2017 Reference Document

INCLUDING THE ANNUAL FINANCIAL REPORT

Air Liquide
creative oxygen

Content

2017 Reference Document

Including the annual Financial Report

World leader in gases, technologies and services for Industry and Health, Air Liquide is present in 80 countries with approximately 65,000 employees and serves more than 3.5 million customers and patients. Oxygen, nitrogen and hydrogen are essential small molecules for life, matter and energy. They embody Air Liquide's scientific territory and have been at the core of the Company's activities since its creation in 1902.

Air Liquide's ambition is to lead its industry, deliver long-term performance and contribute to sustainability. The Company's customer-centric transformation strategy aims at profitable growth over the long term. It relies on operational excellence, selective investments, open innovation and a network organization implemented by the Group worldwide. Through the commitment and inventiveness of its people, Air Liquide leverages energy and environment transition, changes in healthcare and digitization, and delivers greater value to all its stakeholders.

Air Liquide's revenues amounted to 20.3 billion euros in 2017, and its solutions that protect life and the environment represented more than 40% of sales. Air Liquide is listed on the Euronext Paris stock exchange (compartment A) and belongs to the CAC 40, EURO STOXX 50 and FTSE4Good indexes.

AUTORITÉ DES MARCHÉS FINANCIERS
AMF

The original French version of this Reference Document was filed with the French financial markets authority (AMF), on 03/07/18, in accordance with article 212-13 of its General Regulations. It may be used in support of any financial transaction if it is supplemented by a prospectus approved by the AMF. This document was prepared by the issuer and its signatories assume responsibility.

Visit
our website www.airliquide.com

A financial and technical glossary is provided at the end of the document – pages 367 to 370.

A GLOBAL **PRESENCE**

Present in
80
COUNTRIES

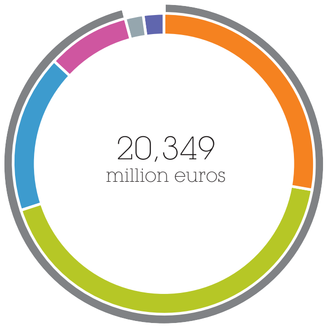
~ 65,000
employees

World leader
in gas, technologies
and services
for Industry
and Health

2017 GROUP REVENUE BY ACTIVITY

96% Gas & Services

26% Large Industries
45% Industrial Merchant
17% Healthcare
8% Electronics
2% Engineering & Construction
2% Global Markets & Technologies

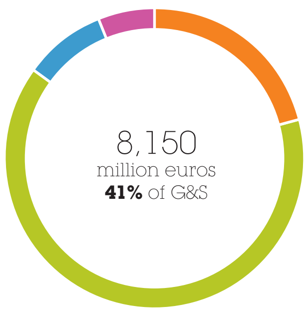


26% of revenue for Gas & Services for Industry [a] realized in developing economies

2017 GROUP REVENUE BY REGION AND BY ACTIVITY, FOR GAS & SERVICES (G&S)

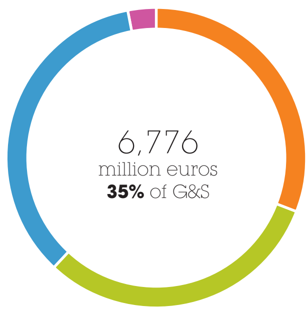
Americas

17% Large Industries
69% Industrial Merchant
10% Healthcare
4% Electronics



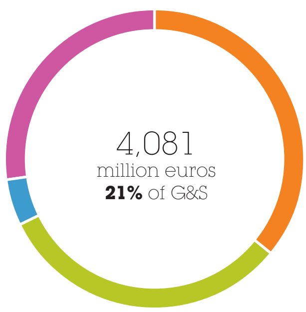
Europe

31% Large Industries
31% Industrial Merchant
35% Healthcare
3% Electronics



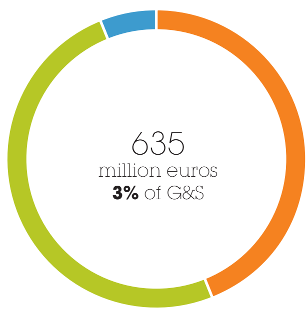
Asia-Pacific

37% Large Industries
31% Industrial Merchant
5% Healthcare
27% Electronics



Middle East & Africa

50% Large Industries
44% Industrial Merchant
6% Healthcare



(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][b]

LARGE INDUSTRIES

- **27%** of G&S
- **5,336** millions of euros
- **+6%** in 2017
- **+1%** 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), **take-or-pay** clauses and **indexed** energy cost

Synergies with other business lines

INDUSTRIAL MERCHANT

- **47%** of G&S
- **9,261** million of euros
- **+22%** in 2017
- **+12%** on average over 5 years

More than 2 million customers

Technological solutions adapted to customers' businesses

Importance of **logistics**

HEALTHCARE

- **17%** of G&S
- **3,401** million of euros
- **+9%** in 2017
- **+7%** on average over 5 years

Medico-technical services activity in a regulated sector

1.5 million patients

Geographical **density**

Sophisticated information systems essential for the activity

ELECTRONICS

- **9%** of G&S
- **1,644** million of euros
- **+2%** in 2017
- **+6%** on average over 5 years

Technological solutions with **ultra-pure gases** and **advanced materials**

Long-term contracts for nitrogen

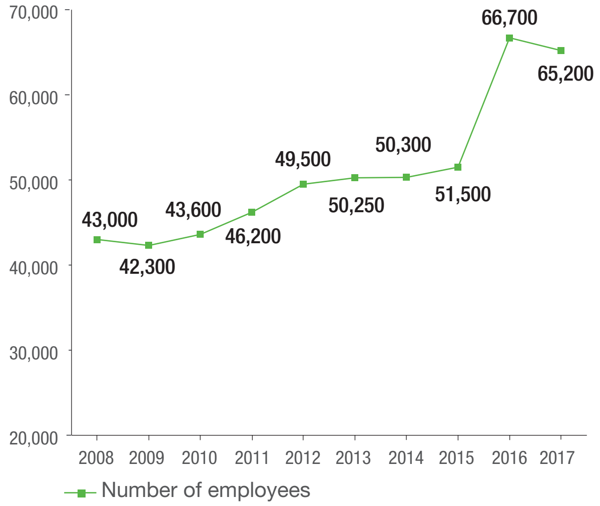
Concentration of the activity in **Asia**

(a) Gas & Services bring together the following business lines: Large Industries, Industrial Merchant, Healthcare, and Electronics. See details in the Activities section on p. 14.

