ibérica de Gases S.L.U.	ESP		100.00%
Air Liquide Medicinal S.L.U.	ESP		99.90%
Air Liquide Healthcare España, S.L.U.	ESP		100.00%
Air Liquide Finland Oy.	FIN		100.00%
Air Liquide Eastern Europe S.A.	FRA		100.00%
Air Liquide France Industrie S.A	FRA		100.00%
Air Liquide Medical Systems S.A.	FRA		100.00%
Air Liquide Réunion S.A.	FRA		95.08%
Air Liquide Russie S.A.	FRA		100.00%
Air Liquide Santé (International) S.A.	FRA		100.00%
Air Liquide Santé France S.A.	FRA		100.00%
Air Liquide Guyane Spatial S.A.	FRA		98.79%
Air Liquide Ukraine S.A.	FRA		100.00%
Cryo-Express S.A.	FRA		98.82%
Lavéra Energies S.N.C.	FRA	JO	50.00%
LVL Médical Groupe S.A.	FRA		100.00%
Pharma Dom S.A.	FRA		100.00%

Main consolidated companies	Country	Integration	% interest
Société des Gaz Industriels de la Guadeloupe S.A.	FRA		95.88%
Société d'Exploitation de Produits pour les Industries Chimiques S.A.	FRA		99.98%
Société Guyanaise de L'Air Liquide S.A.	FRA		97.04%
Société Martiniquaise de L'Air Liquide S.A.	FRA		95.87%
VitalAire S.A.	FRA		100.00%
Air Liquide Ltd	GBR		100.00%
Air Liquide (Homecare) Ltd	GBR		100.00%
Air Liquide UK Ltd	GBR		100.00%
Energas Ltd	GBR		100.00%
SPL Services Limited	GBR		98.02%
Air Liquide Hellas S.A.G.I.	GRC		99.78%
Air Liquide Italia S.p.A.	ITA		99.77%
Air Liquide Italia Service S.r.l	ITA		99.77%
Air Liquide Sanità Service S.p.A.	ITA		99.77%
Air Liquide Italia Produzione S.r.l	ITA		99.77%
Medicasa Italia S.p.A	ITA		99.77%
VitalAire Italia S.p.A.	ITA		99.77%
Air Liquide Healthcare Ireland Limited	IRL		100.00%
Air Liquide Munay Tech Gases	KAZ		75.00%
L'Air Liquide Luxembourg S.A.	LUX		100.00%
Air Liquide Acetylene B.V.	NLD		100.00%
Air Liquide B.V.	NLD		100.00%
Air Liquide Industrie B.V.	NLD		100.00%
Air Liquide Nederland B.V.	NLD		100.00%
Scott Specialty Gases Netherlands B.V.	NLD		100.00%
Air Liquide Norway A.S.	NOR		100.00%
Air Liquide Katowice Sp.z.o.o.	POL		79.25%
Air Liquide Polska Sp.z.o.o.	POL		100.00%
Air Liquide Medicinal S.A.	PRT		99.85%
Sociedade Portuguesa do Ar Liquido Lda	PRT		99.93%
Air Liquide Romania S.r.l	ROM		100.00%
Air Liquide OOO	RUS		100.00%
Air Liquide Severstal CJSC	RUS		75.00%
Air Liquide Slovakia s.r.o.	SVK		100.00%
Air Liquide Gas A.B.	SWE		100.00%
NordicInfu Care A.B	SWE		100.00%
Air Liquide Gaz San. Ve Tic. A.S.	TUR		100.00%

(a) Consolidation method differs form percentage of shares due to a contractual agreement.

Main consolidated companies	Country	Integration	% interest
AMERICAS			
Air Liquide Argentina S.A.	ARG		100.00%
Air Liquide Brasil Ltda	BRA		100.00%
Air Liquide Canada, Inc.	CAN		100.00%
Vitalaire Canada, Inc.	CAN		100.00%
Respiratory Homecare Solutions Canada Inc.	CAN		100.00%
Air Liquide Chile S.A.	CHL		100.00%
Air Liquide Colombia S.A.S	COL		100.00%
Air Liquide Dominicana S.A.S	DOM		100.00%
Air Liquide Mexico, S. de RL de CV	MEX		100.00%
La Oxigena Paraguaya S.A.	PRY		87.96%
Air Liquide Trinidad and Tobago Ltd	TTO		100.00%
Air Liquide Uruguay S.A.	URY		96.68%
Airgas USA, LLC	USA		100.00%
Airgas Specialty Products	USA		100.00%
Red-D-Arc, Inc.	USA		100.00%
Airgas Safety, Inc.	USA		100.00%
Air Liquide Electronics U.S. LP	USA		100.00%
Air Liquide Large Industries U.S. LP	USA		100.00%
Air Liquide Advanced Materials, Inc.	USA		100.00%
MIDDLE EAST AND AFRICA			
Air Liquide Afrique S.A.	FRA		100.00%
Air Liquide Angola LDA	AGO		73.99%
Air Liquide Middle East & North Africa FZCO	ARE		100.00%
Air Liquide Gulf FZE	ARE		100.00%
Air Liquide Bénin S.A.	BEN	E	99.99%
Air Liquide Burkina Faso S.A.	BFA		64.87%
Air Liquide Botswana Proprietary Ltd	BWA		99.93%
Air Liquide Côte d'Ivoire S.A.	CIV		72.08%
Air Liquide Cameroun S.A.	CMR		100.00%
Air Liquide Congo S.A.	COG		100.00%
Société d'Installations et de Diffusion de Matériel Technique S.P.A.	DZA	E	100.00%
Air Liquide Alexandria for Medical & Industrial Gases S.A.E.	EGY		99.99%
Air Liquide El Soukhna for Industrial Gases S.A.E.	EGY		99.93%
Air Liquide Misr S.A.E.	EGY		100.00%

Main consolidated companies	Country	Integration	% interest
Air Liquide Middle East S.A.	FRA		100.00%
Air Liquide Gabon S.A.	GAB		99.04%
Air Liquide Ghana Ltd	GHA		100.00%
Air Liquide India Holding Pvt. Ltd	IND		100.00%
Shuaiba Oxygen Company K.S.C.C. [(a)]	KWT		49.81%
Air Liquide Maroc S.A.	MAR		74.80%
Air Liquide Madagascar S.A.	MDG		73.74%
Air Liquide Mali S.A.	MLI		99.97%
Air Liquide Namibia Proprietary Ltd	NAM		100.00%
Air Liquide Nigeria Plc	NGA		87.31%
Air Liquide Sohar Industrial Gases LLC	OMN		50.10%
Gasal Q.S.C.	QAT	E	40.00%
Vitalaire Arabia LLC.	SAU		60.00%
Air Liquide Al-Khafrah Industrial Gases LLC	SAU		75.00%
Air Liquide Arabia LLC	SAU		65.00%
Air Liquide Sénégal S.A.	SEN		83.60%
Air Liquide Togo S.A.	TGO	E	70.57%
Air Liquide Tunisie S.A.	TUN		59.17%
Air Liquide Large Industries (Pty) Ltd	ZAF		100.00%
Air Liquide Proprietary Ltd	ZAF		99.93%
ASIA PACIFIC			
Air Liquide Australia Ltd	AUS		100.00%
Air Liquide Healthcare P/L	AUS		100.00%
Air Liquide W.A. Pty Ltd	AUS		100.00%
Brunei Oxygen SDN	BHD		50.00%
Air Liquide Cangzhou Co., Ltd	CHN		100.00%
Air Liquide China Holding Co., Ltd	CHN		100.00%
Air Liquide Shanghai Co., Ltd	CHN		100.00%
Air Liquide Shanghai International Trading Co. Ltd	CHN		100.00%
Air Liquide Tianjin Co., Ltd	CHN		100.00%
Air Liquide Yongli Tianjin Co., Ltd	CHN		55.00%
Air Liquide Zhangjiagang Industrial Gases Co., Ltd	CHN		100.00%
Shanghai Chemical Industry Park Industrial Gases Co., Ltd	CHN	JO	50.00%
Société d'Oxygène et d'Acétylène d'Extrême-Orient S.A.	FRA		100.00%
Celki International Ltd	HKG		100.00%
P.T. Air Liquide Indonesia	IDN		100.00%
Air Liquide Japan Ltd	JPN		100.00%

Main consolidated companies	Country	Integration	% interest
Toshiba Nano Analysis K.K.	JPN		51.00%
Sohgo Industry Co., Ltd	JPN		90.23%
Vital Air Japan K.K.	JPN		100.00%
Air Liquide Korea Co., Ltd	KOR		100.00%
VitalAire Korea Inc.	KOR		100.00%
Southern Industrial Gas Sdn Bhd	MYS		100.00%
Air Liquide Malaysia Sdn Bhd	MYS		100.00%
Air Liquide New Zealand Ltd	NZL		100.00%
Air Liquide Phils Inc.	PHL		100.00%
Air Liquide Singapore Pte Ltd	SGP		100.00%
Air Liquide Thailand Ltd	THA		100.00%
Air Liquide Electronics Systems Asia Ltd	TWN		100.00%
Air Liquide Far Eastern Ltd	TWN		65.00%
Air Liquide Vietnam Co., Ltd	VNM		100.00%
ENGINEERING & CONSTRUCTION			
Air Liquide Global E&C Solutions Canada LP	CAN		100.00%
Air Liquide Hangzhou Co., Ltd	CHN		100.00%
Air Liquide Global E&C Solutions Germany Gmbh	DEU		100.00%
Air Liquide Global E&C Solutions France S.A.	FRA		100.00%
Air Liquide Global E&C Solutions Japan K.K	JPN		100.00%
JJ-Lurgi Engineering Sdn. Bhd.	MYS	E	50.00%
Air Liquide Global E&C Solutions Singapore Pte. Ltd	SGP		100.00%
Air Liquide Global E&C Solutions US, Inc.	USA		100.00%

Main consolidated companies	Country	Integration	% interest
GLOBAL MARKETS & TECHNOLOGIES			
Air Liquide Advanced Technologies US LLC	USA		100.00%
Alizent France S.A.	FRA		100.00%
Air Liquide Advanced Technologies S.A.	FRA		100.00%
Cryolor S.A.	FRA		100.00%
GIE Cryospace	FRA		55.00%
Air Liquide Electronics Systems S.A.	FRA		100.00%
FordonsGas Sverige AB	FRA		100.00%
Hélium Services S.A.	FRA		100.00%
The Hydrogen Company	FRA		100.00%
Oilfield Hire and Services	GBR		100.00%
HOLDING COMPANIES AND R&D ACTIVITIES			
Air Liquide Finance S.A.	FRA		100.00%
Air Liquide International S.A.	FRA		100.00%
Air Liquide Participations S.A.	FRA		100.00%
L'Air Liquide S.A.	FRA		100.00%
Orsay-Re S.A.	LUX		100.00%
Air Liquide International Corp.	USA		100.00%
American Air Liquide, Inc.	USA		100.00%
American Air Liquide Holdings, Inc	USA		100.00%

The extended list of consolidated companies is available on: https://www.airliquide.com/group/consolidation-scope-2019

Statutory Auditors' offices and fees

STATUTORY AUDITORS' OFFICES

ERNST & YOUNG et Autres

Principal Statutory Auditor
Ernst & Young et Autres is represented by
Jeanne Boillet and François-Guillaume Postel
Tour First – TS 14444 – 1, place des Saisons
92037 Paris-La Défense Cedex (Courbevoie)

Deputy Statutory Auditor
Auditex
Tour First – TS 14444 – 1, place des Saisons
92037 Paris-La Défense Cedex (Courbevoie)

PricewaterhouseCoopers Audit

Principal Statutory Auditor
PricewaterhouseCoorpers Audit is represented by
Françoise Garnier and Séverine Scheer
63, rue de Villiers
92200 Neuilly-sur-Seine

Deputy Statutory Auditor
Jean-Christophe Georghiou
with PricewaterhouseCoorpers Audit
63, rue de Villiers
92200 Neuilly-sur-Seine

STATUTORY AUDITORS' FEES

(in thousands of euros)	2019							
	ERNST & YOUNG et Autres		PricewaterhouseCoopers Audit		Others		Total	
Audit, certification, review of individual and consolidated financial statements	7,319	94.2%	5,321	85.3%	533	78.6%	13,173	89.8%
■ Issuer	733		616		-		1,349	
■ Fully consolidated subsidiaries	6,586		4,705		533		11,824	
of which Airgas	*1,720*		-		-		*1,720*	
Services required by law	112	1.4%	85	1.4%	19	2.8%	216	1.5%
Total of certification missions and services required by law	**7,431**	**95.6%**	**5,406**	**86.7%**	**552**	**81.4%**	**13,390**	**91.2%**
Services relating to Corporate Social Responsibility (CSR)	27	0.4%	120	1.9%	-	0.0%	147	1.0%
Due-diligence services (sell-side and buy-side)	-	0.0%	-	0.0%	-	0.0%	-	0.0%
Other services	314	4.0%	709	11.4%	126	18.6%	1,148	7.8%
Total of non-audit services	**341**	**4.4%**	**829**	**13.3%**	**126**	**18.6%**	**1,295**	**8.8%**
TOTAL	**7,772**	**100%**	**6,235**	**100%**	**678**	**100%**	**14,685**	**100%**

(in thousands of euros)	2018							
	ERNST & YOUNG et Autres		PricewaterhouseCoopers Audit		Others		Total	
Audit, certification, review of individual and consolidated financial statements	7,807	90.4%	5,172	86.1%	447	75.9%	13,427	88.2%
■ Issuer	992		852		-		1,844	
■ Fully consolidated subsidiaries	6,815		4,320		447		11,583	
of which Airgas	*1,383*		-		-		*1,383*	
Services required by law	85	1.0%	151	2.5%	55	9.3%	291	1.9%
Total of certification missions and services required by law	**7,892**	**91.4%**	**5,323**	**88.6%**	**502**	**85.2%**	**13,717**	**90.1%**
Services relating to Corporate Social Responsibility (CSR)	60	0.7%	120	2.0%	-	0.0%	180	1.2%
Due-diligence services (sell-side and buy-side)	252	2.9%	-	0.0%	-	0.0%	252	1.7%
Other services	431	5.0%	565	9.4%	87	14.8%	1,083	7.0%
Total of non-audit services	**743**	**8.6%**	**685**	**11.4%**	**87**	**14.8%**	**1,516**	**9.9%**
TOTAL	**8,635**	**100%**	**6,009**	**100%**	**589**	**100%**	**15,233**	**100%**

Statutory Auditors' Report on the consolidated financial statements

This is a translation into English of the statutory auditors' report on the consolidated financial statements of the Company issued in French and it is provided solely for the convenience of English-speaking users. This statutory auditors' report includes information required by European regulation and French law, such as information about the appointment of the statutory auditors or verification of the information concerning the Group presented in the Management Report and other documents provided to shareholders. This report should be read in conjunction with, and construed in accordance with, French law and professional auditing standards applicable in France.

To the Annual General Meeting of L'Air Liquide,

OPINION

In compliance with the engagement entrusted to us by your Annual General Meeting, we have audited the accompanying consolidated financial statements of L'Air Liquide for the year ended December 31, 2019.

In our opinion, the consolidated financial statements give a true and fair view of the assets and liabilities and of the financial position of the Group as at December 31, 2019 and of the results of its operations for the year then ended in accordance with International Financial Reporting Standards as adopted by the European Union.

The audit opinion expressed above is consistent with our report to the Audit and Accounts Committee.

BASIS FOR OPINION

Audit Framework

We conducted our audit in accordance with professional standards applicable in France. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Our responsibilities under those standards are further described in the Statutory Auditors' Responsibilities for the Audit of the Consolidated Financial Statements section of our report.

Independence

We conducted our audit engagement in compliance with independence rules applicable to us, for the period from January 1, 2019 to the date of our report and specifically we did not provide any prohibited non-audit services referred to in Article 5 (1) of Regulation (EU) No. 537/2014 or in the French Code of ethics (Code de déontologie) for statutory auditors.

EMPHASIS OF MATTER

We draw your attention to the note "Accounting principles – New IFRS and interpretations" and note 2 to the consolidated financial statements that describe the impacts of the first application of IFRS16 "Leases" as of January 1, 2019. Our opinion is not modified in respect of this matter.

JUSTIFICATION OF ASSESSMENTS - KEY AUDIT MATTERS

In accordance with the requirements of Articles L. 823-9 and R. 823-7 of the French Commercial Code (Code de commerce) relating to the justification of our assessments, we inform you of the key audit matters relating to risks of material misstatement that, in our professional judgment, were of most significance in our audit of the consolidated financial statements of the current period, as well as how we addressed those risks.

These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on specific items of the consolidated financial statements.

Large Industries activity: qualification of the contracts and related revenue recognition method

Risk identified

The gas supply of the Large Industries activity is based on long term contracts with a limited number of customers and requires significant industrial investments.

As described in note "Accounting policies 3.a. Revenue recognition – Gas & Services" to the consolidated financial statements, these investments are usually made to share production capacity with the Industrial Merchant Business Line or to serve customers connected to pipelines in an industrial region. In such cases, Group management considers that those assets are not specific to customers as defined in the standard IFRS16 "Leases".

When assets used for the long term supply agreements are dedicated to a customer, Group management considers, as described in note "Accounting policies 3.a. Revenue recognition – Gas & Services" to the consolidated financial statements, that all the risk and rewards resulting from the utilization of those assets are not transferred to the customers. Accordingly, gas supply agreements linked to those assets are not considered as leases. These industrial investments continue to be owned by the Group from an accounting standpoint and are recorded as property, plant and equipment, the full amounts received for the contracts being recognized as revenue.

Due to the complexity of those contracts and the impact on the consolidated financial statements of the judgments made when the contract is signed, or in case of subsequent significant modifications, we have considered the qualification of Large Industries long-term contracts and related revenue recognition criteria as a key audit matter.

Our response

Our procedures consisted in:

- assessing the criteria to qualify these contracts, considering in particular the specific nature of the underlying assets and certain risks and rewards, resulting from the use of the assets, retained by the Group;
- considering internal control procedures implemented by Group management to confirm the compliance of the contracts with standard terms and conditions on which Group management's IFRS16 analysis is based;
- assessing the compliance of new significant contracts in the current year to standard terms and conditions and the impact of potential deviations on the accounting treatment;
- verifying the appropriateness of the disclosure included in note "accounting policies 3.a. Revenue recognition – Gas & Services" to the consolidated financial statements

Large Industries activity: useful lives of production units and measurement of their recoverable amount

Risk identified

As at December 31, 2019, the net book value of property, plant and equipment amounts to 21,118 million euros (48.4% of the Group total assets). The Large Industries activity requires significant industrial investment to execute customer agreements. Large Industries production units are depreciated on a straight line basis over their estimated useful life, usually between 15 and 20 years. The estimated useful lives are reassessed on a regular basis and the resulting change in estimates, if any, are recorded on a prospective basis.

In addition, the Group can be exposed to certain risks specific to industrial investments. Expected returns on investment and their recoverable value can, for example, be adversely impacted by overruns and construction delays, start-up conditions, technology changes, geographical location or counterparty risk.

As disclosed in note "accounting policies 5.f. Impairment of assets" to the consolidated financial statements, Group management determines on a regular basis whether asset impairment indicators exist. If a triggering event is identified, an impairment test is performed to confirm whether the net book value of the asset exceeds its recoverable value. These principles lead Group management to individually test production assets, in particular in case of significant start-up delays, project termination or early termination of related customer contracts. The measurement of the recoverable value of the equipment relies on significant estimates relating to the Group's capacity to re-use certain equipment for other internal or external customers or to sell the assets to the related customers or to third parties, or to obtain indemnification, notably from customers.

Due to the significant value of each production asset and the cumulative value of these assets, the key assumptions used to assess their useful life, their re-use or the compensation to be received, we have considered the depreciation principles and measurement of the recoverable value of Large Industries production assets as a key audit matter.

Our response

Our procedures consisted in:

- assessing the procedures performed by Group management to assess and update the depreciation period of the equipment and the consistency of their useful lives with contractual terms and available technical studies;
- analyzing the Group's process to identify impairment indicators;
- assessing, in particular through management inquiries, the key assumptions used for these estimates;
- examining correspondence with Group customers and advisors.

Impairment test of goodwill

Risk identified

In connection with its external growth strategy, the Group monitors the related goodwill at the level of group of cash generating units. For the Gas & Services activity, goodwill are mostly allocated on a geographical basis. For the world business units Engineering & Construction and Global Markets & Technologies, goodwill is monitored at the business unit level. As at December 31, 2019, goodwill amounts to a net book value of 13,€943 million (31.9% of the Group total assets).

Group management performs annually, an impairment test, mostly by reference to market values and, if required, with discounted cash-flows as described in note "accounting policies 5.f. Impairment of assets" to the consolidated financial statements.

The determination of fair value and recoverable value, and the sensitivity to the fluctuation of market value and key data and assumptions used, require significant management judgment and estimates. We have considered the measurement of the recoverable value of the groups of cash generating units as a key audit matter.

Our response

Our procedures consisted in:

- assessing principles used to determine the groups of cash generating units;
- analyze principles and methods used to determine the market value and their measurement based on multiples of market capitalization;
- consider in particular for cash generating units (or groups of cash generating units) subject to a value in use valuation, management key assumptions and estimates, notably the underlying operating data and long-term growth rates of the cash-flow. We have also assessed with the support of our valuation experts the discount rates applied and performed sensitivity tests;
- assessing the appropriateness of the information included in note 11. Goodwill to the consolidated financial statements.

SPECIFIC VERIFICATIONS

We have also performed, in accordance with professional standards applicable in France, the specific verifications required by laws and regulations of the information given in the Group's Management Report.

We have no matters to report as to their fair presentation and their consistency with the consolidated financial statements.

We attest that the consolidated non-financial information statement required by article L. 225-102-1 of the French Commercial Code is included in the Group's Management Report, being specified that, in accordance with article L. 823-10 of this Code, the information given in this statement have not been verified by us with respect to the fair presentation and consistency with the consolidated financial statements and has to be subject to a report by an independent third party.

REPORT ON OTHER LEGAL AND REGULATORY REQUIREMENTS

Appointment of the Statutory Auditors

We were appointed as statutory auditors of L'Air Liquide by the Annual General Meeting held on May 12, 2016 for PricewaterhouseCoopers Audit and on May 5, 2010 for ERNST & YOUNG et Autres.

As at December 31, 2019, PricewaterhouseCoopers Audit was in its fourth year of uninterrupted engagement and ERNST & YOUNG et Autres in its tenth year of uninterrupted engagement. Previously, ERNST & YOUNG Audit was statutory auditor of L'Air Liquide from 1983 to 2009.

RESPONSIBILITIES OF MANAGEMENT AND THOSE CHARGED WITH GOVERNANCE FOR THE CONSOLIDATED FINANCIAL STATEMENTS

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with International Financial Reporting Standards as adopted by the European Union and for such internal control as management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, management is responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless it is expected to liquidate the Company or to cease operations.

The Audit and Accounts Committee is responsible for monitoring the financial reporting process and the effectiveness of internal control and risks 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 misstatement. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with professional standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of 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 the Company.

As part of an audit conducted in accordance with professional standards applicable in France, the statutory auditor exercises professional judgment throughout the audit and furthermore:

- identifies and assesses the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, designs and performs audit procedures responsive to those risks, and obtains audit evidence considered to be sufficient and appropriate to provide a basis for 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 and Accounts Committee

We submit a report to the Audit and Accounts 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 and Accounts 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 and Accounts Committee with the declaration provided for in article 6 of Regulation (EU) No. 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 and Accounts Committee the risks that may reasonably be thought to bear on our independence, and the related safeguards.

Neuilly-sur-Seine and Paris-La-Défense, February 21, 2020

The Statutory Auditors

French original signed by

PricewaterHouseCoopers Audit		ERNST & YOUNG et Autres	
Françoise Garnier	Séverine Scheer	Jeanne Boillet	François-Guillaume Postel

STATUTORY ACCOUNTS OF THE PARENT COMPANY

Income statement

For the year ended December 31

(in millions of euros)	Notes	2018	2019
Revenue	(2)	110.3	117.4
Royalties and other operating income	(3)	577.8	579.2
Total operating income (I)		**688.1**	**696.6**
Purchases		(44.4)	(45.4)
Duties and taxes other than corporate income tax		(20.7)	(20.8)
Personnel expenses		(235.7)	(239.1)
Depreciation, amortization and provision expenses	(5)	(34.7)	(29.8)
Other operating expenses	(4)	(292.4)	(304.9)
Total operating expenses (II)		**(627.9)**	**(640.0)**
Net operating profit (loss) (I + II)		**60.2**	**56.6**
Financial income from equity affiliates	(6)	330.9	374.4
Interests, similar income and expenses	(6)	(12.6)	8.7
Other financial income and expenses	(6)	(12.1)	1.0
Financial income and expenses (III)		**306.2**	**384.1**
Net profit / (loss) from ordinary activities before tax (I + II + III)		**366.4**	**440.7**
Exceptional income and expenses	**(7)**	**208.5**	**142.2**
Statutory employee profit-sharing		(2.6)	(2.7)
Corporate income tax	(8)	(27.5)	(12.5)
NET PROFIT FOR THE YEAR		**544.8**	**567.7**

Balance sheet

For the year ended December 31

(in millions of euros)	Notes	December 31, 2018 Net	December 31, 2019 Gross carrying amounts	December 31, 2019 Amortization, depreciation and provisions	December 31, 2019 Net
Assets					
Intangible assets	(9) & (11)	39.7	279.5	(249.9)	29.6
Tangible assets	(9) & (11)	77.2	160.9	(81.6)	79.3
Financial assets	(10) & (11)	13,586.9	13,202.9	(96.6)	13,106.3
TOTAL NON-CURRENT ASSETS		**13,703.8**	**13,643.3**	**(428.1)**	**13,215.2**
Inventories and work-in-progress	(11)	1.0	1.2	(1.0)	0.2
Operating receivables	(11) & (14)	441.3	531.8	(5.9)	525.9
Current account loans with subsidiaries	(11) & (14)	671.0	855.2	-	855.2
Short-term financial investments	(12)	133.3	126.5	-	126.5
Cash and financial instruments		13.0	13.2	-	13.2
Prepaid expenses		5.7	4.3	-	4.3
TOTAL CURRENT ASSETS		**1,265.3**	**1,532.2**	**(6.9)**	**1,525.3**
Bond redemption premiums		0.2	0.1	-	0.1
Unrealized foreign exchange losses		2.7	2.1	-	2.1
TOTAL ASSETS		**14,972.0**	**15,177.7**	**(435.0)**	**14,742.7**
Equity and liabilities					
Share capital		2,361.8			2,602.1
Additional paid-in capital		2,884.5			2,572.9
Revaluation reserve		23.9			23.9
Legal reserve		235.5			236.1
Other reserves		388.5			388.5
Retained earnings		6,207.7			5,587.8
Net profit for the year		544.8			567.7
Tax-driven provisions		2.4			1.7
TOTAL SHAREHOLDERS' EQUITY	**(13)**	**12,649.1**			**11,980.7**
PROVISIONS	**(11)**	**55.2**			**53.3**
Other bonds	(14)	302.3			302.3
Bank borrowings	(14)	0.2			0.6
Other borrowings	(14)	252.7			252.7
Operating payables	(14)	544.1			642.1
Current account borrowings with subsidiaries	(14)	1,167.1			1,508.3
Deferred income		0.4			0.4
		2,266.8			**2,706.4**
Unrealized foreign exchange gains		0.9			2.3
TOTAL EQUITY AND LIABILITIES		**14,972.0**			**14,742.7**

Notes to the statutory accounts

ACCOUNTING POLICIES

1. General principles

The year-end financial statements of L'Air Liquide S.A. have been prepared in accordance with general accounting principles applicable in France and in particular those of the French Chart of Accounts (Plan Comptable Général) and the French Commercial Code.

2. Non-current assets

A. Intangible assets

Internally generated intangible assets primarily include the development costs of information management systems. They are capitalized only if they generate probable future economic benefits. Internal and external costs corresponding to detailed application design, programming, the performance of tests and the drafting of technical documentation intended for internal or external use are capitalized.

Significant upgrade and improvement costs are added to the initial cost of assets if they specifically meet the capitalization criteria.

Other intangible assets include separately acquired intangible assets such as software, licenses and intellectual property rights and are measured at acquisition cost.

Intangible assets are amortized according to the straight-line method over their estimated useful lives.

B. Tangible assets

Land, buildings and equipment are recognized at historical cost. Interim interest expense is not included in the cost.

Where components of a tangible asset have different useful lives, they are accounted separately and depreciated over their own useful lives.

Depreciation is computed according to the straight-line method over their estimated useful lives as follows:

- buildings: 10 to 30 years;
- other equipment: 5 to 20 years.

Land is not depreciated.

C. Impairment of intangible and tangible assets

The Company assesses at each closing date whether there is any indication of impairment loss of intangible and tangible assets. If such indications exist, an impairment test is performed to assess whether the carrying amount of the asset exceeds its present value, which is defined as the greater of its fair value less costs to sell and its value in use.

In assessing value in use, the estimated future cash flows are discounted to their present value as this would be done for an investment decision.

When the present amount of an asset is lower than its net carrying amount, an impairment loss is recognized in the income statement. When the present value exceeds the carrying amount, the previously recognized impairment is reversed to the income statement.

D. Equity investments

Equity investments are recognized at their initial amount on the entry date, with the exception of those subject to a revaluation as provided by Law 76-1232 of December 29, 1976. Acquisition costs that are not representative of market value are expensed.

When the carrying amount, determined using the criteria normally adopted for the measurement of equity investments (market multiples method based on the Air Liquide Group market valuation, estimated cash flow approach, and net asset value remeasured at fair value), is lower than the book value, an impairment loss is recognized for the difference.

E. Treasury shares

When the Company purchases its own shares, they are recognized at cost as treasury shares in other long-term investment securities. The gains or losses on disposals of treasury shares contribute to the net profit for the year.

However, shares allocated for the purpose of implementing plans for free grants of shares are reclassified to a "Short-term financial investments – Company treasury shares" caption at the balance sheet value on the date of allotment.

A provision is recorded over the rights vesting period to cover the future charge of employees and members of Executive Management of the Company relating to the remittance of current shares when the performance criteria can be determined with reliability. Conversely, the amount corresponding to the maximum performance level is presented in off-balance sheet commitments.

When the purchase cost of shares is higher than their valuation based on the average share price during the last month of the fiscal year, treasury shares earmarked for cancellation or allocated for the purpose of implementing plans for free grants of shares are not impaired.

3. Inventories and work-in-progress

Raw materials, supplies and goods are primarily measured at weighted average cost.

An impairment loss is recognized for inventories and work-in-progress when the estimated realizable amount is lower than cost.

4. Trade receivables and other operating assets

Trade receivables and other operating assets are measured at historical cost.

An impairment loss for doubtful receivables is recognized when it becomes probable that the amount due will not be collected and the loss can be reasonably estimated.

5. Foreign currency transactions

Foreign currency transactions are translated at the exchange rate prevailing on the transaction date.

At year-end, the difference arising from the translation of receivables and payables denominated in a foreign currency, are recognized in suspense accounts in assets and liabilities ("Unrealized foreign currency gains or losses").

Where applicable, unrealized foreign exchange losses associated with non-hedged transactions are subject to a contingency provision.

6. Provisions

Provisions are recognized when:

- the Company has a present obligation as a result of a past event or an ongoing one;
- it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation;
- a reliable estimate can be made of the amount of the obligation.

7. Financial instruments

Since January 1, 2017, L'Air Liquide S.A. has applied the ANC regulation No. 2015-05 of July 2, 2015 related to financial forward and hedging instruments.

In accordance with its risk management policy, L'Air Liquide S.A. enters into forward currency purchases or sales in order to hedge the exposure to foreign exchange risk associated with transactions carried out in foreign currencies.

By symmetry, the foreign exchange gains or losses on forward currency purchases or sales is presented at the same time and in the same income statement caption as the hedged item.

Likewise, the unrealized gain from the hedging is presented within the unrealized foreign currency gains or losses statement caption, to offset the exchange differentials related to the revaluation of underlying receivables and debts. When the forward currency purchases or sales, hedge future transactions not yet recorded on the balance sheet, the fair value of these instruments represents an off balance sheet commitment.

Where applicable, when the financial instruments used do not constitute hedging transactions ("isolated open position"), the losses resulting from their year-end market value are provided for in the income statement. In accordance with the principle of prudence, unrealized gains are not recognized in the income statement.

8. Post-employment benefits

The Company applies ANC recommendation 2013-02 related to the recognition and measurement of retirement benefits and similar obligations.

The Company provides its employees with various pension plans, termination benefits, jubilees (awards based on years of service) and other post-employment benefits for both active employees and retirees. These benefits are covered in two ways:

- by so-called defined contribution plans;
- by so-called defined benefit plans.

The Company grants both defined benefit and defined contribution plans.

Defined contribution plans are plans under which the employer's sole obligation is to pay regular contributions. The employer does not grant any guarantee on the future level of benefits paid to the employee or retiree ("means-based obligation"). The annual pension expense is equal to the contribution paid during the fiscal year which relieves the employer from any further obligation.

Defined benefit plans are those by which the employer guarantees the future level of benefits defined in the agreement, most often depending on the employee's salary and seniority ("result-based obligation"). Defined benefit plans can be:

- either financed by contributions to a fund specialized in managing the contributions paid;
- or managed internally.

In the case of defined benefit plans, retirement and similar obligations are measured by independent actuaries, according to the projected unit credit method. The actuarial calculations mainly take into account the following assumptions: salary increases, employee turnover, retirement date, mortality, inflation and appropriate discount rates.

Actuarial gains and losses exceeding the greater of 10% of the obligations or 10% of the fair value of plan assets at the beginning of the reporting period are amortized over the expected average working lives of the plan participants.

In accordance with the option offered by ANC recommendation 2013-02, the Company maintained its previous practices: obligations related to retirement termination payments and jubilees are provided whereas other retirement obligations related to defined benefit plans are not provided but are disclosed in the notes.

9. Revenue recognition

Revenue from the sale of goods is recognized when the risks and rewards of ownership have been transferred to the buyer.

Revenue associated with delivery of services is recognized depending on the stage of completion of the transaction at the balance sheet date, when this can be reliably measured.

10. Tax consolidation

L'Air Liquide S.A. has set up a tax consolidation group with the French subsidiaries in which it holds a direct or indirect interest exceeding 95%, as defined by article 223-A of the French General Tax Code.

Each company calculates its tax provision as if it was taxed separately. L'Air Liquide S.A., as head of the tax consolidation group, recognizes as an expense the tax corresponding to its own profits and recognizes in a balance sheet current tax account the impact of restatements and eliminations when determining taxable profit as a whole and the tax deferrals of subsidiaries with losses. It is booked in exceptional income and expenses according to the Opinion 2005-G of the emergency committee of the C.N.C.

11. Research and Development expenditures

Development costs shall be recognized as assets if and only if the Company can demonstrate all of the following:

- the project is clearly identified and the related costs are individualized and reliably monitored;
- the technical and industrial feasibility of the project is demonstrated;
- there is a clear intention to complete the project and use or sell the products arising from it;
- it is probable that the project will generate future economic benefits for the Company.

When these conditions are not satisfied, the work carried out does not systematically result in the completion of an intangible asset that will be available for use or sale, development costs generated are recognized as an expense when incurred.

ADDITIONAL NOTES ON THE BALANCE SHEET AND INCOME STATEMENT

1. Significant events

In 2018 and 2019, there were no significant events during the fiscal year.

2. Revenue breakdown by geographical area

(in millions of euros)	2018	2019
France	76.6	74.5
Abroad	33.7	42.9
REVENUE	**110.3**	**117.4**

By the nature of its activities, the revenue of L'Air Liquide S.A. mainly corresponds to services and pension expenses recharged to its subsidiaries (see note 16.A).

3. Royalties and other operating income

Other operating income mainly includes change in inventories of goods and services, production of assets capitalized, operating subsidies, operating expense reclassifications, as well as operating provision and impairment reversals.

4. Other operating expenses

Other operating expenses primarily consist of research and development costs and other external expenses such as subcontracting and maintenance costs, fees, travel expenses, telecommunication costs and rental expenses.

5. Depreciation, amortization and provision expenses

Depreciation, amortization and provision expenses break down as follows:

(in millions of euros)	2018	2019
Depreciation and amortization expenses	(15.6)	(15.7)
Provision expenses	(19.1)	(14.1)
DEPRECIATION, AMORTIZATION AND PROVISION EXPENSES	**(34.7)**	**(29.8)**

6. Financial income and expenses

Financial income from equity affiliates amounts to 374.4 million euros in 2019 (330.9 million euros in 2018).

Interests, similar income and expenses break down as follows:

(in millions of euros)	2018	2019
Revenues from long-term loans and other financial revenues	11.3	24.6
Other interest and similar income	(23.9)	(15.9)
INTERESTS, SIMILAR INCOME AND EXPENSES	**(12.6)**	**8.7**

Other financial income and expenses break down as follows:

(in millions of euros)	2018	2019
Other financial expenses, impairment and provisions net of reversals	(12.2)	0.8
Foreign exchange gains / losses (net)	0.1	0.2
OTHER FINANCIAL INCOME AND EXPENSES	**(12.1)**	**1.0**

7. Exceptional income and expenses

As part of the tax consolidation of L'Air Liquide S.A. and its consolidated French subsidiaries, an exceptional income of 138.7 million euros was booked in 2019 (193.2 million euros in 2018). This income had no impact on the Group's consolidated tax position or the profit or loss of the relevant subsidiaries.

Exceptional income and expenses also include the impact of eliminations related to the tax consolidation regime in the amount of 9.7 million euros in 2019 and 13.6 million euros in 2018.

8. Corporate income tax

The total tax expense amounts to 12.5 million euros, compared to 27.5 million euros in 2018.

After allocation of add-backs, deductions and tax credits relating to profits, it breaks down as follows:

(in millions of euros)	2018	2019
Net profit from ordinary activities before tax	(25.7)	(11.3)
Additional contributions on earnings [(a)]	(1.8)	(1.2)
TOTAL	**(27.5)**	**(12.5)**

(a) 3.3% social security contribution on earnings.

9. Intangible and tangible assets

Changes in gross value break down as follows:

(in millions of euros)	Gross value as of January 1, 2019	Additions	Disposals	Gross value as of December 31, 2019
Concessions, patents, licenses	107.6	1.8	(0.5)	108.9
Other intangible assets	175.7	5.7	(10.8)	170.6
INTANGIBLE ASSETS	**283.3**	**7.5**	**(11.3)**	**279.5**
Land and buildings	92.5	3.7	(1.4)	94.8
Plant, machinery and equipment	36.2	3.1	(1.4)	37.9
Other tangible assets	20.2	1.2	(0.4)	21.0
Tangible assets under construction and payments on account – tangible assets	6.7	0.5	-	7.2
TANGIBLE ASSETS	**155.6**	**8.5**	**(3.2)**	**160.9**
TOTAL	**438.9**	**16.0**	**(14.5)**	**440.4**

Changes in amortization, depreciation and impairment losses break down as follows:

(in millions of euros)	Amortization, depreciation, and impairment losses as of January 1, 2019	Amortization and depreciation	Decreases, disposals, scrappings	Amortization, depreciation and impairment losses as of December 31, 2019
Intangible assets	(243.6)	(9.8)	3.5	(249.9)
Tangible assets	(78.4)	(5.9)	2.7	(81.6)
TOTAL	**(322.0)**	**(15.7)**	**6.2**	**(331.5)**

10. Financial assets

Changes in gross value break down as follows:

(in millions of euros)	Gross value as of January 1, 2019	Increases	Decreases	Gross value as of December 31, 2019
Equity investments	12,453.6	40.4 [a]	-	12,494.0
Other long-term investment securities [b]	9.5	200.3	(200.7)	9.1 [d]
Long-term loans	1,153.1	1.5	(526.0) [c]	628.6
Other long-term financial assets	70.2	1.0	-	71.2 [e]
FINANCIAL ASSETS	**13,686.4**	**243.2**	**(726.7)**	**13,202.9**

(a) The increase in equity investments mainly corresponds to the capital increases of the subsidiaries Air Liquide Advanced Business and Air Liquide Investissements d'Avenir et de Démonstration for 30.0 and 10.0 million euros respectively.

(b) The change in other long-term investment securities mainly corresponds to:

- the acquisition and sale of Company treasury shares under the liquidity contract for 91.6 million euros and -92.0 million euros respectively;

- the acquisition of 953,000 Company treasury shares (for the purpose of cancellation) for 108.7 million euros;

- the cancellation of 953,000 Company treasury shares in the amount of -108.7 million euros.

(c) The decrease in long-term loans mainly corresponds to the early repayment of the loan to Air Liquide Finance for 525.0 million euros on December 19, 2019.

At the 2019 year-end:

(d) The "Other long-term investment securities" caption includes 5,000 shares held under the liquidity contract in an amount of 0.6 million euros;

(e) The "Other long-term investments" caption mainly includes the receivable linked to the refund claim on the equalization charge paid for the years 2000 to 2004 for 41.4 million euros and the interest on arrears for 29.2 million euros. In connection with the litigation concerning the reimbursement of the receivable, the Administrative Court of Montreuil partially sided with L'Air Liquide S.A. on July 21, 2014. Following this decision, L'Air Liquide S.A. received 30.3 million euros in principal and 15.0 million euros in interest on arrears. On September 19, 2014, the Company appealed the decision of the Administrative Court of Montreuil regarding the recovery of the balance. The appeal decision had not been rendered as of the period-end date.

11. Impairment, allowances and provisions

A. Impairment and allowances

Impairment and allowances are recognized when the asset's carrying amount is lower than its entry value.

They break down as follows:

(in millions of euros)	2018	Charges	Reversals	2019
Intangible and tangible assets	(4.3)	-	-	(4.3)
Equity investments	(91.2)	(7.8)	10.7	(88.3)
Other long-term investment securities	(8.3)	-	-	(8.3)
Inventories and work-in-progress	(1.1)	(0.3)	0.4	(1.0)
Operating receivables	(5.9)	-	-	(5.9)
IMPAIRMENT AND ALLOWANCES	**(110.8)**	**(8.1)**	**11.1**	**(107.8)**
Whose charges and reversals:	*operating items*	*(0.3)*	*0.4*	
	financial items	*(7.8)*	*10.7*	
	exceptional items	-	-	

Charges and reversals mainly relate to impairment of equity investments.

B. Provisions

Provisions mainly include:

- foreign exchange provisions;
- third party or employee contingency and litigation provisions;
- jubilee awards and vested rights with regard to retirement termination payments (25.4 million euros in 2019 and 23.5 million euros in 2018).

(in millions of euros)		2018	Charges	Reversals	2019
Provisions for contingencies		10.8	2.4	(4.8)	8.4
Provisions for losses		44.4	11.7	(11.2)	44.9
PROVISIONS		**55.2**	**14.1**	**(16.0)**	**53.3**
Whose charges and reversals:	*operating items*		*13.8*	*(14.0)*	
	financial items		*-*	*-*	
	exceptional items		*0.3*	*(2.0)*	

Charges mainly relate to provisions for jubilee awards and vested rights with regard to retirement termination payments for 2.3 million euros, foreign exchange provision for 2.0 million euros and provisions to cover the future charge of the remittance of current shares for 9.4 million euros.

Reversals primarily stem from the cancellation of foreign exchange provisions for -2.7 million euros, the utilization of provisions for third party or employee contingency and litigation provisions for -2.1 million euros, and the remittance of current shares for -10.8 million euros.