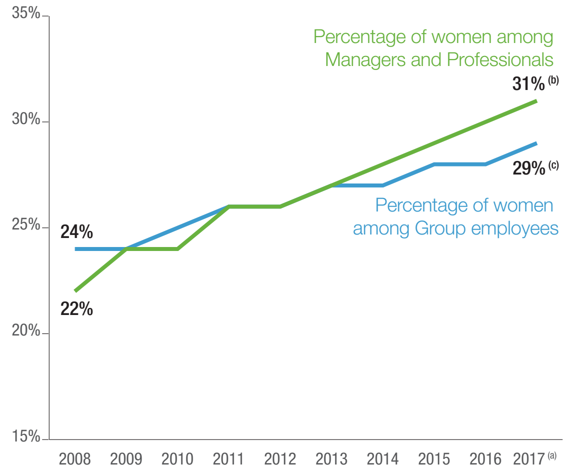
(b) Published data.

... DRIVEN BY **COMMITTED** WOMEN AND MEN

Number of employees since 2008 (10 years)

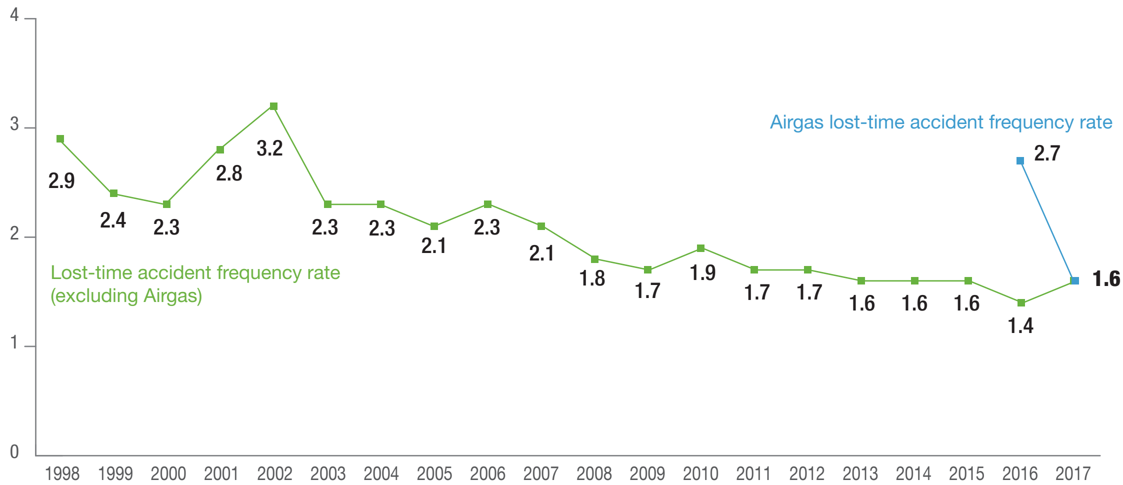


Gender diversity evolution since 2008 (10 years)



(a) Excluding Airgas.
(b) 29% including Airgas.
(c) 26% including Airgas.

Frequency of accidents [a]



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

Air Liquide Foundation

345 employees involved

284 projects in around 50 countries since its creation

Internal Governance in 2017

97% of the Group's employees belong to an entity that has a local Code of Conduct

~80% of the Group's revenues covered by the Industrial Management System (IMS) over the last five years

> 90% of revenues subject to internal control system processes

Corporate Governance in 2017

73% of Board members are independent Directors

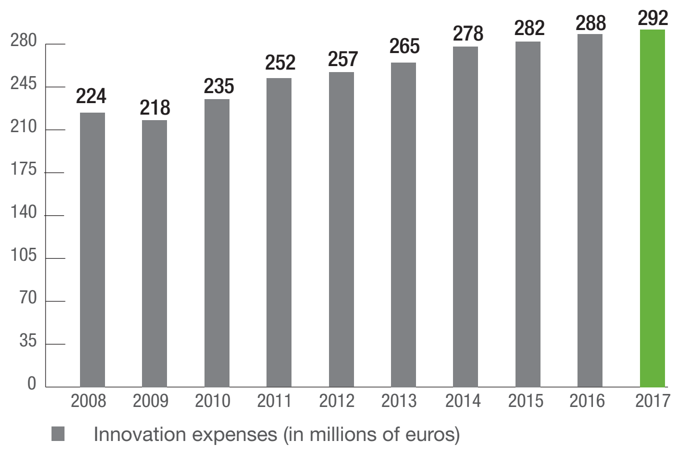
45% of Board members are women

55% of Board members are of foreign nationality (non-French)

AN **INNOVATIVE** COMPANY

INNOVATION EXPENSES

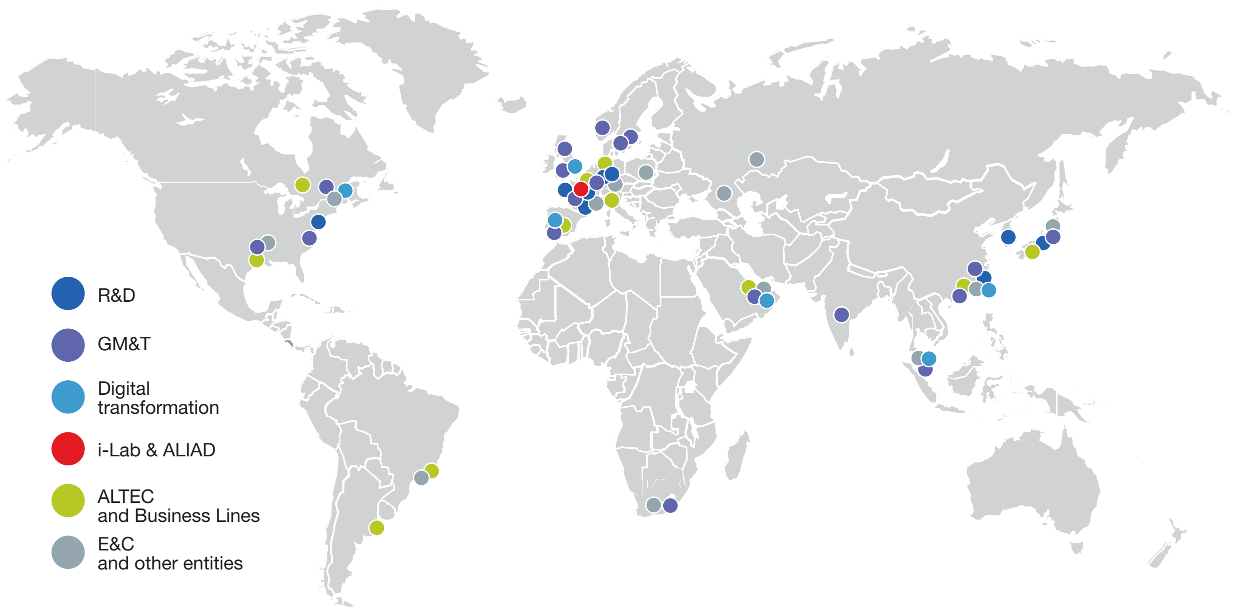
Innovation expenses since 2008 (10 years)