12. Short-term financial investments

The item breaks down as follows:

(in millions of euros)	Gross value as of December 31, 2018	Gross value as of December 31, 2019
Company treasury shares	118.3	126.5
Other short-term financial investments	15.0	-
SHORT-TERM FINANCIAL INVESTMENTS	**133.3**	**126.5**

At the 2019 year-end, “Company treasury shares” consisted of 1,375,893 shares (1,234,488 shares in 2018) allocated to the implementation of performance shares plans to employees.

During the first 2019 half year, the Company bought 347,000 shares (in an amount of 39.5 million euros) allocated to the implementation of performance shares plans to employees.

13. Shareholders' equity

As of December 31, 2019, the share capital comprised 473,105,514 shares with a par value of 5.50 euros.

The portion of share capital arising from the special revaluation reserve totals 71.4 million euros.

(in millions of euros)	As of December 31, 2018 (before appropriation of earnings)	Appropriation of 2018 net profit	Capital increases	Capital decrease	Other changes	As of December 31, 2019 (before appropriation of earnings)
Share capital [b]	2,361.8	-	245.5	(5.2)	-	2,602.1
Additional paid-in capital [b]	2,884.5	-	(208.1)	(103.5)	-	2,572.9
Revaluation reserve	23.9	-	-	-	-	23.9
Reserves:						
■ Legal reserve	235.5	0.6	-	-	-	236.1
■ Tax-driven reserves	307.8	-	-	-	-	307.8
■ Translation reserve	7.7	-	-	-	-	7.7
■ Other reserves	73.0	-	-	-	-	73.0
Retained earnings [c]	6,207.7	(627.1)	-	-	7.2	5,587.8
Net profit for the year	544.8	(544.8)	-	-	567.7	567.7
Accelerated depreciation [d]	2.4	-	-	-	(0.7)	1.7
SHAREHOLDERS' EQUITY	**12,649.1**	**(1,171.3)** [a]	**37.4**	**(108.7)**	**574.2**	**11,980.7**

(a) Following the decision of the Combined Annual Shareholders' Meeting of May 7, 2019.
(b) The change in the Share capital and Additional paid-in capital results from the following transactions:
- capital decrease in the amount of -5.2 million euros by cancelling 953,000 treasury shares, as decided by the Board of Directors on May 7, 2019. The Additional paid-in capital was reduced by the amount of premiums related to these shares, i.e. -103.5 million euros;
- capital increase of 242.6 million euros, noted by the Chairman and Chief Executive Officer, as delegated by the Board of Directors on July 29, 2019, resulting from the granting of one free share for 10 existing shares (creation of 42,890,081 new shares) and one free share for 100 existing shares as part of a 10% bonus allotment (creation of 1,227,640 new shares) by deducting -242.6 million euros from "Additional paid-in-capital";
- capital increases of 2.9 million euros resulting from the exercise of 430,376 subscription options before the free share attribution and 86,983 subscription options after the free share attribution. The Additional paid-in capital was increased by the premiums related to these shares, i.e. 35.8 million euros.
The "Additional paid-in capital" caption was increased by the premiums related to these share capital increases, i.e. -1.3 million euros.
(c) The change in Retained earnings also includes the difference between the estimated loyalty dividend and the loyalty dividend actually paid and the cancellation of the dividend pertaining to treasury shares.
(d) The change in the Accelerated depreciation results from the reversal of accelerated depreciation in accordance with asset depreciation and amortization policies.

14. Debt maturity analysis

(in millions of euros)	December 31, 2019		
	Gross	≤ 1 year	> 1 year
Long-term loans	628.6	1.1	627.5
Other long-term investments	71.2	0.6	70.6
Operating receivables	531.8	467.4	64.4
Current account loans with subsidiaries [a]	855.2	855.2	-
ASSETS	**2,086.8**	**1,324.3**	**762.5**

(a) Current amount loans agreements are concluded for an indefinite period.

(in millions of euros)	December 31, 2019 Gross	≤ 1 year	> 1 to ≤ 5 years	> 5 years
Other bonds [(a)]	302.3	2.3	300.0	-
Bank borrowings	0.6	0.6	-	-
Other borrowings	252.7	1.8	0.6	250.3
Operating payables	642.1	577.7	64.4	-
Current account borrowings with subsidiaries [(b)]	1,508.3	1,508.3	-	-
DEBTS	**2,706.0**	**2,090.7**	**365.0**	**250.3**

(a) All new bond issues carried out by L'Air Liquide S.A., and constituting the outstanding bonds as of December 31, 2019, include a change of control clause.
(b) Current amount borrowings agreements are concluded for an indefinite period.

15. Financial instruments

Unsettled derivatives as of December 31, 2019 break down as follows:

(in millions of euros)	December 31, 2019 Carrying value	Fair value
Currency forwards		
■ Buy	47.2	(0.4)
■ Sell	172.5	(0.2)
FOREIGN EXCHANGE RISK		**(0.6)**

The fair value difference represents the difference between the derivative valuation and the value of the contract determined at the closing year-end exchange rate.

All of these instruments are allocated to hedging. There is therefore no isolated open position whose change in fair value would have a direct impact on the income statement.

16. Retirement and similar plans

A. Group retirement benefit guarantee agreement

In France, Air Liquide grants additional benefits to retirees (3,689 retirees as of December 31, 2019) and to employees over 45, or with more than 20 years of service as of January 1, 1996 (one employee as of December 31, 2019). These benefits provide a supplemental retirement income based on final pay, which is paid in addition to other normal retirement benefits. This plan is closed to employees under the age 45, or with less than 20 years of service as of January 1, 1996. These plans are unfunded. The annual amount paid with regards to additional benefits cannot exceed originally 12% of total payroll or, in some case, 12% of pre-tax profits of companies involved. This 12% threshold will be proportionately reduced by comparing the number of plan beneficiaries for the year to the number of plan beneficiaries for the previous year. This additional benefit was funded subsequently to the article 50 of the law of January 20, 2014 securing the future and fairness of pensions plans.

The contributions amounted to 11.2 million euros in 2019 (12.2 million euros in 2018) after reinvoicing subsidiaries. Excluding the impact of timelines, and until the plan ends, the actuarial value of obligations vis-à-vis retirees and those eligible as of December 31, 2019 amounts to 626.2 million euros.

Based on the assumptions used for the valuation of the retirement obligations, an estimated 450.9 million euros will be recharged to the subsidiaries of L'Air Liquide S.A. as and when benefits are paid to the retirees.

B. Externally funded plan

L'Air Liquide S.A. grants to employees not covered by the preceding plan (961 employees as of December 31, 2019) and with at least one half-year of service benefit from an externally funded defined contribution plan. Contributions to this plan are jointly paid by the employer and employee. For 2019, employer contributions amounted to 7.9 million euros (5.8 million euros in 2018).

C. Retirement termination payments and jubilees

The corresponding obligations are provided for in the amount of 24.5 million euros (net of tax) and 0.9 million euros, respectively.

D. Calculation of actuarial assumptions and methods

The calculations with respect to the Group's retirement benefit guarantee agreement, retirement termination payments and jubilees are performed by independent actuaries using the projected unit credit method.

Actuarial gains and losses exceeding the greater of 10% of the obligations related to retirement termination payments and unrecognized past service costs are amortized over the expected average working lives of the plan participants. As of December 31, 2019, the amounts stand at 18.5 million euros (18.7 million euros in 2018).

The actuarial assumptions (turnover, mortality, retirement age, salary increase) vary according to demographic and economic conditions.

The discount rates used to determine the present value of obligations are based on Government bonds or High-quality Corporate bonds, with the same duration as the obligations at the valuation date (0.85% as of December 31, 2019).

E. Change in retirement obligations and similar benefits

Company obligations with respect to pension plans and similar benefits break down as follows:

(in millions of euros)	Defined benefit plan	Retirement indemnities	Jubilees	Total
OBLIGATIONS AS OF JANUARY 1, 2019	**611.2**	**53.2**	**0.9**	**665.3**
Service cost	0.8	2.5	-	3.3
Interest cost	6.5	0.5	-	7.0
Benefit payments	(39.9)	-	-	(39.9)
Actuarial (gains) / losses	47.6	0.6	-	48.2
OBLIGATIONS AS OF DECEMBER 31, 2019 [(a)]	**626.2**	**56.8**	**0.9**	**683.9**

(a) Commitments as of December 31, 2019 are covered by assets amounting to 10.8 million euros.

17. Accrued income and accrued expenses

(in millions of euros)	December 31, 2019
Accrued income	
Other long-term financial assets	71.6
Operating receivables	178.5
ACCRUED INCOME	**250.1**
Accrued expenses	
Other bonds	2.3
Other borrowings	1.9
Operating payables	273.0
ACCRUED EXPENSES	**277.2**

18. Deferred taxes

Deferred taxes arise from timing differences between the tax regime and the accounting treatment of income and expenses. According to the nature of the differences, these deferred taxes will increase or decrease the future tax expense and are not recorded pursuant to the provisions of the chart of accounts.

Deferred taxes as of December 31, 2019 are estimated as follows:

(in millions of euros)	December 31, 2018	December 31, 2019
Deferred tax assets (decrease in future tax expense)	3.5	3.8
Deferred tax liabilities (increase in future tax expense)	-	-

The deferred taxes were calculated taking into account the 3.3% social security contribution on earnings i.e. a general rate of 32.02%.

OTHER INFORMATIONS

19. Items concerning related undertakings

The Company conducted related party transactions with its wholly owned subsidiaries or subsidiaries that were directly or indirectly controlled.

	December 31, 2019	
(in millions of euros)	Gross	Including related undertakings
Balance sheet		
Long-term loans	628.6	626.0
Other long-term financial assets	71.2	-
Operating receivables	531.8	484.2
Current account loans with subsidiaries	855.2	855.2
Other borrowings	252.7	251.9
Operating payables	642.1	173.3
Current account borrowings with subsidiaries	1,508.3	1,508.3
Income statement		
Financial income from equity affiliates	374.4	374.4
Interests, similar income and expenses	8.7	16.9
Other financial income and expenses	1.0	3.3

20. Off-balance sheet commitments

Off-balance sheet commitments break down as follows:

(in millions of euros)	December 31, 2018	December 31, 2019
Commitments given		
Endorsements, securities and guarantees given [(a)]	994.4	1,164.6
To Air Liquide Finance and Air Liquide US LLC on transactions performed [(b)]	12,282.7	11,703.4
Firm purchase orders for fixed assets	0.8	1.0
COMMITMENTS GIVEN	**13,277.9**	**12,869.0**

(a) *Endorsements, securities and guarantees given mainly consist of the guarantees given in favor of holders of the Senior Notes issued by Airgas (550 million US dollars as of December 31, 2019 versus 825 as of December 31, 2018), the joint and several liability guarantee linked to the European program of non-recourse assignments of trade receivable in an amount of 367 million euros and the joint and several liability guarantee of the subsidiary Air Liquide France Industrie in connection with the energy purchases.*

(b) *L'Air Liquide S.A. holds 100% of the French subsidiary Air Liquide Finance, which manages the Group's cash position and interest rate risk, as well as financing. In addition, Air Liquide Finance holds 100% of Air Liquide US LLC, in order to borrow on the US market. Insofar as the sole activity of Air Liquide Finance and Air Liquide US LLC is the Group's financing, L'Air Liquide S.A. is required to guarantee any issuances performed by these companies.*

21. Remuneration paid to members of Executive Management and the Board of Directors

The remuneration (short-term benefits: fixed and variable portions, benefits in kind, retirement termination payments, Directors' fees) paid by the Company to members of Executive Management and the Board of Directors respectively, amounts to:

(in millions of euros)	2019
Remuneration of the Board of Directors	0.9
Remuneration of Executive Management	3.3
TOTAL	**4.2**

During 2019, the Company paid to third parties the total amount of 227,549 euros for Benoît Potier: with respect to supplementary defined contribution pension plans: 9,689 euros and with respect to the collective death and disability benefits plan: 3,307 euros. In terms of the collective life insurance contract: the amount paid in 2019 in respect of 2018 is 214,553 euros and the amount to be paid in 2020 in respect of 2019 is 218,830 euros.

22. Average number of employees

The average number of employees is:

	2018	2019
Engineers and executives	816	817
Supervisory staff	211	201
Employees	5	3
Laborers	14	11
TOTAL	**1,046**	**1,032**

23. Subsidiaries and affiliates information

(in thousands of euros)	Share capital as of December 31, 2019	Other equity as of December 31, 2019	% share holding	Carrying amount of shares held after the revaluations of 1976, 1978 and 1979			Loans and advances granted by the Company and not repaid	Guarantees and endorsements given by the Company	2018 net revenue [(a)]	Net profit (or loss) for 2018 [(a)]	Dividends collected by the Company during 2019
				Gross	Net	Net					
A. Detailed information on affiliates whose carrying amounts exceed 1% of the capital of the Company required to publish its financial statements											
a) Companies operating in France											
Air Liquide International [(b)] – 75, quai d'Orsay – 75007 Paris	3,151,080	3,774,373	100.00%	9,333,923	9,333,923	21,186	567,177		203	326,586	
Air Liquide France Industrie – 6, rue Cognacq-Jay – 75007 Paris	72,268	514,276	100.00%	285,126	285,126				1,102,884	106,386	100,018
Air Liquide Finance – 6, rue Cognacq-Jay – 75007 Paris	102,000	8,116	100.00%	72,901	72,901		652,576	11,592,096		118,949	88,920
Air Liquide Santé (International) – 75, quai d'Orsay – 75007 Paris	38,477	350,783	100.00%	331,728	331,728	6,301	10			83,755	80,007
Chemoxal [(b)] – 75, quai d'Orsay – 75007 Paris	30,036	4,200	100.00%	30,326	30,326					128	
Air Liquide Investissements d'Avenir et de Démonstration – 6, rue Cognacq-Jay – 75007 Paris	85,050	(16,175)	100.00%	85,050	84,464					(7,501)	
Air Liquide Advanced Business – 6, rue Cognacq-Jay – 75007 Paris	136,450	(47,737)	100.00%	136,450	100,705		8,349		18,706	(12,220)	
b) Companies operating outside of France											
Air Liquide Industriegase GmbH & Co. KG – Hans-Günther-Sohl-Strasse 5 – 40235 Düsseldorf – Germany	10	2,920,135	100.00%	2,106,474	2,106,474				56,512	132,603	90,000
B. General information on other subsidiaries and affiliates											
a) French companies (together)				106,815	55,553	16,068	3,886				9,539
b) Foreign companies (together)				3,973	3,216						5,862

(a) Most recent year-end accounts approved by the competent decision-making bodies.
(b) Holding company.

Statutory Auditors' Report on the annual financial statements

This is a translation into English of the statutory auditors' report on the financial statements of the Company issued in French and it is provided solely for the convenience of English-speaking users. This statutory auditors' report includes information required by European regulation and French law, such as information about the appointment of the statutory auditors or verification of the Management Report and other documents provided to shareholders. This report should be read in conjunction with and construed in accordance with French law and professional auditing standards applicable in France.

To the Annual General Meeting of L'Air Liquide,

OPINION

In compliance with the engagement entrusted to us by your Annual General Meeting, we have audited the accompanying financial statements of L'Air Liquide for the year ended December 31, 2019.

In our opinion, the financial statements give a true and fair view of the assets and liabilities and of the financial position of the Company as at December 31, 2019 and of the results of its operations for the year then ended in accordance with French accounting principles.

The audit opinion expressed above is consistent with our report to the Audit and Accounts 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 Financial Statements section of our report.

Independence

We conducted our audit engagement in compliance with independence rules applicable to us, for the period from January 1, 2019 to the date of our report and specifically we did not provide any prohibited non-audit services referred to in Article 5 (1) of Regulation (EU) No. 537/2014 or in the French Code of ethics (Code de déontologie) for statutory auditors.

JUSTIFICATION OF ASSESSMENTS - KEY AUDIT MATTERS

In accordance with the requirements of Articles L. 823-9 and R. 823-7 of the French Commercial Code (Code de commerce) relating to the justification of our assessments, we inform you of the key audit matters relating to risks of material misstatement that, in our professional judgment, were of most significance in our audit of the 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 financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on specific items of the financial statements.

Equity investments measurement

Identified risk

As at December 31, 2019, the net book value of the equity investments amounts to €12,406 million and represents 84.2% of the total balance sheet. Equity investments are recognized at their initial consideration, excluding acquisition costs and after considering legal reevaluation if any.

As disclosed in note "2.D. Accounting policies – Equity investments", when the carrying amount (determined applying the market multiples method based on the Group market capitalization or the estimated cash flows method or the method of net asset value re-measured at fair value) is lower than the net book value of the equity investment, an impairment loss is recognized for the difference

The selection of the method used to determine the carrying amount requires significant Management judgment.

Due to the significant equity investments balance and the impact of the method retained to determine the carrying amount, we have considered that the measurement of the equity investments as a key audit matter.

Our audit response

Our procedures consisted in:

- assessing, based on information provided by Management, valuation methods applied by the Company
- assessing assumptions used to determine the re-measured net asset
- assessing the methodology and the results of the tests performed based on the Group market capitalization
- verifying the information included in notes "2.D. Accounting policies – Equity investments", "10. Financial assets" and "11. Impairment, allowances and provisions" to the statutory financial statements.

SPECIFIC VERIFICATIONS

We have also performed, in accordance with professional standards applicable in France, the specific verifications required by laws and regulations.

Information given in the Management Report and in other documents with respect to the financial position and the financial statements provided to the Shareholders

We have no matters to report as to the fair presentation and the consistency with the financial statements of the information given in the Management report of the Board of Directors and in the other documents with respect to the financial position and the financial statements provided to the Shareholders.

We attest the fair presentation and the consistency with the financial statements of the information relating to the payment deadlines mentioned in article D.441-4 of the French Commercial Code.

Report on corporate governance

We attest that the Board of Directors' report on corporate governance sets out the information required by articles L. 225-37-3 and L. 225-37-4 of the French Commercial Code.

Concerning the information given in accordance with the requirements of article L. 225-37-3 of the French Commercial Code (Code de commerce) relating to remunerations and benefits paid or awarded to the directors and any other commitments made in their favor, we have verified its consistency with the financial statements, or with the underlying information used to prepare these financial statements and, where applicable, with the information obtained by your company from controlled companies included in the consolidation perimeter. Based on these procedures, we attest the accuracy and fair presentation of this information.

With respect to the information relating to items that your company considered likely to have an impact in the event of a public purchase offer or exchange, provided pursuant to article L. 225-37-5 of the French Commercial Code, we have agreed these to the source documents communicated to us. Based on our work, we have no observations to make on this information.

Other information

In accordance with French law, we have verified that the required information concerning the identity of the shareholders and holders of the voting rights has been properly disclosed in the Management Report.

REPORT ON OTHER LEGAL AND REGULATORY REQUIREMENTS

Appointment of the Statutory Auditors

We were appointed as statutory auditors of L'Air Liquide by the Annual General Meeting held on May 12, 2016 for PricewaterhouseCoopers Audit and on May 5, 2010 for ERNST & YOUNG et Autres.

As at December 31, 2019, PricewaterhouseCoopers Audit was in its fourth year of uninterrupted engagement and ERNST & YOUNG et Autres in its tenth year of uninterrupted engagement. Previously, ERNST & YOUNG Audit, member of the EY network, was statutory auditor of L'Air Liquide from 1983 to 2009.

RESPONSIBILITIES OF MANAGEMENT AND THOSE CHARGED WITH GOVERNANCE FOR THE FINANCIAL STATEMENTS

Management is responsible for the preparation and fair presentation of the financial statements in accordance with French accounting principles and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless it is expected to liquidate the Company or to cease operations.

The Audit and Accounts committee is responsible for monitoring the financial reporting process and the effectiveness of internal control and risks management systems and where applicable, its internal audit, regarding the accounting and financial reporting procedures.

The financial statements were approved by the Board of Directors.

STATUTORY AUDITORS' RESPONSIBILITIES FOR THE AUDIT OF THE FINANCIAL STATEMENTS

Objectives and audit approach

Our role is to issue a report on the financial statements. Our objective is to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with professional standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these 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 the Company.

As part of an audit conducted in accordance with professional standards applicable in France, the statutory auditor exercises professional judgment throughout the audit and furthermore:

- identifies and assesses the risks of material misstatement of the 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 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 financial statements or, if such disclosures are not provided or inadequate, to modify the opinion expressed therein
- evaluates the overall presentation of the financial statements and assesses whether these statements represent the underlying transactions and events in a manner that achieves fair presentation.

REPORT TO THE AUDIT AND ACCOUNTS COMMITTEE

We submit to the Audit and Accounts Committee a report 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 relating to the accounting and financial reporting procedures that we have identified.

Our report to the Audit and Accounts Committee includes the risks of material misstatement that, in our professional judgment, were of most significance in the audit of the 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 and Accounts Committee with the declaration provided for in Article 6 of Regulation (EU) No. 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 and Accounts Committee the risks that may reasonably be thought to bear on our independence, and the related safeguards.

Neuilly-sur-Seine and Paris-La Défense, February 21, 2020

The Statutory Auditors

French original signed by

PricewaterhouseCoopers Audit		ERNST & YOUNG et Autres	
Françoise Garnier	Séverine Scheer	Jeanne Boillet	François-Guillaume Postel

Five-year summary of Company results

(Articles R. 225-83 and R. 225-102 of the French Commercial Code)

	2015	2016	2017	2018	2019
I – Share capital at the end of the year					
a) Share capital *(in euros)* (a) (b) (c)	1,892,896,506	2,138,816,686	2,356,186,525	2,361,828,887	2,602,080,327
b) Number of outstanding ordinary shares	344,163,001	388,875,761	428,397,550	429,423,434	473,105,514
c) Number of shares with loyalty dividend entitlement (d)	102,889,311	102,292,196	117,152,854	128,524,663	134,154,877
d) Convertible bonds					
II – Operations and results of the year *(in millions of euros)*					
a) Revenue	176.3	154.5	139.3	110.3	117.4
b) Net profit before tax, employee profit-sharing, depreciation, amortization and provisions	2,455.5	577.9	1,276.8	624.0	622.4
c) Corporate income tax	59.0	53.8	70.8	27.5	12.5
d) Employee profit-sharing for the year	2.2	2.6	2.6	2.6	2.7
e) Net profit after tax, employee profit-sharing, depreciation, amortization and provisions	2,317.2	482.4	1,149.8	544.8	567.7
f) Distributed profit	921.6	1,037.7	1,165.7	1,171.4	1,313.6
III – Per share data *(in euros)*					
a) Net profit after tax, employee profit-sharing, but before depreciation, amortization and provisions					
■ over the number of ordinary shares outstanding	6.96	1.34	2.88	1.38	1.28
■ over the adjusted number of shares (e)	5.59	1.19	2.62	1.26	1.29
b) Net profit after tax, employee profit-sharing, depreciation, amortization and provisions					
■ over the number of ordinary shares outstanding	6.73	1.24	2.68	1.27	1.20
■ over the adjusted number of shares (e)	5.41	1.10	2.44	1.16	1.20
c) Dividend allocated to each share					
■ over the number of ordinary shares outstanding	2.60	2.60	2.65	2.65	2.70
■ over the adjusted number of shares (f)	2.08	2.14	2.40	2.40	2.70
d) Loyalty dividend					
■ over the number of ordinary shares outstanding	0.26	0.26	0.26	0.26	0.27
■ over the adjusted number of shares (f)	0.21	0.21	0.24	0.24	0.27
IV – Employees working in France					
a) Average number of employees during the year	1,108	1,107	1,057	1,046	1,032
b) Total payroll for the year (in millions of euros)	147.0	149.9	151.9	160.4	156.6
c) Amounts paid with respect to employee benefits during the year (social security, staff benefits, etc.) *(in millions of euros)*	70.0	68.9	69.8	75.2	82.5

(a) Using the authorization granted by the 15th resolution of the Combined Annual Shareholders' Meeting of May 7, 2014, the 12th resolution of the Combined Annual Shareholders' Meeting of May 5, 2017 and the 15th resolution of the Combined Annual Shareholders' Meeting of May 16, 2018, the Board of Directors made the following decisions:

- in its meeting of May 6, 2015, capital decrease by cancellation of 1,500,000 treasury shares;
- in its meeting of May 3, 2017, capital decrease by cancellation of 1,100,000 treasury shares;
- in its meeting of May 16, 2018, capital decrease by cancellation of 654,000 treasury shares;
- in its meeting of May 7, 2019, capital decrease by cancellation of 953,000 treasury shares.

(b) Using the authorization granted by the 17th resolution of the Combined Annual Shareholders' Meeting of May 12, 2016, the Board of Directors decided in its meeting of July 27, 2017, the granting of one free share for ten existing shares (ranking for dividends as of January 1, 2017), and the granting of a 10% bonus for shares held in registered form from December 31, 2014 to September 29, 2017 (ranking for dividends as of January 1, 2017).

Using the authorization granted by the 16th resolution of the Combined Annual Shareholders' Meeting of May 16, 2018, the Board of Directors decided in its meeting of July 29, 2019, the granting of one free share for ten existing shares (ranking for dividends as of January 1, 2019), and the granting of a 10% bonus for shares held in registered form from December 31, 2016 to October 8, 2019 (ranking for dividends as of January 1, 2019).

(c) Using the authorizations granted by the resolutions of Combined Annual Shareholders' Meetings of May 5, 2010, May 7, 2013, and May 12, 2016:

– the Board of Directors noted in its meeting of February 13, 2019 the issuance of 15,413 shares (ranking for dividends as of January 1, 2019) arising from:
- the exercise of 2,736 options subscribed at the price of 63.18 euros;
- the exercise of 6,196 options subscribed at the price of 77.36 euros;
- the exercise of 3,747 options subscribed at the price of 81.68 euros;
- the exercise of 2,734 options subscribed at the price of 85.66 euros;

– the Board of Directors noted in its meeting of July 29, 2019 the issuance of 414,963 shares (ranking for dividends as of January 1, 2019) arising from:
- the exercise of 172,680 options subscribed at the price of 63.18 euros;
- the exercise of 57,093 options subscribed at the price of 77.36 euros;
- the exercise of 71,425 options subscribed at the price of 81.68 euros;
- the exercise of 106,506 options subscribed at the price of 85.66 euros;
- the exercise of 6,528 options subscribed at the price of 92.73 euros;
- the exercise of 731 options subscribed at the price of 84.34 euros;

– the Board of Directors noted in its meeting of February 10, 2020 the issuance of 115,253 shares (ranking for dividends as of January 1, 2019) arising from:
- the exercise of 24,848 options subscribed at the price of 57.28 euros;
- the exercise of 10,126 options subscribed at the price of 70.14 euros;
- the exercise of 27,815 options subscribed at the price of 74.06 euros;
- the exercise of 32,927 options subscribed at the price of 77.67 euros;
- the exercise of 19,537 options subscribed at the price of 84.08 euros.

– Using the authorization granted by the 16th resolution of the Combined Annual Shareholders' Meeting of May 6, 2015, pursuant to the delegation granted by the Board of Directors in its meetings of July 29, 2015 and October 23, 2015, and confirmed on February 15, 2016, the Chairman and CEO noted on May 10, 2016 the employee-reserved issuance of 999,143 new shares:
- 931,900 new shares subscribed in cash at a price of 77.18 euros per share, (ranking for dividends as of January 1, 2016), of which 2,728 shares were subscribed as part of the contribution paid by the Company (one bonus share for four shares subscribed with a maximum of three bonus shares per employee);
- 67,243 new shares subscribed in cash at a price of 82.00 euros per share, (ranking for dividends as of January 1, 2016).

– Using the authorization granted by the 12th resolution of the Combined Annual Shareholders' Meeting of May 6, 2015, the Chairman and CEO, pursuant to the delegation granted by the Board of Directors in its meetings of July 29, 2016, noted on October 11, 2016, the issuance of 43,202,209 new shares, with retention of the preferential subscription rights on the basis of one new share for eight existing shares, subscribed in cash, at a price of 76.00 euros per share.

– Using the authorization granted by the 15th resolution of the Combined Annual Shareholders' Meeting of May 3, 2017, pursuant to the delegation granted by the Board of Directors in its meetings of May 16, 2018 and confirmed on July 27, 2018, the Chairman and CEO noted on December 7, 2018 the employee-reserved issuance of 1,049,529 new shares:
- 934,697 new shares subscribed in cash at a price of 87.09 euros per share, (ranking for dividends as of January 1, 2018), of which 2,413 shares were subscribed as part of the contribution paid by the Company (one bonus share for four shares subscribed with a maximum of three bonus shares per employee);
- 114,832 new shares subscribed in cash at a price of 92.53 euros per share, (ranking for dividends as of January 1, 2018).

(d) Beginning December 31, 1995, shareholders holding their shares in registered form for at least two years at the period-end, and who will retain these shares in this form until the dividend payment date, will receive a dividend with a 10% bonus compared to the dividend paid to other shares. The difference between the loyalty dividend calculated on the number of shares outstanding as of the period-end and the loyalty dividend actually paid shall be allocated to retaining earnings.

(e) Adjusted to take into account, in the weighted average, the capital increases performed via cash subscriptions and treasury shares.

(f) Adjusted to account for share capital movements.

5

ENVIRONMENTAL AND SOCIETAL REPORTING

INTRODUCTION

Air Liquide's ambition is to be an industry leader, deliver long-term performance and contribute to greater sustainability.

As part of its business strategy, the Group has set the following sustainable development objectives:

- preventing global warming and improving air quality;
- to strengthen dialog with all its stakeholders.

Chapter 1 of this Universal Registration Document sets out the Group's integrated strategy and its financial, environmental, and societal performance.

Chapter 2 sets out the risk factors and the control environment. In particular, it includes the environmental and societal risks as well as the Air Liquide Vigilance Plan.

Chapter 5 presents the Group's environmental and societal achievements, coupled with the related reporting. These achievements are monitored using key indicators which indicate their change.

Just like the Financial Report, this Environmental and Societal Reporting is reviewed each year by an independent verifier. Audits by independent verifiers conducted in 2019 covered 30% of the workforce and 20% of the Group's environmental footprint [(a)].

For further information, the Group's website has a section dedicated to Sustainable Development. Visit www.airliquide.com.

1. Extra-financial Performance Declaration and Duty of Vigilance

1.1. METHODOLOGY FOR IDENTIFYING RISKS IDENTIFIED IN THE CONTEXT OF THE EXTRA-FINANCIAL PERFORMANCE DECLARATION

As part of the Extra-financial Performance Declaration, the main risks and challenges have been identified by the Sustainable Development Department in collaboration with the Legal, Financial, Human Resources and Risk Departments. They appear in the Group's overall risk mapping and have been reviewed by the Board of Directors.

Eight risks have thus been identified, four of which are considered as material within the meaning of Prospectus 3 regulation. These risks are classified according to the categories defined by law: environment, social and societal, human rights and the fight against corruption.

The associated material risks and management measures (policies and action plans) are described in Chapter 2 of the Universal Registration Document, page 85.

1.2. METHODOLOGY FOR IDENTIFYING RISKS IDENTIFIED IN THE CONTEXT OF THE DUTY OF VIGILANCE

The risks identified as part of the Vigilance Plan differ in part from the EFPD risks but are based on the same methodology, while taking into account the criteria specific to this regulation.

The mappings thus carried out are complementary and very broadly overlap with certain risks that remain specific to one or other of the regulations. The risks taken into account in the Vigilance Plan as well as the methodology applied to their identification and assessment are described in Chapter 2 on page 101.

(a) Details about the sites audited in 2019 are given in the Independent verifier's report page 319.

1.3. RISK MATCHING TABLE TAKEN INTO ACCOUNT IN THE CONTEXT OF THE EFPD AND THE DUTY OF VIGILANCE

			Location of key elements required by the regulations in the URD		
Category	**Main risks identified**	**Regulations**	**Description of risk**	**Policy, action and results**	**2019 Key Performance Indicators**
Environment	**Greenhouse gas emissions (GHG)***	EFPD and DV	Chapter 2, Environmental and societal risks p. 95	Chapter 1 – 5.2 Climate Objectives: 2019 Achievements p. 63 Chapter 5 – Environmental achievements – 2. GHG emissions p. 291	Carbon intensity p. 64
	Resource management	EFPD and DV	Chapter 2, Environmental and societal risks p. 95	Chapter 1 – 5.2 Climate Objectives: 2019 Achievements p. 63 Chapter 5 – Environmental achievements – 1. Energy p. 290 – 3. Water p. 292	Water consumption p. 292
	Discharges into air and water	EFPD and DV	Chapter 2, Environmental and societal risks p. 95	Chapter 5 – Annual reporting – 2. Environmental indicators p. 312	Discharges into air and water p. 314
	Natural disasters	EFPD	Chapter 2, Environmental and societal risks p. 95	Chapter 5 – Environmental achievements – 3. Water p. 292 (exposure to water stress)	% of Air Liquide sites located in water stress zones p. 292
Societal	**Health and safety of individuals***	EFPD and DV	Chapter 2, Human Resource management risks p. 89 and Industrial risks p. 87	Chapter 1 – 1.1 Safety – p. 19 Chapter 1 – Environmental and Societal Performance – 5.1 Safety: a fundamental value p. 62 Chapter 5 – Annual reporting – 1. Safety indicators p. 311	Lost-time accident frequency rate of Group employees p. 311
Human Rights	**Discrimination***	EFPD and DV	Chapter 2, Environmental and societal risks p. 95	Chapter 1 – Environmental and Societal Performance – 5.3 Achievement in dialog with stakeholders p. 69 Chapter 5 – Societal achievements – 1. Employees p. 297	% of women among Group managers and professionals p. 69 % of young graduates among manager and professional recruitments p. 69
Combatting corruption and tax evasion	Anti-Corruption	EFPD	Chapter 2, Regulatory and legal risks p. 96	Chapter 1 – 1. Ethics p. 20 Chapter 2 – Vigilance Plan p. 101	Number and handling of whistle-blowing cases p. 104
	Tax risks*	EFPD	Chapter 2, Tax risks, p. 93	Chapter 2, Tax risks, p. 93	Group tax rate p. 227

* *Considered as material as defined in the Prospectus 3 regulation.*

ENVIRONMENTAL ACHIEVEMENTS

1. Energy

GROUP ELECTRICITY PROCUREMENT

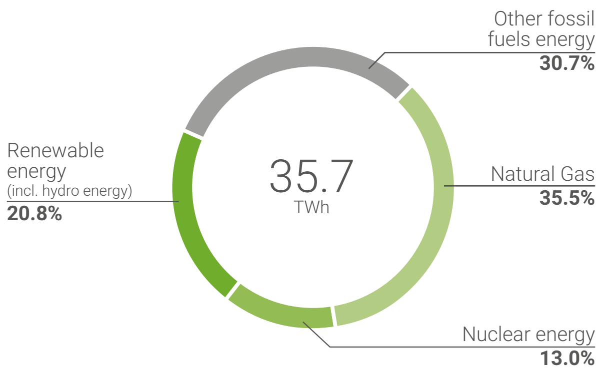
69%
The percentage of electricity consumed by the Group which is low-carbon or renewable.

The role of energy procurement is essential for Air Liquide, in particular for its impact on the Group's indirect greenhouse gas emissions (Scope 2). The Group's energy procurement policy favors the purchase of electricity from suppliers who have made the choice to produce low-carbon solutions. Each time an electricity supply contract is up for renewal and for each new contract, Air Liquide always takes into account the suppliers' primary energy mix to assess and select its electricity suppliers. In addition, Air Liquide is actively pursuing its transition to a lower-carbon supply of electricity, following the signing of a major renewable wind electricity purchase contract in the United States in 2018.

In 2019, calls for tenders in other geographical areas (particularly in Europe for large volumes) were launched in order to continue increasing the share of renewable electricity purchases in line with the stated Climate Objectives.

By taking into account the various types of primary energy used to produce electricity in the countries where Air Liquide is present, it is then possible to calculate a global breakdown by the type of electricity used. This calculation includes the electricity produced from natural gas by the Group's cogeneration units. In 2019, 20.8% of electricity consumed was from a renewable source and 35.5% from natural gas composed mainly of methane. This molecule contains one carbon atom and four hydrogen atoms, the combustion of which generates around 50% less CO_2 emissions than coal per kWh of electricity produced.

ELECTRIC ENERGY ORIGIN USED IN 2019



2. Greenhouse gas emissions (GHG)

2.1. THE VARIOUS SCOPES

Companies' greenhouse gas emissions are usually broken down into three "scopes", depending on their origin.

- **Scope 1** includes direct emissions generated by all possible emission sources owned or controlled by Air Liquide. This scope includes:
  - the Group's production units;
  - the transport of products to customers or patients.

  Of the direct emissions, 94% are related to the nature of the thermal energy used as a raw material by the Group's large hydrogen and carbon monoxide production units, and cogeneration units (for steam and electricity production). The vast majority of these units use natural gas.
- **Scope 2** corresponds to all indirect emissions related to the production of electricity or steam purchased outside the Group in the various countries where it operates. These emissions therefore have a close link with the carbon content of the electricity of countries where Air Liquide operates.
- **Scope 3** corresponds to other indirect emissions such as those generated by transportation, the product life cycle, goods and services, and energy.

2.2. GHG EMISSION QUOTA SYSTEMS

Air Liquide is present in a number of regions that have implemented, or are in the process of implementing, quota systems for greenhouse gas emissions. These regulatory developments are being followed by the Air Liquide teams in order to make sure the Group's activities comply with the obligations associated with these quota systems.

In Europe

In the European Union, the European ETS (Emission Trading Scheme) directive established a system of greenhouse gas emission quotas in 2005, in accordance with the Kyoto Protocol and the European Union's climate change objectives. After an initial phase from 2005 to 2007 and a second phase from 2008 to 2012, a third phase, covering the period from 2013 to 2020, has made it possible to expand the scope of industrial facilities subject to the ETS.

For Air Liquide, in 2019 this directive affected seven cogeneration sites in Germany, France, and the Netherlands, as well as all the Group's large hydrogen production sites in Europe. With regard to hydrogen production units, a portion of the CO_2 emission quotas is allocated for free according to a benchmark established for the top-performing European facilities. Air Liquide receives the remaining CO_2 quotas for the market or its customers in order to cover the hydrogen production site emissions not covered by the free allocations and for all emissions from cogeneration sites. Apart from the new installations (SMR-X, etc.) that have been launched, the scope remains unchanged for the fourth phase, which will begin in 2021 and end in 2030.

In China

To combat climate change, China has announced ambitious objectives for 2030, such as a 60% reduction in carbon intensity compared to 2005 and the achievement of a 20% non-fossil energy share of primary energy consumption. In 2013 and 2014, the Chinese government launched pilot ETS programs in seven regions (the provinces of Guangdong and Hubei, and the cities of Beijing, Tianjin, Shanghai, Chongqing and Shenzhen). These programs relate to four Group production sites. The quotas are initially free of charge and become increasingly expensive. The Chinese government announced the implementation of a mechanism for renewable energy consumption (renewable energy quota) at the end of 2019, stipulating that renewable energy consumption must be broken down by province. A corresponding exchange mechanism is currently in development and will be implemented from 2020. These renewable consumption quotas are implemented in order to support the development of renewable energy.

In Canada

In Canada, the federal government announced the provinces and territories that were aligned with the federal carbon tariff benchmarks. Three provinces, which achieved the federal benchmark, will continue implementing their current carbon tariff initiatives: Alberta, British Columbia and Quebec. Four provinces failed to achieve the federal benchmark: Manitoba, New Brunswick, Ontario and Saskatchewan. Because of this, Air Liquide Canada has chosen to participate voluntarily in the federal compensation system for its Ontario facilities.

The ETS currently only covers the electricity production sector. Other regions, such as Kazakhstan, Korea, and California, have also implemented a national emission quota exchange system. In 2018, a CO_2 taxation system was put in place in Singapore.

3. Water

For several years, Air Liquide has set up a working group to improve data collection and better guide water management on its production sites to reduce water consumption, particularly in water-stressed areas.

3.1. WATER CONSUMPTION

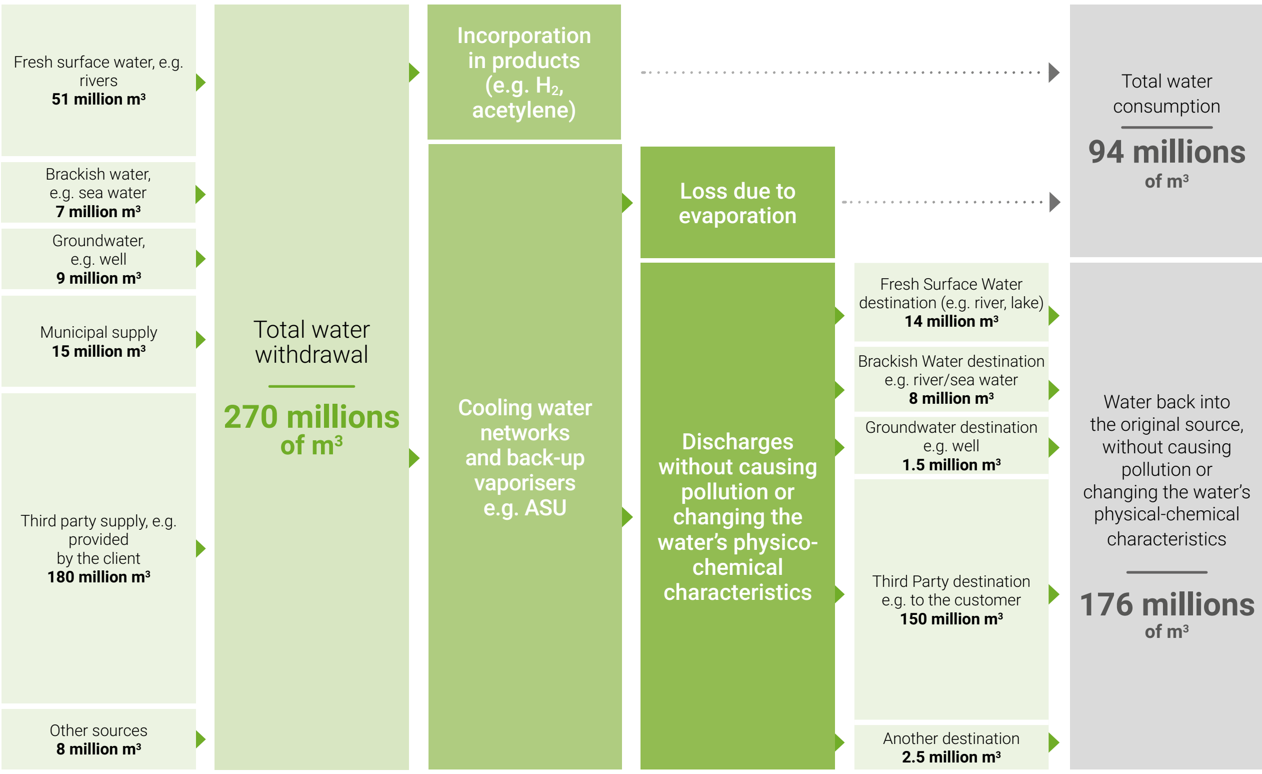
In 2019, Air Liquide consumed 94 million m³ of water. This consumption is from the loss of water by evaporation in the cooling process of rotating machines, particularly for the production of air gases, or its use as a raw material for products such as hydrogen. Water management is part of the environmental and societal risk described in Chapter 2 on page 95.