318
new patents
filed in 2017

GLOBAL NETWORK SUPPORTING INNOVATION

3,800
employees in entities
dedicated or contributing to innovation



REGULAR AND SUSTAINED **PERFORMANCE**

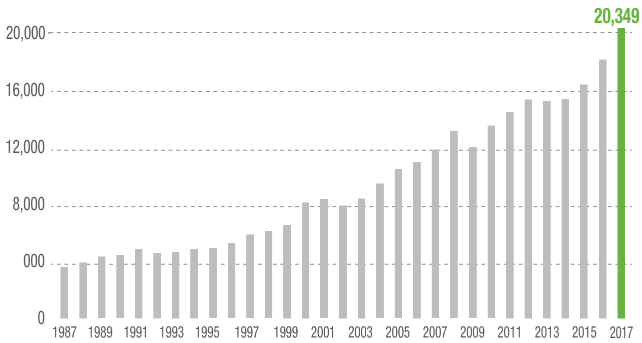
Created in
1902

18.3%
2017 Gas & Services Operating Margin / Revenue

CONSISTENT PERFORMANCE OVER 30 YEARS

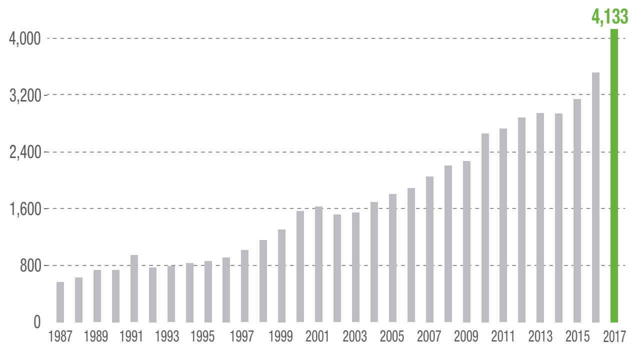
Revenue *(in millions of euros)*

Compound annual growth over 30 years: +6.0%
2016-2017 growth: +12.2%



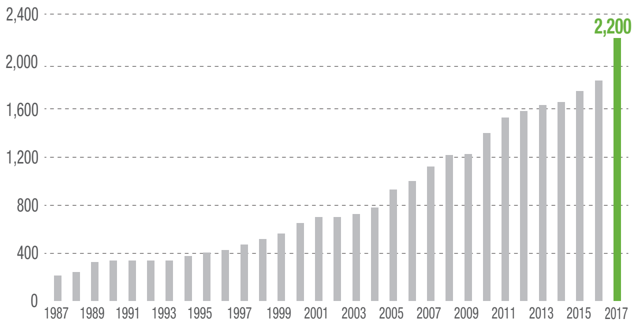
Cash Flow from operating activities before changes in working capital requirement *(in millions of euros)*

Compound annual growth over 30 years: +6.9%
2016-2017 growth: +17.3%

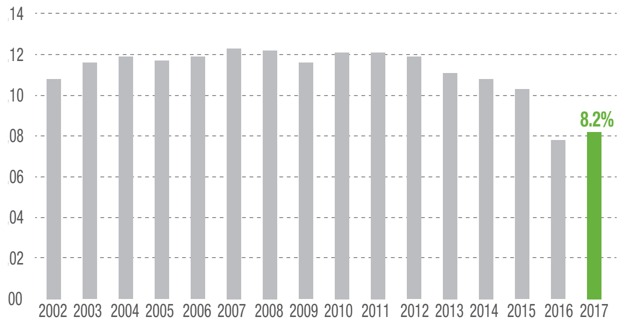


Net profit (Goup share) *(in millions of euros)*

Compound annual growth over 30 years: +8.1%
2016-2017 growth: +19.3%



Return on Capital Employed [(a)]



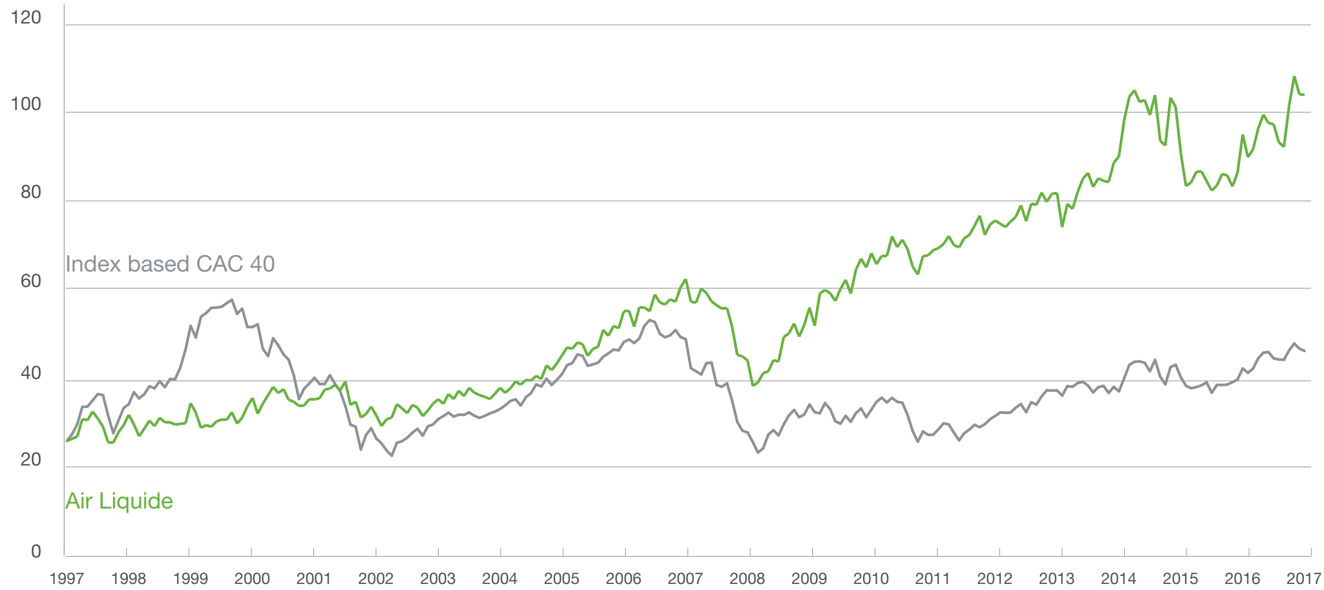
TSR
Total Shareholder Return
for a single registered share

+9.6%
over 5 years [(b)]

+8.4%
over 10 years [(c)]

(a) See ROCE (Return on Capital Employed) definition on page 44.
(b) At December 31, 2017, for an invested capital since December 31, 2012.
(c) At December 31, 2017, for an invested capital since December 31, 2007.