3.2. WATER USAGE WITHIN THE GROUP'S PROCESSES

In 2019, Air Liquide withdrew 270 million of m³ of water from various sources. 67% came from customers, 19% came from freshwater sources such as rivers or lakes, 6% from municipal supply and the remaining 8% from various other sources.

With regard to Air Separation Units, there are several types of cooling systems. Around 54% of these units have semi-open water recirculating systems which require back-up water. Around 38% of these units have open systems. In such cases, water comes from natural resources or third-party industrial systems. It is discharged, without causing pollution or changing the water's physico-chemical characteristics. Lastly, around 8% of these units have closed systems that consume no water.

WATER USAGE WITHIN THE GROUPS PROCESSES



	2015	2016 (a)	2017	2018	2019
Annual water consumption *(estimate in millions of m³)*	79	77	81	86	94* (b)

(a) Excluding Airgas.
(b) The difference from 2018 is due to a more detailed measurement of water consumption on the production sites.
** Indicator verified by the independent verifier.*

Air Liquide carried out a risk assessment on the water management risks of its sites following the publication in August 2019 of the new "Aqueduc 3.0 Water Risk Atlas" map from the World Resource Institute (WRI).

According to this study, 1% of the Group's sites are located in areas that will be considered arid zones in 2030. This assessment takes into account the specific data for each site regarding their location in terms of a watershed, groundwater and an administrative boundary.

To carry out this assessment, the Group used the "business as usual" scenario (SSP2 RCP8.5 of the IPCC) which corresponds to stable economic development and a constant increase in global carbon emissions.

3.3. WATER TREATMENT SOLUTIONS AT CUSTOMERS' SITES

Air Liquide has been a benchmark in water treatment for 35 years, providing its customers with efficient and easy to implement solutions to face environmental challenges. The Group keeps on supporting its clients to meet more stringent regulations, fight water stress and scarcity with cost effective solutions.

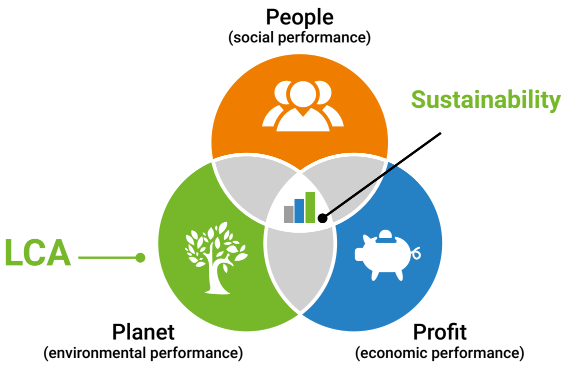
Air Liquide's "Essential Small Molecules" (mainly O_2, O_3, and CO_2) play a fundamental role in drinking water and wastewater treatment processes. Our gases are key to balance mineral levels in desalination water plants, or to eliminate pollutants from surface drinking water sources. For industrial players, who seek technologies to treat and recycle water, our molecules help boost the removal of organic pollution from wastewater and to avoid corrosion or clogging in cooling systems.

The Group continues to innovate in water treatment to help responding to the world's environmental growing needs.

4. Life cycle assessment

Life cycle assessment (LCA) is a standardized evaluation method (ISO 14040 and 14044) that is used to assess the environmental impacts of a product's lifespan, i.e. the acquisition of the raw materials for production, use, end-of-life processing, recycling, and final disposal of a product.

This method does not generally deal with the economic or social aspects of a product, but the approach and methodologies of the life cycle described in the international standard can also be applied to these other aspects.



Air Liquide's direct emissions mainly relate to the production of hydrogen used to desulphurize fossil fuels. A life-cycle analysis highlights the fact that the environmental cost relating to the CO_2 emissions associated with this production of hydrogen is largely offset by the benefit relating to the elimination of acid rain and the decrease in respiratory diseases. To carry out this study, the Group implemented a holistic approach that takes into account its impact on the various stages of the product's life. This assessment has made it possible to calculate the impacts of the different desulfurization processes.

The Group relies on this approach to:

- maintain and enrich its stakeholder interactions by proposing sustainable solutions to customers and suppliers;
- improve the efficiency of its processes, rethink the production chain and make the best long-term strategic choices for its investments.

5. Air Liquide and the sustainable economy

5.1. AIR LIQUIDE: A PARTICIPANT AND ACCELERATOR OF THE CIRCULAR ECONOMY

Rather than the linear management of resources (extract – manufacture – use – dispose), the circular economy seeks to manage natural resources in a resilient and sustainable way. It contributes to sustainable development and to combating global warming and inequality. This economic concept is crucial in the context of the growing global population and the management of certain limited resources.

The circular economy is based on the following principles of action [a]:

- regenerating natural resources;
- reducing or optimizing the use of materials, water and energy and extending the lifespan of products;
- designing systems of production and consumption that reduce waste and pollution.

Through its business models, Air Liquide is a participant in the circular economy. Its activities consist of sharing production units and logistical resources between multiple customers. In addition, Air Liquide recovers the by-products (nitrogen, argon, rare gases, steam, carbon monoxide, etc.) of its primary oxygen and hydrogen production.

Air Liquide also supplies technological products and services that allow its customers to reduce their emissions of pollutant gases [b], to recycle materials [c], to preserve fresh products for longer, and to treat wastewater [d].

(a) According to the Ellen MacArthur Foundation.
(b) Oxy-combustion – reduction of NOx.
(c) O_2 for non-ferrous recycling by smelting.
(d) O_2 to activate microorganisms, O_3 to oxidize organic molecules, CO_2 to control water pH before discharging into the environment.

In addition, Air Liquide is an accelerator of the circular economy via the development of activities such as CO_2 recovery and purification, the recovery of organic waste as biomethane and biofertilizer, and the supply of hydrogen for clean mobility.

5.2. LOCAL DEVELOPMENT

Air Liquide's teams across the globe are wholeheartedly committed to playing their part in local economic life. This participation includes hiring employees in the area and developing close relations with training organizations and universities that can prepare people for the Group's core businesses.

Air Liquide supplies more than two million industrial customers, major companies, SMEs and craftsmen, thanks to the great diversity of its industrial gas applications. The Group provides solutions which are adapted to the competitive or innovation needs of each customer and supports them in their development. In healthcare, Air Liquide is present in the development of infrastructure by supplying medical gases and dedicated equipment to hospitals and by training their staff on their use. Air Liquide cares for more than 1.7 million patients suffering from chronic diseases. In addition, the Group's businesses, as well as the means implemented in order to prevent and manage industrial risks, are regularly presented to populations near Air Liquide's sites. In France, the industrial sites are involved in two local committees, CLIC and CLIE, the aim of which is to provide transparent information about their activities to representatives of the local populations.

Moreover, subsidiaries are also directly involved with communities throughout the world, supporting local corporate philanthropy initiatives. As well as financial support, these actions are successfully conducted with the enthusiastic involvement of employees.

5.3. LOCAL PROCUREMENT

More than 80% of Air Liquide's procurement expenditure is spent locally [a], limiting the environmental footprint relating to transportation and developing the local economy. As an example in this area, Air Liquide is a partner and member of the Board of Directors of "Pacte PME", an association which puts innovative small and medium-sized enterprises (SMEs) in contact with major French groups and which, in 2019, comprised 55 key public and private accounts and professional organizations.

The total amount of Group procurement in 2019 was 12.1 billion euros, including energy and transportation procurement.

In 2019, subcontracting for Air Liquide came to a total of 1.9 billion euros. Subcontracted activities are mainly those which are too far removed from the Group's businesses or that require specific resources or that are linked to a concentrated workload at particular times.

6. Biodiversity

The impact of Air Liquide's activities on biodiversity is limited because the Group's production units are generally located on sites in industrial areas. However, Air Liquide supports biodiversity preservation via its Foundation, which funds scientific research projects around the world relating to air quality as well as local development projects to do with the environment. In recent years, the Air Liquide Foundation has sponsored the following projects:

- the work of the Institut de Recherche pour le Développement (IRD) and WWF France respectively on mangroves in the Indo-Pacific region and the Indonesian and Gabonese forests. These works quantify and qualify the carbon cycle of mangroves and forests with the aim of protecting these ecosystems which are home to a wide range of biodiversity;
- the studies carried out by the Sorbonne University and the French National Center for Scientific Research (CNRS) on methane concentrations and flux in the marine environment and the presence of plastic particles in the atmosphere;
- social projects around organic market gardening.

A number of employees with a desire to act for greater sustainability within Air Liquide have also organized local initiatives linked to biodiversity:

- nine tree planting initiatives have taken place within the Group, in Japan, Singapore, China, Portugal, Spain, France, Ghana and Madagascar. The actions were carried out as part of reforestation or employee environmental awareness programs;
- Air Liquide Singapore has financed a marine biodiversity study combining 10 autonomous reef monitoring structures, directed by the National Parks Board of Singapore. Volunteers from Air Liquide took part in the sorting of specimens from Singapore's corals and seabed.

(a) 2015 analysis based on 2013 data.

7. Regulations

7.1. MARKET AUTHORIZATION REGULATIONS

The distribution of substances, products and articles is part of the product stewardship approach developed by the chemicals industry.

In terms of market authorizations, Air Liquide is mainly affected by four regulations: chemical substances (REACH), biocidal products (BPR), plant protection products (PPP) and fluorinated gases (F-gas).

European REACH regulation – Regulation (EC) No. 1907/2006

REACH (Registration, Evaluation, Authorisation and restriction of CHemicals) is a European Union regulation that governs the registration, notification, restriction, and authorization of chemical substances produced in or imported to the European Union. Air Liquide also ensures that the raw materials in use and authorized for use on the market are in compliance with the REACH regulation.

Registration with REACH

Any chemical substance imported or manufactured in Europe of over one ton a year must be registered with the European chemicals agency, ECHA. Each manufacturer or importer must have its own registration.

The European REACH regulation came into effect in 2007 and registration procedures for existing substances manufactured or imported at a rate of more than one ton per year were spread over this period until May 31, 2018. After this date, requirements in terms of maintaining and updating files shall continue to apply in the event of production or importation in a higher tonnage band, when registration files are reviewed by the authorities, when administrative updates are made, or when new information on the risks for humans or the environment is available.

The same requirements will apply to all new products as of the first ton produced in or imported into Europe.

Air Liquide's main products such as oxygen, nitrogen, hydrogen, CO_2, helium, and rare gases are not subject to REACH registration.

Air Liquide is the lead registrant for several substances, in particular specialty gases in the Electronics business (NF_3, CF_4, C_4F_8, SiF_4, etc.). Air Liquide is the general registrant for several other substances (carbon monoxide, acetylene, methanol, lime, nitrous oxide, ultra-pure fuels) that have been registered within the framework of this Regulation by each relevant subsidiary.

In addition, Seppic, which produces healthcare and beauty specialty ingredients, falls under the REACH regulation for some of its products. Seppic anticipated the introduction of the European REACH regulation and complies with this regulation. Along with the European dossiers submitted under the REACH regulation, Seppic also complies with similar non-European regulations.

In 2018, Group sales subject to REACH registration represented less than 3% of Group revenue.

REACH notifications

It is a legal requirement to notify the ECHA of any substances of very high concern (SVHC) if their concentration in product is greater than 0.1% by weight and if the total quantity imported or produced exceeds one ton per year. These SVHCs must also be disclosed to any recipients of these articles (professional or industrial users). Notifying individuals is only applicable if a consumer makes an explicit request.

Such SVHCs are contained in articles for the commissioning or production of gases.

REACH restrictions

Air Liquide is mainly impacted by restrictions relating to the use of solvents used to distribute acetylene. The restriction dossier for the solvent DMF was finalized in October 2018. Its substitution will require that cylinder filling processes are reviewed. Potential substitute NMP will also be subject to restricted use as of May 2020.

REACH authorizations

Transitional authorizations before permanent discontinuation of use in Europe apply to substances on the list of substances subject to authorization.

Air Liquide does not distribute any substances subject to authorization. These SVHCs are mainly contained in articles distributed for the commissioning or production of gases.

Regulations governing biocidal products (BPR-2012) and plant protection products (PPP-2009)

These long-standing regulations (BPR 2012 and PPP 2009), applicable throughout Europe, are often included in national decrees governing crop protection products. The purpose of using gases such as CO_2 is often to provide an insecticide, substituting chemical products that are banned in Europe.

These two regulations require approval of the substance at European level, before national authorization can be requested.

Since 2016, Air Liquide has been investing in renewal files, under PPP, for the approval of carbon dioxide (CO_2) and ethylene (C_2H_4), which are up for renewal in 2020 and 2022 respectively.

After approval, internal distribution channels (supply chain) will have to be reviewed as the elements of these BPR and PPP products must be procured exclusively from the sources referenced in the approval file.

Under BPR, the review of the ozone approval file is still underway and requests for the appropriate authorization for use both in our industrial facilities and for the market authorization of its precursor, oxygen, will then be made. Applications relating to the drinkability of water, the disinfection of containers and the treatment of industrial water are affected by this review.

The BPR and PPP regulations also set out additional labeling requirements.

F-GAS regulation (2014) – Regulation (EU) No. 517/2014

This European regulation only applies to fluorinated gases placed on the market within the Union. It establishes quotas for placing HFC (hydrofluorocarbons) gases on the market due to their very high global warming potential. Other gases affected by this regulation are monitored and therefore subject to a declaration obligation. Air Liquide primarily markets this type of gas for just the electronic sector. The fluorinated gases used in this sector are destroyed before release and, as a result, their use is exempt from the regulation.

Notification to poison centers

Notifying national emergency services (poison centers) of the composition of and emergency phone numbers for all mixtures placed on the market will be mandatory as of 2021, both for standard mixtures and mixtures made on demand.

This approach requires obtaining a unique formula identifier (UFI code) at a national level, which must also be included on the bottle label. Transit through a storage center also requires a UFI code in the relevant country.

7.2. GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS

The Globally Harmonized System of Classification and Labelling of Chemicals, better known as GHS, was created by the United Nations. This system sets out the classification of chemical products according to the type of danger that they represent and provides standardized hazard information, including labeling.

This labeling must provide key information concerning health, safety and environmental protection to everyone who handles a hazardous product or who could be exposed to one.

In the countries in which GHS is implemented in local regulations, Air Liquide subsidiaries have implemented the principles of GHS in terms of product compliance in accordance with the requirements set out in local regulations.

7.3. SEVESO 3 DIRECTIVE

This European directive focuses on preventing major industrial risks. It applies to any facility where certain hazardous substances exceed certain quantities. These facilities are divided into two categories according to the quantity of such substances: Seveso 3 "upper tier" and "lower tier". In Europe, 98 "lower tier" and 27 "upper tier" Air Liquide sites are affected, mainly because of their stocks of oxygen.

Seveso regulations apply only in Europe, but if the Seveso "upper tier" criteria were to be applied worldwide, 37 other Group sites would be covered.

SOCIETAL ACHIEVEMENTS

1. The long-term engagement of employees

1.1. HUMAN RESOURCES

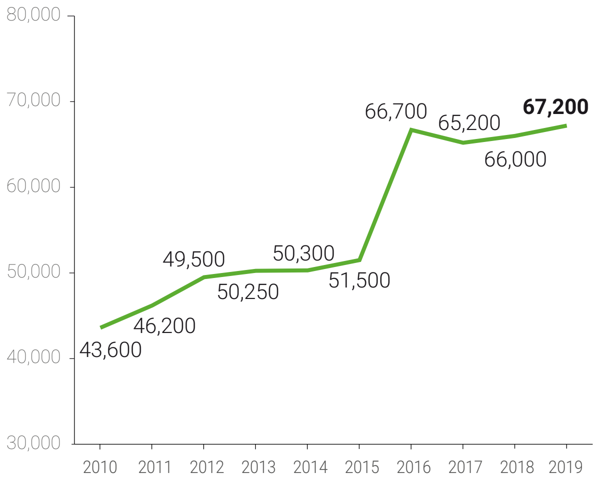
Air Liquide brings together 67,200 men and women of more than 150 nationalities, in 80 countries, who form multicultural teams with a host of skills.

The Group strives to promote diversity, encourage innovation and employee engagement, meet customers' expectations and guarantee Air Liquide's long-term performance.

In an environment which is undergoing profound transformation, Air Liquide has developed a Human Resources strategy to identify, attract, maintain and develop competent employees from all walks of life. This strategy is based on the following three priorities:

- encouraging employee engagement;
- developing an agile and collaborative structure;
- anticipating the "future of work".

GROUP HEADCOUNT



1.2. EMPLOYEE ENGAGEMENT

1.2.1. Employees' voices

There is a direct link between employee engagement and customer satisfaction which is at the heart of the NEOS company program. Employee engagement is one of Human Resources' priorities. Air Liquide has launched "MyVoice", a program similar to the "Voice of Customer" project introduced as part of the customer-centric NEOS company program. This program has been designed to encourage feedback from employees and to rapidly implement measures resulting from this feedback. Over 12,700 employees were asked to respond to the MyVoice survey in 2019. Broader deployment is planned for 2020 before the program becomes an annual one for all entities in 2021.

1.2.2. Mobility for skills development

Air Liquide is continuously looking to recruit diverse profiles to build multi-disciplinary and complementary teams.

The Group's diversity is characterized by the fact that there is no "standard career path". On the contrary, each employee adapts their career path according to their individual objectives and the career opportunities offered by the Group. Internal mobility and technical expertise are two major factors in career development.

THE TECHNICAL COMMUNITY LEADERS PROGRAM

The Technical Community Leaders (TCL) program enables talent in their technical domain to access career paths that offer recognition, satisfaction and influence. More than 3,400 experts have been recognized, playing a key role in sharing expertise, knowledge and technical excellence.

This community of the Group's technology experts contributes to the transfer of the technical know-how that Air Liquide will need in the future.

In 2019, in the context of the program of identification and development of our technical talents (TCL), 105 new international experts were appointed. The year 2019 was also marked by the technical integration of a new field: digital and IT. In this field, 12 new international experts were appointed. This makes TCL a key driver of innovation and a major contributor to ensure the Group's long-term reliability and safety.

1.2.3. Employee performance and remuneration

The performance review meeting is a key stage in employee development as it facilitates a discussion between an employee and their manager on performance and development, the assessment and setting objectives for the year ahead. In 2019, 77% of Group employees had a performance review meeting with their immediate supervisor.

The comprehensive remuneration of Group employees is based on three criteria:

- the position held;
- the degree of responsibility;
- performance.

Also factored in are local market conditions, the Group's fair pay at hiring policy and current legislation. It is generally made up of a basic salary plus additional compensation and benefits items.

The variable part of remuneration is devised locally for certain categories of employees to reward performance. In general, it depends on parameters such as the Group's earnings, the entity's earnings and individual performance, which is measured in quantitative and qualitative terms. By rewarding collective and individual performance, Air Liquide encourages everyone to collaborate and contribute to overall earnings.

Most of the managers and professionals have a variable pay, which includes sustainable development objectives.

Remuneration may also include benefits such as death and disability insurance, health insurance, profit sharing [(a)] or solutions to help balance work and family life which vary by country.

In 2019, 56% of the Group's employees received an individual variable portion as part of their remuneration (down by 3% compared with 2018).

15% of managers' variable remuneration is linked to sustainable development criteria, such as safety, customer satisfaction, energy efficiency and equality.

Finally, the top 370 Group executives have a significant portion of their variable remuneration mandatorily linked to these criteria, for example, safety and Corporate Sustainability Program targets for their entity.

1.2.4. Well-being at work

The official definition of well-being in the workplace provided by the World Health Organization (WHO) considers this to be "a dynamic state of mind characterized by reasonable harmony between a person's abilities, needs and expectations, and environmental demands and opportunities". Moreover, one of the Sustainable Development Goals (SDGs) defined by the UN, is specifically focused on health and well-being.

Safety, ethics and respect for human rights are prerequisites for achieving a high-quality work environment. Well-being in the workplace has a direct impact on the engagement of employees and their performance.

In order to strengthen occupational well-being within Air Liquide, various initiatives have been implemented within the Group to promote the work-life balance of its employees (support for new parents, access to service platforms and expertise, raising awareness of health-related issues).

Mobile working or home office is widespread among several of the Group's entities. This approach is a response to employees' wishes in terms of work-life balance.

These practices were incorporated into principles that were jointly developped with European social partners. Having been approved in November 2019, "Care & Perform" defines seven principles and rules to promote the well-being and mental health of employees for long-term commitment and performance. These principles cover topics such as workplace relationships, the right to disconnect, respect for private life and inclusion. This joint charter is expected to be deployed throughout Europe in 2020.

1.2.5. Legal working hours

Each Group entity defines, in agreement with representative bodies and in line with local regulations, legal working hours which encourage engagement and performance.

In addition to the local regulations, the European "Care & Perform" principles and rules are also designed to organize work in a way that respects the autonomy, flexibility and private life of each employee. From 2020 onwards, the European entities will deploy campaigns for developing flexibly organized work, telecommuting, or the right to disconnect.

In France, the general framework of legal working hours is defined in agreements signed with the labor unions. A few businesses operate with shift work. These concern fewer than 10 plants in the country, mainly in the Large Industries business line. A project is currently being deployed to reduce shift work.

On the other hand, the industrial businesses, as well as those in Healthcare, include on-call systems that are regularly discussed and are subject to agreements with the labor unions.

1.2.6. Renewing social dialog

The Group ensures that social dialog is encouraged and, as part of this, 80% of Group employees had access to a representation, dialog or consultation structure in 2019.

In Europe, the European Works Council has 29 employee representatives from 13 countries. It was renewed in 2017 for a term of four years. The role and nature of exchanges within this body was strengthened by an agreement signed in 2014. Chaired by a member of the Executive Committee, the European Works Council met twice in 2019, for two ordinary meetings and three times for an extraordinary plenary meeting. Four other meetings of the Council's board members also took place, including one meeting of the extended board and one informal meeting. The main themes dealt with during information and consultation meetings are safety, news on the Group's activities, especially in Europe, the annual financial statements, the well-being and psychological health of employees, the Sustainable Development policy, strategy and its implementation in the different countries where Air Liquide operates.

In France, the Group sought to improve social dialog, using a debate and project development approach. A second social seminar was held in June 2019 to promote working together (employee representatives/ trade unions and management/HR) toward a new aim. This exercise helped define a roadmap and transformation projects:

- anticipating the management of employability of Group employees in addition to the agreements for forward planning of employment and skills ("Gestion prévisionnelle des emplois et des compétences, GPEC");
- improving the employee representatives pathway within Air Liquide;
- initiating discussions on the prevention of psychosocial risks.

In addition, long-established French companies [(b)] signed an agreement on the inclusion of disabled employees at the end of 2019. This agreement represents a new ambition on this topic.

(a) This method of remuneration, used in certain countries, is at the Company's initiative or in response to local legislation or market requirements.
(b) The historical perimeter represents 10 Air Liquide subsidiaries in France.

1.3. AN AGILE AND COLLABORATIVE STRUCTURE

The second focus of the Human Resources strategy consists of building an agile and collaborative structure capable of addressing the challenges of a continuously changing world. This requires facilitating cross-divisional exchanges within our teams to ensure sustainable performance.

1.3.1. Inclusion and diversity

Diversity is a priority of Air Liquide's Human Resources strategy and policy and the Group considers it a source of dynamism, creativity and performance.

It is a fundamental element of the organization, in terms of both businesses and employees, and drives the Group's long-term performance.

Our objectives at Group level include enhancing diversity among managerial staff to better value the various cultures on which Air Liquide is based and to improve gender equality. In this respect, quantified targets have been set for the Group and its entities regarding gender and nationalities.

At the entity level, our aim is for our teams to be made up of employees which represent the environment in which they work.

Through this diversity policy, Air Liquide is strongly committed to fighting any form of discrimination.

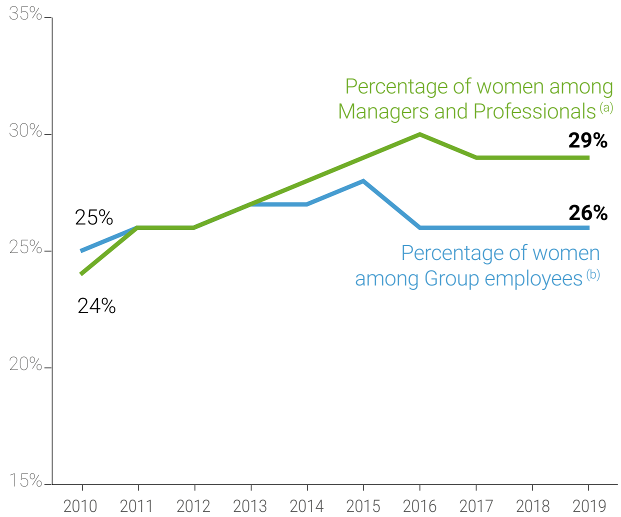
A solid roadmap has been defined to achieve our objectives. A team within Human Resources is responsible for managing diversity projects. The Group's roadmap is based on three criteria:

- introducing diversity objectives at all our entities and ensuring the implementation of related actions plans, in particular for key populations (management positions, high potential employees and technical experts);
- improving all of the Group's Human Resources processes to reduce any bias and avoid all forms of discrimination;
- promoting an inclusive culture to leverage the diversity of our teams.

1.3.2. Gender

The Group has set ambitious gender equality objectives aimed at reaching a rate of 35% of women among "Managers and Professionals" by 2025. These objectives are in line with the results obtained over the past ten years which have enabled the share of female "Managers and Professionals" within the Group to increase from 24 to 29% between 2010 and 2019.

PERCENTAGE OF WOMEN AMONG MANAGERS AND PROFESSIONALS



(a) Including Airgas since 2017.
(b) Including Airgas since 2016.

Women now represent 41% of employees considered as high-potential. This level must be maintained.

Of the 14 members (excluding Executive Officers) of the Executive Committee, five are women. Three of them were appointed in 2019, after having held executive positions within the Group.

More generally, and taking the highest level of responsibilities across the Group into account, women currently hold 20% of the Top 100 positions, and 19% of all positions defined as Executive. This latter percentage has increased from 4% to 19% over the past ten years.

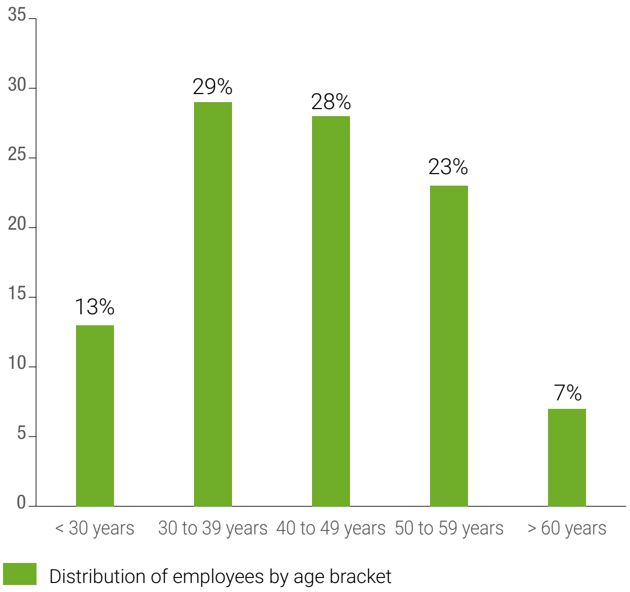
The Group aims to achieve a rate of 25% of women in Executive positions by 2025.

Among the 10% of positions with the greatest level of responsibility within the Company [(a)], 23% of them are women; these women have an average age of 50 and median age of 50.3, i.e. 3.8 years and 4 years less respectively than the average age (53.8 years) and median age (54.3 years) of men in these positions. This difference is due to the policy to promote women at the highest levels of responsibility earlier on in their careers, and thus rule out career development discrepancies that may be seen in the absence of voluntary measures in this field.

(a) i.e., 123 positions, including all members of the Executive Committee (excluding Executive Officers) as well as expatriate employees whose work contracts are suspended but whose career and remuneration continue to be managed by the Company during the suspension of their French contract.

1.3.3. Age

DISTRIBUTION OF EMPLOYEES BY AGE BRACKET IN 2019 [(a)]



The Group has invested in better professional qualifications and training programs for young people to facilitate their integration into the business world.

Internship and apprenticeship contracts are encouraged by the Group. In France, 559 young people have benefited from work-study contracts and around 369 from an internship, combining theoretical learning at their university or school and a practical internship at Air Liquide.

Seniors will represent an increasing share of Air Liquide employees in the coming years. Their contribution to mentoring programs (notably the Technical Career Leaders program) and training programs aimed at younger generations will be further promoted.

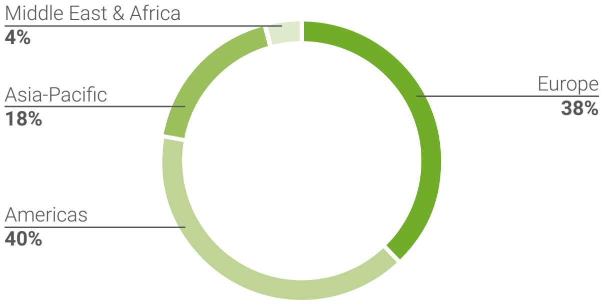
Various initiatives have been introduced within the Group to ensure the support and engagement of employees nearing retirement age. For example in France:

- 16 people became skills sponsors following the pilot launched in France in 2018;
- "youth-employment contracts" were continued. These include an initiative which allows employees to prepare for their retirement, and in particular take early retirement.

1.3.4. Nationality

There are 35 different nationalities among Air Liquide's senior managers. The Group's Board of Directors is composed of six nationalities. In terms of total employees, more than 150 different nationalities are employed by the Group. The Group has international exchange programs to attract and train young talent: the ALLEX program for engineers and managers and the EVE program for vocational employees (more than 500 people since they were set up).

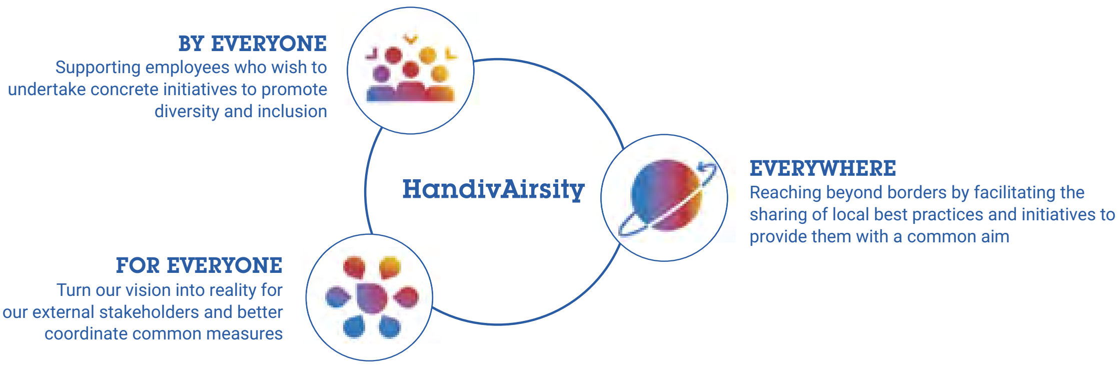
BREAKDOWN OF EMPLOYEES BY GEOGRAPHIC AREA



1.3.5. Disability

The Group has continued the deployment of its Disability policy, which is now called HandivAirsity, in order to expand its inclusive culture to Europe and further promote the integration of employees with disabilities within the Company.

Since it was set up, more than 1,300 employees from 23 different countries have signed the HandivAirsity Charter that encourages employees to maintain the momentum by taking part in concrete measures. More than one hundred events were organized during the 2019 Disabilities Week.



The HandivAirsity program for developing a culture of inclusion in Europe and promoting the integration of individuals with disabilities requires an entire ecosystem of players. Employees, shareholders, customers, and suppliers are involved and committed to acting together to include people with disabilities.

(a) In 2019, a new tool was used to consolidate the age brackets of employees.

Through the policy's main guiding principle: "Our differences are our strength", the Group aims to value the uniqueness of each person for the benefit of all. HandivAirsity is driving this desired change: "by everyone, everywhere, for everyone".

In France, thanks to the involvement of employees and workplace agreements in favor of recruiting employees with disabilities, a set of subsidiaries has seen the rate of employees with a disability from rise from 1.75% in 2007 to approximately 4.5% in 2019 [(a)]. More than 1.2 million euros have also been subcontracted to firms in the adapted and protected sector.

The Group has just signed a new three-year agreement covering 5,500 employees in France.

1.3.6. Network organization

Air Liquide has a decentralized organizational structure which relies on its hubs and clusters (groups of countries or entities). This global scale network structure is more agile, favors initiative-taking and strengthens proximity with customers.

A collaborative working platform called "Kite" has been launched throughout the Group. Kite is changing every year to offer new services to its users. The Group therefore provides employees with the opportunity to create and access Google+ communities through the Kite collaborative working platform. These communities rally employees on several subjects: expertise, tools, events, procedures, shared interests, etc. They transform working methods by favoring flexibility, efficiency, diversity and collective intelligence.

1.4. ANTICIPATING THE "FUTURE OF WORK"

The "Future of Work" cornerstone focuses on identifying the business lines and skills of the future. To do so, the Human Resources teams must understand and anticipate trends that are likely to transform our business.

1.4.1. Business lines and skills

The aim is to implement an efficient action plan to help employees evolve at the same pace as their business line. To support each employee in this new technological environment, Air Liquide University has developed:

- a Business Academy has been set up to strengthen key skills in the Group's business lines. More than 1,000 employees have had the opportunity to develop thanks to the academy. Other business line academies are under review in order to meet existing needs in terms of technical skills;
- a "digital passport", which consists of several self-assessment questionnaires on digital culture in general, but also on the knowledge of Kite (the Group's collaborative working platform);
- the digital training campuses (Data Strategy, Digital Marketing, Cybersecurity, etc.) have been made available to Group employees in order to move forward with the development of digital skills;
- data challenges have also been organized within the Group. These competitions make it possible to share data skills quickly while creating value for our businesses.

1.4.2. Career-long training and development

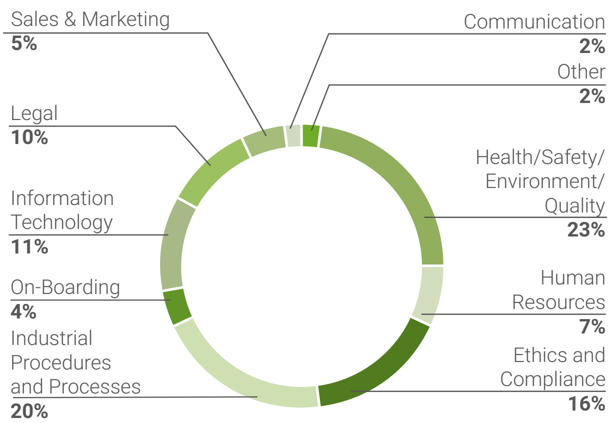
Air Liquide takes special care to develop the competencies and expertise of its employees. Several ways of learning are proposed. Career development can take place throughout our careers and we must all take a proactive approach.

In 2019, the percentage of the Group's employees who had at least one training session during the year was up, at 69%.

The online training offering is upgraded every year and covers many topics such as safety, ethics, Human Resources processes, management and, more recently, digital technology.

A new online self-learning package (#ILoveLearning) was deployed in 2019 as part of a pilot by Air Liquide University. Over 4,450 employees have used of this training. Global deployment is planned for 2020 to encourage self-service training.

BREAKDOWN OF TRAINING TOPICS



Through its programs and structure, the University, which celebrated its 10th anniversary in 2019, supports the Group's strategic initiatives and promotes the Air Liquide culture. Today, the University is present at Group level and globally promotes new ways of learning, in both traditional and non-traditional ways. The Company's various businesses and functions thus have access to tools to design their own programs.

Modern teaching methods, for adults, are coupled with formal and informal skills, online training, lessons, support, mentoring, co-development, etc. The programs are as practical and relevant as possible, and use role play, mock exercises, workshops, case studies, guided discussions and various feedback mechanisms.

Among the University's programs, those on management and leadership cover all modern management situations, thus promoting the use of a shared language at Group level. These programs help managers understand the increasingly volatile and complex world that surrounds them and provide the Group with the relevant expertise to maintain its leadership position over the long term.

(a) Estimate. Calculation of the figure to be made after the URD publication.

In fact, one of the flagship management programs at Air Liquide University was revised in 2019 to incorporate transformation management and change management. It now complements the specifically dedicated "Leading Transformation" training courses, from which more than 360 managers and human resources supervisors have benefited this year. These programs allow managers to develop in supporting transformation, while involving employees and preserving their well-being at work. This is also the first of the Care & Perform principles adopted in 2019.

The continuation of campuses, in cooperation with the digital transformation teams, has enabled us to continue to raise awareness among various populations regarding new digital expertise: platform economies, data strategies, user-related research, cybersecurity, etc.

2. Shareholders: a long-term relationship

More than **64%** of shareholders own their shares for more than **10 years.**

Shareholders have been contributing to and supporting the Group's growth since its creation. During the 2016 acquisition of Airgas, they again confirmed their commitment to the Group's growth by participating massively in the capital increase in cash with preferential subscription rights. Today, it is thanks to their loyal support that Air Liquide can continue to change and grow. Air Liquide's long-term profitable growth strategy and its commitment to its shareholders are therefore closely linked. By promoting individual share ownership, through various measures in place and by offering shareholders the expertise of its dedicated service, Air Liquide fosters a close relationship based on dialog with its shareholders on a daily basis which focuses on the following key principles:

- promoting long-term share investment;
- encouraging shareholder loyalty through registered shares;
- promoting dialog and meetings;
- recognizing and promoting the shareholder's key role.

DISTRIBUTION OF CAPITAL (AS OF DECEMBER 31, 2019)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Individual shareholders	36%	37%	37%	36%	37%	36%	33%	32%	32%	32%
French institutional investors	23%	21%	19%	19%	17%	18%	20% (a)	19%	18%	17%
Non-French institutional investors	40%	42%	45%	45%	46%	46%	47% (a)	49%	50%	51%
Treasury shares	<1%	>0%	>0%	>0%	>0%	>0%	>0%	>0%	>0%	>0%
Registered capital	34%	35%	36%	36%	35%	36%	33%	34%	35%	34%
Capital eligible for the loyalty bonus	25%	28%	29%	30%	30%	30%	26%	25%	26%	28%

(a) In 2016, the proportion of institutional investors in the Group's capital increased due to their over-subscription to the capital increase.

Air Liquide regularly receives rewards for the quality of its financial communication and its transparency, particularly in areas linked to corporate social responsibility (CSR). In 2019, the Group received six prizes relating to share ownership, including: the Grand Prix de l'Assemblée Générale awarded by the Institut du Capitalisme Responsable; first place in the Trophée eCac 40 organized by *Les Échos,* which rewards "the digital maturity of big businesses"; the CAC 40 bronze trophy for best services to shareholders awarded by the newspaper *Le Revenu;* the Grand Prix d'Or organized by TopCom, in particular for the editorial approach taken in the Shareholders' Guide; the "Functioning of Corporate Governing Bodies" prize awarded by the AGEFI; and Boursorama's prize for responsible investment.

The Chairman and CEO is personally involved in General Meetings, "post-General Meeting" conferences in several cities of France and Shareholders' Communication Committees (SCCs).

2.1. A STEADY LONG-TERM PERFORMANCE AND AN ATTRACTIVE REMUNERATION POLICY

Since its flotation in 1913, Air Liquide has always shown a profit and shared the fruits of its growth by rewarding its shareholders' confidence through a remuneration and loyalty policy that is based on regular dividend distribution, allocation of free shares, and a loyalty bonus. Thus, more than 50% of earnings of the last 10 years have been distributed to shareholders.

2.2. CUSTOMIZED SERVICES

Shareholder Services, with more than thirty employees, is a unique feature of Air Liquide.

Air Liquide provides its institutional and individual shareholders, who are bearer or registered shareholders, with information and support. In addition to its steady performance and remuneration policy, and to increase the investment value of shares and reward long-term shareholders, Air Liquide showcases registered shares.

In 2017, as part of the NEOS company program, Shareholder Services launched its "Shareholder experience" approach to continue to improve the quality of its services for shareholders. Similar to initiatives launched as part of the NEOS company program on the customer-centric strategy, the aim of this comprehensive approach of active listening and response to its shareholders and their expectations is to streamline administrative procedures by offering made-to-measure services, ensuring a better and wider circulation of strategy and financial information, for example with the live broadcasting of Group shareholders' events. The latest digital tools are also at the heart of this initiative as they are an excellent source of leverage and customization.

2.2.1. Registered shareholder services

This form of shareholding provides access to a loyalty bonus for registered shares held for more than two full calendar years: +10% on the amount of the dividends received and on the number of free shares granted during allocation transactions. To benefit from the loyalty bonus, shareholders must continue to hold their shares in registered form on the day of the dividend payment or of the free share allocation.

Air Liquide is the only CAC 40 non-bank company which manages internally all aspects of its shares on behalf of its more than 100,000 direct registered shareholders: account administration-holding, record keeping, centralization of the General Meeting. Shareholders pay no handling fees, and the broker fees of 0.18% (excluding tax) of the gross amount of the transaction are reduced to 0.10% (excluding tax) for stock market orders placed online and paid by account debit or bank card.

DIFFERENT SHAREHOLDING OPTIONS

Direct registered shares

Direct registered shares are registered in the Air Liquide account and held in a securities account opened at Air Liquide. Air Liquide's Shareholder Services is the point of contact for shareholders.

Intermediary registered shares

Intermediary registered shares are registered in the Air Liquide account and held in a securities account or a share savings plan at the shareholder's financial institution.

Bearer shares

Bearer shares are held in a securities account or a share savings plan at the shareholder's financial institution.

2.2.2. Innovation for the benefit of shareholders

Information documents and media for shareholders such as the Annual Report, the Shareholders' Guide, Shareholders' Newsletter "Interactions", the webzine "Stock & Share" and the Invitation to General Meeting are drawn up with a particular focus on educating readers. Air Liquide also publishes, in the month after the event, a report of its General Meeting available on the website: airliquide.com. For the first time, comic strips have been edited for young shareholders (under 18 years of age) and their legal representatives; in an original format, they provide a better understanding of the role of shareholders and explain the Air Liquide Group's activities.

Direct registered shareholders have access to a personal secure Account on the Internet, so that they can consult their share portfolio and useful documents for managing their account as well as modify their personal information. They can also place buy and sell orders on the stock market online and view, in real time, the operations conducted on their securities account. Air Liquide was the first company to set up a Shareholders' Communication Committee (SCC). The SCC is composed of 12 shareholders and is regularly consulted on subjects relating to shareholder communication in addition to the three plenary meetings with the Chairman and Chief Executive Officer. A Committee member is part of the Air Liquide Foundation's Project Selection Committee. The Chairman and CEO is personally involved in General Meetings, "post-General Meeting" conferences in several cities of France and Shareholders' Communication Committees (SCCs).

2.2.3. The General Meeting, the expression of shareholder democracy

Each year, all Air Liquide shareholders who hold at least one share are invited to the General Meeting. They receive all the documentation relating to their vote either by mail or by email more than one month before the General Meeting. In accordance with the principle of shareholder equality to which Air Liquide is very committed, each share entitles its owner to one vote. Air Liquide endeavors to make all this material available in English to its non-French shareholders in similar time frames. Air Liquide centralizes its General Meeting by collecting the votes of its shareholders directly and offers voting by Internet. Shareholders can attend the General Meeting in person or view the event live online.

SHAREHOLDER SERVICES AND SUSTAINABLE DEVELOPMENT

In line with the Group's Climate Objectives, Air Liquide encourages its shareholders to receive their documents electronically (account documents, General Meeting voting documents, newsletters to Shareholders, etc.). This measure saves some around four tons of paper each year. Moreover, for all its mail shots, Shareholder Services uses a biosourced film, produced using a raw material that complies with the NF T51-800 standard.

2.3. RECOGNIZING AND PROMOTING THE SHAREHOLDER'S KEY ROLE

The continuing decline in the number of individual shareholders in France is a major social challenge. Air Liquide is committed to defending individual shareholders' rights and promoting equity investments. The Group has supported, in particular, stock market initiatives such as those of the ANSA (Association Nationale des Sociétés par Actions), the Observatoire des Actionnaires d'Avenir and the F2iC (the French Federation of Individual Investors and Investment Clubs) which contributed to the creation of the "PEA Jeunes", a young person's personal equity plan under the PACTE Act.

In 2019, Air Liquide helped draw up the Observatoire des Actionnaires d'Avenir's White Paper.

Air Liquide took part in the first ever Investir Day event in Paris. Nearly 4,000 people, whether looking for information on the world of savings or already shareholders, came to exchange information and find out more about the stock market and the financial markets. In particular, this event provided the opportunity to meet young adults and is part of the Group's efforts to boost its individual shareholder base among new age groups.

3. Serving customers and patients

3.1. COMMITMENT TO CUSTOMERS

In an increasingly dynamic and competitive environment, Air Liquide focuses its attention on its customers and their satisfaction in order to provide them with long-term growth. To strengthen this priority, the Group Customer Department is supervised by a member of the Executive Committee.

Proximity and expertise

Air Liquide meets the needs of two million industrial customers worldwide. These customers come from sectors as diverse as steel, agribusiness, electronics and handicrafts. The Group's objective is to support its customers by gaining an in-depth knowledge of their business, allowing it to provide them with services and solutions that are both innovative and reliable.

The Group's organization allows each entity to respond to the specific expectations of local customers within its geographic region, and so to build a close relationship with each customer. Customers demand flexibility, responsiveness, service, availability, and a real long-term partnership. In addition, some international clients require fully coordinated global management services. An organization dedicated to strategic key accounts helps support them and meet their specific needs. This program relies on a team of Key Account Managers whose mission is to develop an in-depth knowledge of those customers so that they can better respond to their needs and adopt a strategic alignment with their growth priorities.

From listening to action

For over 115 years, the Group has always listened to its customers. However, traditional methods of collecting our customers' opinions have not allowed to fully understand their satisfaction or the best way to rank their priorities in order of importance and to act on what they tell us. For these reasons, for the last three years the organization has been directed toward a customer-centric transformation, boosted by a customer experience management tool called "Voice of Customer" (VoC). This solution provides all entities with the ability to regularly poll (through digital channels) an unlimited number of customers, analyze their comments in real time, identify dissatisfied customers and to close the loop quickly, i.e., get back in contact with them and do what is necessary to deal with the reasons for their dissatisfaction. Thanks to the broad sharing of customer comments at every level of the Group, appropriate action plans have been identified and put in place to improve the customer experience.

This VoC platform was launched in March 2017 and has already been deployed in more than 60 countries. Feedback from tens of thousands of customers has been collected and analyzed, highlighting the priorities of each subsidiary. Furthermore, since 2018 the Group has decided to launch transactional surveys to measure satisfaction at key stages of the customer experience (order, delivery, invoicing).

This new approach means that customer comments can be collected and analyzed in real time. All this information allows the local teams to identify problems and to fix them quickly by continually rationalizing processes and flows to provide the highest quality of customer experience.

Customer satisfaction and loyalty are measured using an international indicator called the NPS (Net Promoter Score®), which can help to instantly identify dissatisfied Air Liquide customers and address the reasons for their dissatisfaction. This indicator is tracked in all the business units and in most geographies, giving the Group a common indicator to measure the satisfaction of its customers, better respond to their expectations and improve global performance.

This approach is a perfect example of the customer-centric transformation strategy that forms part of the NEOS company program.

3.2. THE HEALTHCARE BUSINESS: SUPPORTING PATIENTS, HEALTHCARE PROFESSIONALS AND HOSPITALS

Today, 1.7 million patients and 15,000 hospitals and clinics worldwide place their trust in Air Liquide. They are all part of a changing environment in which the healthcare sector is evolving.

While basic trends such as population aging and changing lifestyles (urbanization, sedentariness, junk food, pollution, etc.) are taking us into an age of chronic diseases, the healthcare sector is undergoing a massive transformation:

The hospital is changing and new places of care emerging.

Payers' expectations are evolving to address the sustainability issue of the health systems.

Digital technology impacts the patients' connection to their health, allows a continuity of the care pathway and a better anticipation of complications.

The patient becomes more and more an actor of his health and his expectations are evolving.

With a long-term vision and as a benchmark healthcare player, Air Liquide provides solutions along the continuum of care in the following areas:

- home healthcare;
- hospital care;
- hygiene and healthcare specialty ingredients.

These activities are described in Chapter 1 on page 30.

In more than 35 countries, Air Liquide's 16,500 employees in the Healthcare business units – nurses, researchers, technicians, engineers, doctors, data scientists – work alongside patients, healthcare professionals and hospitals to help patients to live better with their conditions and to make care pathways and treatment follow-up more efficient.

As a major world player in home healthcare, an expert treatment of chronic diseases in home, and a supplier of medical gases and hygiene products for hospitals, Air Liquide works to make the healthcare system work well for everybody.

FOR AN EFFECTIVE AND MUTUALLY BENEFICIAL HEALTH SYSTEM

Doctors, patients and health organizations are increasingly interested in a global accompaniment focused on the result of the treatment for the patient. Our approach aims to improved patient adherence to treatment and it is a win-win situation!

The patient
Personalized support and the ability to contact Air Liquide's service departments by phone (or SMS) are designed to ensure better adherence to the treatment and reassure the patient.

Society
The increase in chronic diseases is forcing us to rethink how they are treated at community level. Providing tailored support at home should allow for better control of indirect costs, such as those associated with work stoppages, isolation and insecurity.

The family
The family is often the first responder when it comes to chronic patients. A better understanding of treatment, simplified interactions with healthcare professionals, and human and digital support all help ease the burden for those surrounding the patient.

The paying agency
Making a commitment to members means doing everything to make the patient's treatment a success.
This approach emphasizes the quality of the support provided for patients and boosts the savings generated for the healthcare system as a whole, in order to create the conditions for truly effective treatment as well as real economic effectiveness.

The hospital
Hospitals face major challenges: receiving more and more patients, meeting the challenges of healthcare staffing, reducing costs without impacting the quality of care, seizing the opportunities presented by digitization, etc. Air Liquide has been at hospitals' side since its inception and provides specific answers to these challenges, while implementing continuity of hospital-to-home care.

Healthcare professionals
Air Liquide promotes the proper coordination of healthcare professionals by making it possible to collect information about the patient remotely and to share it continuously through connected devices.
The result is fewer superfluous meetings and more time for medical actions with a high added value and for dialog with the patient.

3.2.1. Home Healthcare

As a leader in home healthcare in Europe, Air Liquide provides care in the home for people with chronic diseases. The Group provides respiratory, nutritional and perfusion assistance solutions. Thanks to its expert multi-disciplinary teams, Air Liquide aims to increase the autonomy and quality of life of patients, improve their treatment compliance and lower their risk of relapse or rehospitalization.

The Home Healthcare business is one of the responses to the shift to outpatient care and sits at the heart of the healthcare system between the patient, hospital, doctors, nurses, health insurance organizations, pharmacists and others. Air Liquide supplies the services, products and/or medical equipment necessary to start treatment at the patient's home, following the medical prescription, and trains the patients and their families in the proper use of devices. Air Liquide has two trump cards: its close human proximity to patients at home for over 30 years, and its innovative strength, particularly in digital solutions. The Group, therefore, makes a major contribution to the continuum of care by ensuring follow-up care at home for patients with chronic conditions. This business demands high-quality service on a daily basis and is focused on the long term, with all the caregivers dedicated to improving the patient's quality of life at home.

3.2.2. Hospital businesses

Air Liquide is one of the world leaders in medical gas production and distribution for hospitals and related services.

Whether in emergency rooms, operating rooms, or intensive care units, Air Liquide's medical gases and associated services make it possible to provide care, alleviate pain, administer anesthetic and improve respiratory functions.

The teams work alongside healthcare professionals to develop solutions that allow them to take care of their patients, often at critical moments.

Air Liquide's solutions are also dispensed by certain specialists in doctors' practices or at new care settings outside the hospital.

Air Liquide aims to help professionals to care for their patients while facing the constantly changing challenges in the healthcare environment, by supplying medical gases, related services and innovative solutions.

Air Liquide also offers services such as "Total Gas Management" (TGM) which remains permanently at the hospital in order to optimize the supply of medical gases and to monitor the different supply parameters so that the hospital can maintain efficiency. Air Liquide supports the transformation of hospital care and the development of outpatient care with a significant presence in the urban medical sector and care centers.

4. Sustainable procurement

Air Liquide strives to build long-lasting and balanced relationships with its suppliers, in an environment of mutual trust. The Group attaches great importance to the ability of its suppliers to offer long-term partnerships and to ensure a high level of safety, reliability, competitiveness and innovation, while guaranteeing that ethics and sustainable development are also taken into account. These principles are set out in the following documents:

- the **Procurement Code of Conduct,** translated into several languages, which applies to all Group employees engaged in Procurement activities;
- the **Sustainable Procurement policy,** updated in 2018, which lays out the guidelines to be applied by the procurement departments to integrate ethical, social and environmental aspects in their procurement processes, and defines the prevention approach for the related supplier risks;
- a **CSR commitment clause** (covering compliance with the Supplier's Code of Conduct, safety, and the environment) is included in the contract templates used by the Procurement teams and signed by suppliers;
- The **Supplier's Code of Conduct** is publicly accessible on the Air Liquide website (https://www.airliquide.com/group/sustainable-procurement). It is available in 13 languages and its purpose is to promote and ensure all our suppliers respect practices relating to Human As part of process of monitoring its suppliers, the Group qualifies its critical suppliers according to four main criteria: the supplier's activity, the amount of annual expenditure with the supplier, its dependency ratio on Air Liquide and the location where the supplier conducts its primary business.

For the Group's 944 critical suppliers in the CSR sense, the objective is to evaluate their CSR performance by 2020. In 2019, more than 325 suppliers were assessed (indicator monitored under the Vigilance Plan – see Chapter 2, page 103), i.e. 85% of the suppliers invited to the assessment campaign. Corrective action plans are regularly implemented for those with an unsatisfactory score. In 2019, 2,800 corrective action plans with identified high priority (including one inadequate sub-rating on ethics) were communicated to suppliers for completion within the 12 months following the rating of their CSR performance.

Several measures have been implemented to raise awareness and train buyers in the context of the Group's Sustainable Procurement policy, thus strengthening its application within the organization.

Training modules on Sustainable Procurement have been developed. They are aimed at everyone in the Group involved in Procurement and at critical suppliers, and serve to:

- show the consistency between the Sustainable Procurement approach and the Group's strategy;
- explain the challenges of the Sustainable Procurement approach and position it as a source of value creation;
- present various tools to facilitate the roll-out of this approach.

To date, the e-learning module has been taken by 700 Air Liquide employees and almost 80% of those who have completed it consider that they have become more efficient in their role as buyers. Specific training sessions covering the methodology for the Sustainable Development evaluation of suppliers and the implementation of corrective action plans were organized for the Group's buyers and critical suppliers, in line with preceding years.

Since 2016, a Sustainable Procurement category has been introduced in our "Air Liquide Procurement Awards" to promote the best initiatives in this field and increase their visibility within the Group. A dozen or so internal projects were submitted in this category in 2019.

5. The Air Liquide Foundation

Created in 2008, the Air Liquide Foundation represents the Group's commitment to being a responsible enterprise both environmentally and socially.

Equipped with a strongly growing budget, the Foundation acts in the areas of air quality and respiratory diseases, as well as projects of local development. In 2019, the Foundation's Board of Directors defined new strategic orientations to maximize its scientific and social impact. These decisions follow consultations with the Foundation's stakeholders, such as members of the Project Selection Committee (PSC), employees, Group executives, and shareholders.

RESEARCH AND SCIENTIFIC EDUCATION

Project aims	Fundamental research and scientific education projects in the areas of air quality and respiratory diseases supported by the Foundation help to: ■ advance the current state of scientific knowledge; ■ better understand the origin and impact of atmospheric pollutants; ■ develop new therapeutic options for treating rare or chronic respiratory diseases; ■ raise awareness among young people and the general public about science.
Project locations	European Economic Area (European Union + Iceland, Liechtenstein, and Norway).
Priorities for action	Co-development of projects with high-level teams. Long-term support with more significant funding.
Examples of projects supported by the Foundation	The Air Liquide Foundation supported Fondation Université Grenoble Alpes' Ice Memory project in 2016 and 2018. Ice Memory aims to create a library of ice cores that are in danger of disappearing; these are taken from high mountain glaciers, in particular from temperate zones. In 2019, the Air Liquide Foundation confirmed its partnership with Fondation Université Grenoble Alpes and various research units at the university, supporting three new projects: **Air quality** ■ Ice Memory: analysis phase of ice cores drilled in France, Bolivia, and Russia – Institut des Géosciences de l'Environnement (Institute of Environmental Geosciences); ■ Predict'Air: study of a new air quality indicator – Institut des Géosciences de l'Environnement; ■ Respiratory diseases: effects of hypoxia on the human body involving two areas of research, altitude, and hypoxic conditioning as a way to improve health – Chaire Montagne Altitude et Santé ("Mountain, Altitude, Health" Chair).

LOCAL DEVELOPMENT

Project focus	Local development projects concern problems in the territories in which the Group is present: ■ Employability: to develop projects that have a strong impact, in particular in territories characterized by a high level of unemployment, with a substantial number of young people who lack qualifications and have limited job prospects, and projects targeting technical professions for which there is a shortage of employees. ■ Employee engagement: to help finance organizations recommended by employees working in fields such as education and training, disability, social, micro-entrepreneurs, environment, and access to care.
Project locations	Employability: in particular in France or Africa Projects recommended by employees: European Economic Area or developing countries where Air Liquide is present, near to one of the Group's subsidiaries.
Priorities for action	To develop multi-year, innovative projects with greater funding in order to: ■ help disadvantaged people integrate into employment sustainably; ■ establish a link between the demand for technical skills in a territory and potential human capital encountering or at risk of exclusion. The Foundation relies on local Air Liquide teams and organizations.
Project examples	The Foundation supports the "écoles de productions" (production schools) ICAM Ouest (Carquefou, France) and Boisard (Vaulx-en-Velin, France). These schools train young people who have dropped out of education in professions that suffer from a shortage of employees in their region, training them in the fields of aluminum joinery, and electrical assembly and wiring. Based on the pedagogical approach "learning by doing", students work on real orders for companies. This allows them to gain confidence and acquire the necessary skills. The aim of the production schools is to ensure that all young people successfully secure a placement at the end of their training (employment or continuation of their studies in the field).

A dedicated website enables projects to be directly submitted online, in French or English. The website address is: www.fondationairliquide.com/en.

5.1. THE FOUNDATION AND EMPLOYEE ENGAGEMENT

Air Liquide employees are actively involved in the work of the Foundation.

Group employees are encouraged to recommend projects for organizations close to their hearts. Almost 30% of projects approved in 2019 were therefore sponsored by employees.

Furthermore, all projects are assessed and monitored by the Foundation with the support of employees.

Scientific projects are assessed and monitored by experts from Air Liquide's research centers. Local development projects are supported by employees who work near these projects. The Foundation thus provides employees with the opportunity to take part in community work, and to express their social and human commitment.

The role of an employee responsible for project monitoring is broken down into three steps:

- making contact and project feasibility study;
- follow-up and support;
- final assessment.

The Foundation wants to further involve employees in implementing local development projects through skills-based sponsorship. Organizations supported by the Foundation will be able to benefit from employees' professional skills. Employees will therefore be involved in the development of these organizations.

Currently, hundreds of employees are involved in the Foundation's actions.

SHAREHOLDERS REPRESENTED IN THE SELECTION OF PROJECTS

Air Liquide shareholders also contribute to the Foundation's missions. A shareholder is also a member of the Project Selection Committee. The representation of shareholders in this way is a special feature of the Air Liquide Foundation. Their presence is important: the shareholder provides an external perspective, while being familiar with the Group. The other seven members of the Project Selection Committee are Group employees. The Project Selection Committee examines the projects put forward by the Foundation's team three times a year.

5.2. LOCAL CORPORATE PHILANTHROPY INITIATIVES

In addition to the initiatives of the Air Liquide Foundation, subsidiaries are also directly involved with the communities throughout the world, supporting local corporate philanthropy initiatives. As well as financial support, these actions are successfully conducted with the enthusiastic involvement of employees.

LOCAL INITIATIVES

In South Africa, Air Liquide Group employees are committed to improving education in communities around the production sites. The subsidiary is a partner of the NGO Valued Citizens as part of its "Bridging For Life" program. The program's objective is to help high school students achieve their professional and personal aspirations. Air Liquide South Africa employees are actively involved in supporting 50 high school students through their participation in career guidance and motivational workshops, and careers fairs. High school students gain the confidence to continue their studies and are educated about corporate culture, thereby improving their employability.

Since 2012, the subsidiary Airgas has been supporting a technical high school in Philadelphia, United States, that is specialized in welding. In addition to equipment and gas donations, support is also provided in the form of teaching aids initiated by employees for teachers at the high school, and assistance in training the students. In May 2019, employees gave students a tour of the new Advanced Fabrication Center which the Group opened at the Delaware Innovation Campus. After the tour, the engineering employees were able to discuss their training, their progress in their field, and their interest in the welding business with the students.

6. Relationships with the public sphere

Air Liquide has formalized a Public Affairs policy governing the Group's interactions with the national, regional and international public spheres to develop growth opportunities, reduce risks relating to regulatory changes, and involve Air Liquide in public debate. This policy specifies that Air Liquide work with the public authorities of each country in which it does business in a constructive and transparent manner, following ethical rules and applying political neutrality. All the Group's actions respect the official lobbying regulations in force in the countries in which it is present.

Air Liquide is therefore listed in the "Transparency Register" of European institutions and in France in the "Interest Representatives" register which was created in 2017 and is managed by the High Authority of Transparency in Public Life (Haute Autorité pour la Transparence de la Vie Publique – HATVP).

Managers specializing in public affairs have been appointed in the principal countries, comprising a network of around 20 people worldwide, coordinated by the European and International Affairs Division. The tasks of these managers are to follow public initiatives that may have an impact on the Group and to interact with the public authorities to defend or promote Air Liquide's interests. This network allows the Group to work on the definition of joint positions on cross-divisional challenges such as the circular economy, energy transition and innovation, and to share information on changes to social challenges in different parts of the world.

Air Liquide's Public Affairs policy also aims to establish and develop constructive and sustainable relationships with:

- public authorities;
- professional bodies which represent the sectors in which the Group operates;
- other players such as non-governmental organizations and think tanks.

These interactions can take place either directly or through national or international associations of professional bodies such as the European Roundtable of Industrialists (ERT).

The Group also calls on outside consultants to support its actions. Public affairs cover all the Group's activities. The priorities in this area form part of a long-term process:

- the competitiveness of companies at worldwide level;
- air quality as a key public health challenge;
- energy transition and the environment with the boom in alternative energies (hydrogen energy, biogas, photovoltaic, wind turbines, etc.) and their applications in particular in terms of mobility and energy efficiency;
- the carbon market with changes in European regulations and the development of regional markets in North America and Asia Pacific;
- the opportunities and risks relating to the digitalization of the economy;
- the defense of Air Liquide's shareholding model;
- space exploration at European level;
- the defense of intellectual property and the launch of the European unitary patent and of the Unified Patent Court;
- environmental and societal reporting challenges. In relation to fiscal matters, Air Liquide is particularly attentive to paying taxes in the countries where the Group is present and to the desire for good relations with the different local tax authorities.

FRENCH INNOVATION COUNCIL (CONSEIL DE L'INNOVATION)

Launched in 2018 and co-chaired by the French Minister of Economy and Finance and the French Minister of Higher Education, Research, and Innovation, the French Innovation Council (Conseil de l'Innovation) sets out the strategic priorities for French innovation policy. By encouraging greater risk-taking and being prepared to accept failure, the Council promotes disruptive thinking and the creation of initiatives and structures that will form the keystone of future innovation for both France and Europe. The Council is composed of six ministers, the relevant government departments (French General Secretariat for Investment, SGPI; French Directorate for Enterprises, DGE; French Directorate for Research and Innovation, DGRI), two operators (ANR and Bpifrance), as well as six eminent figures, including the Chairman and CEO of Air Liquide, Benoît Potier.

ANNUAL REPORTING

1. Safety indicators

SAFETY INDICATORS FOR THE GROUP AS A WHOLE

	2010	2011	2012	2013	2014	2015	2016	2017 (f)	2018	2019
Number of Group employee lost-time accidents of at least one day (a)	153	144	149	151	144	152	137	198	161	158
Accident frequency of Group employees (b)	1.9	1.7	1.7	1.6	1.6	1.6	1.4	1.6	1.3	1.2*
Accident severity rate (c)		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.17	<0.1
Number of accidents of subcontractors and temporary workers (d) (e)	155	118	142	110	92	94	91	90	93	109
Frequency of accidents of subcontractors and temporary workers				2.2	2.3	2.2	2.0	2.1	2.2	2.4

(a) *Fatal work accidents since 2010: none in 2019, three in 2018, none in 2017, one in 2016, none in 2015, none in 2014, three in 2013, one in 2012, one in 2011. Among these fatal accidents, the one in 2016 was a road accident.*

(b) *Number of accidents involving lost time of at least one day, per million hours worked by Group employees. Accidents defined according to International Labour Office recommendations. Working hours are defined according to local employment laws.*

(c) *Average number of days of lost time per thousand hours worked. Accidents defined according to International Labour Office recommendations.*

(d) *Personnel working under an Air Liquide contract at a Group site, at a customer site, or as a delivery vehicle driver.*

(e) *Fatal work accidents since 2015: two in 2019, five in 2018, none in 2017, one road accident in 2016, one road accident in 2015.*

(f) *With Airgas, data from previous years relate to Air Liquide alone.*

* *Indicator verified by the independent verifier.*

The lost-time accident frequency rate of Air Liquide employees continues to improve and stood at 1.2 at the end of 2019, representing a 3.9% improvement compared to 2018. This is the lowest frequency rate the Group has achieved in more than 20 years.

As for the frequency rate of subcontractors and temporary workers, it was 2.4 at the end of 2019, significantly higher than in 2018. The increase in the number of lost-time accidents of subcontractors and temporary workers is due to a greater number of hours worked, as well as an increase in this number of accidents in Europe. It should be noted that the severity rate of these accidents fell significantly.

2. Environmental indicators

2.1. LIST OF PRODUCTION UNITS AND THEIR ENVIRONMENTAL FOOTPRINT

The environmental elements that are most representative of the Group's activities and part of Air Liquide's Sustainable Development reporting are described below. They cover a total of 565 Air Liquide production units worldwide.

Type of production unit	Number of production units	Applications and environmental footprint
Large Air Separation Units (ASUs)	327	Large Air Separation Units produce oxygen, nitrogen and argon, with some sites also producing rare gases such as krypton and xenon. These plants "without chimneys" do not use any combustion processes. They are particularly environmentally-friendly as they emit no CO_2, sulfur oxide (SOx) or nitrogen oxide (NOx). They use almost exclusively electricity: worldwide they use about 3,600 MW at any given moment. The electricity purchased from our energy suppliers and consumed by the Air Separation Units is the source of indirect emissions. The cooling systems of these units require back-up water.
Hydrogen and carbon monoxide units (HyCO)	47	Large hydrogen and carbon monoxide production units also produce steam for some customers. They primarily use natural gas as raw material and some water, required for the reaction that produces hydrogen. Carbon monoxide is an essential raw material in the chemical industry for producing plastics. The desulfurization of hydrocarbons in order to produce fuels with reduced sulfur content is one of the main applications of hydrogen. These units emit CO_2 and nitrogen oxides (NOx), but practically no sulfur oxides (SOx). They also consume electricity and their cooling systems require back-up water.
Cogeneration units	19	Cogeneration units produce steam and electricity simultaneously. They consume natural gas and water, mostly converted into steam and supplied to customers. The steam can be condensed at these customers' facilities and then reused in the cogeneration unit. In most cases, the electricity produced is supplied to the local electricity distribution network, which in some countries can be used to power the Group's other units. Combustion of natural gas produces CO_2 and leads to low nitrogen oxide (NOx) emissions, but practically no sulfur oxide (SOx) emissions.
Acetylene units	58	These units produce acetylene, a gas primarily used in metal welding and cutting. 50 of these units produce this gas through the decomposition of a solid (calcium carbide) using water. Two units fill cylinders with this gas, which is supplied by another industrial company. This process produces lime, at least 90% of which tends to be recycled in industrial and agricultural applications.
Nitrous oxide units	7	Nitrous oxide is used primarily as an anesthetic gas in the healthcare sector and as a sweetening agent in the food industry. It is produced from ammonium nitrate in solid form or as a water-based solution.
Carbon dioxide liquefaction and purification units	76	These units liquefy and purify carbon dioxide, which has many industrial applications, especially in the food industry where it is used to deep-freeze foods or to produce carbonated beverages. Carbon dioxide is most often a by-product of chemical units operated by other manufacturers. In certain cases, it is found naturally in underground deposits. In other cases, it comes from the Group's hydrogen and carbon monoxide units. It is purified and liquefied in Air Liquide units consuming electricity and cooling water. Carbon dioxide is thus reused for other industrial applications instead of being emitted directly into the atmosphere.
Units for the Hygiene and Specialty Ingredients business	10	These production units for the Hygiene and Specialty Ingredients business are located in France, Germany and China and belong to the subsidiaries Schülke (Hygiene business) and Seppic (Specialty Ingredients business). Air Liquide experts work closely with hospitals to help them reduce the risk of nosocomial infection and contamination, thanks to the products the Group has developed. These units consume natural gas, electricity and water. Combustion of natural gas produces small amounts of CO_2.
Engineering & Construction units	6	Units for the Engineering & Construction business taken into account in this reporting are located at five sites in France, China and the United Arab Emirates. They are mainly used for the construction of air separation columns and cryogenic tanks.
Biogas units	15	These units process waste to produce biogas, a renewable energy source. Biogas is produced during the methanization of biomass: household waste, industrial and agricultural waste and sewage sludge. Air Liquide is aware of the potential of this process in terms of the energy transition and is thus working on global solutions dedicated to the valorization of biogas and which meet the needs of farmers, waste treatment managers and the agro-industry.

2.2. ENVIRONMENTAL FOOTPRINT OF TRANSPORTATION

TRANSPORTATION: INDUSTRIAL MERCHANT BUSINESS

	2015	2016	2017	2018	2019
Kilometers traveled by all vehicles delivering gas in liquid or cylinder form *(in millions of km)*	426	540	588	601	596*
Estimate of CO_2 emissions generated by these vehicles in the Industrial Merchant business *(in thousands of tons)*	468	600	653	666	660*
Change in distance traveled per ton of liquid industrial gas delivered (oxygen, nitrogen, argon, carbon dioxide) [(a)] *(truck delivery)*	100.0	97.0	100.3	101.7	98.1*
Estimate of truck transportation kilometers avoided through on-site customer units *(in millions of km)*	-74	-63	-57	-58	-56
Estimate of CO_2 emissions avoided by these on-site units *(in thousands of tons)*	-74	-63	-58	-59	-56
Percentage of deliveries of air gases and hydrogen via pipeline or on-site	87%	85%	85%	85%	85%

(a) In kilometers per ton delivered for the Industrial Merchant business. 2015 base of 100.
** Indicator verified by the independent verifier.*

TRANSPORTATION: HEALTHCARE BUSINESS

	2015	2016	2017	2018	2019
Transportation: Home Healthcare business					
Kilometers traveled *(in millions of km)*	161	173	184	181	187
Associated CO_2 emissions *(in thousands of tons)*	39	38	35	35	33
Transportation: Medical Gases business					
Kilometers traveled *(in millions of km)*	28	27	33	33	32
Associated CO_2 emissions *(in thousands of tons)*	25	24	29	30	29
TOTAL KILOMETERS TRAVELED HEALTHCARE BUSINESS *(in millions of km)*	**189**	**200**	**217**	**214**	**219**
TOTAL ASSOCIATED CO_2 EMISSIONS *(in thousands of tons)*	**64**	**62**	**64**	**65**	**63**

2.3. SUMMARY OF THE GROUP'S GREENHOUSE GAS EMISSIONS

	2015	2016	2017	2018	2019
Scope 1: total direct greenhouse gas emissions (GHG) *(in thousands of tons of CO_2 eq.)* [(a)]	13,552	14,062	14,476	15,390	15,641*
Scope 2: total indirect GHG emissions *(in thousands of tons of CO_2)* [(b)]	11,716	11,174	11,679	12,422	12,207*
TOTAL DIRECT AND INDIRECT GHG EMISSIONS *(in thousands of tons of CO_2 eq.)*	**25,268**	**25,236**	**26,155**	**27,812**	**27,848***

(a) Includes CO_2 emissions and nitrous oxide emissions.
(b) Total of indirect GHG emissions generated by the production of electricity purchased outside the Group. The indirect emissions only concern CO_2 emissions. The calculation takes into account the various primary energy sources that each country uses to produce electricity (source: International Energy Agency).
** Indicator verified by the independent verifier.*

The Group's direct emissions (Scope 1) increased from 15.4 million tons of CO_2 equivalent in 2018 to 15.6 million tons in 2019, i.e., an increase of 1.6%. This growth is mainly due to increased sales of COGEN in the United States (due to favorable electricity market conditions) and hydrogen sales in Benelux, China and Singapore.

The Group's indirect emissions (Scope 2) fell from 12.4 million tons in CO_2 equivalent in 2018 to 12.2 million tons in 2019, which is a reduction of 1.7%. This reduction is partly due to a decrease in oxygen sales.

Air Liquide has launched a more accurate and complete analysis of its Scope 3 emissions in accordance with the Greenhouse Gas Protocol. This analysis in progress aims to quantify the various categories within Scope 3 and to determine which are the most significant for the Group's activity.

In addition, 3.6 Mt of CO_2 were purified and supplied to customers by Air Liquide in 2019 to be used in various applications such as greenhouses or the food industry.

Business travel by plane, road or train is the source of reported Scope 3 CO_2 emissions. Emissions from business travel represented around 215,000 tons of CO_2 in 2019 for all subsidiaries, representing less than 1% of the Group's total emissions.

2.4. ENERGY AND EFFICIENCY INDICATORS FOR THE GROUP AS A WHOLE

	2015	2016	2017	2018	2019
Annual electricity consumption *(in GWh)* [(a)]	31,650	32,834	34,062	36,265	35,687*
Annual thermal energy consumption *(in LHV terajoules)* [(b)]	266,153	281,043	290,285	306,111	307,022* [(c)]
Change in energy consumption per m^3 of air gas produced [(d) (e)]	100.0	101.4	99.3	98.8	99.9*
Change in energy consumption per m^3 of hydrogen produced [(d) (f)]	100.0	100.2	99.3	100.0	100.0*

(a) Includes a share of steam and compressed air purchased by the Group.
(b) LHV: Lower Heat Value, which includes the fact that energy from water vaporizing in fuel is not recovered.
(c) Approximately 85,000 GWh LHV.
(d) Calculated using a base of 100 in 2015.
(e) Gases produced (oxygen, nitrogen, argon) calculated in m^3 of equivalent gaseous oxygen.
(f) Hydrogen and carbon monoxide.
** Indicator verified by the independent verifier.*

2.5. DISCHARGES INTO AIR AND WATER

(in tons)	2015	2016	2017	2018	2019
Discharges into air: NOx (nitrogen oxides)	3,270	3,563	3,542	3,974	5,043
Discharges into air: SOx (sulfur oxides)	<250	<250	<250	<100	<100
Volatile organic compounds (VOCs) discharged into the atmosphere *(estimate)*	99	76	146	246	299
Discharge to water: oxidizable matter	<1,000	<1,000	<1,000	<1,500	<1,000
Discharge to water: suspended solids	<1,500	<1,500	<1,500	<1,000	<1,000

2.6. WASTE AND BY-PRODUCTS

Air Liquide wishes to be part of a process of continuous improvement of its environmental footprint regarding waste. To this end, in 2019, the reporting of waste and by-products changed to provide a more comprehensive view of the types of waste generated and their management.

This qualitative approach focuses on the three main hazardous waste groups at each site, allowing a better appreciation of the main environmental impacts associated with waste in each location. This new approach is to be refined in the coming years, in order to provide a view that will allow this environmental footprint to be managed more effectively within the Group.

Main hazardous waste	% of sites which mentionned it as one of their three main hazardous waste categories	Treatment mode	Volume concerned
Oils	76%	Recycling	59%
Paints and solvents	24%	Recycling	34%
		Incineration	28%
Batteries	22%	Recycling	87%

For non-hazardous waste, the main waste groups are metal, paper, wood and plastics. More than half of our sites provide a selective collection of this waste. More than 90% of metal is recycled across all of our sites.

	2015	2016	2017	2018	2019
Non-hazardous waste and by-products					
Annual quantity of lime produced (extracted dry equivalent) by the acetylene production units *(in tons)*	29,000	26,000	25,000	25,380	31,247
% recycled	*>80%*	*>80%*	*>90%*	*>90%*	*>90%*
Metal waste *(in tons)* [(a)]	7,600	5,700	61,513	61,680	20,632 [(b)]
% recycled	*>99%*	*>99%*	*>99%*	*>99%*	*>99%*
TOTAL NON-HAZARDOUS WASTE AND BY-PRODUCTS *(estimate in tons)*	**36,600**	**31,700**	**86,513**	**87,060**	**51,879**

(a) Non-hazardous metal waste.
(b) Decrease in 2019 following the end of the Airgas unused cylinder cleaning process.

3. Specific indicators for the Home Healthcare business linked to the issue of socially responsible bonds

In 2012, Air Liquide issued its first SRI-labeled bond* under its Euro Medium Term Notes (EMTN) program, for a total amount of 500 million euros. This bond was mostly placed with investors having SRI management mandates and permitted the Group to diversify its financing sources. After numerous public authorities and supranational issuers, Air Liquide became the first company in the world to issue bonds meeting the criteria of SRI investors. Obtaining a rating from the extra-financial rating agency Vigeo for the Home Healthcare business led to this issue being given an SRI label. This evaluation is based on the social, environmental and governance criteria of the Home Healthcare business that concerns more than 1.6 million patients worldwide. In the course of this SRI bond issue, Air Liquide made a commitment to publishing indicators specific to the Home Healthcare business relating to the environment, safety, and employee diversity throughout the life of these bonds, i.e., nine years.

Number of patients treated	2015	2016	2017	2018	2019
Total number of patients treated by the Air Liquide Home Healthcare Division	1,300,000	1,400,000	1,550,000	1,630,000	1,700,000
Group employees					
Home Healthcare employees (a)	9,112	9,492	10,015	10,143	10,425
Safety					
Number of lost-time accidents of at least one day among employees	79 (b)	63 (b)	66 (b)	63 (d)	65 (b)
Number of accidents of subcontractors and temporary workers (c)	16 (b)	21 (d)	8 (b)	16 (b)	20 (b)
Gender mix					
% of women among managers and professionals	58%	57%	58%	56%	55%
% of women among managers and professionals hired during the year	58%	62%	59%	60%	58%
Training					
Average number of days of training per employee, per year	1.6	2.1	1.9	2.1	2.1 (e)
Kilometers driven and CO_2 emissions related to transportation					
Kilometers driven per patient monitored per year	123	131	118	111	110
CO_2 emissions related to transportation per patient *(kgCO_2/patient)* per year	30	29	23	21	20

(a) Employees under contract, excluding temporary employees.
(b) No fatal work accidents.
(c) Personnel working under an Air Liquide contract at a Group site, at a customer site, or as a delivery vehicle driver.
(d) One fatal accident (road accident).
(e) 15.7 hours per year when counted in hours (base: 1 day = 7.5 hrs).

* *Socially Responsible Investment: application of sustainable development principles to investment. Approach consisting in systematically considering the three dimensions – environment, social/societal, and governance – in addition to the usual financial criteria.*

4. Human Resources indicators

GROUP EMPLOYEES [(a)]

Employees [(a)]	2015	2016	2017	2018	2019
Group employees	51,500	66,700	65,200	66,000	67,200*
Women	14,200	17,000 [(e)]	16,900	17,300	17,500
as a %	28%	25%	26%	26%	26%
Men	37,300	49,700	48,300	48,700	49,700
as a %	72%	75%	74%	74%	74%
Joining the Group [(b)]	16.5%	17.1%	16.7%	16.5%	17.4%
Leaving the Group [(c)]	14.0%	15.1%	18%	15.2%	16.4%
% of employees having resigned during the year [(d)]	5.3%	5.4%	7.5%	8.0%	7.5%

(a) *Employees under contract, excluding temporary employees.*
(b) *Hiring or integration due to acquisitions. The percentage is based on the number of employees as of December 31 of the preceding year.*
(c) *Retirement, resignations, layoffs (around 20% of the departures), departures due to disposals, etc. The percentage is calculated based on the number of employees as of December 31 of the preceding year.*
(d) *Calculated on the number of employees as of December 31 of the preceding year.*
(e) *Estimate.*
* *Indicator verified by the independent verifier.*

HUMAN RESOURCES INDICATORS FOR THE GROUP

	2015	2016	2017	2018	2019
Parity and diversity					
Gender mix					
% of women among managers and professionals	29%	30%	29%	29%	29%*
% of women among managers and professionals hired during the year	34%	39%	37%	36%	38%*
% of women among employees considered as high potential	38%	40%	40%	41%	41%
Number of nationalities					
Among expatriates	50	44	53	49	55
Among senior executives	33	30	33	30	34
Among employees considered as high potential	48	49	52	53	55
Number of nationalities among senior executives / Number of countries where the Group is present	41%	38%	41%	38%	43%
Training					
% of total payroll allocated to training	About 2%	About 2%	About 2%	About 1.5%	About 2%
Average number of days of training per employee, per year *(order of magnitude)*	3.5 days	3.1 days	3.0 days	2.7 days	3.0 days* (a)
% of employees who received training at least once during the year *(order of magnitude)*	77%	72%	73%	63%	70%* (a)
Performance review					
% of employees who have had an annual performance review meeting with their direct supervisor during the year	80%	76%	81%	80%	78%*
% of employees who have had a career development meeting with the HR Department during the year	15%	17%	12%	13%	14%
Remuneration					
% of employees with an individual variable component as part of their remuneration	60%	63%	57%	53%	56%
Absenteeism					
Absence rate of Air Liquide employees *(estimate)*	2.7%	2.7%	2.5%	2.3%	2.1%
Employee loyalty					
Average length of service in the Group	10 years	10 years	10 years	10 years	10 years
Retention rate of managers and professionals over a year (b)	95%	95%	93%	93%	93%
Social performance					
% of employees with disabilities (c)	1.4%	1.4%	1.1%	1.1%	1.2%
% of employees with access to a representation/dialog/consultation structure	79%	82%	85%	86%	80.4% (d)
% of employees belonging to an entity at which an internal commitment survey was conducted within the last three years	68%	65%	45%	36%	74.3%
Employee shareholders					
% of capital held by Group employees (e)	1.5%	1.5%	1.5%	1.7%	1.7%
% of Group employees that are shareholders of L' Air Liquide S.A.	Almost 50%	More than 50%	36%	43%	39.8%

(a) 23 hours a year when counted in hours (base: 1 day = 7.5 hrs), does not take into account training courses if they do not total a minimum of one day (e.g. e-learning).
(b) This rate takes only resignations into account.
(c) For the countries where regulations allow this data to be made available.
(d) Decrease in 2019 related to the acquisition of new entities with no existing structures.
(e) Within the meaning of article L. 225-102 of the French Commercial Code.
** Indicator verified by the independent verifier.*

6. Reporting methodology

6.1. PROTOCOL AND DEFINITIONS

In the absence of a relevant and recognized protocol for industrial gas operations, Air Liquide has created its own protocol to define its reporting methods for Human Resources, safety and environmental indicators. This protocol includes all the definitions, measurement procedures and collection methods for this information. In line with the Group's commitment to continuous improvement, Air Liquide is gradually completing the work of adjusting to its Sustainable Development indicators protocol to reflect changes in the Group.

This protocol is based on the general principles defined by the Group with regard to scope, responsibilities, controls and limits, and establishes definitions, departmental responsibilities, tools and data-tracing methods for each indicator. This document is regularly updated. Moreover, this protocol takes into account all the Group's formalized procedures in the framework of the Industrial Management System (IMS) and the global protocol for Group Policies, Codes and Procedures called the BLUEBOOK. This reporting protocol makes it possible to cover the information listed in articles L. 225-102-1 and R. 225-105 of the French Commercial Code, except for the fight against food waste, food insecurity, respect for animal well-being, and commitments to responsible, fair, and sustainable food. Due to its industrial activity, these subjects are not considered as a priority by Air Liquide.

6.2. SCOPE AND CONSOLIDATION METHODS

Human Resources and environmental indicators are consolidated worldwide for all companies integrated within the financial consolidation scope. Entities accounted for by the equity method are excluded from the reporting scope.

Safety indicators are consolidated worldwide for all companies in which Air Liquide has operational control or is responsible for safety management.

Apart from these general rules, there are some specific ones:

- information on the impact of transportation (kilometers traveled, CO_2 emitted) is calculated on the basis of data collected in the main countries where the Group is established around the world;
- information on avoided kilometers and avoided CO_2 emissions through on-site Air Separation Units and efficiency measures pertains to fully consolidated subsidiaries within the financial consolidation scope;
- environmental and energy indicators for the main types of production units operated by the Group cover about 99% of the Group's Gas & Services revenue, and 98% of the Group's total revenue;
- for environmental and energy indicators, production units are included in the reporting system from the effective date of their industrial commissioning;
- electricity consumption and the indirect CO_2 emissions related to it are only taken into account when Air Liquide pays for this electricity. Energy consumption of on-site units as well as water consumption specific to the sale of treated water (which is not part of the Group's core business) are excluded from the consolidation scope of the data. When the Group has cogeneration units in a country where ASUs are available, the indirect emissions from the electricity of these units are not taken into account;
- the segmentation between advanced economies and developing economies used for direct and indirect greenhouse gas emissions is the same as that used by the Finance Department.

6.3. DATA COLLECTION AND RESPONSIBILITIES

The Human Resources, safety and environmental indicators are produced by several data collection systems in the Group, each under the responsibility of a specific department:

- Human Resources indicators, included in the Group's general accounting consolidation tool, fall under the responsibility of the Human Resources Department;
- the energy consumption and CO_2 emissions indicators for the main Air Separation Units and cogeneration, hydrogen and carbon monoxide units are tracked by the Large Industries business line using a dedicated Intranet tool;
- as a complement, environmental and safety reporting is carried out by the Safety and Industrial System Department using a dedicated Intranet tool, and includes:
  - for all entities, the Group's accident reporting data,
  - for the units of the Large Industries business line, other environmental indicators (atmospheric emissions, water consumption, discharge to water, etc.),
  - for the smaller units (acetylene, nitrous oxide, and carbon dioxide units and Hygiene and Specialty Ingredients businesses), the Engineering & Construction business units, the Research & Development sites and the Technical Centers, all indicators (energy, atmospheric emissions, water consumption, discharge to water, etc.);
- indicators on Industrial Merchant transportation are the responsibility of this business line;
- indicators on transportation for Medical Gases and Home Healthcare are the responsibility of the Healthcare business line;
- the estimate of the percentage of the Group's revenue with respect to the implementation of the Industrial Management System (IMS), as well as ISO 9001, ISO 14001 and OHSAS 18001 are indicators which fall under the responsibility of the Safety and Industrial System Department;
- among the subjects covered by the French "Grenelle 2" Law, soil pollution and the consideration of noise pollution are not relevant for the Industrial Gas business, given the size of the Group's sites and the noise levels generated. They are therefore not mentioned in this report.