Stock market performance

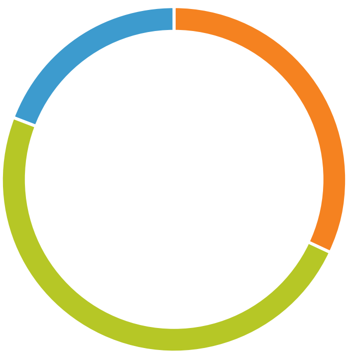


		2013	2014	2015	2016	2017
Market Capitalisation at December 31		32,159	35,470	35,672	41,085	45,003
Adjusted closing share price [(a)] *(in euros)*	high	93.28	100.91	120.44	106.05	111.45
	low	79.17	82.26	94.91	86.40	90.41
At December 31		91.02	100.18	100.96	105.65	105.05
Net earnings [(b)] – EPS *(in euros)*		4.23 [(c)]	4.29 [(c)]	4.53 [(c)]	4.64 [(c)]	5.16
Net Dividend per share [(b)] – DPS *(in euros)*		2.04 [(c)]	2.25 [(c)]	2.29 [(c)]	2.36 [(c)]	2.65 [(d)]
Pay ratio		49.7%	53.9%	52.5%	56.0%	52.8%
Dividend yield		2.5%	2.5%	2.5%	2.5%	2.5%
Ex-dividend date		May 16, 2014	May 18, 2015	May 23, 2016	May 15, 2017	May 28, 2018

(a) Adjusted following current Euronext regulation.
(b) Adjusted for previous two-for-one share splits, attribution of free shares and capital increase.
(c) Adjusted of the dilution impact of the capital increase.
(d) Subject to the approval of the May 16, 2018 Shareholders' Meeting.

Share ownership breakdown at December 31, 2017

- **32%** Individual shareholders
- **49%** Foreign institutional investors
- **19%** French institutional investors
- **> 0%** Treasury shares



SUSTAINABLE DEVELOPMENT **APPROACH**

STRATEGY

Improve air quality
Strengthen dialog with stakeholders

PROGRAM

Solutions for clean industry
Solutions for clean transport
Measures to promote local development

COMMITMENTS

Air Liquide is a signatory of the United Nation's **Global Compact** and the **Responsible Care®** Global Charter.

ENVIRONMENTAL FOOTPRINT

More than **40%** of revenue generated by applications related to preserving life and the environment.

Almost **60%** of the Group's innovation expenses in 2017 were related to work to improve air quality, health and the environmental footprint.

Close to **30%** of the Group's Innovation expenses are devoted to reducing CO_2 emissions (by reducing the carbon content of its products or those of its customers).

NON-FINANCIAL RATING AGENCIES

Air Liquide publishes a detailed report and monitors its environmental footprint in its Sustainable Development Report. These indicators are audited by an independent verifier and are part of a transparency approach that is recognized by specialized bodies and non-financial rating agencies. The latter assess the company's level of responsibility and transparency in terms of Sustainable Development.

CDP A-

MSCI A

EcoVadis 67/100
(GOLD category, Top 5%)

Sustainalytics 74/100

Euronext Vigeo Eiris Indices Europe 120

Euronext Vigeo Eiris Indices Eurozone 120

FTSE4Good

Ethibel Excellence

1

MANAGEMENT REPORT

HISTORY OF THE AIR LIQUIDE GROUP

1902

ORIGIN

Air Liquide was born of innovation and an 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 sights internationally early on, building numerous production units abroad. Development was rapid in Europe (1906), Japan (1907), Canada (1911) and the United States (1916). See "A Century of International Development."

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 an exceptional stock market performance, with an average annual increase in its share price over the 100 years to 2013 of +11.9%.

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. In 1954, the first liquid oxygen plant was launched in the North of France.

A CENTURY OF INTERNATIONAL DEVELOPMENT

Air Liquide's development was rapid during the early part of the XXth century, with significant business growth between the two world wars. From 1945 to 1970, in an economy that was being rebuilt, the Group consolidated its positions and established itself in South America and South Africa (1946), then in Australia and North Africa (1956).

In the 1970s-80s, international growth was renewed with a major acquisition: Big Three in the United States in 1986. At the end of the 1980s, taking advantage of its long-time presence in Japan, Air Liquide set its sights on other Asian countries and played its part in the development of the electronics market. The Group invested massively in China in the early 2000s; the country is a major growth market for industrial gases and Air Liquide entered into numerous air gas contracts.

In the 1990s, the Group began to develop in Central Europe. During a second phase, in the 2000s, it made inroads further east in Russia, Ukraine and Turkey, winning Large Industries contracts. The Middle East also became a new investment priority.

In the 2000s, there was a second major acquisition: certain businesses of Messer Griesheim in Germany, the United Kingdom and the United States. In 2007, the Group purchased minority interests in its joint ventures in Japan and South-East Asia.

Today, Air Liquide continues to pursue its strategy of expanding its global presence, convinced that the geographical diversity will guarantee resilience and future growth. As a result, the Group is continuously strengthening its historical positions in the major economies worldwide and relentlessly seeking footholds in new markets.

Air Liquide is now present in 80 countries, its global dimension being a fundamental component of its identity.

1960

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 through a pipeline network. The Group multiplied production capacity to meet soaring demand from large industries: firstly, for oxygen in the steel industry, and secondly, for nitrogen in chemicals.

The Large Industries business was launched with customers committing to long-term contracts of 15 years or more. The Group currently manages more than 9,400 km (≈ 5,800 miles) of pipelines worldwide, in particular in the US along the Gulf Coast of Mexico, in Northern Europe, in the Ruhr valley in Germany and in several Asian countries.