6.4. CONTROLS

Each department in charge of collecting data is responsible for the indicators provided. Control occurs at the time of consolidation (review of changes, inter-entity comparisons).

Safety and energy indicators are tracked monthly. In addition, audits of environmental data are carried out by the Safety and Industrial System Department on a sample of sites representative of the various types of units monitored. Where the data reported are inconsistent or missing, an estimated value may be used by default.

6.5. METHODOLOGICAL LIMITS

The methodologies used for certain Human Resources, safety and environmental indicators can have certain limits due to:

- the absence of nationally or internationally recognized definitions, in particular for indicators on managers and professionals and social performance indicators;
- the representativeness of the measurements taken and required estimates. This is particularly the case for indicators regarding avoided CO_2 emissions, water consumption, kilometers avoided per on-site unit, and training.

7. Independent verifier's report

REPORT BY ONE OF THE STATUTORY AUDITORS, APPOINTED AS AN INDEPENDENT THIRD PARTY, ON THE CONSOLIDATED NON-FINANCIAL INFORMATION STATEMENT INCLUDED IN THE GROUP MANAGEMENT REPORT

This is a free translation into English of the Statutory Auditor's report issued in French and is provided solely for the convenience of English speaking readers. This report should be read in conjunction with, and construed in accordance with, French law and professional standards applicable in France.

For the year ended 31 December 2019

To L'Air Liquide's annual general meeting,

In our capacity as Statutory Auditor of L'Air Liquide (hereinafter the "entity"), appointed as an independent third party and accredited by COFRAC under number 3-1060 rév. 2 (whose scope is available at www.cofrac.fr), we hereby report to you on the consolidated non-financial information statement for the year ended 31 December 2019 (hereinafter the "Statement") included in the Group Management Report, pursuant to the legal and regulatory provisions of articles L. 225 102-1, R. 225-105 and R. 225-105-1 of the French Commercial Code (Code de commerce).

The entity's responsibility

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

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

Independence and quality control

Our independence is defined by the provisions 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 the ethical requirements, French professional guidance and applicable legal and regulatory requirements.

Responsibility of the Statutory Auditor, appointed as an 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 provisions of article R. 225-105 of the French Commercial Code;
- the fairness of the information provided in accordance with article R. 225 105 I, 3 and II of the French Commercial Code, i.e., the outcomes, including key performance indicators, and the measures implemented considering the principal risks (hereinafter the "Information").

However, it is not our responsibility to comment on:

- The entity's compliance with other applicable legal and regulatory provisions, in particular the French duty of care law and Anti-Corruption and tax evasion legislation;
- The compliance of products and services with the applicable regulations.

Nature and scope of our work

The work described below was performed in accordance with the provisions of articles A. 225-1 et seq. of the French Commercial Code determining the conditions in which the independent third party performs its engagement and with the professional guidance of the French Institute of Statutory Auditors ("CNCC") applicable to such engagements, as well as with ISAE 3000 – Assurance engagements other than audits or reviews of historical financial information.

Our procedures allowed us to assess the compliance of the Statement with regulatory provisions and the fairness of the Information:

- we obtained an understanding of the entity's consolidated activities, the description of the social and environmental risks associated with its activities and the impact of these activities on compliance with human rights and Anti-Corruption and tax evasion legislation, as well as the resulting policies and their outcomes;
- we assessed the suitability of the Guidelines with respect to their relevance, completeness, reliability, objectivity 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, as well as information regarding compliance with human rights and Anti-Corruption and tax evasion legislation;
- we verified that the Statement includes an explanation for the absence of the information required under article L. 225-102-1 III, 2;
- we verified that the Statement presents the business model and the principal risks associated with the entity's consolidated activities including where relevant and proportionate, the risks associated with its business relationships and products or services, as well as its policies, measures and the outcomes thereof, including key performance indicators;
- we verified, where relevant with respect to the principal risks or the policies presented, that the Statement provides the information required under article R. 225-105 II;
- we assessed the process used to identify and confirm the principal risks;
- we asked what internal control and risk management procedures the entity has put in place;
- we assessed the consistency of the outcomes and the key performance indicators used with respect to the principal risks and the policies presented;
- we verified that the Statement covers the scope of consolidation, i.e., all the companies included in the scope of consolidation in accordance with article L. 233-16 within the limitations set out in the Statement;
- we assessed the data collection process implemented by the entity 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, we implemented:
  - analytical procedures to verify the proper consolidation of the data collected and the consistency of any changes in those data,
  - substantive tests, 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, including Geismar, ROCC Houston, Tuscaloosa, Puertollano, Anvers, Fos-sur-Mer, COOD St Priest, et Sarroch Sarlux for environmental and health and safety data, as well as USA Cluster, Iberia Cluster, Cryo Santé France, Airgas, and SEPPIC for social data, and covers between 26% and 33%, respectively, of the consolidated data relating to the key performance indicators and outcomes selected for these tests;
- we referred to documentary sources and conducted interviews to corroborate the qualitative information (measures and outcomes) that we considered to be the most important;
- we assessed the overall consistency of the Statement based on our knowledge of the entity's consolidated activities.

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

Means and Resources

Our work was carried out by a team of nine people between October 2019 and February 2020 and took a total of 20 weeks.

We were assisted in our work by our specialists in sustainable development and corporate social responsibility. We conducted approximately ten interviews with people responsible for preparing the Statement, representing Sustainable Development, Risks, Procurement, Ethics, Human Resources, Safety and Industrial Systems, and Large Industries departments.

Conclusion

Based on our work, nothing has come to our attention that causes us to believe that the consolidated non-financial information statement included in the Group Management Report is not in accordance with the applicable regulatory provisions and that the Information, taken as a whole, is not presented fairly in accordance with the Guidelines.

Paris, 21 February 2020

One of the Statutory Auditors

French original signed by

PricewaterhouseCoopers Audit

Séverine Scheer Partner	Sylvain Lambert Sustainable Development Partner

Appendix: List of the information we considered most important

Key performance indicators and other quantitative results:

- Carbon intensity
- Direct GHG emissions;
- Indirect GHG emissions;
- CO_2 emissions avoided
- Energy consumption per m^3 of gas in the air produced;
- Energy consumption per m^3 of hydrogen produced;
- Distance traveled per tonne of industrial gas delivered;
- Nox emissions;
- Sox emissions;
- Share of Air Liquide sites located in areas of water stress;
- Water consumption;
- Accident severity rate;
- Number of fatal accidents;
- Accident frequency rate;
- Number of participants in ALLEX program for managers and EVE program for technicians;
- Share of women managers and professionals (M&Ps);
- Share of employees with disabilities;
- Share of employees who benefited from at least one training during the year;
- Recruitment of young graduates for engineer and manager positions;
- Share of Ethicall alerts requiring corrective actions.

Qualitative information (actions and results):

- Participation of employees in the Air Liquide University pilot program;
- Collaboration with Equinor, Shell and Total on the Northern Lights CO_2 capture and storage project;
- Launch of the construction of the first electrolysis units using water and electricity to produce hydrogen without CO_2 emissions;
- Deployment of specific training to educate teams on a Health & Safety subject;
- Implementation of actions ("policy conducted") to promote women to the highest levels of responsibility earlier in their careers;
- Deployment of the "Technical Community Leaders" Program;
- Formalization of a third-party evaluation system;
- Awareness raising sessions for ethics, purchasing, finance and legal correspondents to assess the risk of corruption among third parties;
- Signature of the "Tax Partnership" with the French tax administration.

8. Appendix

Link between Air Liquide's Sustainable Development indicators and the indicators of the Global Reporting Initiative (GRI)

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ANNUAL GENERAL MEETING 2020

BOARD OF DIRECTORS' REPORT ON THE RESOLUTIONS PRESENTED TO THE COMBINED GENERAL MEETING – MAY 5, 2020

Results for the fiscal year

The financial statements of L'Air Liquide S.A. that have been prepared by applying the methods provided for by law and the standards of the French General Chart of Accounts are attached to this report – pages 269 and 270.

Revenue for the fiscal year ended December 31, 2019 amounted to 117.4 million euros, compared to 110.3 million euros in 2018, up by +6.4%.

The income from French and foreign equity securities amounted to 374.4 million euros, compared to 330.9 million euros in 2018.

Net profit for the fiscal year ended December 31, 2019 amounted to 567.7 million euros, compared to 544.8 million euros in 2018.

In 2018 and 2019, L'Air Liquide S.A. net profit is impacted by exceptional items.

Consolidated revenue in 2019 amounted to 21,920.1 million euros, compared to 21,011.1 euros in 2018, up +4.3%. After adjusting for the cumulative impact of foreign exchange fluctuations, revenues was up +2.2%. The latter essentially stemmed from the appreciation of the US dollar and to a lesser extent of the Yen and Singapore dollar against the Euro. Those effects are partly balanced by the depreciation of the Argentina peso against the Euro.

Consolidated net profit, after deduction of minority interests, amounted to 2,241.5 million euros, compared to 2,113.4 million euros in 2018, up by +6.1% (up +4.2% excluding foreign exchange impact).

These results are detailed in the Management Report and the financial statements.

Information on share capital

AMOUNT OF SHARE CAPITAL HELD BY EMPLOYEES

Please refer to the Chapter "Additional Information" of this Universal Registration Document – page 354.

CROSSING OF SHARE CAPITAL AND VOTING RIGHTS THRESHOLDS IN 2017

Please refer to the Chapter "Additional Information" of this Universal Registration Document – page 353.

Investments and acquisition of controlling interests

In accordance with the provisions of article L. 233-6 of the French Commercial Code, there is no new transaction performed by L'Air Liquide S.A. in 2019.

Resolutions within the authority of the Ordinary General Meeting

We ask you, after having reviewed:

- the Reports of the Board of Directors;
- the Company's financial statements, income statement, balance sheet and notes thereto;
- the Group's consolidated financial statements;
- the Reports of the Statutory Auditors;

to approve the Company's financial statements and the consolidated financial statements for the year ended December 31, 2019 as presented, as well as the transactions set out in these financial statements or mentioned in these reports.

Your Company's net profit allows the Board to propose the payment of a dividend of 2.70 euros for each share entitled to a dividend, it being specified that in the event of a change in the number of shares entitled to a dividend compared to the 473,105,514 shares making up the share capital as of December 31, 2019, the overall dividend amount would be adjusted accordingly and the amount appropriated to the retained earnings account would be determined on the basis of the dividends effectively paid.

The proposed dividend amounts to 2.70 euros per share. The level of this dividend must be taken into account including the free share attribution of one share for 10 existing shares on October 9, 2019.

The ex-dividend date will be set for May 11, 2020. The dividend payment date will be set for May 13, 2020.

In accordance with article 117 quater of the French General Tax Code, it is specified that ordinary and loyalty dividends paid to individuals with their tax residence in France are fully subject to the single flat-rate withholding tax of 12.8%. Nonetheless, at the express, irrevocable and global request of the shareholder, these dividends may be subject to the progressive income tax rate and shall therefore be eligible for the 40% allowance referred to in section 2° of paragraph 3 of article 158 of the French General Tax Code, which is applicable under certain conditions. In all cases, these ordinary and loyalty dividends shall also be subject to social contributions at a rate of 17.2%.

In addition, shareholders who have held their shares in registered form for at least two years as of December 31, 2019, and who retain such shares in registered form up to the dividend payment date, shall be entitled, for such shares (i.e. a total number of 134,154,877 shares at December 31, 2019), to a loyalty dividend of 10% compared with the dividend paid to the other shares, i.e. an additional dividend of 0.27 euro per share. In accordance with article 117 quater of the French General Tax Code, it is specified that ordinary and loyalty dividends paid to individuals with their tax residence in France are fully subject to the flat-rate withholding tax of 12.8%. Nonetheless, at the express, irrevocable and global request of the shareholder, these dividends may be subject to the progressive income tax rate and shall therefore be eligible for the 40% allowance referred to in section 2° of paragraph 3 of article 158 of the French General Tax Code, which is applicable under certain conditions. In all cases, these ordinary and loyalty dividends shall also be subject to social contributions at a rate of 17.2%.

The difference between the loyalty dividend calculated on the number of shares known to exist at December 31, 2019 and the loyalty dividend actually paid will be allocated to the retained earnings account.

We also ask you to take due note of distributable earnings for the fiscal year. Such amount includes profits for fiscal year 2019 of 567,741,496 euros plus available retained earnings at December 31, 2019 of 5,587,764,890 euros, i.e. a total of 6,155,506,386 euros.

We propose to appropriate the distributable earnings for fiscal year 2019, i.e. 6,155,506,386 euros, as follows:

Legal reserve	24,025,144 euros
Retained earnings	4,817,874,537 euros
Dividend (including the loyalty dividend)	1,313,606,705 euros

DISTRIBUTION

In accordance with French law, we wish to remind you that the distributions made in respect of the last three fiscal years were as follows:

	Total amount distributed [(a)] *(in euros)*	Number of shares concerned [(b)]	Dividend distributed eligible in its entirety for the 40% allowance referred to in article 158-3-2° of the French Tax Code [(c)] *(in euros)*
Fiscal year 2016			
Ordinary dividend	1,011,076,979	388,875,761	2.60
Loyalty dividend	26,595,971	102,292,196	0.26
Fiscal year 2017			
Ordinary dividend	1,135,253,508	428,397,550	2.65
Loyalty dividend	30,459,742	117,152,854	0.26
Fiscal year 2018			
Ordinary dividend	1,137,972,100	429,423,434	2.65
Loyalty dividend	33,416,412	128,524,663	0.26

(a) Theoretical values calculated based on the number of shares as of December 31 for each fiscal year.

(b) Number of shares expressed historically as of December 31 for each fiscal year.
The amounts effectively paid after adjustment were as follows:
- fiscal year 2016 – ordinary dividend: 1,005,542,972 euros for 386,747,297 shares; loyalty dividend: 26,025,861 euros for 100,099,466 shares;
- fiscal year 2017 – ordinary dividend: 1,130,983,210 euros for 426,786,117 shares; loyalty dividend: 29,591,663 euros for 113,814,089 shares;
- fiscal year 2018 – ordinary dividend: 1,131,698,657 euros for 427,056,097 shares; loyalty dividend: 32,497,215 euros for 124,989,290 shares.
The adjustment arises from the change in the number of treasury shares, from the final determination of the loyalty dividend taking into account shares sold between January 1 and the ex-dividend date, from the exercise of options over this same period and the capital increase reserved for employees.

(c) Applicable, under certain conditions, when the progressive income tax rate is applied.

BUYBACK BY THE COMPANY OF ITS OWN SHARES

A. Information on the completion of the Company's share buyback program (pursuant to article L. 225-211 of the French Commercial Code)

The Combined General Meeting of May 7, 2019 authorized the Board, for a period of 18 months, in accordance with articles L. 225-209 et seq. of the French Commercial Code and the directly applicable provisions of EC Regulation No. 596/2014 of April 16, 2014, to allow the Company to repurchase its own shares in order to:

- cancel them;
- tender them following the exercise of rights attached to marketable securities conferring entitlement to Company shares by redemption, conversion, exchange, presentation of a warrant or any other means;
- implement (i) any share purchase option plans or (ii) plans for free share attributions, or (iii) any employee share ownership transactions reserved for members of a Company Savings Plan, performed through the transfer of shares acquired previously by the Company, or providing for a free share grant in respect of a contribution in shares by the Company and/or to replace the discount, or (iv) allocation of shares to employees and/or Executive Officers and Directors of the Company and affiliated companies, in accordance with the laws and regulations in force;
- maintain an active market in the Company's shares pursuant to a market liquidity contract in accordance with an Ethics Charter recognized by the French financial market authority (Autorité des marchés financiers).

The maximum purchase price was set at 165 euros per share, and the maximum number of shares that can be bought back was set at 10% of the total number of shares making up the share capital as of December 31, 2018, namely 42,942,343 shares for a maximum total amount of 7,085,486,595 euros, subject to the legal limits.

These shares could be purchased at any time, excluding the periods for takeover bids on the Company's share capital, on one or more occasions and by all available means, either on or off a stock exchange, over-the-counter, including the purchase of blocks of shares, or through the use of derivative financial instruments, and, if applicable, by all third parties acting on behalf of the Company, under the conditions stipulated in the provisions of the final paragraph of article L. 225-206 of the French Commercial Code.

Pursuant to this authorization and the previous delegation authorized by the Combined General Meeting of May 16, 2018,

- A liquidity contract was set up which led to the following movements during the 2019 fiscal year:
  - 789,899 shares were purchased for a total price of 91,594,578 euros, or an average purchase price of 115.80 euros;
  - 795,504 shares were sold for a total price of 92,360,454 euros, or an average purchase price of 116.10 euros.
- On March 13, 2019, under the share buyback program, 1,300,000 shares were bought back for a total amount of 148,246,540 euros, i.e. an average cost of 114.0358 euros per share, representing 0.30% of the share capital as of December 31, 2018.

  No other shares were bought before the end of fiscal year 2019.

  The total cost of the buybacks was thus limited to 148,246,540 euros.

  The total amount of the transaction fees (exclusive of taxes) was 0.2 million euros.
- In addition, during the fiscal year, the Company proceeded to the tender of treasury shares to beneficiaries of performance share plans as follows:
  - 29,887 shares vested under the 2016 Airgas performance share plan ("France" Plan);
  - 152,235 shares vested under the 2015 performance share plan ("World" Plan);
  - 169,772 shares vested under the 2016 performance share plan ("France" Plan).

As of December 31, 2019, the Company directly owned 1,375,893 shares at an average purchase price of 91.94 euros, i.e. a balance sheet value of 126,495,001 euros. These shares, each with a par value of 5.50 euros, represented 0.29% of the Company's share capital.

1,375,893 of these shares are assigned for implementation of any performance share plans.

Under the liquidity contract, as of December 31, 2019 a total of 5,000 shares were on the balance sheet for a net value of 618,513 euros.

B. Draft resolution

As the authorization granted by the Ordinary General Meeting of May 7, 2019 was partially used, the Board proposes to replace it with a new authorization to allow the Company to repurchase its own shares in order to:

- cancel them, subject to the adoption of the 13th resolution;
- tender them following the exercise of rights attached to marketable securities conferring entitlement to Company shares by redemption, conversion, exchange, presentation of a warrant or any other means;
- implement (i) any share purchase option plans or (ii) plans for free share attributions, or (iii) any employee share ownership transactions reserved for members of a Company Savings Plan, performed under the terms and conditions set forth in articles L. 3331-1 et seq. of the French Labor Code through the transfer of shares bought back previously by the Company under this resolution, or providing for free share attributions in respect of a contribution in shares by the Company and/or to replace the discount; or (iv) allocation of shares to employees and/or Executive Officers and Directors of the Company and affiliated companies, in accordance with the laws and regulations in force;
- maintain an active market in the Company's shares pursuant to a market liquidity contract in accordance with an Ethics Charter recognized by the French financial market authority (Autorité des marchés financiers).

The maximum purchase price will be set at 200 euros (excluding acquisition costs) per share with a par value of 5.50 euros per share, and the maximum number of shares that can be bought back will be set at 10% of the total number of shares making up the share capital as of December 31, 2019, or 47,310,551 shares with a par value of 5.50 euros, for a maximum total amount of 9,462,110,200 euros, subject to the legal limits.

As the objective of retaining shares and subsequently tendering them within the scope of external growth transactions is no longer considered an accepted market practice under the new European regulations, it has not been maintained in the draft resolution.

As in previous years, the resolution stipulates that the authorization does not apply during takeover bid periods. These shares may thus be purchased at any time, excluding the periods for takeover bids on the Company's share capital, on one or more occasions and by all available means, either on or off a stock exchange, over-the-counter, including the purchase of blocks of shares, or through the use of derivative financial instruments, and, if applicable, by all third parties acting on behalf of the Company, under the conditions stipulated in the provisions of the last paragraph of article L. 225-206 of the French Commercial Code.

Shares bought back may be commuted, assigned or transferred in any manner on or off a stock exchange or over-the-counter, including the sale of blocks of shares, in accordance with the applicable regulations.

Dividends on treasury shares held by the Company shall be allocated to retained earnings.

This authorization shall be granted for a period of 18 months starting from the date of this General Meeting. It shall be valid as of the date of the Board of Directors meeting called to decide on the implementation of the share buyback program and, at the latest, as of November 6, 2020. It supersedes the authorization granted by the Ordinary General Meeting of May 7, 2019 in its 4th resolution with respect to its non-utilized portion.

RENEWAL OF A DIRECTOR'S TERM OF OFFICE AND APPOINTMENT OF TWO DIRECTORS

The 5th resolution concerns the renewal of the term of office of Brian Gilvary, as Company Director, that expires at the end of this General Meeting. Brian Gilvary has been an independent Director on the Board of Directors since May 2016 and a member of the Audit and Accounts Committee since May 2017. He provides the Board of Directors with his financial expertise, knowledge of the energy sector and global vision of a large international group. Brian Gilvary is a British national and also brings his multi-cultural expertise to the Board. Shareholders are invited, on the recommendation of the Appointments and Governance Committee, to renew the term of office of Brian Gilvary as a Director for a period of four years.

Shareholders are invited, in the 6th and 7th resolutions, to appoint two new Directors.

The terms of office of Karen Katen and Pierre Dufour will expire at the end of this General Meeting. The term of office of Karen Katen is not proposed for renewal in accordance with the provisions set out in the internal regulations of the Board of Directors. Moreover, the Board of Directors has noted Pierre Dufour's decision not to request the renewal of his term of office as Director.

The Board of Directors thanked Karen Katen warmly for her contribution to the work of Air Liquide's Board of Directors since 2008.

As a former Group senior executive and Director since 2012, Pierre Dufour has contributed his extensive international experience and in-depth knowledge of the engineering and industrial gases businesses to the Board of Directors. The Board thanked him warmly for his major contribution to Air Liquide's growth over the years.

Your Board of Directors has decided, on the recommendation of the Appointments and Governance Committee, to propose the appointment of two new Directors to continue to improve the diversity of profiles and the complementarity of experience, expertise and cultures within the Board of Directors.

Thus, on the recommendation of the Appointments and Governance Committee, following a selection process overseen by the latter, assisted by an external consultant, and carried out in accordance with the diversity policy defined by the Board of Directors, shareholders are invited to appoint as Directors, for a period of four years , Anette Bronder and Kim Ann Mink.

A German citizen, Anette Bronder is the Group Chief Operating Officer of Swiss Re, a world leading provider of re-insurance. She was previously member of the Management Board of T-Systems International, a subsidiary of Deutsche Telekom, where she was responsible for building up and managing the growth areas 'Internet of Things', 'Public Cloud' and 'Cybersecurity'. Anette Bronder will bring to the Board her strong digital expertise, as well as her experience of large international groups in the fields of IT and telecom.

An American citizen, Kim Ann Mink spent most of her career in US-based leading international groups in the chemical sector, where she held senior management roles. She joined Innophos from the Dow Chemical Company in 2015 as President and CEO and was named Chairman in 2017. She had previously served for more than 20 years at the Rohm and Haas Company (which was acquired by Dow Chemical). Kim Ann Mink will bring to the Board, in addition to her scientific academic background and her experience in research and innovation, her strong leadership skills and deep understanding of the chemical sector.

REGULATED AGREEMENTS

During the 2019 fiscal year, no new regulated agreement, was submitted for the approval of the Board of Directors.

As provided by law, the Board of Directors carried out an annual review of agreements entered into and approved during previous fiscal years which continued to be applied during the year ended December 31, 2019.

In the 8th resolution, you are asked to take note that the Statutory Auditors' Special Report on regulated agreements does not mention any new agreement.

The Special Report is included in Chapter 6 of the 2019 Universal Registration Document.

APPROVAL OF THE ELEMENTS OF REMUNERATION PAID DURING OR AWARDED IN RESPECT OF THE FISCAL YEAR ENDED DECEMBER 31, 2019 TO BENOÎT POTIER

Pursuant to article L. 225-100 of the French Commercial Code, shareholders are asked in the 9th resolution to approve the fixed, variable and exceptional components of the total remuneration and other benefits paid or awarded in respect of the 2019 fiscal year to Benoît Potier. It is specified that no exceptional remuneration has been paid or awarded in 2019.

The components of remuneration are described in the Report on Corporate Governance included in the 2019 Universal Registration Document and are summarized in the 2020 Invitation to the Annual General Meeting. They were paid or awarded in line with the remuneration policy approved by the General Meeting on May 7, 2019.

APPROVAL OF INFORMATION RELATING TO THE REMUNERATION OF CORPORATE OFFICERS INCLUDED IN THE REPORT ON CORPORATE GOVERNANCE IN ACCORDANCE WITH ARTICLE L. 225-37-3 I OF THE FRENCH COMMERCIAL CODE

In accordance with the provisions of law No. 2019-486 dated May 22, 2019 (known as the PACTE law) and Ordinance No. 2019-1234 dated November 27, 2019, shareholders are invited to approve the 10th resolution on information relating to the remuneration of Corporate Officers (Chairman and Chief Executive Officer and Directors) and listed in article L. 225-37-3 I of the French Commercial Code.

In addition to total remuneration and other benefits paid in 2019 or awarded to the Executive Officer in respect of the 2019 fiscal year, information provided in accordance with the new regulation includes in particular elements which establish the link between the Executive Officer's remuneration and the Company's performance; coupled with the 2019 allocation formula for the remuneration of Directors as part of the total amount approved by the General Meeting of May 16, 2018 (1.15 million euros per fiscal year).

This information is described in the Report on Corporate Governance included in the 2019 Universal Registration Document.

APPROVAL OF THE REMUNERATION POLICY APPLICABLE TO THE CORPORATE OFFICERS

In accordance with article L. 225-37-2 II of the French Commercial Code, shareholders are invited in the 11th resolution to approve the Corporate Officer's remuneration policy applicable to Benoît Potier for his role as Chairman and Chief Executive Officer, as well to Directors.

This policy is described in the Report on Corporate Governance included in the 2019 Universal Registration Document and is summarized in the 2020 Invitation to the Annual General Meeting.

SETTING OF THE TOTAL ANNUAL AMOUNT OF DIRECTORS' REMUNERATION

The 12th resolution sets the authorized amount of Directors' remuneration per fiscal year. In 2018, the amount has been increased to 1.15 million euros. On the recommendation of the Remuneration Committee, the Board of Directors proposes to increase the amount of Directors' remuneration that may be allocated each year to the Directors to 1.3 million euros as of 2020.

The proposed increase takes into account, in particular, the increase in the number of meetings in connection with the consolidation of the work program for the Board of Directors and certain committees as well as the desire to continue promoting a diversity of skills and nationalities within the Board of Directors during the intended future recruitments.

The Directors' remuneration allocation formula comprises a fixed portion and a variable portion based on lump-sum amounts per meeting, thereby taking account of the effective participation of each Director in the work of the Board and its Committees as well as a fixed amount per trip for non-resident Directors. For further information regarding these elements, please refer to Chapter 3, p. 164, 165 and 186 of the 2019 Universal Registration Document.

Resolutions within the authority of the Extraordinary General Meeting

AUTHORIZATION TO REDUCE THE SHARE CAPITAL BY CANCELLATION OF TREASURY SHARES

You are asked, in the 13th resolution, to authorize the Board of Directors to cancel, at its sole discretion, on one or more occasions, and within the limit of 10% of the Company's share capital per 24-month period, any or all of the shares bought back by the Company within the scope of the authorization adopted by this Ordinary General Meeting in its 4th resolution and those shares bought back within the scope of the authorizations adopted by the Ordinary General Meeting of May 7, 2019 and to reduce the share capital by this amount.

The difference between the carrying amount of the canceled shares and their nominal amount will be allocated to reserve or additional paid-in capital accounts.

This authorization shall be granted for a period of 24 months starting from the date hereof and supersedes the authorization granted by the Extraordinary General Meeting of May 7, 2019 in its 10th resolution with respect to the non-utilized portion of such authorization.

SHARE CAPITAL INCREASE THROUGH CAPITALIZATION OF ADDITIONAL PAID-IN CAPITAL, RESERVES, PROFITS OR ANY OTHER AMOUNTS

The Combined General Meeting of May 16, 2018 had granted the Board of Directors, for a period of 26 months, the authority to increase the share capital, on one or more occasions, through capitalization of additional paid-in capital, reserves, profits or any other amounts that may be capitalized, for the purposes of attributing free shares to shareholders.

This authorization was partially used in 2019 when the Company attributed one free share for every 10 existing shares following a share capital increase through capitalization of the sum of 242 million euros taken from "additional paid-in capital" thereby creating 44,117,721 new shares (amount including the loyalty bonus of 10%, i.e. one additional free share for every 100 existing shares).

As in 2018, in order to provide shareholders with the right to express an opinion on such a capital increase during periods of takeover bids, it is proposed that this delegation of authority is suspended during periods of takeover bids.

The purpose of the 14th resolution is to renew this authorization for a maximum amount of 300 million euros.

CAPITAL INCREASE RESERVED FOR EMPLOYEES WITH CANCELLATION OF SHAREHOLDER PREFERENTIAL SUBSCRIPTION RIGHTS

In accordance with legal provisions, these draft resolutions are submitted again to the vote at the General Meeting. The two resolutions proposed to the General Meeting are identical to those approved on May 7, 2019.

Shareholders, having read the Board of Directors' Report and the Statutory Auditors' Special Report, are therefore asked to authorize the Board of Directors to decide one or more share capital increases, at the time or times and in the proportions that it deems appropriate, via the issuance of ordinary shares of the Company, as well as other marketable securities granting access to the Company's share capital, reserved for:

- under the 15th resolution, the members, from the Company and the French or foreign companies which are affiliated to it within the meaning of article L. 225-180 of the French Commercial Code and article L. 3344-1 of the French Labor Code, of a Company or Group Savings Plan (directly or through a Company mutual fund or all other structures or entities permitted by applicable legal or regulatory provisions). The delegation shall be valid for a period of 26 months starting from the date of this General Meeting;
- under the 16th resolution, a category of beneficiaries, defined as any bank or subsidiary of such an institution mandated by the Company, which would subscribe to shares, or other share capital issued by the Company pursuant to the 15th resolution, with the sole intent of enabling employees and Corporate Officers of foreign companies, affiliated to the Company within the meaning of article L. 225-180 of the French Commercial Code and article L. 3344-1 of the French Labor Code, to benefit from a plan with an economic profile comparable to an employee share ownership scheme that would be set up in connection with a share capital increase undertaken in accordance with the 15th resolution of this General Meeting, taking into account the regulatory and fiscal and/or social framework applicable in the country of residence of the employees and Corporate Officers of the aforementioned foreign companies. The delegation shall be valid for a period of 18 months starting from the date of this General Meeting.

The Board of Directors shall be competent to determine, within those categories, the identity of the beneficiaries of these share capital increases.

The total amount of share capital increases likely to be performed in accordance with these two resolutions may not exceed a maximum nominal amount of 22 million euros, corresponding to the issue of a maximum of 4 million shares. Furthermore, the maximum nominal amount of share capital increases likely to be performed on the basis of these two resolutions shall be deducted from the overall limit stipulated in paragraph 2 of the 11th resolution the Extraordinary General Meeting of May 7, 2019. In the event that they are used, the proposed resolutions will automatically result in the cancellation of the shareholders' preferential subscription rights in favor of the above-mentioned beneficiaries.

The subscription price of the shares that would be issued pursuant to these two resolutions may not exceed the average, determined in accordance with article L. 3332-19 of the French Labor Code, of the opening trading prices for the Company's share during the 20 stock market trading days preceding the date of the decision setting the opening date for the subscription to a share capital increase made on the basis of the 15th resolution, or be more than 20% lower than such average, bearing in mind that the shareholders will officially authorize the Board of Directors, if deemed appropriate, to reduce or cancel the aforementioned discount, within the legal, regulatory and tax limits under the applicable foreign law. In accordance with article L. 3332-21 of the French Labor Code, the Board of Directors may provide for the attribution, on a bonus basis, to the beneficiaries referred to in the 15th resolution, of shares to be issued or already issued or other marketable securities granting access to the Company's share capital to be issued or already issued, in respect of (i) the contribution that could be paid in accordance with the regulations governing Company or Group Saving Plans, and/or (ii) where appropriate, the discount.

Should the beneficiaries referred to in the 15th resolution not subscribe to the entire share capital increase within the allotted deadlines, the share capital increase would only be performed for the amount of the shares subscribed, and the non-subscribed shares may be offered again to the beneficiaries concerned within the scope of a subsequent share capital increase.

Finally, the shareholders shall grant full powers to the Board of Directors, with the option of sub-delegation under the conditions determined by law, to set, within the limits described above, the various terms and conditions governing the implementation of the two proposed resolutions.

PROPOSED MODIFICATIONS TO THE ARTICLES OF ASSOCIATION TO TAKE INTO ACCOUNT CERTAIN PROVISIONS RELATING TO THE ACTION PLAN FOR GROWTH AND BUSINESS TRANSFORMATION (PLAN D'ACTION POUR LA CROISSANCE ET LA TRANSFORMATION DES ENTREPRISES – PACTE)

In the 17th, 18th and 19th resolutions, on the recommendation of the Appointments and Governance Committee, shareholders are invited to validate modifications to the Company's articles of association to take into account certain provisions of law No. 2019-486 dated May 22, 2019 relating to the growth and transformation of companies (PACTE law). These modifications relate to:

- the harmonization of article 11 (Composition of the Board of Directors) with the provisions of the PACTE law to provide for the appointment of a second Director representing employees when the number of Directors on the Board of Directors, calculated in accordance with article L. 225-27-1-II of the French Commercial Code, exceeds eight (versus 12 previously);
- the modification of article 15 (Powers of the Board of Directors) to reflect modifications applied to article L. 225-35 of the French Commercial Code and which provides that the Board of Directors shall determine the orientations of the Company's activities and ensures their implementation, *in line with its corporate interest, by taking into account the social and environmental stakes of its activity;*
- ensuring the compliance of article 16 (Remuneration) with the PACTE law which has removed the reference to the term "Directors' fees" to describe Directors' remuneration.

PROPOSED MODIFICATION TO ARTICLE 9 OF THE ARTICLES OF ASSOCIATION RELATING TO THRESHOLD NOTIFICATIONS, TO HARMONIZE STATUTORY RULES WITH LEGAL RULES RELATING TO THE ASSIMILATION OF EQUITY HOLDINGS

In the 20th resolution, shareholders are invited to validate the modification of the provision of article 9 of the articles of the association, relating to the obligation to inform the Company when statutory reporting thresholds are crossed. This modification will allow legal assimilation rules to be applied to statutory thresholds and will harmonize the calculation methods of legal and statutory thresholds, facilitating the calculation of the various thresholds for shareholders.

When calculating holding thresholds, shares and voting rights held by the declarant, along with assimilated shares and voting rights within the meaning of article L. 233-9 of the French Commercial Code, will therefore be taken into account. These notably include shares and voting rights held by companies controlled by this person and shares and voting rights relating to certain financial instruments and agreements.

PROPOSED STATUTORY MODIFICATION RELATING TO THE AUTHORITY TO DECIDE OR AUTHORIZE THE ISSUE OF BONDS

In the 21st resolution, shareholders are invited to approve the modification of article 15 (Powers of the Board of Directors) and article 19 (Powers of General Meetings) of the Company's articles of association to transfer to the Board of Directors the authority to decide or authorize the issue of bonds as permitted under the first paragraph of article L. 228-40 of the French Commercial Code.

The choice to attribute authority to the Board of Directors (as opposed to the General Meeting) to decide or authorize the issue of bonds is part of the legal decision to simplify the authorization system for the issue of simple bonds introduced by the legislator as of 2004. This choice has been made by the majority of the major listed French bond issuers, which have delegated authorization to their administrative body to issue bonds, thus simplifying the administrative procedure relating to issues. It is to be noted that this modification will not affect issues granting access to share capital, which have a potential dilutive effect for shareholders, the exclusive authority over which, in accordance with legal requirements, will remain that of the General Meeting.

In accordance with the Group's financing policy which has been introduced in recent years (and in line with the financial objectives set out as part of the NEOS company program primarily aimed at maintaining the Group's long-term "A" range rating), the total aggregate maximum amount that may be issued by the Company shall continue to be governed and reviewed each year by the Board of Directors with the same rigor as in the past. Each planned transaction will also continue to be examined closely (amount to be issued, maturity, use of funds, market conditions, etc.) by the Group's Operational Finance Committee (and, where applicable, by the Strategic Finance Committee) in accordance with existing control procedures set out in Chapter 2 of the 2019 Universal Registration Document. Moreover, as in recent years, bond issues will continue to be issued via Air Liquide Finance, a wholly-owned subsidiary of L'Air Liquide S.A., and therefore do not require formal prior authorization from the Company's General Meeting.

Therefore, shareholders are invited to validate the removal of the fourth paragraph of article 15 and the second paragraph of article 19 of the articles of association and to thus formally acknowledge that the delegated power given to the Board of Directors by the General Meeting of May 12, 2016 in its 13th resolution has thus expired (for the non-utilized portion and the remaining term).

EXTENSION OF THE COMPANY'S TERM

The end of the Company's term currently stands at February 17, 2028. Shareholders are invited in the 22nd resolution to prematurely extend the term of your Company for a period of 99 years as of the date of this General Meeting and decide on consequential amendment to article 4 of the articles of association.

RESOLUTIONS PRESENTED FOR THE APPROVAL OF THE COMBINED GENERAL MEETING – MAY 5, 2020

Ordinary General Meeting

Resolutions 1 and 2 Approval of the financial statements for the year

Purpose

Shareholders are asked in the **1st and 2nd resolutions** to approve both the Company and consolidated financial statements of Air Liquide for the year ended December 31, 2019, as presented in Chapter 4 of the 2019 Universal Registration Document.

FIRST RESOLUTION

(Approval of the Company financial statements for the year ended December 31, 2019)

The shareholders, deliberating according to the quorum and majority required for Ordinary General Meetings, having reviewed:

- the Reports of the Board of Directors and the Statutory Auditors;
- the Company's financial statements, income statement, balance sheet and notes thereto;

approve the Company's financial statements for the year ended December 31, 2019 as presented, and approve the transactions reflected in these financial statements or mentioned in these reports.

The shareholders determined the amount of net earnings for the fiscal year at 567,741,496 euros.

SECOND RESOLUTION

(Approval of the consolidated financial statements for the year ended December 31, 2019)

The shareholders, deliberating according to the quorum and majority required for Ordinary General Meetings, having reviewed:

- the Reports of the Board of Directors and the Statutory Auditors;
- the Group's consolidated financial statements;

approve the consolidated financial statements for the year ended December 31, 2019 as presented.

Resolution 3 Appropriation of earnings and setting of the dividend

Purpose

In the **3rd resolution**, shareholders are asked to approve the distribution of a dividend of **2.70 euros** per share. Following the free share attribution of one share for 10 on October 9, 2019, the proposed dividend shows a strong growth of **+12.4%** compared with last year.

A loyalty dividend of 10%, i.e. 0.27 euro per share, shall be granted to shares which have been held in registered form since December 31, 2017 and which remain held in this form continuously until May 13, 2020, the dividend payment date. As of December 31, 2019, 28.36% of the shares making up the share capital are likely to benefit from this loyalty dividend.

With an estimated pay-out ratio of 58% of the Group's published net profit, the proposed dividend is an integral part of Air Liquide's policy to reward and grow shareholder portfolios over the long term.

The ex-dividend date will be set for **May 11, 2020**. The dividend payment date will be set for **May 13, 2020**.

THIRD RESOLUTION

(Appropriation of 2019 earnings; setting of the dividend)

The shareholders, deliberating according to the quorum and majority required for Ordinary General Meetings, having noted that, considering the fiscal year 2019 earnings of 567,741,496 euros and the retained earnings of 5,587,764,890 euros as of December 31, 2019, distributable earnings for the year amount to a total of 6,155,506,386 euros, approve the proposals of the Board of Directors regarding the appropriation of earnings. The shareholders hereby decide to appropriate distributable earnings as follows:

Legal reserve	24,025,144 euros
Retained earnings	4,817,874,537 euros
Dividend (including the loyalty dividend)	1,313,606,705 euros

Hence, a dividend of 2.70 euros shall be paid to each of the shares conferring entitlement to a dividend, it being specified that in the event of a change in the number of shares conferring entitlement to a dividend compared to the 473,105,541 shares making up the share capital as of December 31, 2019, the overall dividend amount would be adjusted accordingly and the amount appropriated to the retained earnings account would be determined on the basis of the dividend effectively paid.

The dividend payment date will be set for May 13, 2020:

- for direct registered shares: directly by the Company;
- for intermediary registered shares, as well as for bearer shares which are registered in shareholder accounts: by the authorized intermediaries to whom the management of these shares has been entrusted.

The dividend distributions made with respect to the last three fiscal years are as follows:

	Total amount distributed [(a)] *(in euros)*	Number of shares concerned [(b)]	Dividend distributed eligible in its entirety for the 40% allowance referred to in article 158-3-2° of the French Tax Code [(c)] *(in euros)*
Fiscal year 2016			
Ordinary dividend	1,011,076,979	388,875,761	2.60
Loyalty dividend	26,595,971	102,292,196	0.26
Fiscal year 2017			
Ordinary dividend	1,135,253,508	428,397,550	2.65
Loyalty dividend	30,459,742	117,152,854	0.26
Fiscal year 2018			
Ordinary dividend	1,137,972,100	429,423,434	2.65
Loyalty dividend	33,416,412	128,524,663	0.26

(a) Theoretical values calculated based on the number of shares as of December 31 for each fiscal year.
(b) Number of shares expressed historically as of December 31 for each fiscal year.
The amounts effectively paid after adjustment were as follows:
- fiscal year 2016 – ordinary dividend: 1,005,542,972 euros for 386,747,297 shares; loyalty dividend: 26,025,861 euros for 100,099,466 shares;
- fiscal year 2017 – ordinary dividend: 1,130,983,210 euros for 426,786,117 shares; loyalty dividend: 29,591,663 euros for 113,814,089 shares.
- fiscal year 2018 – ordinary dividend: 1,131,698,657 euros for 427,056,097 shares; loyalty dividend: 32,497,215 euros for 124,989,290 shares.
The adjustment arises from the change in the number of treasury shares, from the final determination of the loyalty dividend taking into account shares sold between January 1 and the ex-dividend date, from the exercise of options over this same period and the capital increase reserved for employees.
(c) Applicable, under certain conditions, when the progressive income tax rate is applied.

Pursuant to the provisions of the articles of association, a loyalty dividend of 10%, i.e. 0.27 euro per share with a par value of 5.50 euros, shall be granted to shares which have been held in registered form since December 31, 2017, and which remain held in this form continuously until May 13 2020, the dividend payment date.

In accordance with article 117 quater of the French General Tax Code, it is specified that ordinary and loyalty dividends paid to individuals with their tax residence in France are fully subject to the single flat-rate withholding tax of 12.8%. Nonetheless, at the express, irrevocable and global request of the shareholder, these dividends may be subject to the progressive income tax rate and shall therefore be eligible for the 40% allowance referred to in section 2° of paragraph 3 of article 158 of the French General Tax Code, which is applicable under certain conditions. In all cases, these ordinary and loyalty dividends shall also be subject to social contributions at a rate of 17.2%.

The total amount of the loyalty dividend for the 134,154,877 shares which have been held in registered form since December 31, 2017, and which remained held in this form continuously until December 31, 2019, amounts to 36,221,817 euros.

The total loyalty dividend corresponding to these 134,154,877 shares that cease to be held in registered form between January 1, 2020 and May 13, 2020, the dividend payment date, shall be deducted from the aforementioned amount.

Resolution 4 Buyback by the Company of its own shares

Purpose

The 4th resolution renews the authorization granted to the Board, for a term of 18 months, to allow the Company to buy back its own shares (including under a liquidity contract).

In 2019, the buyback program resulted in the purchase of 1,300,000 shares, representing 0.30% of the capital at December 31, 2018 and the cancellation of 953,000 shares.

Additionally, under the liquidity contract: 0.791 million shares were purchased and 0.795 million were sold. As of December 31, 2019, 5,000 shares were held under the liquidity contract.

As of December 31, 2019, the Company directly owned 1,375,893 shares assigned to the objective of implementation of any performance shares plan. These shares represent 0.29% of the Company's share capital. They do not have any voting rights and their related dividends are allocated to retained earnings.

The authorization referred to in the 4th resolution provides that the maximum purchase price is set at 200 euros per share and the maximum number of shares that can be bought back is limited to 10% of the total number of shares comprising the share capital as of December 31, 2019, i.e. 47,310,551 shares, for a maximum total amount of 9,462,110,200 euros.

The shares purchased may be canceled in order to offset, in the long term, the dilutive impact resulting from capital increases relating to employee share ownership transactions.

The objectives of the share buyback program are detailed below in the 4th resolution and the buyback program description included in the 2019 Universal Registration Document available on the Company's website, www.airliquide.com, prior to the General Meeting.

As in previous years, the resolution stipulates that the authorization does not apply during takeover bid periods.

FOURTH RESOLUTION

(Authorization granted to the Board of Directors for a period of 18 months to allow the Company to trade in its own shares)

The shareholders, deliberating according to the quorum and majority required for Ordinary General Meetings, after having reviewed the Report of the Board of Directors, in accordance with articles L. 225-209 et seq. of the French Commercial Code and the directly applicable provisions of European Commission Regulation No. 596/2014 of April 16, 2014, authorize the Board of Directors to allow the Company to repurchase its own shares in order to:

- cancel them, subject to the adoption of the thirteenth resolution;
- tender them following the exercise of rights attached to marketable securities conferring entitlement to Company shares by redemption, conversion, exchange, presentation of a warrant or any other means;
- implement (i) any share purchase option plans or (ii) plans for free share attributions, or (iii) any employee share ownership transactions reserved for members of a Company Savings Plan, performed under the terms and conditions set forth in articles L. 3331-1 et seq. of the French Labor Code through the transfer of shares bought back previously by the Company under this resolution, or providing for free share attributions in respect of a contribution in shares by the Company and/or to replace the discount, or (iv) share grants to employees and/or Executive Officers of the Company or affiliated companies;
- maintain an active market in the Company's shares pursuant to a liquidity contract in accordance with the market practice recognized by the French financial market authority (Autorité des marchés financiers).

The shareholders set the maximum purchase price at 200 euros (excluding acquisition costs) per share with a par value of 5.50 euros and the maximum number of shares that can be bought back at 10% of the total number of shares comprising the share capital at December 31, 2019, i.e. 47,310,551 shares with a par value of 5.50 euros, for a maximum total amount of 9,462,110,200 euros, subject to the legal limits.

These shares may be purchased at any time, excluding the periods for takeover bids on the Company's share capital, on one or more occasions and by all available means, either on or off a stock exchange, over-the-counter, including the purchase of blocks of shares, or through the use of derivative financial instruments, and, if applicable, by all third parties acting on behalf of the Company, under the conditions stipulated in the provisions of the final paragraph of article L. 225-206 of the French Commercial Code.

Shares bought back may be commuted, assigned or transferred in any manner on or off a stock exchange or over-the-counter, including the sale of blocks of shares, in accordance with the applicable regulations.

Dividends on treasury shares held by the Company shall be allocated to retained earnings.

This authorization is granted for a period of 18 months starting from the date of this General Meeting. It shall be valid as of the date of the Board of Directors meeting called to decide on the implementation of the share buyback program and, at the latest, as of November 6, 2020. With effect from this date, it supersedes the authorization granted by the fourth resolution of the Ordinary General Meeting of May 7, 2019 with respect to the non-utilized portion of such authorization.

The shareholders give full powers to the Board of Directors, with the possibility of sub-delegating such powers, to implement this authorization, place orders for trades, enter into all agreements, perform all formalities and make all declarations with regard to all authorities and, generally, do all that is necessary for the execution of any of the Board's decisions made in connection with this authorization.

The Board of Directors shall inform the shareholders of any transactions performed in light of this authorization in accordance with applicable regulations.

Resolutions 5 to 7 Renewal of a Director's term of office and appointment of two Directors

Purpose

The **5th resolution** concerns the **renewal** of the term of office of **Mr Brian Gilvary**, as Company Director, that expires at the end of this General Meeting. Brian Gilvary has been an independent Director on the Board of Directors since May 2016 and a member of the Audit and Accounts Committee since May 2017. He provides the Board of Directors with his financial expertise, knowledge of the energy sector and global vision of a large international group. Brian Gilvary is a British national and also brings his multi-cultural expertise to the Board. Shareholders are invited, on the recommendation of the Appointments and Governance Committee, to renew the term of office of Brian Gilvary as a Director for a period of four years.

Shareholders are invited, in the **6th and 7th resolutions**, to **appoint** two new Directors.

The terms of office of Karen Katen and Pierre Dufour will expire at the end of this General Meeting. The term of office of Karen Katen is not proposed for renewal in accordance with the provisions set out in the internal regulations of the Board of Directors. Moreover, the Board of Directors has noted Pierre Dufour's decision not to request the renewal of his term of office as Director.

The Board of Directors thanked Karen Katen warmly for her contribution to the work of Air Liquide's Board of Directors since 2008.

As a former Group senior executive and Director since 2012, Pierre Dufour has contributed his extensive international experience and in-depth knowledge of the engineering and industrial gases businesses to the Board of Directors. The Board thanked him warmly for his major contribution to Air Liquide's growth over the years.

Your Board of Directors has decided, on the recommendation of the Appointments and Governance Committee, to propose the appointment of two new Directors to continue to improve the diversity of profiles and the complementarity of experience, expertise and cultures within the Board of Directors.

Thus, on the recommendation of the Appointments and Governance Committee, following a selection process overseen by the latter, assisted by an external consultant, and carried out in accordance with the diversity policy defined by the Board of Directors, shareholders are invited to appoint as Directors, for a period of four years, **Ms Anette Bronder and Kim Ann Mink**.

A German citizen, Anette Bronder is the Group Chief Operating Officer of Swiss Re, a world leading provider of re-insurance. She was previously member of the Management Board of T-Systems International, a subsidiary of Deutsche Telekom, where she was responsible for building up and managing the growth areas 'Internet of Things', 'Public Cloud' and 'Cybersecurity'. Anette Bronder will bring to the Board her strong digital expertise, as well as her experience of large international groups in the fields of IT and telecom.

An American citizen, Kim Ann Mink spent most of her career in US-based leading international groups in the chemical sector, where she held senior management roles. She joined Innophos from the Dow Chemical Company in 2015 as President and CEO and was named Chairman in 2017. She had previously served for more than 20 years at the Rohm and Haas Company (which was acquired by Dow Chemical). Kim Ann Mink will bring to the Board, in addition to her scientific academic background and her experience in research and innovation, her strong leadership skills and deep understanding of the chemical sector.

FIFTH RESOLUTION

(Renewal of the term of office of Mr Brian Gilvary as Director)

The shareholders, deliberating according to the quorum and majority required for Ordinary General Meetings, after having reviewed the Report of the Board of Directors, decide to renew the term of office of Mr Brian Gilvary as a Director for a period of four years, which will expire at the end of the 2024 General Meeting, held to approve the financial statements for the fiscal year ending December 31, 2023.

SIXTH RESOLUTION

(Appointment of Ms Anette Bronder as Company Director)

The shareholders, deliberating according to the quorum and majority required for Ordinary General Meetings, after having reviewed the Report of the Board of Directors, decide to appoint Ms Anette Bronder as a Director for a term of four years, which will expire at the end of the 2024 General Meeting held to approve the financial statements for the fiscal year ending December 31, 2023.

SEVENTH RESOLUTION

(Appointment of Ms Kim Ann Mink as Company Director)

The shareholders, deliberating according to the quorum and majority required for Ordinary General Meetings, after having reviewed the Report of the Board of Directors, decide to appoint Ms Kim Ann Mink as a Director for a term of four years, which will expire at the end of the 2024 General Meeting held to approve the financial statements for the fiscal year ending December 31, 2023.

Resolution 8 Regulated agreements

Purpose

During the 2019 fiscal year, no new regulated agreement, was submitted for the approval of the Board of Directors.

As provided by law, the Board of Directors carried out an annual review of agreements entered into and approved during previous fiscal years which continued to be applied during the year ended December 31, 2019.

In the 8th resolution, you are asked to take note that the Statutory Auditors' Special Report on regulated agreements does not mention any new agreement.

The Special Report is included in Chapter 6 of the 2019 Universal Registration Document.

EIGHTH RESOLUTION

(Statutory Auditors' Special Report on agreements covered by articles L. 225-38 et seq. of the French Commercial Code)

The shareholders, deliberating according to the quorum and majority required for Ordinary General Meetings, duly note that the Statutory Auditors' Special Report on the agreements and transactions covered by articles L. 225-38 et seq. of the French Commercial Code required by the legal and regulatory provisions in force, and which makes no mention of any new agreement, has been submitted to them.

Resolution 9 Approval of the remuneration of Executive Officers and Directors paid in 2019 or awarded in respect of the 2019 fiscal year

Purpose

Pursuant to article L. 225-100 III of the French Commercial Code, shareholders are asked in the 9th resolution to approve the fixed, variable and exceptional components of the total remuneration and other benefits paid in 2019 or awarded in respect of the 2019 fiscal year to Benoît Potier. It is specified that no exceptional remuneration has been paid or awarded in 2019.

The components of remuneration are described in the Report on Corporate Governance included in the 2019 Universal Registration Document and are summarized in the 2020 Invitation to the Annual General Meeting. They were paid or awarded in line with the remuneration policy approved by the General Meeting on May 7, 2019.

NINTH RESOLUTION

(Approval of the elements of remuneration paid during or awarded in respect of the fiscal year ended December 31, 2019 to Mr Benoît Potier)

The shareholders, deliberating according to the quorum and majority required for Ordinary General Meetings, approve, pursuant to article L. 225-100 III of the French Commercial Code, the fixed, variable and exceptional components of the total remuneration and other benefits paid during or awarded in respect of the fiscal year ended December 31, 2019 to Benoît Potier, as presented in the Company's 2019 Universal Registration Document, Chapter 3 "Corporate Governance", in the section "Remuneration of L'Air Liquide S.A. Executive Officers and Directors", in the paragraph "Elements of the total remuneration and benefits of any kind paid during or awarded in respect of the fiscal year ended December 31, 2019 to Benoît Potier and on which the General Meeting of May 5, 2020 is invited to vote".

Resolution 10 Approval of information relating to the remuneration of Corporate Officers included in the Report on Corporate Governance in accordance with article L. 225-37-3 I of the French Commercial Code

Purpose

In accordance with the provisions of law No. 2019-486 dated May 22, 2019 (known as the PACTE law) and Ordinance No. 2019-1234 dated November 27, 2019, shareholders are invited to approve the **10th resolution** on information relating to the remuneration of Corporate Officers (Chairman and Chief Executive Officer and Directors) and listed in article L. 225-37-3 I of the French Commercial Code.

In addition to total remuneration and other benefits paid in 2019 or awarded to the Executive Officer in respect of the 2019 fiscal year, information provided in accordance with the new regulation includes in particular elements which establish the link between the Executive Officer's remuneration and the Company's performance; coupled with the 2019 allocation formula for the remuneration of Directors as part of the total amount approved by the General Meeting of May 16, 2018 (1.15 million euros per fiscal year).

This information is described in the Report on Corporate Governance included in the 2019 Universal Registration Document.

TENTH RESOLUTION

(Approval of information relating to the remuneration of Corporate Officers stated in paragraph I of article L. 225-37-3 of the French Commercial Code)

The shareholders, deliberating according to the quorum and majority required for Ordinary General Meetings, approve, in accordance with article L. 225-100 II of the French Commercial Code, information stated in paragraph I article L. 225-37-3 of the same code which is included in the Board of Directors' Report on Corporate Governance, in Chapter 3 "Corporate Governance", in the section entitled "Remuneration of L'Air Liquide S.A. Executive Officers and Directors", in the paragraphs "Remuneration of the Executive Officer (including information stated in paragraph I of article L. 225-37-3 of the French Commercial Code)" and "Remuneration of non-executive Directors (including information stated in paragraph I of article L. 225-37-3 of the French Commercial Code)".

Resolution 11 Approval of the remuneration policy applicable to the Corporate Officers

Purpose

In accordance with article L. 225-37-2 II of the French Commercial Code, shareholders are invited in the **11th resolution** to approve the Executive Officers' remuneration policy applicable to Benoît Potier for his role as Chairman and Chief Executive Officer, as well to Company Directors.

This policy is described in the Report on Corporate Governance included in the 2019 Universal Registration Document and is summarized in the 2020 Invitation to the Annual General Meeting.

ELEVENTH RESOLUTION

(Approval of the remuneration policy applicable to Corporate Officers)

The shareholders, deliberating according to the quorum and majority required for Ordinary General Meetings, after having reviewed the Board of Directors' Report on Corporate Governance, approve, pursuant to article L. 225-37-2 II of the French Commercial Code, the Corporate Officers' remuneration policy as presented in the Company's 2019 Universal Registration Document, in Chapter 3 "Corporate Governance", in the section "Remuneration of L'Air Liquide S.A. Executive Officers' and Directors", in the paragraph "Remuneration policy applicable to Corporate Officers".

Resolution 12 Setting of the total annual amount of Directors' remuneration

Purpose

The **12th resolution** sets the authorized amount of Directors' remuneration per fiscal year. In 2018, the amount has been increased to 1.15 million euros. On the recommendation of the Remuneration Committee, the Board of Directors proposes to increase the amount of Directors' remuneration that may be allocated each year to the Directors to 1.3 million euros as of 2020.

The proposed increase takes into account, in particular, the increase in the number of meetings in connection with the consolidation of the work program for the Board of Directors and certain committees as well as the desire to continue promoting a diversity of skills and nationalities within the Board of Directors during the intended future recruitments.

The Directors' remuneration allocation formula comprises a fixed portion and a variable portion based on lump-sum amounts per meeting, thereby taking account of the effective participation of each Director in the work of the Board and its Committees as well as a fixed amount per trip for non-resident Directors. For further information regarding these elements, please refer to Chapter 3, p. 164, 165 and 186 of the 2019 Registration Universal Document.

TWELFTH RESOLUTION
(Setting the total annual amount of the Directors' remuneration)

The shareholders, deliberating according to the quorum and majority required for Ordinary General Meetings, after having reviewed the Report of the Board of Directors, decides in accordance with article 16 of the articles of association, to set, from fiscal year 2020, the overall amount of fixed annual sum pursuant to article L. 225-45 of the French Commercial Code to be allocated to Directors as remuneration of their work at the amount of 1.3 million euros per year.

Extraordinary General Meeting

Resolution 13 Authorization to reduce the share capital by cancellation of treasury shares

Purpose

As is the case each year, we ask you, in the **13th resolution**, to authorize the Board of Directors to cancel any or all of the shares purchased in the share buyback program and reduce share capital under certain conditions, particularly in order to fully offset, where necessary, any potential dilution resulting from capital increases relating to employee share ownership transactions.

The difference between the carrying amount of the canceled shares and their nominal amount will be allocated to reserve or additional paid-in capital accounts. This authorization granted to the Board of Directors will be for a period of 24 months.

THIRTEENTH RESOLUTION
(Authorization granted to the Board of Directors for a period of 24 months to reduce the share capital by cancellation of treasury shares)

The shareholders, deliberating according to the quorum and majority required for Extraordinary General Meetings after having reviewed the Report of the Board of Directors and the Statutory Auditors' Special Report, authorize the Board of Directors to cancel, via its decisions alone, on one or more occasions, and within the limit of 10% of the Company's share capital per 24-month period, any or all of the shares bought back by the Company within the scope of the authorization adopted by this Ordinary General Meeting in its fourth resolution and of those shares bought back within the scope of the authorization adopted by the Ordinary General Meeting of May 7, 2019 and to reduce the share capital by this amount.

The difference between the carrying amount of the canceled shares and their nominal amount will be allocated to any reserve or additional paid-in capital accounts.

This authorization is granted for a period of 24 months starting from the date of this General Meeting. It supersedes the authorization granted by the Extraordinary General Meeting of May 7, 2019 in its tenth resolution with respect to the non-utilized portion of such authorization.

Full powers are granted to the Board of Directors, with the possibility of sub-delegation under the conditions set by law, to implement this authorization, deduct the difference between the carrying amount of the shares canceled and their nominal amount from all reserve and additional paid-in capital accounts and to carry out the necessary formalities to implement the reduction in capital which shall be decided in accordance with this resolution and amend the articles of association accordingly.

Resolution 14 Share capital increase through capitalization of additional paid-in capital, reserves, profits or any other amounts

Purpose

The Combined General Meeting of May 16, 2018 had granted the Board of Directors, for a period of 26 months, the authority to increase the share capital, on one or more occasions, through capitalization of additional paid-in capital, reserves, profits or any other amounts that may be capitalized, for the purposes of attributing free shares to shareholders.

This authorization was partially used in 2019 when the Company attributed one free share for every 10 existing shares following a share capital increase through capitalization of the sum of 6.75 million euros taken from "additional paid-in capital" thereby creating 44,117,721 new shares (amount including the loyalty bonus of 10%, i.e. one additional free share for every 100 existing shares).

As in 2018, in order to provide shareholders with the right to express an opinion on such a capital increase during periods of takeover bids, it is proposed that this delegation of authority is suspended during periods of takeover bids.

The purpose of the **14th resolution** is to renew this authorization for a maximum amount of 300 million euros.

FOURTEENTH RESOLUTION

(Delegation of authority granted to the Board of Directors for a period of 26 months in order to increase the share capital through capitalization of additional paid-in capital, reserves, profits or any other amount that may be capitalized, for a maximum amount of 300 million euros)

The shareholders, deliberating according to the quorum and majority required for Ordinary General Meetings, after having reviewed the Report of the Board of Directors and pursuant to articles L. 225-129-2 and L. 225-130 of the French Commercial Code:

- delegate to the Board of Directors, with the option of sub-delegation, the authority necessary to increase the share capital on one or more occasions, according to the terms and conditions and at the time it shall determine, through capitalization of additional paid-in capital, reserves, profits or any other amount that may be capitalized, the capitalization of which will be possible under the law and the articles of association as a free share attribution to shareholders and/or an increase in the par value of existing shares;
- the delegation thereby granted to the Board of Directors is valid for a period of 26 months starting from the date of this General Meeting, it being specified however that the Board of Directors will not be authorized to make use of it during periods of takeover bids on the Company's share capital;
- decide that the total amount of share capital increases likely to be performed thereby may not exceed 300 million euros, this limit being distinct and independent from the limit provided for in paragraph 2 of the eleventh resolution passed by the General Meeting of May 7, 2019 (or any resolution which would replace it at a later date), and may not in any case exceed the amount of the additional paid-in capital, reserve, profit or other accounts referred to above that exist at the time of the capital increase (it being specified that these amounts do not include additional shares to be issued, in accordance with applicable legal and regulatory provisions, and when relevant, contractual stipulations providing for other adjustments, to preserve the rights of holders of marketable securities or other rights conferring access to share capital);
- decide that, should the Board of Directors use this delegation, in accordance with article L. 225-130 of the French Commercial Code, fractional rights shall not be negotiable and the corresponding securities shall be sold; the sums resulting from such sale shall be allocated to the holders of rights under the applicable regulatory conditions;
- take due note that this delegation supersedes any unused portion of the delegation granted to the Board of Directors in the sixteenth resolution voted by the Extraordinary General Meeting of May 16, 2018;
- grant full powers to the Board of Directors, with the option of sub-delegation under the conditions set by law, to implement this delegation and in particular to set the terms of issue, to deduct from one or more "available reserves" accounts the costs arising from the share capital increase and, if deemed appropriate, all sums necessary to bring the legal reserve up to one-tenth of the new share capital after each share issue, duly record the completion of the resulting share capital increases, make the corresponding amendments to the articles of association and generally complete all the formalities relating to the share capital increases.

Resolutions 15 and 16 Capital increase reserved for employees

Purpose

As provided by law, the resolution authorizing increases in share capital in favor of members of a Company Savings Plan approved during the Extraordinary General Meeting of May 7, 2019, is resubmitted to you. The total nominal amount of share capital increases likely to be performed under this resolution is 22 million euros, corresponding to the issue of a maximum of 4 million shares, or 0.85% of the share capital as at December 31, 2019. This amount shall be deducted from the maximum nominal amount of 470 million euros, i.e. around 20% of the share capital, as stipulated in the 11th resolution of the General Meeting of May 7, 2019 relating to the overall limit for share capital increases likely to be performed with delegation to the Board of Directors.

The **15th resolution** outlines the conditions of share capital increases reserved for members of a Company or Group Savings Plan; it is accompanied in the **16th resolution** by a similar provision for Group employees and Corporate Officers based abroad who cannot benefit from the shareholding mechanism which will be established pursuant to the 15th resolution.

These two delegations will be valid for a period of 26 months for the 15th resolution and for a period of 18 months for the 16th resolution. They shall result in the waiver by shareholders of their preferential subscription rights in favor of the beneficiaries.

The Group wishes to continue increasing the involvement of employees in its development. These employee share ownership offers contribute significantly to increasing employee motivation and a sense of belonging to the Group.

At the end of 2019, the share capital held by employees and former employees of the Group is estimated at 2.4%, of which 1.7% corresponds to shares subscribed by employees during capital increases reserved for employees or held through dedicated mutual funds.

FIFTEENTH RESOLUTION

(Delegation of authority granted to the Board of Directors for a period of 26 months to perform share capital increases, with cancellation of preferential subscription rights, reserved for members of a Company or Group Savings Plan)

The shareholders, deliberating according to the quorum and majority required for Extraordinary General Meetings, after having reviewed the Report of the Board of Directors and the Statutory Auditors' Special Report, deliberating pursuant to articles L. 225-129-6 and L. 225-138-1 of the French Commercial Code and articles L. 3331-1 et seq. of the French Labor Code:

- delegate to the Board of Directors the authority to decide to increase the Company's share capital, on one or more occasions, at the time or times and in the proportions that it deems appropriate, via the issuance of ordinary shares of the Company as well as equity securities granting access to the Company's share capital, reserved for members of a Company or Group Savings Plan;
- decide that the total amount of share capital increases likely to be performed under this resolution may not exceed a maximum nominal amount of 22 million euros, corresponding to the issue of a maximum of 4 million shares, it being specified that this amount does not include additional shares to be issued, in accordance with applicable legal and regulatory provisions, and, when relevant, contractual stipulations providing for other adjustments, to preserve the rights of holders of equity securities conferring access to share capital and that the total amount of capital increases to be performed under this resolution and the sixteenth resolution may not exceed the aforementioned nominal amount of 22 million euros;
- decide that the maximum nominal amount of share capital increases to be performed on the basis of this delegation shall be deducted from the overall limit stipulated in paragraph 2 of the eleventh resolution of the Extraordinary General Meeting of May 7, 2019 (or any resolution which would replace it at a later date);
- decide that the beneficiaries of these capital increases will be, directly or through an intermediary of a Company mutual fund (FCPE) or all other structures or entities permitted by applicable legal or regulatory provisions, the members, within the Company and the French or foreign companies affiliated to it within the meaning of article L. 225-180 of the French Commercial Code and article L. 3344-1 of the French Labor Code, of a Company or Group Savings Plan;
- decide to cancel the preferential subscription rights of shareholders to the new shares or other equity securities, and equity securities to which the latter would confer entitlement, which shall be issued in favor of the aforementioned members of a Company or Group Savings Plan in accordance with this resolution;
- decide that the subscription price may not exceed the average, determined in accordance with article L. 3332-19 of the French Labor Code, of the opening trading prices for the Company's share during the 20 trading days preceding the date of the decision setting the opening date for the subscription period, or be more than 20% lower than such average, bearing in mind that the shareholders officially authorize the Board of Directors, if deemed appropriate, to reduce or cancel the aforementioned discount, in view of the legal, regulatory and tax constraints under the applicable foreign law, where applicable;
- decide, in accordance with article L. 3332-21 of the French Labor Code, that the Board of Directors may provide for the free share attribution, to the aforementioned beneficiaries, of shares to be issued or already issued or other equity securities or securities granting access to the Company's capital to be issued or already issued, in respect of (i) the contribution that could be paid in accordance with the regulations governing Company or Group Saving Plans, and/or (ii) where appropriate, the discount;
- also decide that, should the beneficiaries not subscribe to the entire capital increase within the allotted deadlines, the capital increase would only be performed for the amount of the shares subscribed, and that the non-subscribed shares may be offered again to the beneficiaries concerned within the scope of a subsequent capital increase;

- grant full powers to the Board of Directors with the option of sub-delegation under the conditions set by law, to determine, within the limits described above, the various terms and conditions of the transaction and particularly:
  - define the criteria which the companies must meet in order for their employees to be entitled to benefit from the capital increases,
  - determine a list of these companies,
  - set the terms and conditions of the share issue, the characteristics of the shares, and, where appropriate, the other equity securities, determine the subscription price calculated based on the method defined above, set the terms and conditions and deadline for fully paying up the subscribed shares, deduct from the "additional paid-in capital" account all costs relating to these capital increases and, if deemed appropriate, all sums necessary to bring the legal reserve up to one tenth of the new share capital after each share issue; and generally complete, directly or through an authorized representative, all the transactions and formalities relating to the share capital increases performed under this resolution and, where appropriate, take any measures with a view to listing the shares issued pursuant to this resolution for trading on the Euronext Paris regulated exchange,
  - set the opening and closing dates for the subscription period, record the completion of the corresponding capital increase and amend the articles of association accordingly;
- decide that this delegation of authority granted to the Board of Directors is valid for a period of 26 months starting from the date of this General Meeting.

SIXTEENTH RESOLUTION

(Delegation of authority granted to the Board of Directors for a period of 18 months to perform share capital increases, with cancellation of preferential subscription rights, reserved for a category of beneficiaries)

The shareholders, deliberating according to the quorum and majority required for Extraordinary General Meetings, after having reviewed the Report of the Board of Directors and the Statutory Auditors' Special Report, pursuant to articles L. 225-129 to L. 225-129-2 and article L. 225-138 of the French Commercial Code:

- delegate to the Board of Directors the authority to decide to increase share capital, on one or more occasions, at the time or times and in the proportions it shall deem fit, via the issuance of ordinary shares of the Company as well as any other equity securities conferring entitlement to the Company's share capital, reserved for the category of beneficiaries defined hereafter;
- decide that the total amount of share capital increases likely to be performed under this resolution may not exceed a maximum nominal amount of 22 million euros, corresponding to the issue of a maximum of 4 million shares, it being specified that this amount does not include additional shares to be issued, in accordance with applicable legal and regulatory provisions, and when relevant, contractual stipulations providing for other adjustments, to preserve the rights of holders of equity securities conferring access to share capital and that the total amount of share capital increases to be performed under this resolution and the fifteenth resolution may not exceed the aforementioned nominal amount of 22 million euros;
- decide that the maximum nominal amount of share capital increases to be performed on the basis of this delegation shall be deducted from the overall limit stipulated in paragraph 2 of the eleventh resolution of the Extraordinary General Meeting of May 7, 2019 (or any resolution which would replace it at a later date);
- decide to cancel the preferential subscription rights of shareholders to the shares or other equity securities and to the equity securities to which the latter would confer entitlement, which shall be issued pursuant to this resolution and to reserve the right to subscribe them to the category of beneficiaries meeting the following characteristics: any bank or subsidiary of such a bank mandated by the Company and which would subscribe to shares, or other equity securities issued by the Company pursuant to this resolution, with the sole intent to enable employees and Corporate Officers of foreign companies, affiliated to the Company within the meaning of article L. 225-180 of the French Commercial Code and article L. 3344-1 of the French Labor Code, to benefit from a shareholding or investment plan with an economic profile comparable to an employee share ownership scheme that would be set up in connection with a share capital increase performed in accordance with the fifteenth resolution submitted to the vote of this General Meeting, taking into account the regulatory and fiscal and/or social framework applicable in the country of residence of the employees and Corporate Officers of the aforementioned foreign companies;
- decide that the unit price for the issue of the shares to be issued pursuant to this resolution shall be determined by the Board of Directors based on the Company's share price; this issue price shall be equal to the average of the opening trading prices for the Company's share during the 20 trading days preceding the date of the Board of Directors' decision setting the opening date for the period of subscription to a share capital increase performed on the basis of the fifteenth resolution, with the possibility of reducing this average by a maximum discount of 20%; the amount of this discount shall be determined by the Board of Directors within the aforementioned limit;
- decide that the Board of Directors shall have full powers, under the terms and conditions set forth by law and within the limits defined above, with the option of sub-delegation, so as to implement this delegation and particularly in order to:
  - set the date and price for the issue of shares or other equity securities to be issued in accordance with this resolution as well as the other terms and conditions governing the issue,
  - determine the beneficiary (or list of beneficiaries) for the cancellation of the preferential subscription right within the above-defined category, as well as the number of shares to be subscribed by such beneficiary (or each beneficiary),
  - where appropriate, determine the characteristics of the other equity securities granting access to the Company's share capital under the applicable legal and regulatory conditions,
  - record the completion of the share capital increase, complete, directly or through an authorized representative, all the transactions and formalities involving the share capital increases and, on its sole decision and if it deems appropriate, deduct the share capital increase costs from the amount of additional paid-in capital relating to such increases, amend the articles of association accordingly and perform all the necessary formalities and, where appropriate, take any measures with a view to listing the shares issued pursuant to this resolution for trading on the Euronext Paris regulated exchange;
- decide that this delegation of authority granted to the Board of Directors is valid for a period of 18 months starting from the date of this General Meeting.

Resolutions 17 to 19 Proposed modifications to the articles of association to take into account certain provisions relating to the Action Plan for Growth and Transformation of Companies (Plan d'Action pour la Croissance et la Transformation des Entreprises – PACTE)

Purpose

In the **17th, 18th and 19th resolutions**, on the recommendation of the Appointments and Governance Committee, shareholders are invited to validate modifications to the Company's articles of association to take into account certain provisions of law No. 2019-486 dated May 22, 2019 relating to the growth and transformation of companies (PACTE law). These modifications relate to:

- the harmonization of article 11 (Composition of the Board of Directors) with the provisions of the PACTE law to provide for the appointment of a second Director representing employees when the number of Directors on the Board of Directors, calculated in accordance with article L. 225-27-1 II of the French Commercial Code, exceeds eight (versus 12 previously);
- the modification of article 15 (Powers of the Board of Directors) to reflect modifications applied to article L. 225-35 of the French Commercial Code and to provide for the Board of Directors to determine the orientations of the Company's activities and ensure their implementation, *in line with its corporate interest, by taking into account the social and environmental stakes of its activity;*
- ensuring the compliance of article 16 (Remuneration) with the PACTE law which has removed the reference to the term "Directors' fees" to describe Directors' remuneration.

SEVENTEENTH RESOLUTION

(Harmonization of article 11 of the articles of association (Composition of the Board of Directors) with the provisions of the Pacte Law in relation to Directors representing employees)

The shareholders, deliberating according to the quorum and majority required for Extraordinary General Meetings, after having reviewed the Report of the Board of Directors, decide to modify the provisions of article 11 (Composition of the Board of Directors) of the Company's articles of association relating to the threshold which triggers the obligation to appoint a second Director representing employees to adapt them to the provisions set out in law No. 2019-486 dated May 22, 2019 relating to the growth and transformation of companies (PACTE law).

Article 11 – Composition of the Board of Directors

The first three paragraphs of the section relating to Directors representing employees in article 11 of the articles of association now read as follows:

Existing text	New text
Director(s) representing employees In accordance with statutory requirements, if the number of members of the Board of Directors, calculated in accordance with article L. 225-27-1-II of the French Commercial Code, is less than or equal to 12, the Group Committee in France shall proceed to appoint a Director representing employees. If the number of members of the Board of Directors, calculated in accordance with article L. 225-27-1-II of the French Commercial Code, is more than 12, and provided this criterion is still fulfilled on the date of the appointment, a second Director representing employees shall be appointed by the European Works Council. If the number of members of the Board of Directors, calculated in accordance with article L. 225-27-1-II of the French Commercial Code, was originally more than 12 members but becomes less than or equal to 12 members, the Director appointed by the European Works Council shall remain in office until his term of office expires. .../...	**Director(s) representing employees** In accordance with statutory requirements, if the number of members of the Board of Directors, calculated in accordance with article L. 225-27-1-II of the French Commercial Code, is less than or equal to **eight**, the Group Committee in France shall proceed to appoint a Director representing employees. If the number of members of the Board of Directors, calculated in accordance with article L. 225-27-1-II of the French Commercial Code, is more than **eight**, and provided this criterion is still fulfilled on the date of the appointment, a second Director representing employees shall be appointed by the European Works Council. If the number of members of the Board of Directors, calculated in accordance with article L. 225-27-1-II of the French Commercial Code, was originally more than **eight** members but becomes less than or equal to **eight** members, the Director appointed by the European Works Council shall remain in office until his term of office expires. .../...

The remaining paragraphs of article 11 remain unchanged.

EIGHTEENTH RESOLUTION

(Modification to article 15 of the articles of association (powers of the Board of Directors) relating to Management decisions taken by the Board of Directors (Pacte Law))

The shareholders, deliberating according to the quorum and majority required for Extraordinary General Meetings, after having reviewed the Report of the Board of Directors, decide to modify the provisions of article 15 (Powers of the Board of Directors) of the Company's articles of association to reflect the modifications made to article L. 225-35 of the French Commercial Code and provide that the Board of Directors shall determine the orientations of the Company's activities and ensure their implementation, in line with its corporate interest, by taking into account the social and environmental stakes of its activity.

Article 15 – Powers of the Board of Directors

The first paragraph of article 15 of the articles of the association shall now read as follows:

Existing text	New text
The Board of Directors determines the orientations of the Company's activities and ensures their implementation.	The Board of Directors determines the orientations of the Company's activities and ensures their implementation, **in line with its corporate interest, by taking into account the social and environmental stakes of its activity.**

The remaining paragraphs of article 15 remain unchanged.

NINETEENTH RESOLUTION

(Compliance of article 16 of the Articles of association (Remuneration) with the provisions of the Pacte Law relating to Directors' remuneration)

The shareholders, deliberating according to the quorum and majority required for Extraordinary General Meetings, after having reviewed the Report of the Board of Directors, decide to amend the provisions set out in article 16 (Remuneration) the Company's articles of association relating to the remuneration of Directors to remove reference to the term "Directors' fees" in accordance with the PACTE law.

Article 16 – Remuneration

Article 16 of the articles of the association shall now read as follows:

Existing text	New text
The Ordinary Shareholders' Meeting may allocate to the members of the Board of Directors, as remuneration for their activity, a fixed annual amount in Directors' fees. The Board of Directors is free to distribute the overall sum thus allocated among its members. It may also allocate a greater amount to the Directors who are members of Committees set up within the Board than that allocated to the other Directors. The Board may allocate exceptional sums to remunerate assignments or mandates entrusted to the members of the Board.	The Ordinary Shareholders' Meeting may allocate to the members of the Board of Directors, as remuneration for their activity, a fixed annual amount. The Board of Directors is free to distribute the overall sum thus allocated among its members. It may also allocate a greater amount to the Directors who are members of Committees set up within the Board than that allocated to the other Directors. The Board may allocate exceptional sums to remunerate assignments or mandates entrusted to the members of the Board.

Resolution 20 Proposed modification to article 9 of the articles of association relating to threshold notifications, to harmonize statutory rules with legal rules relating to the assimilation of equity holdings

Purpose

In the **20th resolution**, shareholders are invited to validate the modification of the provision of article 9 of the articles of the association, relating to the obligation to inform the Company when statutory reporting thresholds are crossed. This modification will allow legal assimilation rules to be applied to statutory thresholds and will harmonize the calculation methods of legal and statutory thresholds, facilitating the calculation of the various thresholds for shareholders.

When calculating holding thresholds, shares and voting rights held by the declarant, along with assimilated shares and voting rights within the meaning of article L. 233-9 of the French Commercial Code, will therefore be taken into account. These notably include shares and voting rights held by companies controlled by this person and shares and voting rights relating to certain financial instruments and agreements.

TWENTIETH RESOLUTION

(Modification of article 9 of the Articles of association (Identification of shareholders) relating to threshold notifications)

The shareholders, deliberating according to the quorum and majority required for Extraordinary General Meetings, after having reviewed the Report of the Board of Directors, decide to modify the provisions set out in article 9 (Identification of shareholders) of the Company's articles of association to apply legal assimilation rules to statutory thresholds, to include within the calculation and reporting of statutory threshold notifications the shares and voting rights deemed to be held, in accordance with these rules, by the person bound to provide this information.

Article 9 – Identification of shareholders

Article 9 of the articles of the association shall now read as follows:

Existing text	New text
The Company may avail itself at any time of the legal and statutory provisions in force permitting the identification of the owners of shares conferring immediately or in the future the right to vote in Shareholders' Meetings, as well as the number of shares they own. In addition to the legal obligations to notify the Company, any person, acting alone or jointly, coming in direct or indirect possession of a fraction of the Company's capital or voting rights equal to or greater than 2%, or a multiple of 2% of capital or voting rights (including above the 5% threshold), is required to inform the Company within 15 days as of the date on which the threshold is exceeded and, as the case may be, independently of the effective transfer date of share ownership. The person shall state the number of shares and marketable securities granting entitlement to capital that he or she owns on the date of notification. Any decrease below the 2% threshold or a multiple of 2% of capital or voting rights shall be notified in the same manner. In the event of a failure to meet this additional notification obligation, one or several shareholders, owning a fraction of the Company's capital or voting rights amounting to at least 2%, may, at a Shareholders' Meeting, request that the shares exceeding the fraction which should have been reported, be stripped of their voting rights for any Shareholders' Meeting held until the end of a two-year period following the date on which the notice is rectified. The request is recorded in the Minutes of the Shareholders' Meeting.	The Company may avail itself at any time of the legal and statutory provisions in force permitting the identification of the owners of shares conferring immediately or in the future the right to vote in Shareholders' Meetings, as well as the number of shares they own. In addition to the legal obligations to notify the Company, any person, acting alone or jointly, coming in direct or indirect possession of a fraction of the Company's capital or voting rights equal to or greater than 2%, or a multiple of 2% of capital or voting rights (including above the 5% threshold), is required to inform the Company within 15 days as of the date on which the threshold is exceeded and, as the case may be, independently of the effective transfer date of share ownership. The person shall state the number of shares and marketable securities granting entitlement to capital that he or she owns on the date of notification. Any decrease below the 2% threshold or a multiple of 2% of capital or voting rights shall be notified in the same manner. **To determine share capital and voting rights thresholds, the crossing of which must be declared under the previous paragraph, assimilation rules set out in article L. 233-9 of the French Commercial Code are applied.** In the event of a failure to meet this additional notification obligation, one or several shareholders, owning a fraction of the Company's capital or voting rights amounting to at least 2%, may, at a Shareholders' Meeting, request that the shares exceeding the fraction which should have been reported, be stripped of their voting rights for any Shareholders' Meeting held until the end of a two-year period following the date on which the notice is rectified. The request is recorded in the Minutes of the Shareholders' Meeting.

Resolution 21 Proposed statutory modification relating to the authority to decide or authorize the issue of bonds

Purpose

In the **21st resolution**, shareholders are invited to approve the modification of article 15 (Powers of the Board of Directors) and article 19 (Powers of General Meetings) of the Company's articles of association to transfer to the Board of Directors the authority to decide or authorize the issue of bonds as permitted under the first paragraph of article L. 228-40 of the French Commercial Code.

The choice to attribute authority to the Board of Directors (as opposed to the General Meeting) to decide or authorize the issue of bonds is part of the legal decision to simplify the authorization system for the issue of simple bonds introduced by the legislator as of 2004. This choice has been made by the majority of the major listed French bond issuers, which have delegated authorization to their administrative body to issue bonds, thus simplifying the administrative procedure relating to issues. It is to be noted that this modification will not affect issues granting access to share capital, which have a potential dilutive effect for shareholders, the exclusive authority over which, in accordance with legal requirements, will remain that of the General Meeting.

In accordance with the Group's financing policy which has been introduced in recent years (and in line with the financial objectives set out as part of the NEOS company program primarily aimed at maintaining the Group's long-term "A" range rating), the total aggregate maximum amount that may be issued by the Company shall continue to be governed and reviewed each year by the Board of Directors with the same rigor as in the past. Each planned transaction will also continue to be examined closely (amount to be issued, maturity, use of funds, market conditions, etc.) by the Group's Operational Finance Committee (and, where applicable, by the Strategic Finance Committee) in accordance with existing control procedures set out in Chapter 2 of the 2019 Universal Registration Document. Moreover, as in recent years, bond issues will continue to be issued via Air Liquide Finance, a wholly-owned subsidiary of L'Air Liquide S.A., and therefore do not require formal prior authorization from the Company's General Meeting.

Therefore, shareholders are invited to validate the removal of the fourth paragraph of article 15 and the second paragraph of article 19 of the articles of association and to thus formally acknowledge that the delegated power given to the Board of Directors by the General Meeting of May 12, 2016 in its 13th resolution has thus expired (for the non-utilized portion and the remaining term).

TWENTY-FIRST RESOLUTION

(Statutory modification relating to the authority to decide or authorize the issue of bonds)

The shareholders, deliberating according to the quorum and majority required for Extraordinary General Meetings, having reviewed the Report of the Board of Directors:

- decide to modify the provisions set out in article 15 (Powers of the Board of Directors) and article 19 (Powers of Shareholders' Meetings) of the Company's articles of association as follows, so that the Board of Directors has sole authority to decide or authorize the issue of bonds:

Article 15 – Powers of the Board of Directors

The fourth paragraph of article 15 of the articles of association, drafted "The Board is authorized to issue bonds pursuant to a delegation granted by the Ordinary Shareholders' Meeting." has been deleted.

The other paragraphs of article 15, as modified where applicable by the eighteenth resolution, remain unchanged.

Article 19 – Powers of Shareholders' Meetings

The second paragraph of article 19 of the articles of association, drafted "During the Ordinary Shareholders' Meeting, shareholders decide or authorize the issue of bonds secured, where necessary, by specific collateral in accordance with prevailing laws and regulations and authorize the Chairman to grant such collateral. They may delegate to the Board of Directors the competence and powers necessary to issue such bonds, in one or more installments, within a period set by them, and to determine the terms and conditions of the issuance of such bonds. The guarantees set up subsequent to the issue of the bonds are granted by the Chairman of the Board of Directors upon the Board's authorization." has been deleted.