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 and the Ariane program for 65 years. The Group's contribution has been as much in the production of the fluids essential for launch (oxygen, hydrogen, helium and nitrogen) and the supply of associated services, as in the design and production of the tanks and cryogenic equipment of the launchers.

1970

A TRADITION OF INVENTIONS

The Claude-Delorme Research Center, located in the Paris-Saclay innovation Cluster and now called the Paris-Saclay Research Center, was created to enhance gas production techniques and their applications (combustion, welding, metalworking, chemicals, electronics, food, respiratory functions, and environmental treatment). It is evidence of the Group's desire to inherently understand the industrial processes of its customers and develop new gas applications to better satisfy their requirements (in terms of quality, productivity and the environment). The Center also develops partnerships with universities and industrial companies. The Group currently has research centers in Europe, North America and Asia.

1976

A TECHNOLOGICAL BREAKTHROUGH

With the Sasol project in South Africa, for the production of synthetic fuel, air separation units (ASUs) have scaled up, dramatically increasing in size. Following this technological breakthrough, Air Liquide became the leader in large ASUs, and remains so today.

1985

A NEW MARKET: ELECTRONICS

In Japan, the Group began to supply ultra-high purity gases to the semiconductor 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 semiconductors. In 1987, Air Liquide inaugurated the Tsukuba Research Center in Japan, which is dedicated to the electronics industry.

1995

EXTENDED OFFERING: HYDROGEN AND STEAM

In addition to oxygen and nitrogen, as part of its commitment to protecting the environment and promoting energy efficiency, Air Liquide extended its offering to hydrogen and steam. To ensure the success of this new offering, the Group has used the business model, which is behind the success of its air gas activity, 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.

PROTECTING LIFE

Originally an oxygen supplier to hospitals, Air Liquide has become a specialist in the healthcare sector. The Group launched its Home Healthcare activity 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 ushered in the hygiene sector, an activity that naturally complemented hospital services. Most recently, Air Liquide launched significant research programs in therapeutic gases, used for anesthesia, resuscitation, and pain relief.

2007

ORGANIZATION BY BUSINESS LINE

The Air Liquide growth drivers for the coming decades are solid and sustainable, 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. The Group remains geographically focused, but each zone or country benefits from the support and experience of the business lines to accelerate its development.

Conscious of the strategic dimension of Engineering & Construction capabilities, the Group acquired Lurgi in 2007. This company provides Air Liquide with major proprietary technologies such as hydrogen and carbon monoxide production units, or processes relating to gasification or CO_2 purification, adding to the Group's historical competencies in cryogenics. Thanks to this acquisition, the Group now has a complete technological offering and a greater engineering capacity.

2009

RESILIENCE IN AN UNPRECEDENTED CRISIS

Affected by a 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 confirmed its resilience and demonstrated the relevance of its business model. In a context of global recession, the Group shows itself to be an exception, posting a stable net profit while preserving the strength of its balance sheet.

2010-2012

NEW TERRITORIES, NEW ACQUISITIONS

The Group accelerated its presence in new territories, including Turkey, Ukraine and Mexico, and strengthened its presence in China. These developments contributed to the increase, in eight years, of the developing economies' share of Gas & Services revenue from 15% to 23% in 2017.

In a weaker growth environment in advanced economies, and particularly in Western Europe, Air Liquide intensified its acquisitions. At the end of 2012, two major home healthcare players joined the Group: LVL Médical in France and Gasmedi in Spain. Other acquisitions were completed in 2013 to strengthen the Group's positions in Healthcare in Poland, Scandinavia and Canada and in Industrial Merchant in Brazil, Russia, the Middle East and China.

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 investment subsidiary, to make minority investments in innovative technology start-ups. In 2014, the Group decided on new investments with the modernization of the Paris-Saclay Research Center, 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 2015, Air Liquide inaugurated Cryocap™ in France, a unique industrial installation that enables the capture of CO_2 released during hydrogen production via a cryogenic process. After being purified, the captured CO_2 can be used to meet a variety of industrial needs for carbonic gas supply.

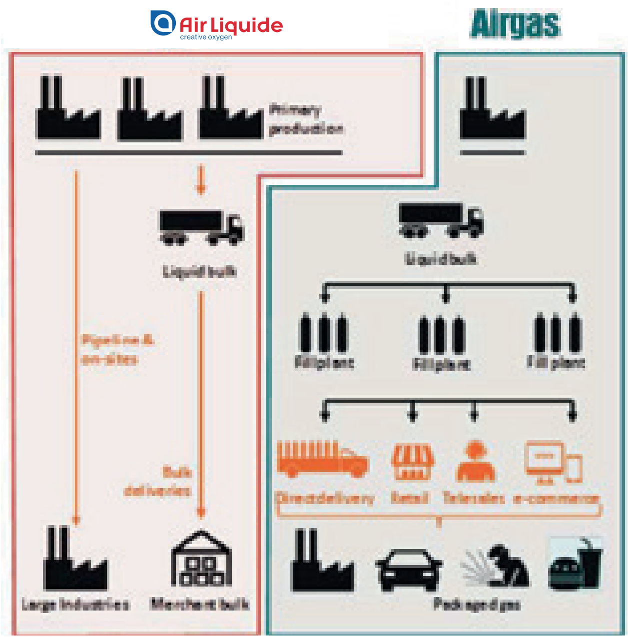
In addition, on a worldwide scale, Air Liquide actively contributes to the development of the hydrogen energy activity by accompanying automotive manufacturers launching fuel cell electric vehicles on the market. Air Liquide contributes to the construction of hydrogen-charging stations (United States, Japan, France, Germany, Belgium, Denmark and the Netherlands), 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 enabled the Group to combine two highly complementary businesses and be present on all market segments. At the end of 2017, the United States represented 35% of Gas & Services revenue.

In the USA, Air Liquide's presence was primarily upstream with production both in Large Industries (over 23,000 tons per day of oxygen production capacity, over 2,200 miles/3,500 kilometers of pipelines, principally along the Gulf Coast) and in Industrial Merchant in bulk. Air Liquide also served customers in Electronics and Healthcare (medical gases to hospitals only, no home healthcare) business lines. Airgas was primarily focused on downstream distribution with 300 fill plants and 900 branches/retail stores providing direct delivery of packaged gas and hardgoods to more than one million Industrial Merchant and Healthcare customers (medical gases). Airgas also enjoyed the most advanced multi-channel network in the United States, including telesales and e-commerce platforms which allowed for next-day direct deliveries from national warehouses for a whole range of complementary products.



The integration of this upstream and downstream coverage creates significant value. Air Liquide plans to realize more than 300 million US dollars of pre-tax synergies: cost synergies by the end of 2018, growth synergies by the end of 2019. Cost synergies account for around 70% of total synergies and are the result of sourcing optimization, better loading of Air Liquide and Airgas' assets, distribution efficiencies and reorganizations. Growth synergies come from cross-selling the various Gas & Services offers to both customer bases. They also result from the roll-out of Air Liquide technologies via Airgas' various distribution networks, as well as support for Airgas customers in their international expansion (in Canada and Mexico in particular). These represent approximately 30% of the total amount of synergies.

Moreover, Air Liquide believes that the Airgas model, in terms of products, digitization of activities, and business model, may be applied in certain regions outside the United States. These additional strategic synergies are not included in the 300 million US dollars already announced.

With this acquisition, Air Liquide strengthens its leading position in the United States, the largest industrial gas market worldwide. This market also enjoys the strongest growth among advanced economies. The US market is expected to deliver 20 to 25% of the global worldwide industrial gases market's mid-term growth. This market is supported by long-term structural strengths such as competitive natural gas and energy prices driving investments and the industrial production.

Approximately half of the US packaged gas market is composed of independent distributors. This current fragmentation of the US market provides further opportunities for growth as Airgas and Air Liquide have significant experience in integrating bolt-on acquisitions.

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 company program, NEOS, for the period 2016-2020.

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 lead its industry, deliver long-term performance and contribute to sustainability.

2017

INTEGRATION OF AIRGAS

Air Liquide continued to generate synergies through the integration of Airgas. Cost synergies are being achieved more quickly than expected and the first growth synergies materialized.

REFOCUSING ON GAS & SERVICES ACTIVITIES

Following the disposal of its Aqua Lung and Air Liquide Welding subsidiaries, Air Liquide focused on its Gas & Services activities and the implementation of its NEOS company program. The Gas & Services activities now represent 96% of the Group's revenue.

NEW VISUAL IDENTITY FOR THE GROUP

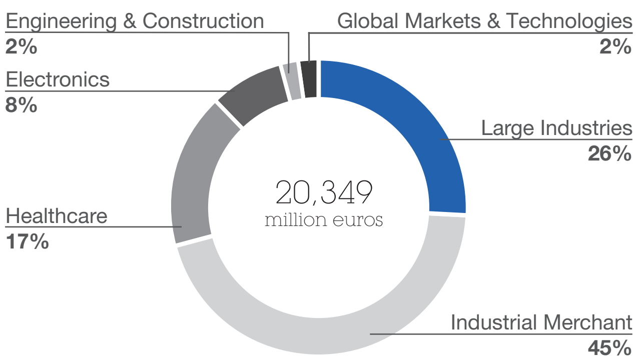
To mark its transformation, the Group created a new logo, the fifth since the company was founded 115 years ago. This new visual identity, which embodies the change within Air Liquide, is that of a leading Group, expert and innovative, that is close to its stakeholders and open to the world.

ACTIVITIES, RISK FACTORS AND INTERNAL CONTROL

Activities

The Group classifies its activities as follows: Gas & Services, Engineering & Construction, Global Markets & Technologies. Additional information is available in the "2017 Performance" section of this report.

2017 GROUP REVENUE



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 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: Houston (United States), Frankfurt (Germany), Shanghai (China) and Dubai (United Arab Emirates). These hubs draw on the Group's expertise and presence in these geographic regions (Europe, Americas, Asia Pacific and Middle East and Africa).

Moreover, the operational management of Gas & Services is led by the World Business Lines to better adapt to changes in the different markets:

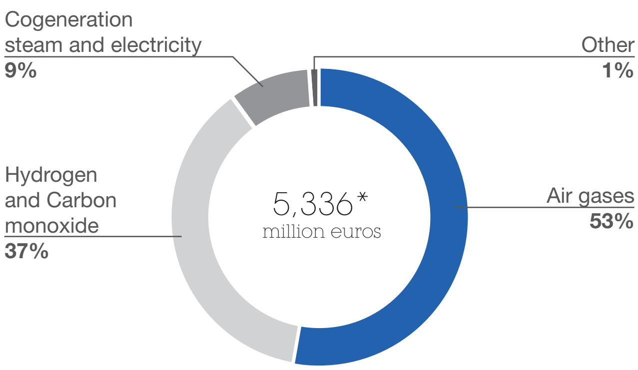
- **Large Industries** supplies industrial gases by operating major production units. It serves customers in the metals, chemicals, refining and energy industries with high gas consumption, requiring delivery through a dedicated plant or pipeline. Large Industries also supplies the Group's other business lines;
- **Industrial Merchant** supplies a wide range of different gases, application equipment and associated services. It serves industries of all sizes that require quantities smaller than those for customers of Large Industries. The product is either distributed in bulk, in liquid form, for medium and large quantities, or in cylinders, in gaseous form, for small quantities;
- **Healthcare** supplies medical gases, hygiene products, medical devices and services to hospitals and patients in their homes. It also produces and distributes healthcare specialty ingredients for the cosmetics, pharmaceutical and vaccine markets;
- **Electronics** supplies gas and services mainly for the production of semiconductors, but also for flat panels and photovoltaic panels.

Depending on their end use, gases are distributed in different states and using various means: in gaseous form through a pipeline network, in liquid form in cryogenic trailers, and in gaseous form in high-pressure cylinders.

LARGE INDUSTRIES

The Large Industries business line proposes gas and energy solutions to customers in the metals, chemicals, refining and energy industries, which are essential for their own industrial production, to improve process efficiency and to make their plants more environmentally friendly. 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.

2017 LARGE INDUSTRIES REVENUE BY ACTIVITY



* 27% of Gas & Services revenue.

The Large Industries business line provides oxygen, nitrogen, argon, hydrogen and carbon monoxide through a network of plants and pipelines. At the end of 2017, these comprised 374 large Air Separation Units (ASUs), 50 Steam Methane Reformers (SMRs) producing hydrogen and carbon monoxide and a pipeline network of more than 9,400 km (≈ 5,800 miles) worldwide. Moreover, the Group operated 18 cogeneration plants supplying customers with steam and electricity.

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 break up heavy hydrocarbons. The demand for hydrogen is growing due to the combination of increasingly stringent emissions legislation and the use of heavier hydrocarbons.