The first paragraph of article 19 remains unchanged.

- consequently note the expiry, for the non-utilized portion and the remaining term, of the delegated power given to the Board of Directors by the General Meeting of May 12, 2016 in its thirteenth resolution to issue bonds, as the Company's articles of association no longer grant authority to the General Meeting to decide or authorize the issue of bonds.

Resolution 22 Extension of the Company's term

Purpose

The end of the Company's term currently stands at February 17, 2028. Shareholders are invited in the **22nd resolution** to prematurely extend the term of your Company for a period of 99 years as of the date of this General Meeting and decide on consequential amendment to article 4 of the articles of association.

TWENTY-SECOND RESOLUTION

(Extension of the Company's term and consequential amendment to the articles of association)

The shareholders, deliberating according to the quorum and majority required for Extraordinary General Meetings, having reviewed the Report of the Board of Directors and noting the expiry date of the Company's term initially set at February 17, 2028, decide to prematurely extend said term for a period of 99 years as of this General Meeting, i.e. until May 4, 2119.

The shareholders therefore decide to modify article 4 of the articles of association as follows:

Article 4 – Duration

Existing text	New text
The Company's term has been fixed at 99 years beginning on February 18, 1929, except in the event of early dissolution or extension.	The Company's term, initially fixed at 99 years beginning on February 18, 1929, **has been extended as of the Extraordinary General Meeting of May 5, 2020 for a period of 99 years, i.e. until May 4, 2119,** except in the event of early dissolution or extension.

Ordinary General Meeting

Resolution 23 Powers

Purpose

The **23rd resolution** is a standard resolution required for the completion of official publications and legal formalities.

TWENTY-THIRD RESOLUTION

(Powers for formalities)

Full powers are granted to a holder of a copy or extract of the minutes of this General Meeting to perform all official publications and other formalities required by law and the regulations.

STATUTORY AUDITORS' REPORTS

Statutory Auditors' Special Report on related party agreements

This is an unofficial translation into English of the Statutory Auditors' Special Report on related-party agreements that is issued in French and provided solely for the convenience of English speaking readers.

This report should be read in conjunction with, and construed in accordance with, French law and professional standards applicable in France.

It should be understood that the agreements reported on are only those provided for by the French Commercial Code (Code de commerce) and that the report does not apply to those related-party transactions described in IAS24 or other equivalent accounting standards.

To the Shareholders of L'Air Liquide,

In our capacity as Statutory Auditors of your Company, we hereby report on the agreements with related parties.

We are required to inform you, based on the information provided to us, of the characteristics and principal terms and conditions as well as the reasons justifying the interest for your Company of those agreements of which we have been informed or which we discovered at the time of our engagement, without expressing an opinion on their usefulness and appropriateness or seeking to identify other agreements. It is your responsibility, pursuant to article R. 225-31 of the French Commercial Code (Code de commerce), to assess the benefits resulting from the conclusion of these agreements prior to their approval.

Furthermore, we are required, where applicable, to inform you in accordance with article R. 225-31 of the French Commercial Code (Code de commerce) relating to the performance, during the past fiscal year, of the agreements already approved by the Annual Shareholders' Meeting.

We performed those procedures which we considered necessary to comply with professional guidance issued by the national auditing body (Compagnie nationale des commissaires aux comptes) relating to this type of engagement. These procedures consisted in verifying that the information provided to us is consistent with the documentation from which it has been extracted.

AGREEMENTS SUBMITTED FOR APPROVAL OF THE ANNUAL SHAREHOLDERS' MEETING

We hereby inform you that we have not been advised of any agreements authorized in the course of the year to be submitted to the General Meeting of Shareholders for approval in accordance with Article L. 225-38 of the French Commercial Code (Code de commerce).

AGREEMENTS ALREADY APPROVED BY SHAREHOLDERS' MEETING

Agreements approved during prior fiscal years

Pursuant to article R. 225-30 of the French Commercial Code (Code de commerce), we have been informed that the performance of the following agreements already approved by the Annual Shareholders' Meeting during prior fiscal years, continued during the last fiscal year.

With Mr Benoît Potier, Chairman and Chief Executive Officer

Life insurance contract

Nature, purpose and conditions

As Executive Officers do no longer benefit from the defined contribution pension plan for senior managers and executives, Mr Benoît Potier benefits from a life insurance contract for the portion of his Reference remuneration amounting to between zero and twenty-four times the annual social security ceiling. The Reference remuneration includes the fixed remuneration and the variable remuneration within the limit of 100% of the fixed remuneration.

The rights resulting from the contributions paid have been definitely acquired by Mr Benoît Potier and are available at any time.

This agreement was last authorized by the Board of Directors on November 20, 2014 and approved by the Annual Shareholders' Meeting on May 6, 2015.

The amount of the contributions paid in respect of this contract in 2019 totals 214,553 euros for Mr Benoît Potier.

Neuilly-sur-Seine and Paris-La Défense, February 21, 2020

The Statutory Auditors

French original signed by

PricewaterhouseCoopers Audit		ERNST & YOUNG et Autres	
Françoise Garnier	Séverine Scheer	Jeanne Boillet	François-Guillaume Postel

Statutory Auditors' report on the share capital reduction

(Combined Shareholders' meeting of May 05, 2020 – 13th resolution)

This is a free translation into English of the Statutory Auditors' report issued in French and is provided solely for the convenience of English-speaking readers. This report should be read in conjunction with, and construed in accordance with, French law and professional standards applicable in France.

To the Shareholders,

In our capacity as Statutory Auditors of your Company and pursuant to the provisions of article L. 225-209 of the French Commercial Code (Code de commerce) relating to share capital reductions, in particular as regards the cancellation of shares bought back by the Company, we hereby report to you on our assessment of the reasons for and the terms and conditions of the proposed share capital reductions.

The shareholders are asked to delegate to the Board of Directors full powers to cancel, any or all of the shares bought back by the Company under the share buyback program, within the limit of 10% of the capital as of the date of the cancellation, per twenty-four-month period. These powers would be exercisable for a period of twenty-four months from the Shareholders' Meeting, in accordance with article L. 225-209 of the French Commercial Code (Code de commerce).

We performed the procedures we deemed necessary in accordance with professional standards applicable in France to such engagements. These procedures consisted in ensuring that the reasons for and the terms and conditions of the proposed capital reductions, which are not considered to affect shareholder equality, comply with the applicable legal provisions.

We have no matters to report on the reasons for or terms and conditions of the proposed capital decrease.

Neuilly-sur-Seine and Paris-La Défense, February 21, 2020

The Statutory Auditors

French original signed by

PricewaterhouseCoopers Audit		ERNST & YOUNG et Autres	
Françoise Garnier	Séverine Scheer	Jeanne Boillet	François-Guillaume Postel

Statutory Auditors' report on the issue of ordinary shares and other equity securities giving rights to the share capital reserved for members of a Company or Group savings plan

(Combined Shareholders' meeting of May 05, 2020 – 15th resolution)

This is a free translation into English of the Statutory Auditors' report issued in French and is provided solely for the convenience of English-speaking readers. This report should be read in conjunction with, and construed in accordance with, French law and professional standards applicable in France.

To the Shareholders,

In our capacity as Statutory Auditors of your Company, and in compliance with articles L. 228-92 and L. 225-135 et seq. of the French Commercial Code (Code de commerce), we hereby report to you on the proposed delegation of authority to the Board of Directors to issue, without shareholders' preferential subscription rights, ordinary shares and equity securities giving rights to the share capital, reserved for the employees of the Company and of any French or foreign companies affiliated to it within the meaning of article L. 225-180 of the French Commercial Code (Code de commerce) and article L. 3344-1 of the French Labor Code (Code du travail), provided that such employees are members of a Company or Group savings plan, an operation upon which you are called to vote.

The maximum nominal amount of share capital increases likely to be performed under this resolution may not exceed 22 million euros (corresponding to the issue of a maximum of 4 million shares), it being specified that:

- the total amount of share capital increases that may be carried out pursuant to the fifteenth and sixteenth resolutions of this Extraordinary Shareholders' Meeting, may not exceed the aforementioned nominal amount of 22 million euros;
- the maximum nominal amount of share capital increases that may be carried out pursuant to the fifteenth and sixteenth resolutions, will be deducted from the overall limit of 470 million euros stipulated in the eleventh resolution of the Extraordinary Shareholders' Meeting of May 7, 2019.

This operation is submitted for your approval in accordance with the provisions of article L. 225 129 6 of the French Commercial Code (Code de commerce) and articles L. 3332-18 et seq. of the French Labor Code (Code du travail).

Your Board of Directors proposes that, on the basis of its report, the shareholders delegate to it the authority, for a period of 26 months as from the date of this Extraordinary Shareholders' Meeting, to decide one or several issuances and to cancel your preferential subscription rights to the shares to be issued. Where applicable, the Board of Directors will be responsible for setting the final terms and conditions of any such issue.

It is the Board of Directors' responsibility to prepare a report in accordance with articles R. 225-113 et seq. of the French Commercial Code (Code de commerce). It is our responsibility to express an opinion on the fairness of the information taken from the financial statements, on the proposed cancellation of shareholders' preferential subscription rights and on certain other information relating to this issue, contained in this report.

We have performed the procedures that we deemed necessary in accordance with professional standards applicable in France to such engagements. These procedures consisted in verifying the information provided in the Board of Directors' Report pertaining to the transaction and the methods used to set the issue price of the shares to be issued.

Subject to a subsequent examination of the terms and conditions of the proposed issue, we have no matters to report on the methods used to set the issue price of the securities given in the Board of Directors' Report.

Since the final terms and conditions of the issue have not been set, we do not express an opinion in this respect or consequently, on the proposed cancellation of shareholders' preferential subscription rights.

In accordance with article R. 225-116 of the French Commercial Code (Code de commerce), we will prepare an additional report in the event that the Board of Directors exercises this delegation of authority to issue shares or marketable securities granting entitlement to equity securities to be issued.

Neuilly-sur-Seine and Paris-La Défense, February 21, 2020

The Statutory Auditors

French original signed by

PricewaterhouseCoopers Audit		ERNST & YOUNG et Autres	
Françoise Garnier	Séverine Scheer	Jeanne Boillet	François-Guillaume Postel

Statutory Auditors' report on the issue of ordinary shares and other equity securities giving rights to the share capital reserved for a category of beneficiaries

(Combined Shareholders' meeting of May 05, 2020 – 16th resolution)

This is a free translation into English of the Statutory Auditors' report issued in French and is provided solely for the convenience of English-speaking readers. This report should be read in conjunction with, and construed in accordance with, French law and professional standards applicable in France.

To the Shareholders,

In our capacity as Statutory Auditors of your Company, and in compliance with articles L. 228-92 and L. 225-135 et seq. of the French Commercial Code (Code de commerce), we hereby report to you on the proposed delegation of authority to the Board of Directors for the issue of ordinary shares and other equity securities giving rights to the Company's share capital, without preferential subscription rights and reserved for the category of beneficiaries set out below, an operation upon which you are called to vote.

The issue is reserved for any financial institution or subsidiaries thereof appointed by your Company and which would subscribe to shares, or other equity securities issued by your Company pursuant to this resolution, with the sole aim of allowing employees and Executive Officers of foreign companies related to the Company, within the meaning of articles L. 225-180 of the French Commercial Code (Code de commerce) and L. 3344-1 of the French Labor Code (Code du travail), to benefit from a share ownership or investment mechanism with a similar economic profile to any employee share ownership plan implemented in connection with a share capital increase, pursuant to the fifteenth resolution of this Extraordinary Shareholders' Meeting, taking into account the locally applicable regulatory, tax and/or social framework for employees and Executive Officers of the above-mentioned foreign companies.

The maximum nominal amount of share capital increases likely to be performed under this resolution may not exceed €22 million (corresponding to the issue of a maximum of 4 million shares), it being specified that:

- the total amount of share capital increases that may be carried out immediately or in the future pursuant to the fifteenth and sixteenth resolutions of this Extraordinary Shareholders' Meeting, may not exceed the aforementioned nominal amount of €22 million;
- the maximum nominal amount of share capital increases that may be carried out pursuant to the fifteenth and sixteenth resolutions, will be deducted from the overall limit of €470 million stipulated in the eleventh resolution of the Extraordinary Shareholders' Meeting of May 7, 2019.

This issue is submitted to the shareholders for approval in accordance with the provisions of article L. 225 129 6 of the French Commercial Code (Code de commerce) and articles L. 3332-18 et seq. of the French Labor Code (Code du travail).

Your Board of Directors proposes that, on the basis of its report, the shareholders delegate to it the authority, for a period of 18 months as from the date of this Extraordinary Shareholders' Meeting, to decide one or several issuances and cancel your preferentiel subscription rights to the shares to be issued. Where applicable, the Board of Directors will be responsible for setting the final terms and conditions of any such issue.

It is the Board of Directors' responsibility to prepare a report in accordance with articles R. 225-113 et seq. of the French Commercial Code (Code de commerce). It is our responsibility to express an opinion on the fairness of the information taken from the financial statements, on the proposed cancellation of preferential subscription rights and on certain other information relating to this issue, contained in this report.

We have performed the procedures that we deemed necessary in accordance with professional standards applicable in France to such engagements. These procedures consisted in verifying the information provided in the Board of Directors' Report pertaining to the transaction and the methods used to set the issue price of the shares to be issued.

Subject to a subsequent examination of the terms and conditions of the proposed issue, we have no matters to report on the methods used to set the issue price of the securities given in the Board of Directors' Report.

Since the final terms and conditions of the issue have not been set, we do not express an opinion in this respect or consequently, on the proposed cancellation of shareholders' preferential subscription rights.

In accordance with article R. 225-116 of the French Commercial Code (Code de commerce), we will prepare an additional report in the event that the Board of Directors uses this delegation of authority to issue shares or marketable securities granting entitlement to equity securities to be issued.

Neuilly-sur-Seine and Paris-La Défense, February 21, 2020

The Statutory Auditors

French original signed by

PricewaterhouseCoopers Audit		ERNST & YOUNG et Autres	
Françoise Garnier	Séverine Scheer	Jeanne Boillet	François-Guillaume Postel

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ADDITIONAL INFORMATION

SHARE CAPITAL

1. Trends in share capital over the past three years

Issue date	Type of transaction	Number of shares issued	Aggregate number of shares	Share capital increase	Issue premiums and reserves	Share capital
(in euros, except for shares)						
February 14, 2017	Exercise of share subscription options	78,644	388,898,530	432,542.00	4,626,159.78	2,138,941,915.00
May 3, 2017	Cancelation of shares	(1,100,000)	387,798,530	(6,050,000.00)	(109,287,860.00)	2,132,891,915.00
September 26, 2017	Exercise of share subscription options	439,965	388,238,495	2,419,807.50	23,264,528.21	2,135,311,722.50
September 26, 2017	Free share attribution (1 for 10)	38,823,849	427,062,344	213,531,169.50	(213,531,169.50)	2,348,842,892.00
September 26, 2017	Free share attribution (1 for 100)	990,504	428,052,848	5,447,772.00	(5,447,772.00)	2,354,290,664.00
February 14, 2018	Exercise of share subscription options	390,657	428,443,505	2,148,613.50	25,990,743.26	2,356,439,277.50
May 16, 2018	Cancelation of shares	(654,000)	427,789,505	(3,597,000)	(59,799,789)	2,352,842,277.50
July 27, 2018	Exercise of share subscription options	481,736	428,271,241	2,649,548.00	28,247,932.03	2,355,491,825.50
December 7, 2018	Share capital reserved for employees	1,049,529	429,320,770	5,772,409.50	86,255,757.19	2,361,264,235.00
February 13, 2019	Exercise of share subscription options	118,077	429,438,847	649,423.50	8,399,348.00	2,361,913,658.50
May 7, 2019	Cancelation of shares	(953,000)	428,485,847	(5,241,500)	(103,434,617.40)	2,356,672,158.50
October 1, 2019	Exercise of share subscription options	414,963	428,900,810	2,282,296.50	28,668,632.32	2,358,954,455.00
October 1, 2019	Free share attribution (1 for 10)	42,890,081	471,790,891	235,895 445.50	(235,895,445.50)	2,594,849,900.50
October 1, 2019	Free share attribution (1 for 100)	1,227,640	473,018,531	6,752,020.00	(6,752,020)	2,601,601,920.50

Note: Between October 1 and December 2019, 86,983 options were exercised, giving rise to an outsanting capital as at December 31, 2019 of 2,602,080,327.00 euros divided up into 473,105,514 actions.

2. Changes in share capital ownership over the last three years

	2017	2018	2019
Individual shareholders	32%	32%	32%
French institutional investors	19%	18%	17%
Non-French institutional investors	49%	50%	51%
Treasury shares	>0%	>0%	>0%

THRESHOLD NOTIFICATIONS

During the fiscal year ended December 31, 2017 the following legal threshold notifications were declared:

Date	Société	% Capital		% droit de vote
01/17/2019	BlackRock	5.01%	↗	5.01%
01/18/2019	BlackRock	4.90%	↘	4.90%
02/15/2019	BlackRock	5.01%	↗	5.01%
03/04/2019	BlackRock	5.04%	↗	5.04%
03/05/2019	BlackRock	4.96%	↘	4.96%
03/11/2019	BlackRock	5.01%	↗	5.01%
03/13/2019	BlackRock	4.98%	↘	4.98%
03/14/2019	BlackRock	5.00%	↗	5.00%
03/15/2019	BlackRock	4.98%	↘	4.98%
03/18/2019	BlackRock	5.03%	↗	5.03%
03/19/2019	BlackRock	4.95%	↘	4.95%
05/06/2019	BlackRock	5.04%	↗	5.04%
05/07/2019	BlackRock	4.92%	↘	4.92%
05/28/2019	BlackRock	5.03%	↗	5.03%
05/30/2019	BlackRock	4.98%	↘	4.98%
06/14/2019	BlackRock	5.03%	↗	5.03%
06/17/2019	BlackRock	4.94%	↘	4.94%
07/08/2019	BlackRock	4.99%	↘	4.99%
07/09/2019	BlackRock	5.06%	↗	5.06%
07/15/2019	BlackRock	4.97%	↘	4.97%
07/18/2019	BlackRock	5.02%	↗	5.02%
07/19/2019	BlackRock	4.99%	↘	4.99%
07/22/2019	BlackRock	5.01%	↗	5.01%
08/15/2019	BlackRock	4.99%	↘	4.99%
08/19/2019	BlackRock	5.02%	↗	5.02%
10/08/2019	BlackRock	4.98%	↘	4.98%
10/11/2019	BlackRock	5.59%	↗	5.59%
10/11/2019	BlackRock	5.07%	↗	5.07%
10/16/2019	BlackRock	4.99%	↘	4.99%
10/17/2020	BlackRock	5.04%	↗	5.04%
10/31/2019	BlackRock	4.99%	↘	4.99%
11/07/2019	BlackRock	5.01%	↗	5.01%
11/18/2019	BlackRock	4.97%	↘	4.97%
11/19/2019	BlackRock	5.00%	↗	5.00%
11/21/2019	BlackRock	4.97%	↘	4.97%
11/22/2019	BlackRock	5.03%	↗	5.03%
11/26/2019	BlackRock	4.98%	↘	4.98%
11/28/2019	BlackRock	5.03%	↗	5.03%
12/04/2019	BlackRock	4.94%	↘	4.94%

To the Company's knowledge, there is no other shareholder that holds either directly or indirectly, alone or jointly, more than 5% of the capital or voting rights.

3. Share capital and voting rights for the last three years

	Number of shares comprising share capital	Theoretical number of voting rights (including treasury shares)	Actual number of voting rights (excluding treasury shares)
2017	428,397,550	428,397,550	426,838,237
2018	429,423,434	429,423,434	427, 970,430
2019	**473,105,514**	**473,105,514**	**471,489,056**

There are no double voting rights.

To the best of the Company's knowledge, there are no shareholders' agreements or joint or concerted action agreements.

The portion of the L'Air Liquide S.A. share capital comprising the direct registered shares owned by the main shareholders and pledged is not material.

4. Amount of share capital held by employees

Since 1986, L'Air Liquide S.A. has given the employees of certain Group companies the possibility to subscribe to capital increases reserved for them. At the end of 2019, the share of capital held by employees and former employees of the Group is estimated at 2.4%, of which 1.7% (within the meaning of article L. 225-102 of the French Commercial Code), that is 7,825,033 shares, corresponds to shares subscribed by employees during employee reserved capital increase operations or held through mutual funds.

5. Delegations of authority granted at the Shareholders' Meeting

Nature of the delegation	Validity of the delegation	Authorized amount	Utilization in 2019
Share buyback	Granted by: SM of May 7, 2019 (4th)* For a period of: **18 months** Maximum price: 165 euros	10% of share capital, representing 42,942,343 shares, for a maximum amount of 7,085,486,595 euros	**Treasury shares** As of December 31, 2019, the Company owned 1,375,893 shares at an average purchase price of 91.94 euros, i.e. a balance sheet value of 126,495,001 euros. **Liquidity contract changes** Under the liquidity contract, as of December 31, 2019 a total of 5,000 shares were on the balance sheet for a net value of 630,469 euros. For more details, see pages 326-327 in the Universal Registration Document.
Cancelation of shares	Granted by: SM of May, 7, 2019 (10th)* For a period of: **24 months**	10% of share capital	953,000 shares canceled in May 2019 for a total carrying amount of 108,679,117 euros (or an average price of 114.04 euros). See Information on the completion of the Company's share buyback program on page 326.
Increase in share capital via the issuance of shares or marketable securities, with retention of shareholders' preferential subscription rights	Granted by: SM of May, 7, 2019 (11th) For a period of: **26 months**	470 million euros nominal amount (overall limit) Maximum nominal amount of marketable securities: 3 billion euros Amounts may be increased by a maximum of 15%, in the event of oversubscription (12th resolution SM of May, 7, 2019)	None

* *Renewal to be proposed to the Combined Shareholders' Meeting on May 5, 2020.*

Nature of the delegation	Validity of the delegation	Authorized amount	Utilization in 2019
Capital increase via capitalization of reserves	Granted by: SM of May 16, 2018 (16th)* For a period of: **26 months**	For a maximum nominal amount of 300 million euros	In 2019, capitalization of the sum of 242 million euros taken from the "Additional paid-in capital" and "retained earnings" accounts, by means of the creation of 42,890,081 new shares freely attributed to shareholders at 1 new share for every 10 existing shares and 1,227,640 new shares freely attributed to shareholders as part of a 10% bonus attribution.
Share capital increase reserved for employees: ■ as part of a Group savings plan ■ as part of a comparable scheme abroad	Granted by: SM of May 7, 2019 (15th)* For a period of: **26 months** Granted by: SM of May 7, 2019 (16th)* For a period of: **18 months**	22 million euros nominal value and 4 million shares. To be deducted from the aforementioned overall limit of 470 million euros	None
Bond issuance	Granted by: SM of May 12, 2016 (13th) For a period of: 5 years	20 billion euros	As of December 31, 2019, outstanding bond issues of 302 million euros for L'Air Liquide S.A., 12.1 billion euros for the Air Liquide Group.
Stock options	Granted by: SM of May 7, 2019 (13th) For a period of: **38 months**	2% of the capital on the day the options were granted 0.2% of the capital on the date the options were granted to the Executive Officers	None
Performance shares	Granted by: SM of May 7, 2019 (14th) For a period of: **38 months**	0.5% of the capital on the day the shares were granted 0.1% of the capital on the date the shares were granted to the Executive Officers	349,173 performance shares were granted by the Board on September 30, 2019.

* *Renewal to be proposed to the Combined Shareholders' Meeting on May 5, 2020.*

GENERAL INFORMATION

1. General information

Law applicable to L'Air Liquide S.A.

French law.

Incorporation and expiration dates

The Company was incorporated on November 8, 1902, for a set term expiring on February 17, 2028.

Business and Company register

552 096 281 RCS Paris
APE code: 7112B
LEI: 969500MMPQVHK671GT54

Consulting legal documents

The articles of association, Minutes of Shareholders' Meetings and other Company documents may be consulted at Company headquarters.

Fiscal year

The Company's fiscal year starts on January 1, and ends on December 31, of the same year.

Address, phone number of the head office and website

75, quai d'Orsay, 75007 Paris
+33 (0)1 40 62 55 55
https://www.airliquide.com

The information on the website is not included in the Universal Registration Document unless it is incorporated in it by reference.

2. Articles of association

Section I

NAME – PURPOSE – HEAD OFFICE – TERM

Article 1: Form and name

The Company is a joint stock company, with a Board of Directors. This Company will be governed by the laws and regulations in force and these articles of association.

The Company's name is "L'Air Liquide, société anonyme pour l'Étude et l'Exploitation des procédés Georges Claude".

Article 2: Purpose

The Company's corporate purpose includes:

- the study, exploitation, sale of the patents or inventions of Messrs. Georges and Eugène Claude pertaining to the liquefaction of gases, the industrial production of refrigeration, liquid air and oxygen, and the applications or utilizations thereof;
- the industrial production of refrigeration, of liquid air, the applications or uses thereof, the production and liquefaction of gases, and in particular oxygen, nitrogen, helium and hydrogen, the applications and uses thereof in all forms, pure, in blends and combinations, without any distinction as to state or origin, in all areas of application of their physical, thermodynamic, chemical, thermochemical and biological properties, and, in particular, in the domains of propulsion, the sea, health, agri-business and pollution;
- the purchase, manufacturing, sale, use of all products pertaining directly or indirectly to the aforementioned corporate purpose, as well as all sub-products resulting from their manufacturing or their use, of all machines or devices used for the utilization or application thereof and, more specifically, the purchase, manufacturing, sale, use of all products, metals or alloys, derived or resulting from a use of oxygen, nitrogen and hydrogen, pure, blended or combined, in particular of all oxygenated or nitrogenous products;
- the study, acquisition, direct or indirect exploitation or sale of all patents, inventions or methods pertaining to the same corporate purposes;
- the exploitation, directly or through the incorporation of companies, of all elements connected, directly or indirectly, with the Company's purpose or likely to contribute to the development of its industry;
- the supply of all services, or the supply of all products likely to develop its clientele in the industry or health sectors.

The Company may request or acquire all franchises, perform all constructions, acquire or lease all quarries, mines and all real property, and take over all operations connected with its corporate purpose, sell or lease these franchises, merge or create partnerships with other companies by acquiring Company shares or rights, through advances or in any appropriate manner. It may undertake these operations either alone or jointly.

Lastly, and more generally, it may carry out all industrial, commercial, real estate, personal or financial operations pertaining directly or indirectly to the corporate purposes specified above.

Article 3: Head office

The Company's head office is located at 75, quai d'Orsay, Paris.

It may be transferred upon a Board of Directors' decision to any other location in Paris or a neighboring department, subject to the ratification of such decision by the next Ordinary General Shareholders' Meeting, and anywhere else by virtue of a decision by an Extraordinary Shareholders' Meeting.

Article 4: Term

The Company's term has been fixed at 99 years beginning on February 18, 1929, except in the event of early dissolution or extension.

Section II

SHARE CAPITAL – SHARES – IDENTIFICATION OF SHAREHOLDERS

Article 5: Share capital

The share capital has been set at 2,602,235,812 euros divided into 473,133,784 fully paid-up shares of a par value of 5.50 euros each.

Share capital is increased under the conditions stipulated by law either by issuing ordinary or preferred shares, or by raising the par value of existing shares. It may also be increased by exercising the rights attached to marketable securities granting access to share capital, under the conditions stipulated by law.

In accordance with prevailing legal provisions, unless otherwise decided by the Shareholders' Meeting, the shareholders have, in proportion to the amount of shares they own, a preferential subscription right to the shares issued in cash in order to increase share capital.

The share capital may also be reduced under the conditions stipulated by law, in particular, by reducing the par value of the shares, or by reimbursing or redeeming shares on the stock exchange and by canceling shares, or by exchanging existing shares for new shares, in an equivalent or lesser number, with or without the same par value, and with or without a cash balance to be paid or received. The Shareholders' Meeting may always compel the shareholders to sell or purchase existing shares to permit the exchange of existing shares for new shares, with or without a cash balance to be paid or received, even if such reduction is not a result of losses.

Article 6: Shares

If the new shares are not fully paid up upon issuance, calls for payment shall be performed, on dates set by the Board of Directors, by means of announcements posted one month in advance in one of the Paris official legal publications chosen for the legal publication of the Company's deeds.

Shares not fully paid up shall be held as registered shares until they are fully paid up.

Each payment on any subscribed shares will be registered in an account opened in the name of the subscriber.

All late payments shall automatically bear interest, for the benefit of the Company, as of the due date, without any formal notice or legal action, at the legal interest rate, subject to any personal action that the Company may take against any defaulting shareholder and the compulsory execution measures provided by law.

Article 7: Type of shares

Paid-up shares are registered as registered shares or bearer shares depending on the choice of the shareholder.

The provisions of the aforementioned paragraph also apply to other securities of any nature issued by the Company.

Article 8: Rights and obligations governing shares

Shareholders shall not be liable above the amount of their subscription.

Share ownership automatically binds shareholders to the articles of association and the decisions of the Shareholders' Meetings.

Subject to legal and regulatory restrictions, voting rights attached to the shares are proportionate to the capital quota they represent and each share confers the right to one vote. In accordance with the option provided for in paragraph 3 of article L. 225-123 of the French Commercial Code, double voting rights will not be conferred to paid-up shares and for which a nominative registration for at least two years in the name of the same shareholder can be proved.

Any share grants entitlement, during the Company's term, as in the event of liquidation, to the payment of an identical net amount for any distribution or redemption.

Shares are freely transferable under the conditions provided by law.

Article 9: Identification of shareholders

The Company may avail itself at any time of the legal and statutory provisions in force permitting the identification of the owners of shares conferring immediately or in the future the right to vote in Shareholders' Meetings, as well as the number of shares they own.

In addition to the legal obligations to notify the Company, any person, acting alone or jointly, coming in direct or indirect possession of a fraction of the Company's capital or voting rights equal to or greater than 2%, or a multiple of 2% of capital or voting rights (including above the 5% threshold), is required to inform the Company within fifteen days as of the date on which the threshold is exceeded and, as the case may be, independently of the effective transfer date of share ownership. The person shall state the number of shares and marketable securities granting entitlement to capital that he or she owns on the date of notification. Any decrease below the 2% threshold or a multiple of 2% of capital or voting rights shall be notified in the same manner.

In the event of a failure to meet this additional notification obligation, one or several shareholders, owning a fraction of the Company's capital or voting rights amounting to at least 2%, may, at a Shareholders' Meeting, request that the shares exceeding the fraction which should have been reported, be stripped of their voting rights for any Shareholders' Meeting held until the end of a two-year period following the date on which the notice is rectified. The request is recorded in the Minutes of the Shareholders' Meeting.

Article 10: Co-ownership and usufruct

As all shares are indivisible from the point of view of the Company, all joint owners of shares are required to be represented vis-à-vis the Company by a single owner selected from among them or proxy under the conditions provided by law.

The voting right attached to the share is exercised by the beneficial owner at both Ordinary and Extraordinary Shareholders' Meetings. However, the bare-owner shall be entitled to attend all Shareholders' Meetings. He or she may also represent the beneficial owner at Shareholders' Meetings.

The heirs, creditors, trustees or successors of a shareholder may not, on any grounds whatsoever, call for the affixing of seals on the Company's assets and securities, request the distribution thereof, or interfere in any manner whatsoever in its administration.

In order to exercise their rights, they must consult the Company's records and decisions of the Shareholders' Meetings.

Section III

MANAGEMENT OF THE COMPANY

Article 11: Composition of the Board of Directors

The Company is managed by a Board of Directors, comprising a minimum of three members and a maximum of fourteen members (unless temporarily waived in the event of a merger), physical persons or legal entities.

The members of the Board of Directors are appointed by the Ordinary Shareholders' Meeting for a term of four years expiring at the close of the Shareholders' Meeting held to approve the financial statements for the previous year and which is held in the year during which the mandate expires. As an exception to this rule, the members of the first Board of Directors who exercised functions as members of the Supervisory Board in the Company under its former mode of administration shall be appointed for a period equal to the remaining term of their mandate as members of the Supervisory Board.

The members of the Board of Directors may be re-elected.

Each Director must own at least 500 registered shares in the Company during the term of his functions. If, on the date of his appointment, a Director does not own the required number of shares or if, during his term, he ceases to own them, he is deemed to have resigned with immediate effect if he has not rectified the situation within a period of three months.

In the event of a vacancy of one or more seats due to death or resignation, the Board of Directors may, between two Shareholders' Meetings, make temporary appointments. Provisional appointments made by the Board of Directors are subject to the approval of the next Ordinary Shareholders' Meeting. If the number of Directors falls below the legal minimum, the remaining Directors must immediately convene an Ordinary Shareholders' Meeting in order to make up the numbers of the Board.

No individual over the age of 70 shall be appointed as a member of the Board of Directors if his appointment increases the number of the members of the Board of Directors who have passed this age to over one third. If during their term, the number of the members of the Board of Directors who have passed 70 years of age exceeds one third of the Board's members, the oldest member of the Board of Directors who has not carried out management functions in the Company is deemed to have resigned at the end of the Annual Shareholders' Meeting held following the occurrence of this event.

During the Company's term, Directors are appointed and their mandates renewed under the conditions provided by law.

They may be dismissed by the Ordinary Shareholders' Meeting at any time.

Director(s) representing employees

In accordance with statutory requirements, if the number of members of the Board of Directors, calculated in accordance with article L. 225-27-1-II of the French Commercial Code, is less than or equal to 12, the Group Committee in France shall proceed to appoint a Director representing employees.

If the number of members of the Board of Directors, calculated in accordance with article L. 225-27-1-II of the French Commercial Code, is more than 12, and provided this criterion is still fulfilled on the date of the appointment, a second Director representing employees shall be appointed by the European Works Council.

If the number of members of the Board of Directors, calculated in accordance with article L. 225-27-1-II of the French Commercial Code, was originally more than 12 members but becomes less than or equal to 12 members, the Director appointed by the European Works Council shall remain in office until his term of office expires.

As an exception to the foregoing, the Director representing employees appointed by virtue of this clause is not required to hold at least 500 registered shares during his term of office.

The Director representing employees shall be appointed for a four-year term expiring at the close of the Shareholders' Meeting called to approve the financial statements for the previous year and which is held in the year in which his term of office expires. The tenure of the Director representing employees may be renewed.

The tenure of the Director representing employees shall be terminated in accordance with statutory requirements and the provisions contained in this clause, particularly in the event of termination of said Director's employment contract; if the criteria for the application of article L. 225-27-1 of the Commercial Code are no longer met, the tenure of the Director(s) representing employees shall expire at the end of the meeting during which the Board of Directors observes that the Company has been released from this obligation.

In the event that the seat of a Director representing employees is vacant for any reason whatsoever, the vacant seat shall be filled under the conditions set forth in article L. 225-34 of the French Commercial Code.

In addition to the provisions of the second paragraph of article L. 225-29 of the French Commercial Code, it is stipulated, if need be, that any failure to appoint a Director representing employees by the body designated herein, in accordance with the law and with this clause, shall not invalidate the resolutions of the Board of Directors.

Article 12: Organization and management of the Board of Directors

The Board of Directors elects from among its members who are individuals, a Chairman. It determines his remuneration and sets his term of office which may not exceed his term of office as Director. The Chairman may be re-elected.

The Chairman of the Board of Directors performs the duties entrusted to him by law. He chairs the Board of Directors, organizes and manages its work and reports on such work to the Shareholders' Meeting. He ensures that the Company's bodies operate properly and, in particular, that the Directors are able to fulfill their assignments.

The Board may also appoint from among its members one or more Vice-Chairmen, whose term of office shall be determined within the limit of their term as Director and whose role it is, subject to the legal provisions applicable in the event of the temporary impediment or death of the Chairman, to convene and chair Board meetings or chair Shareholders' Meetings in accordance with these articles of association when the Chairman is impeded.

No Director who does not also assume the role of Chief Executive Officer may be appointed as Chairman of the Board of Directors after the age of 70 (or 72 if the Board decides at its discretion to derogate from this limit in exceptional circumstances). If, during the term of office, this age limit is reached, the Chairman's mandate shall terminate at the close of the Shareholders' Meeting held to approve the financial statements for the year during which he has reached the age limit.

If the Chairman of the Board of Directors also assumes the role of Chief Executive Officer, the applicable age limit is that applicable to the Chief Executive Officer.

The Chairman and each Vice-Chairman may be dismissed by the Board of Directors at any time. They may also be re-elected.

The Board may appoint a secretary who need not be a shareholder or one of its members.

Article 13: General Management

Management organization

In accordance with the law, the Company's General Management is assumed either by the Chairman of the Board of Directors or by any other physical person, Director or not, appointed by the Board of Directors and who assumes the role of Chief Executive Officer.

The choice between either of the two General Management organizations described above is made by the Board of Directors.

The Board of Directors makes its decision relating to the choice of General Management organization under the quorum and majority conditions stipulated in article 14 of these articles of association. The shareholders and third parties are informed of the Board of Directors' decision under the conditions stipulated by the regulations in force.

When the Company's General Management is assumed by the Chairman of the Board of Directors, the Board of Directors must appoint, among its members considered as independent by the Board of Directors, a Lead Director. The conditions of appointment, the tasks and powers of the Lead Director (in particular, if applicable, the power to ask to convene a meeting of the Board of Directors), are set out in the Board of Directors' internal regulations.

The choice made by the Board of Directors remains valid until it decides otherwise.

The Board of Directors will review, as necessary, the choice made each time the mandate of the Chairman of the Board of Directors or the Chief Executive Officer comes up for renewal.

Chief Executive Officer

If the Company's Chief Executive Officer is assumed by the Chairman of the Board of Directors, the following provisions relating to the Chief Executive Officer are applicable.

The Board of Directors sets the term of office and determines the remuneration of the Chief Executive Officer.

No individual over the age limit set by law may be appointed as Chief Executive Officer. If, during the term of office, this age limit is reached, the Chief Executive Officer's mandate shall terminate at the close of the Shareholders' Meeting held to approve the financial statements for the year during which he has reached the age limit set by law.

The Chief Executive Officer may be dismissed at any time by the Board of Directors. The discharge of a Chief Executive Officer who does not assume the role of Chairman may give rise to damages if decided without reasonable cause.

The Chief Executive Officer may always be re-elected.

Powers of the Chief Executive Officer

The Chief Executive Officer is vested with the broadest powers to act in all circumstances on behalf of the Company within the limit of the Company's corporate purpose, the articles of association, and subject to the powers expressly granted by law to Shareholders' Meetings and the Board of Directors.

The Board of Directors is responsible for defining the decisions of the Chief Executive Officer that require its prior approval. The Board of Directors' prior approval should be sought particularly for external acquisitions or sales of interests or assets, and for investment commitments, in each case under the conditions and exceeding the amounts corresponding to an efficient operation of the Company as set by the Board of Directors. It should also be sought for financing operations of any amount likely to substantially alter the Company's financial structure and for any decision likely to substantially alter the Company's strategic orientations determined by the Board of Directors.

Senior Executive Vice-Presidents

On the Chief Executive Officer's proposal, whether he be Chairman of the Board of Directors or any other person, the Board of Directors may appoint one or more physical persons as Senior Executive Vice-Presidents to assist the Chief Executive Officer.

The maximum number of Senior Executive Vice-Presidents is set at three.

In accordance with the Chief Executive Officer, the Board of Directors determines the scope and term of the powers granted to the Senior Executive Vice-Presidents and sets their remuneration.

The Senior Executive Vice-Presidents have the same powers as the Chief Executive Officer vis-à-vis third parties.

In the event of impediment of the Chief Executive Officer or the cessation of his functions, the Senior Executive Vice-Presidents shall maintain, unless decided otherwise by the Board of Directors, their functions and powers until a new Chief Executive Officer is appointed.

The Senior Executive Vice-Presidents may be dismissed at any time by the Board of Directors, at the Chief Executive Officer's proposal. They are subject to the age limit provided by law.

Senior Executive Vice-Presidents may be re-elected.

Article 14: Board of Directors' Meetings and deliberations

The Board of Directors meets as often as the interest of the Company so requires, by notice from its Chairman or in the case of impediment, from the oldest Vice-Chairman, if one or more Vice-Chairmen have been appointed, at the head office or in any other location indicated in the Notice of Meeting.

The agenda is set by the Chairman and may only be finalized at the time of the Meeting.

Directors representing at least one third of members of the Board of Directors may, while specifying the meeting's agenda, ask the Chairman to summon the Board if it has not met for more than two months.

Likewise, the Chief Executive Officer, if he does not chair the Board of Directors, may ask the Chairman to summon the Board of Directors on any specified agenda.

The Chairman is bound to the requests made to him.

In the event that the Chairman is impeded or fails in performing the aforementioned tasks, the oldest Vice-Chairman, if one or more Vice-Chairmen have been appointed, shall have the authority to call the Board and set the meeting's agenda at the request of at least one third of members of the Board of Directors or the Chief Executive Officer, as the case may be. In the absence of a Vice-Chairman, the minimum of one third of members of the Board of Directors or the Chief Executive Officer, depending on the case, shall have the authority to call the Board and set the meeting's agenda.

Notices may be made by all means, including verbally.

The presence of one half of the members of the Board of Directors is required for the validity of the Board's decisions.

Decisions are made by a simple majority of the votes of the members present or represented. In the event of a tie, the Chairman shall have the casting vote.

The Board of Directors will set its internal rules that it may amend by simple resolution.

The Board of Directors may stipulate in its internal rules that the members of the Board of Directors who take part in the Board's meeting by videoconference or telecommunications in accordance with the conditions provided by the regulations in force shall be considered as present for calculating the quorum and voting majority of the members, for all decisions in which the law does not exclude such possibility.

Article 15: Powers of the Board of Directors

The Board of Directors determines the orientations of the Company's activities and ensures their implementation.

Subject to the powers expressly attributed to Shareholders' Meetings by law and these articles of association and in accordance with the corporate purpose, the Board deals with any issues concerning the smooth running of the Company and manages corporate business pursuant to its decisions.

The Board of Directors may conduct controls and verifications as it deems appropriate.

The Board is authorized to issue bonds pursuant to a delegation granted by the Ordinary Shareholders' Meeting.

It may also decide to create Committees of its members responsible for analyzing issues which it itself or its Chairman submits thereto for review. The Board determines the composition and powers of the Committees which conduct their activities under its responsibility.

Issues related to the performance, remuneration and, where appropriate, the renewal of the term of office of the Chairman and Chief Executive Officer, or the Chief Executive Officer, shall be decided by the Board of Directors as and when required, and at least once a year, after analysis by the Committee(s) of the Board of Directors that deal with appointment and remuneration issues.

Article 16: Remuneration

The Ordinary Shareholders' Meeting may allocate to the members of the Board of Directors, as remuneration for their activity, a fixed annual amount in Directors' fees. The Board of Directors is free to distribute the overall sum thus allocated among its members. It may also allocate a greater amount to the Directors who are members of Committees set up within the Board than that allocated to the other Directors.

The Board may allocate exceptional sums to remunerate assignments or mandates entrusted to the members of the Board.

Section IV

STATUTORY AUDITORS

Article 17: Audit of the Company

At the Ordinary Shareholders' Meeting, the shareholders appoint, under the conditions and with the assignments set by law, the principal and deputy Statutory Auditors.