In the **metals** industry, Air Liquide supplies large volumes of oxygen to steel makers, 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.

Numerous industries linked to **energy** or **chemicals** use large quantities of oxygen to transform coal, natural gas and syngas hydrocarbons 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 own pipeline networks progressively over the last 40 years. With a total length of more than 9,400 kilometers (≈ 5,800 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). Many other mid-sized local networks have also been built in other significant and fast-developing industrial basins in Germany, Italy, Singapore and, more recently, China.

The use of industrial gases is critical for these various industrial processes. As any discontinuity in the supply necessitates a stoppage of the customer's production operations, supply reliability is crucial. However, although vital, gas supply generally represents a very small part of total production cost for the customer.

The raw materials necessary for the production of industrial gases vary according to the type of unit and the region. The production of oxygen and nitrogen requires air and a large quantity of electricity. Hydrogen and carbon monoxide production units mainly consume natural gas and little electricity. Cogeneration units consume natural gas and water. The energy and capital intensity of these industrial processes is generally high.

The supply of gas is generally contracted for 15 years. For certain specific 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, the contracts include the indexation of input costs, mainly electricity and natural gas, and guaranteed minimum volumes through take-or-pay clauses.

The Large Industries business line operates under long-term contracts, where costs are indexed, in particular, to energy costs. These contracts, 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). 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.

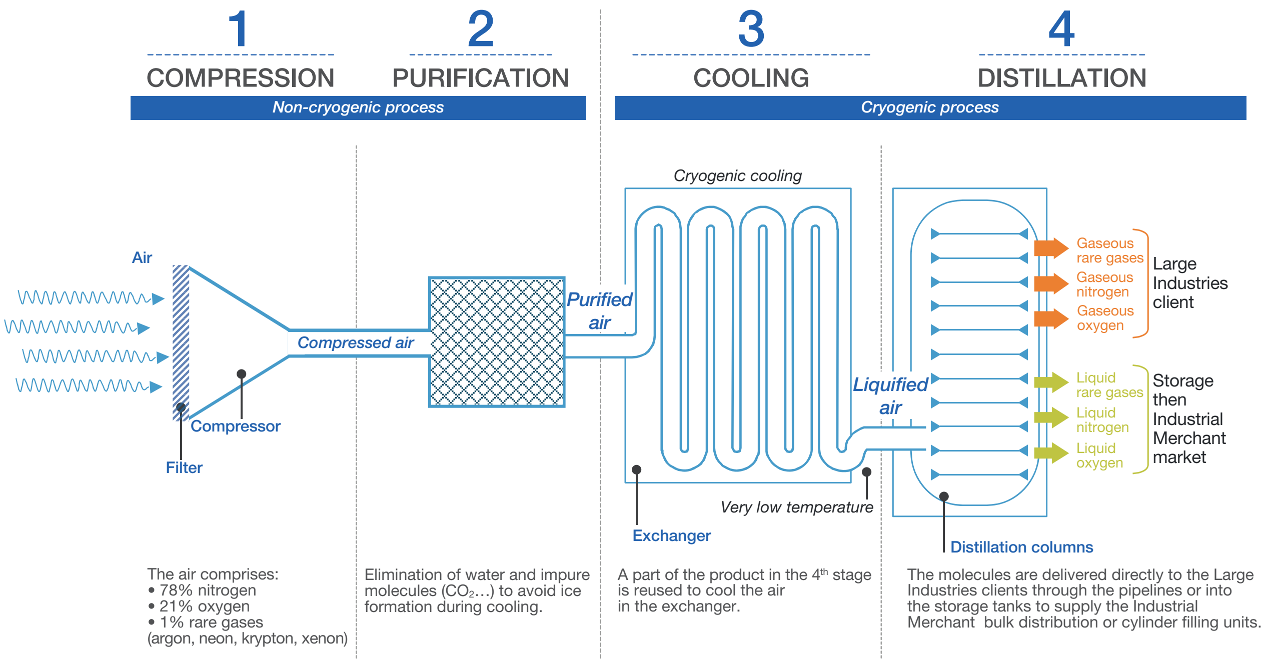
Air Liquide is developing a network strategy in the industrial basins in order to provide customers with greater supply reliability while optimizing operating costs.

LARGE INDUSTRIES PROCESSES

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.

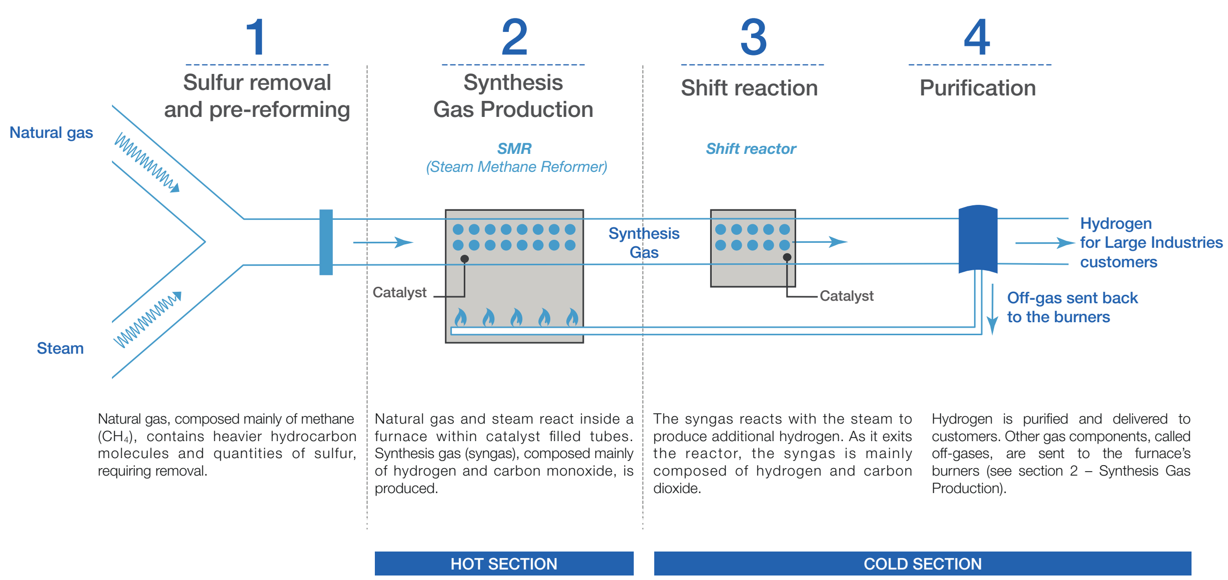
SIMPLIFIED DIAGRAM OF AN AIR SEPARATION UNIT'S OPERATION



HYDROGEN AND CARBON MONOXIDE PRODUCTION (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.