Section V

SHAREHOLDERS' MEETINGS

Article 18: Shareholders' Meetings

The Shareholders' Meeting is comprised of all the shareholders, regardless of the number of shares they own, provided that all shares are fully paid up and that they are not stripped of voting rights.

The right to attend Shareholders' Meetings of the Company shall be justified by the recording of the shares, in the book-entry form, in the name of the shareholder or of the intermediary registered on behalf of the shareholder within the time frames and under the conditions provided for by French law.

The owners of registered shares or bearer shares must furthermore have filed a proxy or absentee ballot form, or a single document presented in lieu thereof, or if the Board of Directors has so decided, a request for an admission card, at least three days prior to the meeting. The Board of Directors may however reduce this time period if it deems appropriate. It may also authorize the submission to the Company of the proxy or absentee ballot forms by teletransmission (including electronically) in accordance with prevailing regulatory and legal provisions.

The electronic signature can, when used, take the form of a process that satisfies the conditions defined in the first sentence of section 2 of article 1316-4 of the French Civil Code.

The Shareholders' Meeting, duly constituted, represents all of the shareholders.

Ordinary and Extraordinary Shareholders' Meetings, and where necessary, Special Shareholders' Meetings are convened, meet and deliberate under the conditions provided by law and these articles of association.

Meetings take place at the head office or at any other place designated by the author of the notice, even outside of the head office or the head office's department.

Shareholders' Meetings are chaired by the Chairman of the Board of Directors or, in his absence, by the Vice-Chairman or the oldest Vice-Chairman of the Board, if one or more Vice-Chairmen have been appointed, or otherwise by a Director specifically appointed for this purpose by the Board. In the event of impediment of the Vice-Chairman or Vice-Chairmen when Vice-Chairmen have been appointed or if the Board has not appointed a Director, the shareholders shall themselves appoint the Chairman.

The two members of the Shareholders' Meeting with the highest number of votes and having accepted the position act as ballot inspectors for the Shareholders' Meeting. The officers of the meeting appoint a secretary who need not be a shareholder.

In the event that the meeting is convened by a Statutory Auditor or by a judicial representative, the Shareholders' Meeting is chaired by the author of the notice.

Upon the decision of the Board of Directors published in the Notice of Meeting or notice of convocation to rely on means of telecommunication, the shareholders who take part in the Shareholders' Meeting by videoconference or using telecommunications means permitting their identification in accordance with the conditions provided by prevailing law, shall be considered as present for calculating the quorum and voting majority.

Article 19: Powers of Shareholders' Meetings

Ordinary and Extraordinary Shareholders' Meetings, and where necessary, Special Shareholders' Meetings allow shareholders to exercise the powers defined by law and these articles of association.

During the Ordinary Shareholders' Meeting, shareholders decide or authorize the issue of bonds secured, where necessary, by specific collateral in accordance with prevailing laws and regulations and authorize the Chairman to grant such collateral. They may delegate to the Board of Directors the competence and powers necessary to issue such bonds, in one or more installments, within a period set by them, and to determine the terms and conditions of the issuance of such bonds. The guarantees set up subsequent to the issue of the bonds are granted by the Chairman of the Board of Directors upon the Board's authorization.

Section VI

INVENTORY – RESERVES – DISTRIBUTION OF PROFITS

Article 20: Fiscal year

The fiscal year begins on January 1 and ends on December 31.

Article 21: Inventory, distribution of profits

The Company's net proceeds, established in the annual inventory, after deducting overheads and other costs, including all amortization, depreciation and provisions, constitute the net profits.

From these profits, less, as the case may be, previous losses, a deduction of at least 5% is first of all made to create the reserve required by law. This deduction ceases to be mandatory when the reserve amounts to 10% of the share capital. It is resumed if this reserve is ever used.

The distributable profits are made up of the annual net profits, less previous losses, as well as the sums to be placed on reserve pursuant to law, plus the profit carried forward.

From these profits, a deduction is made of the amount necessary to pay the shareholders, as a first dividend, 5% of the sums paid-up on their shares, and not amortized, and 5% of the sums from premiums on shares issued in cash, and appearing in a "share premium" account, without it being possible, if the profits of a given year do not permit this payment, for the shareholders to claim such amounts from the profits of subsequent years.

The Shareholders' Meeting may decide to earmark any portion of the available surplus of said profits it wishes for the creation of general or special providence or reserve funds, under any name whatsoever or even simply as an amount carried forward.

The balance constitutes a surplus fund which is intended for the distribution of the second dividend as well as the amount provisionally assessed as necessary to pay a 10% increase to the registered shares satisfying the following conditions.

Starting on January 1, 1996, the shares registered at December 31 of each year in registered form for at least two years, and which remain registered until the date of the payment of the dividend, will entitle their owners to collect a dividend per share which is 10% higher, rounded down if necessary to the lower centime, than the dividend per share distributed in respect of other shares, provided that the amount of the dividend per share prior to any increase is at least equal to the amount of the dividend per share prior to any increase distributed in the preceding year, adjusted to take into account the change in the number of shares from one year to the next resulting in a capital increase by capitalizing premiums, reserves or profits or a share split.

In the event that, starting on January 1, 1996, the Board of Directors, with the approval of the shareholders decides to increase the capital by capitalizing reserves, profits or premiums, the registered shares held on December 31 prior to the attribution for at least two years and that remain held until the day before the share attribution date will entitle their owners to an attribution of shares which is 10% higher than the attribution made in favor of other shares, and according to the same procedure.

The new shares created in this manner will be comparable in all respects to the existing shares from which they are issued, for calculating the entitlement to the higher dividends and the higher attributions.

The increases defined in each of the two preceding paragraphs may be modified or eliminated by simple decision during the Extraordinary Shareholders' Meeting, according to the procedures it determines.

Pursuant to law, the number of shares eligible for these increases shall not for any given shareholder exceed 0.5% of the Company's share capital.

The Shareholders' Meeting held to approve the financial statements for the year shall have the possibility of granting to each shareholder, for all or part of the dividend or interim dividends, an option for payment of the dividend or interim dividends in either cash or shares.

Section VII

LIQUIDATION

Article 22: Liquidation

At the expiration of the Company's term, or in the event of early dissolution, the shareholders determine the method of liquidation, in accordance with the conditions stipulated by law. They appoint and determine the powers of one or more liquidators.

The liquidators may, pursuant to a decision of the shareholders, transfer to another company or sell to a company or to any other entity or person, all or part of the assets, rights and obligations of the dissolved Company.

The duly constituted Shareholders' Meeting retains the same prerogatives during the liquidation as during the Company's term. In particular, it has the power to approve the accounts of the liquidation and to grant a discharge thereof.

After the Company's commitments have been settled, the net proceeds from the liquidation are used first to fully redeem the shares, and the surplus is then distributed equally among them.

Section VIII

DISPUTES

Article 23: Disputes

All disputes which may arise during the Company's term or liquidation, either between the shareholders and the Company or among the shareholders themselves, regarding Company affairs, are settled in accordance with law and submitted to the jurisdiction of the competent Paris courts.

For this purpose, in the event of disputes, all shareholders shall elect domicile in Paris, and all summonses and notices are duly served at this domicile.

Failing election of domicile, summonses and notices are validly served at the Office of Public Prosecution of the French Republic at the High Court of Paris.

3. Dividends

Year	Paid	Ordinary dividend [(a)] Loyalty dividend [(b)]	Number of shares	Distribution *(in euros)*
2017 [(e)]	May 30, 2018	2.65 [(a)]	426.786.117	1.130.983.210
		0.26 [(b)]	113.814.089	29.591.663
				1.160.574.873
2018 [(e)]	May 22, 2019	2.65 [(a)]	427.056.097	1.131.698.657
		0.26 [(b)]	124.989.290	32.497.215
				1.164.195.872
2019 [(c)(d)]	May 13, 2020	2.70	473.105.514	1.277.384.888
		0.27	134.154.877	36.221.817
				1.313.606.705

(a) Ordinary dividend paid on all shares.
(b) Loyalty dividend paid only on registered shares held continuously for two full calendar years.
(c) Subject to the approval of the General Shareholders' Meeting on May 5, 2020.
(d) For 2019, amounts distributed are theoretical values calculated based on the number of shares as of December 31, 2019.
(e) For 2017 and 2018, amounts actually paid.

4. Property, plant and equipment

The Group's facilities and establishments are located in 80 countries around the world, with extremely diversified production capacities and characteristics.

No material tangible fixed asset exists at Group level.

The number of main plants by unit types is detailed in the Environmental and Societal Reporting – page 312.

5. Documents accessible to the public

Documents, or copies of the documents listed below may be consulted during the period of the Universal Registration Document's validity at Shareholder Services located at the head office of Air Liquide (75, quai d'Orsay, 75007 Paris) and, if applicable, on the Company's Internet website (www.airliquide.com), subject to the documents made available at the Company's head office or Internet site under the applicable laws and regulations:

- the Company's articles of association;
- all reports, letters and other documents, historical financial information, evaluations and official assertions and declarations prepared by an expert at the Company's request, some of which are included or referred to in this Universal Registration Document;
- historical financial information of the Group, for each of the two fiscal years preceding publication of this Universal Registration Document.

6. Incorporation by reference

Pursuant to the article 19 of the EC Regulation (EU) 2017/1129, the following information is included in this Universal Registration Document:

- the consolidated and parent company financial statements for the year ended December 31, 2017, accompanied by the Statutory Auditors' Reports which appear on pages 293 to 298 and on pages 313 to 315, respectively, of the 2017 Reference Document filed on March 7, 2018 with the French financial markets authority (AMF) under number D.18-0107;
- the financial information shown on pages 10 to 66 of the 2017 Reference Document filed on March 7, 2018 with the French financial markets authority (AMF) under number D.18-0107;
- the consolidated and parent company financial statements for the year ended December 31, 2018, accompanied by the Statutory Auditors' Reports which appear on pages 249 to 252, and on pages 267 to 269, respectively, of the 2018 Reference Document filed on March 6, 2019 with the French financial markets authority (AMF) under number D.19-0120;
- the financial information shown on pages 10 to 88 of the 2018 Reference Document filed on March 6, 2019 with the French financial markets authority (AMF) under number D.19-0120.

The sections not included in these documents serve no useful purpose to investors or are already covered in this Universal Registration Document.

INFORMATION RELATING TO PAYMENT DEADLINES FOR SUPPLIERS AND CUSTOMERS

Pursuant to the provisions of Article D. 441-4 of the French Commercial Code and Decree No. 2015-1553 of November 25, 2015, the breakdown of the balance of trade payables and receivables of L'Air Liquide S.A. as at December 31, 2019 is as follows:

	Invoices received outstanding at the closing date of the financial year that has ended					
(in millions of euros)	**0 day**	**1 to 30 days**	**31 to 60 days**	**61 to 90 days**	**91 days or more**	**Total (1 day and more)**
A) Late payment tranches						
Number of invoices concerned	1,070					1,747
Total amount of invoices concerned (all taxes included) *(in millions of euros)*	17.4	3.2	1.2	1.5	2.6	8.5
Percentage of total amount of purchases net of taxes for the financial year	5.2%	1.0%	0.3%	0.4%	0.8%	2.5%
B) Invoices excluded from (A) relating to disputed and unrecorded debts						
Number of invoices excluded						
Total amount of invoices excluded *(in millions of euros)*						
C) Reference payment terms used (contractual or statutory period – article L. 441-6 or article L. 443-1 of the French Commercial Code)						
Payment deadlines used to calculate late payments	Contractual deadlines	0 to 60 days				

	Invoices issued outstanding at the closing date of the financial year that has ended					
(in millions of euros)	**0 day**	**1 to 30 days**	**31 to 60 days**	**61 to 90 days**	**91 days or more**	**Total (1 day and more)**
A) Late payment tranches						
Number of invoices concerned	49					83
Total amount of invoices concerned (all taxes included) *(in millions of euros)*	1.1	0.2	-	0.1	1.3	1.6
Percentage of total amount of revenues net of taxes for the financial year	1.0%	0.1%	-	0.1%	1.2%	1.4%
B) Invoices excluded from (A) relating to disputed and unrecorded debts						
Number of invoices excluded						
Total amount of invoices excluded *(in millions of euros)*						
C) Reference payment terms used (contractual or statutory period – article L. 441-6 or article L. 443-1 of the French Commercial Code)						
Payment deadlines used to calculate late payments	Contractual deadlines	0 to 60 days				

PERSON RESPONSIBLE FOR THE UNIVERSAL REGISTRATION DOCUMENT

1. Person responsible for the Universal Registration Document

Benoît POTIER, Chairman and CEO of L'Air Liquide S.A.

2. Certification by the person responsible for the Universal Registration Document

I hereby attest, after having taken all reasonable measures for such purpose, that the information contained in this Universal Registration Document reflects, to the best of my knowledge, the current situation and does not omit any information that could alter its scope.

I certify that, to the best of my 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, and of the financial position and results of the Company and of its consolidated subsidiaries, and that the Management Report defined on the Cross-reference table available in Chapter 7 of this Universal Registration Document pages 372 and 373 provides a true and fair view of the evolution of the business, results and financial condition of the Company and of its consolidated subsidiaries, and a description of the main risks and uncertainties the Company and its consolidated subsidiaries are subject to.

Paris March 2, 2020

Benoît Potier

Chairman and CEO

CROSS-REFERENCE TABLE FOR THE UNIVERSAL REGISTRATION DOCUMENT

The cross-reference table identifies the main information required by the Delegated Regulation No. 2019/980 of the European Commission dated March 14, 2019 (the "Regulation"). The table indicates the pages of this Reference Document where is presented the information related to each item. The table indicates, when required by the Regulation, the pages of the Reference Document related to the year ended December 2018, filed on March 6, 2019 under the number D.19-0121 (the "DDR 2018"), and the pages of the Reference Document related to the year ended December 2017, filed on March 7, 2018 under the number D.18-0107 (the "DDR 2017"), which are incorporated by reference in this document.

No.	Items of the Annex I of the Regulation	Pages
5.7.1	Principal investments realized	6, 16 to 18, 55, 204 12 to 13, 63, 186 of DDR 2018 12 to 13, 51, 226, 243 to 244, 245 of DDR 2017
5.7.2	Principal investments in progress or for which firm commitments have already been made	56 to 58, 258
5.7.3	Participation in joint ventures and undertakings	260 to 262, 281
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7.	**Operating and Financial Review**	
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7.1.2	The issuer's future development and its activities in the fields of research and development	76 to 83
7.2	Operating results	
7.2.1	Significant factors materially affecting the issuer's income from operations	46 to 54, 224 to 225
7.2.2	Disclosure of material changes in net sales or revenues	46 to 51, 224
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8.5	Anticipated sources of funds	44, 58 to 59, 245 to 249
9	**Regulatory environment**	**96 to 97, 295 to 296**
10	**Trend information**	
10.1	The most significant recent trends in production, sales and inventory, and costs and selling prices since the end of the last fiscal year , and the significant change in the issuer's financial or trading position	83, 258
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11.	**Profit Forecasts or Estimates**	
11.1	Statement on the correctness of a forecast included in the prospectus	N/A
11.2	Statement setting out the principal assumptions upon which the issuer has based its forecast or estimate	N/A
11.3	Preparation of the forecast or estimate	N/A
12.	**Administrative, Management and Supervisory Bodies and Senior Management**	
12.1	Composition – statements	108 to 110, 115, 132 to 144
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18.2	Interim and other financial information	N/A
18.3	Auditing of historical annual financial information	
18.3.1	Statement indicating that the historical financial information has been audited	265 to 268, 282 to 284 249 to 252, 267 to 269 of DDR 2018 293 to 298, 313 to 315 of DDR 2017
18.3.2	Indication of other information which has been audited	319 to 321, 346 to 349
18.3.3	Source of the data when financial data in the registration document is not extracted from the issuer's audited financial statements	N/A
18.4	Pro forma financial information	N/A
18.5	Dividend policy	9, 46, 54, 227, 285 to 286, 325, 331 to 332, 362 to 363, 378 to 379
18.6	Legal and arbitration proceedings	96 to 97, 238, 258
18.7	Significant change in the issuer's financial or trading position	259

CROSS-REFERENCE TABLE FOR THE ANNUAL FINANCIAL REPORT

In order to facilitate the reading of this document, the cross-reference table, hereafter, enables to identify in this Universal Registration Document the information which constitutes the annual Financial Report that must be published by the listed companies in accordance with article L. 451-1-2 of the French Monetary and Financial Code and article 222-3 of the French financial markets authority's general regulations.

CROSS-REFERENCE TABLE FOR THE MANAGEMENT REPORT

In order to facilitate the reading of this document, the cross-reference table, hereafter, enables to identify in this Reference Document the Management Report information required by articles L. 225-100 et seq., L. 232-1 et seq. and R. 225-102 et seq. of the French Commercial Code (Code de commerce).

Required element	Reference text	Chapter / Pages
Group situation and activity		
Objective and comprehensive analysis of changes in business, results and the financial situation of the Company and the Group	L. 225-100-1, I-1°, L. 232-1, II, L. 233-6 and L. 233-26 of the French Commercial Code	Key figures / p. 4 to 13 Chapter 1 / p. 16 to 18, 19 to 33, 36, 46 to 61
Key non-financial performance indicators relating to the Company and the Group's specific activity	L. 225-100-1, I-2° of the French Commercial Code	Key figures / p. 10 to 13 Chapter 1 / p. 61 to 75
Significant events occurring between the fiscal year closing date and the Management Report preparation date	L. 232-1, II and L. 233-26 of the French Commercial Code	Chapter 4 / p. 259
Description of the main risks and uncertainties and indication of the use of financial instruments by the Company and the Group	L. 225-100-1, I-3° and 6° of the French Commercial Code	Chapter 2 / p. 86 to 97 Chapter 4 / p. 250 to 255
Internal control and risk management procedures implemented by the company	L. 225-100-1, I-5° of the French Commercial Code	Chapter 2 / p. 98 to 106
Description and management of the environmental and climatic risks	L.225-100-1, I-4° of the French Commercial Code	Chapter 2 / p. 95
Significant acquisitions during the fiscal year of equity interests in companies which have their registered office in France	L. 233-6 paragraph 1 of the French Commercial Code	Chapter 6 / p. 324
Company and Group foreseeable trends and outlook	L. 232-1, II and L. 233-26 of the French Commercial Code	Chapter 1 / p. 37 to 45, 83
Research and Development activities	L. 232-1, II and L. 233-26 of the French Commercial Code	Chapter 1 / p. 76 to 82
Corporate governance / Executive Officers		
List of all terms of office and functions held in any company by each Executive Officer during the fiscal year	L. 225-37-4, 1° of the French Commercial Code	Chapter 3 / p. 108 to 110, 132 to 143
Composition, preparation and organization of the work of the Board of Directors	L. 225-37-4, 5° of the French Commercial Code	Chapter 3 / p. 111 to 131
Limits brought by the Board of Directors on Chief Executive Officer's powers	L.225-37-4, 7° of the French Commercial Code	Chapter 3 / p. 118
Reference to a Code of corporate governance and application of the principle comply or explain	L. 225-37-4, 8° of the French Commercial Code	Chapter 3 / p. 111, 131
Remuneration policy of the Corporate Officers	L. 225-37-2 I of the French Commercial Code	Chapter 3 / p. 178 to 186
Remuneration and benefits of any kind paid during or awarded in respect of the fiscal year to each Corporate Officer	L. 225-37-3 I-1° of the French Commercial Code	Chapter 3 / p. 148 to 165
Relative proportion of the fixed and variable remuneration	L. 225-37-3 I-2° of the French Commercial Code	Chapter 3 / p. 149 to 164
Use of the possibility to reclaim variable remuneration	L. 225-37-3 I-3° of the French Commercial Code	N/A
Commitments of any kind made by the Company for the benefit of its Corporate Officers, corresponding to elements of remuneration, indemnities or benefits due or likely to be due as a result of the assumption, termination or change in their duties, or thereafter	L. 225-37-3 I-4° of the French Commercial Code	Chapter 3 / p. 159 to 163
Remuneration paid or awarded by a company included in the scope of consolidation pursuant to article L. 233-16 of the French Commercial Code	L. 225-37-3 I-5° of the French Commercial Code	Chapter 3 / p. 165
Ratios between the remuneration of each Executive Officer and the average and median remunerations of the Company employees	L. 225-37-3 I-6° of the French Commercial Code	Chapter 3 / p. 158
Annual change in the remuneration, the Company's performances, the average remuneration of the Company employees and the above-mentioned ratios over the five past fiscal years	L. 225-37-3 I-7° of the French Commercial Code	Chapter 3 / p. 158
Explanation on how the total remuneration complies with the remuneration policy adopted, including the way it contributes to long term performances of the Company and the way the performance criteria has been applied	L. 225-37-3 I-8° of the French Commercial Code	Chapter 3 / p. 148 to 165
Manner in which the vote of the last ordinary general meeting provided for by II of article L. 225-100 of the French Commercial Code has been taken into account	L. 225-37-3 I-9° of the French Commercial Code	Chapter 3 / p. 148
Deviation from the procedure for the implementation of the remuneration policy and any derogations	L. 225-37-3 I-10° of the French Commercial Code	N/A

Required element	Reference text	Chapter / Pages
Application of article L. 225-45 al. 2 of the French Commercial Code	L. 225-37-3 I-11° of the French Commercial Code	N/A
Agreements between an Executive Officer or a major shareholder and a subsidiary	L. 225-37-4, 2° of the French Commercial Code	N/A
Specific conditions governing shareholders' attendance at the Annual General meeting	L. 225-37-4, 9° of the French Commercial Code	Chapter 3 / p. 131 Chapter 7 / p. 357 to 358, 361
Summary table of delegations of authority currently in force granted by the Shareholders' Meeting relating to an increase in capital	L. 225-37-4, 3° of the French Commercial Code	Chapter 7 / p. 354 to 355
Description of diversity policy concerning the Board of Directors, description of the objectives of this policy, its way of implementing and the results obtained during the fiscal year / information on a manner in which the Society seeks for equal representation of women and men in the committees put in place by Executive Management and results with respect to the mixity in 10% of positions at the highest level of responsibilities	L. 225-37-4, 6° of the French Commercial Code	Chapter 3 / p. 111 to 112
The implementation of an appraisal procedure in respect of transactions in the ordinary course of business entered into on arm's length terms.	L. 225-37-4, 10° of the French Commercial Code	Chapter 3 / p. 122, 125
Information that may have an impact in the event of a takeover bid	L. 225-37-5 of the French Commercial Code	Chapter 3 / p. 197 to 198
Share ownership and capital		
Structure and change in Company capital and threshold notifications	L. 233-13 of the French Commercial Code	Key figures / p. 7 Chapter 5 / p. 302 Chapter 7 / p. 352 to 353
Acquisition and disposal by the Company of treasury shares	L. 225-211 of the French Commercial Code	Chapter 6 / p. 326 to 327 Chapter 7 / p. 354
Employee share ownership	L. 225-102 paragraph 1 of the French Commercial Code	Chapter 3 / p. 187 to 195 Chapter 7 / p. 354
Shares acquired by employees as part of a management buyout	L. 225-102 paragraph 2 of the French Commercial Code	N/A
Possible adjustments for securities giving access to share capital in case of buybacks of shares or financial transactions	R. 228-90 and R. 228-91 of the French Commercial Code	Chapter 3 / p. 189 to 190, 191 to 193
Information on Company's shares trading by Executive Officers and related persons	L. 621-18-2 of the French Monetary and Financial Code	Chapter 3 / p. 196
Attribution and retention of stock options by Executive Officers Attribution and retention of free share grants to Executive Officers	L. 225-185 of the French Commercial Code L. 225-197-1 of the French Commercial Code	Chapter 3 / p. 153 to 156, 169 to 170, 181 to 183
Amount of dividends paid out in respect of the three previous fiscal years	243 bis of the French Tax Code	Chapter 6 / p. 325, 332 Chapter 7 / p. 363
Extra-financial Performance Declaration		
Business model	R. 225-105, I of the French Commercial Code	Chapter 1 / p. 19 to 36
Information on the manner in which the Groupe considers societal and environmental implications of its activity	L. 225-102-1, III and R. 225-105 of the French Commercial Code	Chapter 5 / p. 289
Specific information for companies operating at least one site classed Seveso "high threshold"	L. 225-102-2 of the French Commercial Code	Chapter 5 / p. 296
Fight against corruption and tax evasion	L. 225-102-1, III and R. 225-105, II-B-1° and 2° of the French Commercial Code	Chapter 1 / p. 20 to 21, Chapter 2 / p. 93, 96 to 97
Information on respect of human rights	L. 225-102-4 of the French Commercial Code	Chapter 1 / p. 69 to 70, Chapter 2 / p. 95, Chapter 5 / p. 297 to 302
Vigilance Plan		Chapter 2 / p. 101 to 104
Additional information		
Additional tax information	223 quater and 223 quinquies of the French Tax Code	N/A
Injunctions or financial penalties in respect of anti-competitive practices	L. 464-2 of the French Commercial Code	N/A
Information on suppliers and customers payment terms	D. 441-6-1 of the French Commercial Code	Chapter 7 / p. 365
Table of Company results over the past five fiscal years	R. 225-102 of the French Commercial Code	Chapter 4 / p. 285

GLOSSARY

1. Financial glossary

A

Adjusted price

Share price adjusted to take account of changes in capital (issue of new shares, share split, etc.). The adjusted share price is used to produce meaningful comparisons of price changes over time.

AMF (Autorité des marchés financiers, the French financial market authority)

The AMF governs and oversees the conduct and professional ethics of the markets and protects the interests of investors and shareholders.

B

Bearer share

Share held in a security account at the shareholder's financial broker.

Bond

Tradable debt security issued by a public or private company, a group, an association or a government. Bonds carry fixed interest for a specific period and are redeemable on maturity.

C

CAC 40 (cotation assistée en continu – Continuous Automated Trading)

The flagship stock market index of Euronext in Paris, the CAC 40 tracks the evolution of a selection of 40 stocks registered on this stock market. A Committee of Euronext specialists regularly revises its composition to ensure that it remains representative. Air Liquide has been included in the CAC 40 since its inception in 1988.

Capital employed

Balance sheet capital corresponding to financial resources used by a company to develop its business. It is the sum of equity, minority interests and net debt.

Capital gain

Gain realized on the sale of a security, that is, the difference between its sale price and its original purchase price, or book value.

Cash flow

This indicator provides the exact measure of annual cash flow that the Company is able to generate from its operations, independently of the evolution of the working capital requirement, which can be seasonal or erratic. This indicator is before tax, dividends and cost of financing.

Conditional grant of shares to employees (CGSE)

Means of remuneration that grants free shares of the Company to all the employees or a specific employee category. The employee only becomes the owner of the shares after a given acquisition period and according to the plan's conditions. If the acquisition period is shorter than four years, the law provides that the employee must keep his/her shares for a minimum additional two-year period.

Custody fees

Fees charged by a financial intermediary for maintaining a share account. They generally represent a percentage of the portfolio or a set fee per line of shares held. Air Liquide's Shareholder Services provide this service free of charge for shares held in a direct registered account.

D

Deferred settlement service (SRD)

Fee-based service available for the most traded stocks through which settlement for orders or delivery of shares is deferred to the last trading day of the month. Air Liquide shares are eligible for this service.

Diluted earnings per share (Diluted EPS)

Net profit Group share divided by the average weighted number of shares which would be outstanding, assuming conversion of all potential shares (exercise of share subscription options, definitive grant of free shares, etc.). The equivalent accounting term is diluted net profit by share.

Direct registered shares

Direct registered shares are managed by Air Liquide and registered in its accounts. They are held in a securities account opened at Air Liquide.

E

Earnings per share (EPS)

Net profit Group share divided by the average weighted number of shares outstanding. The equivalent accounting term is net profit per share.

ESG (Environmental, Social and Corporate Governance)

Environmental, social and corporate governance are the three main areas appraised by SRI analysts. A positive appraisal of these criteria is a guarantee of quality. It reflects the sustainability of a company's development.

Euronext Paris

Name of the firm which organizes, manages and develops the securities market in Paris, and acts as market regulator (financial transactions, monitoring of companies listed on the stock market) with the delegated authority of the AMF.

Euro Stoxx 50

Stock Exchange index composed of 50 of the highest capitalizations and most actively traded stocks listed in the eurozone.

F

Fractional right

Part of a share that cannot be distributed in the case of a free share attribution or subscription if the number of shares held is not a multiple of the transaction. Example: in a 1 for 10 free share attribution, a shareholder holding 68 shares is allocated 6 new shares and 8 fractional rights.

Free float

The part of a company's capital publicly available and tradable on the stock markets. The higher the free float, the greater the liquidity of the shares. Nearly 100% of Air Liquide's capital is floated.

Free share attribution

Transaction by which the Company issues new shares by capitalizing undistributed earnings at no cost to shareholders, and allocates new shares in proportion to the number of shares already held. Air Liquide allocates regularly such free shares.

G

Goodwill

Difference between the purchase price of a company and its net tangible assets on the day of the acquisition.

I

IFRS (International Financial Reporting Standards)

International accounting standards with effect from January 1, 2005, conceived by the International Accounting Standards Board, or IASB, for quoted companies to harmonize the presentation and increase the transparency of their financial statements.

Indirectly/intermediary registered shares

Indirectly/intermediary registered shares are registered in the Air Liquide accounts and held in a securities account at the shareholder's financial institution.

L

Liquidity

Ratio of the volume of shares traded over the total number of shares outstanding, which make up the capital.

Loyalty bonus

The loyalty bonus increases the dividend distributed and the number of free shares attributed by 10% for registered shares held for more than two full calendar years and subject to the conditions defined by Air Liquide's articles of association.

Loyalty dividend

Pursuant to Air Liquide's articles of association, a dividend premium of 10%, granted to loyal shareholders for registered shares held continuously for more than two full calendar years and until the date of the payment of the dividend.

M

Market capitalization

A company's market value equal, at any given time, to the quoted share price multiplied by the total number of shares outstanding.

Market sheet

The market sheet presents all the buy and sell orders for a share, as well as the latest orders executed. Investors can only have access to the five best offers (sales) and the five best demands (purchases).

N

Net Dividend Per Share

The part of a company's net profit distributed to shareholders. Shareholders vote the dividend at the Annual General Meeting after approval of the financial statements and the allocation of earnings proposed by the Board of Directors.

Net profit (Group share)

Profit or loss made by the Company. It is calculated by adding operating income recurring, other non recurring operating expenses, net finance costs, other net financial expenses, share of profit of associates, profit (loss) from discontinued operations, then subtracting Company tax and minority interests.

O

OPCVM (Organisme de placement collectif en valeurs mobilières – pooled investment funds)

A savings product that makes it possible to hold part of a collective marketable security portfolio handled by a professional, like SICAVs (open-ended investment companies) or FCPs (mutual funds).

Operating income recurring

Annual sales minus the cost of producing, distributing and selling products and the depreciation or amortization on capital expenditures. It provides an operating performance indicator before financing and taxes.

P

Par value
The issue price of a share as defined in a company's articles of association. A company's total capital is the par value of the share multiplied by the total number of shares outstanding.

PER (Price Earnings Ratio)
The ratio of the market price of a share over earnings per share.

Preferential subscription right
Tradable right giving shareholders priority in subscribing to a number of new shares in proportion to the number of shares already held in the event of a share issue. This is a negotiable right in the stock exchange. In exceptional cases, the Company may ask its shareholders to suspend their subscription right at an Extraordinary Shareholders' Meeting.

Q

Quorum
Minimum percentage of shares with voting rights required to be present or represented for a General Shareholders' Meeting to be validly constituted.

R

Registered share
Share registered in the Air Liquide accounts.

Retained earnings
Undistributed profit, held by the Company until further decision.

Roadshow
Organized series of meetings during which a listed company, represented by its management or an Investor Relations team, travels to meet with institutional investors in their offices.

ROCE (Return On Capital Employed)
Return On Capital Employed after tax: ((net profit after tax before deduction of minority interests – net finance costs after taxes) for the period) / (average (total shareholders' equity + net debt) at the end of the three last semesters).

ROE (Return On Equity)
The ratio of Net Profit over shareholders' equity. It represents the net return on money invested by shareholders.

S

Share
Tradable security representing a portion of a company's capital. The owner of a share, the shareholder, is a part-owner of the Company and enjoys certain rights. Shares can be held as registered or bearer shares.

Share buyb ack
Transaction by which a company buys its own stock on the market, up to the limit of 10% of its capital. The transaction requires shareholder approval at the Company's General Shareholders' Meeting. Bought back shares are not taken into account in the net earnings per share calculation and do not receive any dividends.

Shareholders' equity
The part of the Company's capital belonging to its shareholders. It includes the value of issued shares, retained earnings and Net Profit for the financial year.

SRI (Socially Responsible Investment)
Socially responsible investment integrates, over and above the standard financial criteria, environmental, social and corporate governance (ESG) criteria in the analysis process and investment decision.

Stock option
A subscription option that offers the right to subscribe, at a price set in advance, for a fixed period, a company's shares.

Share split
Split of a share's par value to improve its liquidity. A share split leads, in the same proportions, to a split in the share's market value and the multiplication of the number of shares comprising the capital. The value is unchanged.

U

Usufruct
The legal right to use and derive profit or benefit from property that belongs to another person, as long as the property is not damaged. The holder of an usufruct has the right to use and enjoy the property, as well as the right to receive profits from the fruits of the property.

V

Volatility
The degree of variation of a share over a given period. It is a risk indicator: the greater the volatility, the higher the risk.

Y

Yield
Ratio of dividend per share over market share price.

2. Technical glossary

Advanced materials
Replaces the ALOHA range and the advanced precursors and includes ALOHA and Voltaix.

Alternative energy
Energy that represents an alternative to traditional energies, produced by transformation of natural gas or coal using gasification and/or gas cleaning techniques.

ASU
Air Separation Unit.

Biogas
Renewable energy that is produced during the methanization of biomass (treatment of household waste, industrial or agricultural waste, sewage sludge), then transformed using Air Liquide purification and liquefaction technologies.

Bio-GNV
Clean fuel, produced from biogas.

Carrier gases
Carrier gases (nitrogen, oxygen, hydrogen, etc.) are used to transport and dilute process gases or to protect semiconductors from minute dust particles.

Cogen
Cogeneration is the simultaneous production of electricity and steam. It is an environmentally virtuous process as it avoids energy loss by harnessing the heat emitted during electricity production to produce steam.

Cold technologies
All cryogenic-related technologies used, primarily, in the production of air gases.

Cryogenics
Very low temperatures, necessary to the liquifaction of air gases, hydrogen and helium. Concerns temperatures below -150 degrees Celsius.

Fab
Production facility in the electronics sector.

Fellow
The second highest international level of expertise (among four) in the Air Liquide Technical Career Ladder. Fellows are recognized as worldwide authorities within their given field of expertise. Fellows are consultants of the top management in long-term company strategy.

Hot technologies
All heat-producing technologies, such as combustion processes. For Air Liquide, hot technologies comprise steam reforming of methane to produce hydrogen and carbon monoxide and cogeneration units.

HyCO unit
Unit that simultaneously produces hydrogen (H_2) and carbon monoxide (CO).

On-site
On-site installations consist of gas production units installed directly on Industrial Merchant or Electronic customer premises, thanks to which truck deliveries can be avoided.

Orders in hand
They represent the contractual value of all Group and third-party engineering and construction contracts managed by the Engineering & Construction entities, excluding projects under warranty, from the signature date.

Orders intake
They represent the sum of all Group and third-party engineering contracts which entered into force during the period.

Renewable energy
Forms of energy whose production does not lead to a decline in resources on a human scale, e.g. solar, wind, geothermal and hydroelectric energies.

Syngas
Syngas, or synthesis gas, is a gas mixture consisting primarily of hydrogen, carbon monoxide, and in some cases carbon dioxide.

Substrate
Material on or in which components of a micro-electronic system or circuit are manufactured.

Take-or-Pay
Contracts used in Large Industries integrating fixed minimum payments below minimum volume thresholds.

Traditional energy
As opposed to renewable energies, energy whose production exhausts resources by consuming them more quickly than they are created. It is directly produced from fossil fuels: coal, oil, natural gas.

TEN-YEAR CONSOLIDATED FINANCIAL SUMMARY

	2010	2011	2012
Key figures *(in millions of euros)*			
Consolidated income statement			
Revenue	13,488.0	14,456.9	15,326.3
thereof Gas & Services	*11,885.7*	*13,046.0* (i)	*13,912.0*
Operating income recurring	2,252.2	2,408.7	2,553.0 (j)
Operating income recurring / revenue	16.7%	16.7%	16.7% (j)
Net profit (Group share)	1,403.6	1,534.9	1,591.1 (j)
Consolidated cash flow statement			
Cash flow from operating activities before changes in working capital	2,660.9	2,728.1	2,885.9 (j)
Purchase of property, plant and equipment and intangible assets	1,449.8	1,755.0	2,007.9
Purchase of property, plant and equipment and intangible assets / Revenue	10.7%	12.1%	13.1%
Acquisition of consolidated companies and financial assets	239.9	99.5	879.4
Total capital expenditures / Revenue (a)	13.2%	12.9%	18.9%
Dividends related to fiscal year and paid in the following year (b)	684.0	728.8	796.7
Consolidated balance sheet			
Shareholders' equity at the end of the period	8,903.5	9,758.6	10,190.4 (j)
Net debt at the end of the period	5,039.3	5,248.1	6,102.5
Gearing	55.3%	52.5%	58.5%
Capital employed at the end of the period (c)	14,151.8	15,243.8	16,525.5
Share capital			
Number of shares issued and outstanding at the end of the period	284,095,093	283,812,941	312,281,159
Adjusted weighted average number of shares outstanding (d)	427,262,988	428,969,018	428,353,075
Key figures per share *(in euros)*			
Net profit per share (e)	3.29	3.58	3.71
Dividend per share	2.35	2.50	2.50
Adjusted dividend per share (f)	1.72	1.84	2.02
RATIOS			
Return on equity (ROE) (g)	17.0%	16.8%	16.1% (j)
Return on capital employed after tax (ROCE) (h)	12.1%	12.1%	11.6% (j)

Loyalty dividend:

Since 1995, a 10% loyalty dividend is attributed to shareholders holding their shares in registered form for at least two years in the year preceding the period of distribution, and owned until the date of payment of the dividend.

The dividend proposed to the Annual General Meeting for fiscal year 2019 amounts to 2.70 euros per share, and the enhanced dividend to 0.27 euro per share representing a total distribution of 1,310.8 million euros.

(a) Purchase of property, plant and equipment, intangible assets and long-term investments. Industrial and financial capital expenditures and transactions with minority shareholders are included.

(b) Including a loyalty dividend of 37.2 million euros in 2019, 32.7 million euros in 2018, 29.6 million euros in 2017, 26.6 million euros in 2016, 26.8 million euros in 2015, 25.7 million euros in 2014, 23.2 million euros in 2013, 22.7 million euros in 2012, 19.5 million euros in 2011 and 16.5 million euros in 2010.

(c) Capital employed at the end of period: shareholders' equity + minority interests + net debt.

(d) Adjusted to take into account, on a basis of a weighted number of shares outstanding, capital increases by capitalization of reserves and additional paid-in capital (2019, 2017, 2014, 2012, 2010), cash subscription of 2016 and treasury shares.

2013	2014	2015 restated [(l)]	2016	2017	2018	2019
15,225.2	15,358.3	15,818.5	18,134.8	20,349.3	21,011.1	21,920.1
13,837.0	*13,800.1* [(k)]	*14,752.3*	*17,331.0*	*19,641.9*	*20,106.9*	*21,040.0*
2,580.6	2,633.8	2,856.2	3,023.9	3,363.8	3,448.5	3,793.8
16.9%	17.1%	18.1%	16.7%	16.5%	16.4%	17.3%
1,640.3	1,665.0	1,756.4	1,844.0	2,199.6	2,113.4	2,241.5
2,948.5	2,942.7	3,149.5	3,523.2	4,133.0	4,138.2	4,859.4
2,156.1	1,901.7	2,027.7	2,258.6	2,182.5	2,249.2	2,636.4
14.2%	12.4%	12.8%	12.5%	10.7%	10.7%	12.0%
391.9	179.0	384.4	12,165.3	140.4	129.2	536.9
16.7%	13.5%	15.2%	79.5%	11.4%	11.3%	14.5%
814.6	897.8	920.3	1,031.3	1,160.2	1,164.5	1,310.8 [(m)]
10,625.1	11,536.5	12,405.7	16,741.8	16,317.9	17,783.1	18,870.4
6,061.9	6,306.3	7,238.7	15,368.1	13,370.9	12,534.9	12,373.3
55.7%	53.3%	56.7%	89.7%	80.0%	68.8%	64.0%
16,950.0	18,133.2	20,009.5	32,493.1	30,089.3	30,742.3	31,697.7
312,831,676	344,872,883	344,163,001	388,875,761	428,397,550	429,423,434	473,105,514
427,784,804	428,470,411	427,974,640	438,660,697	470,270,565	470,562,802	471,214,966
3.83	3.89	4.10	4.20	4.68	4.49	4.76
2.55	2.55	2.60	2.60	2.65	2.65	2.70
2.06	2.28	2.32	2.36	2.65	2.65	2.70
16.0%	15.3%	14.7%	13.5%	13.5%	12.6%	12.5%
11.1%	10.8%	10.3%	7.8%	8.2%	8.0%	8.4%

(e) Calculated on the adjusted weighted number of shares outstanding during the year excluding treasury shares.
(f) Adjusted to account for share capital movements.
(g) Return on equity: (Net profit Group share)/(weighted average of shareholders' equity over the year). These aggregates are adjusted for the application of the IFRS16 standard.
(h) Return on capital employed after tax: ((Net profit after tax before deduction of minority interests and excluding IFRS16 impact – net cost of debt after taxes) for the period 2019) / (weighted average of (shareholders' equity excluding IFRS16 impact + minority interests + net debt) at the end of the last three half years (H2 2018, H1 2019 and H2 2019)).
(i) The specialty ingredients activities of Seppic and its subsidiaries were reclassified from "Other activities" to "Gas & Services".
(j) Corresponds to the amounts as of December 31, 2012 restated for the impacts of IAS19 revised "Employee Benefits".
(k) Restatement related to the business line Global Markets & Technologies.
(l) Restatement related to the classification in accordance with IFRS5 "Non-current Assets Held for Sale and Discontinued Operations".
(m) The dividend payment related to the financial year ended December 31, 2019 is estimated taking into account share buybacks and cancellations.

Cautionary note regarding forward-looking statements

This Universal Registration Document contains information on the Group's prospects, objectives and trends for growth. These forward-looking statements can be identified by the use of the future tense, conditional or of forward-looking terms such as "consider", "intend", "anticipate", "believe", "estimate", "plan", "expect", "think", "aim", or, as the case may be, the negative of these words, or any other terms with a similar meaning. This information is not based on historical data and should not be considered as a guarantee that the prospects and objectives described will be achieved. These statements are based on data, assumptions and estimates considered reasonable by the Group as of the date of this Universal Registration Document. They may be affected by known or unknown risks, uncertainties and other factors which might impact future results, performances and achievements of the Group in a way that is substantially different from the objectives described. This information might therefore change due to uncertainties relating notably to the economic, financial, competitive and regulatory environment or due to the occurrence of certain risks described in Chapter 2 of this Universal Registration Document. This information is given solely as of the date of this Universal Registration Document. All forward-looking statements contained in this Universal Registration Document are qualified in their entirety by this cautionary note.

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Air Liquide - Company established for the study and application of processes developed by Georges Claude with issued capital of €2,602,235,812.00

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