SIMPLIFIED DIAGRAM OF A HYDROGEN UNIT'S OPERATION



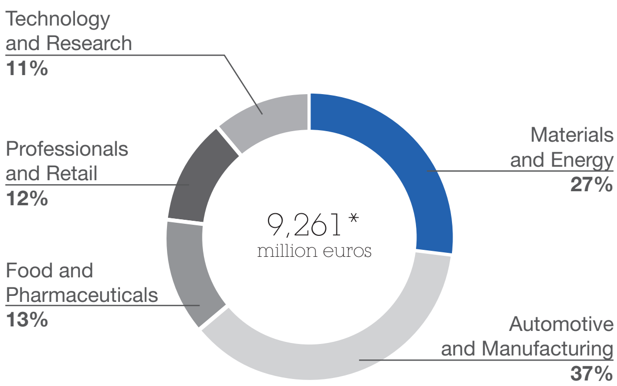
COGENERATION

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.

INDUSTRIAL MERCHANT

The Industrial Merchant business line serves a wide range of markets and customers – craftsmen, SMEs, large multinational industrial groups – offering comprehensive gas solutions for the implementation and optimization of their industrial processes. Supported by a global network of business experts and extensive geographical coverage, Air Liquide provides more than two millions of its customers with innovative solutions including industrial gases, welding equipment, application and safety equipment and related services.

2017 INDUSTRIAL MERCHANT REVENUE BY END-MARKET



* 47% of Gas & Services revenue.

INDUSTRIAL MERCHANT KEY FIGURES

- ~24 million cylinders
- ~ 13,000 trucks
- ~ 61,000 tanks at customers sites
- > 1,000 on-site units
- ~ 37,000 employees
- ~ 1,000 stores

The Industrial Merchant activity serves five primary markets:

- **Materials and Energy:** customers in this market use a wide range of different gases. Oxygen is used to reduce energy consumption in glass and metal manufacturing processes and to treat wastewater. Nitrogen is used to create inert atmospheres for the conservation of oxygen-sensitive products. Carbon dioxide is used in drinking water treatment, helium for professional diving and magnetic resonance imaging. Nitrogen and carbon dioxide can be used for the enhanced recovery of oil and gas and, in certain cases, the reduction of water and solvent consumption.

Zoom on the glass industry: in all areas of glass, customers use oxygen to facilitate the melting of raw materials, to reduce fossil fuels and to reduce their emissions of pollutants such as nitrogen oxide. For plate glass manufacturing for construction and automotive industries, glassmaker customers also use nitrogen and hydrogen to improve the quality and transparency of their products, while for container glass used in packaging (bottles, flasks, etc.) or for tableware, customers use oxygen to eliminate manufacturing defects and obtain a quality appearance. These manufacturers receive delivery either by truck, in the form of cryogenic liquid, or by small generators of on site gas production ("on site" units) for larger furnaces. Air Liquide provides the storage and accessories for measuring and controlling of gas flow as well as combustion technologies, such as burners designed by its engineers, to maximize the performance and efficiency of melting furnaces.

- **Automotive and Manufacturing:** argon and argon mixtures are used for metal parts welding in manufacturing industries, hydrogen and nitrogen for thermal treatment, specialty gases for waste gas analysis, helium for airbags, and rare gases (krypton, xenon) for lighthouses and thermal insulation. Oxygen and acetylene are used in metal heating and cutting operations. Air Liquide therefore enables customers to produce high quality products, while improving their manufacturing processes and preserving their working environment.

Zoom on manufacturing: many operations in manufacturing involve cutting, welding or heat treatment of metal parts. Industrial gases play an essential role in improving site productivity while ensuring the quality of the manufacturing. They are supplied in gaseous form at high pressure, with cylinders often equipped with innovative integrated trigger valves, or in liquid form for the larger production sites. The Air Liquide experts accompany their customers in proposing the most adapted gas solutions to their processes and specific needs. Argon, carbon dioxide or helium are essential molecules to ensure the quality of arc welding, oxygen and acetylene are used for metal cutting, nitrogen or oxygen for laser cutting argon or nitrogen for new 3D printing processes while nitrogen or hydrogen are essential for physicochemical treatments such as annealing, carburizing or tempering, making it possible to achieve the final mechanical properties. Air Liquide installs storage or panoplies of packaged gas at client sites as well as the associated equipment to control the relative processes, including devices for measuring and controlling the atmosphere of heat treatment furnaces.

- **Food and Pharmaceuticals:** the Group's technologies help increase shelf life and improve food and pharmaceutical manufacturing and cooling processes. The three major activities in this market are the supply of carbon dioxide for beverages, gas mixtures for modified atmosphere packaging, and nitrogen for inerting or freezing food. Air Liquide ensures these products comply with prevailing market regulations and in particular the complete traceability of its gases.

Zoom on food freezing: cryogenics allows food temperatures to drop very quickly, avoiding surface dehydration and the formation of large ice crystals in the product. This process makes it possible to preserve all the taste properties of frozen foods. Air Liquide provides and guarantees customers as to the quality and food safety of the nitrogen or liquid carbon dioxide required for deep freezing in accordance with the regulatory traceability specifications. Air Liquide also provides agri-business with deep freezing tunnels or cabinets as developed by its engineers, thus enabling them to process their production directly while guaranteeing the best conditions of hygiene, quality, productivity and efficiency. Air Liquide ensures the adjustment and maintenance of this equipment and provides customers with the expertise needed to integrate and use its deep freezing equipment along their production line.

- **Technology and Research:** industrial gases are used in the assembly and encapsulation of electronic components in optoelectronics processes – particularly LED manufacturing and optic fiber and silicon cylinder drawing. Specialty gases required, in particular for the calibration of analysis instruments, are widely used in research centers and analytical laboratories. Specific, highly technical gases and equipment have been developed for these various applications.

Zoom on optoelectronics: the production of an optical fiber initially requires the production of a silica bar called a preform. This preform is consolidated with hydrogen, oxygen and helium, then melted in an oven and stretched into an optical fiber at a speed of 1,500 to 2,000 meters per minute. The stretched fiber is then cooled with helium. Air Liquide assists optical fiber manufacturers by supplying these high purity gases. Moreover, the base material used by the white and blue LEDs requires a nitrogen atom. For this process, UHP (ultra high purity) ammonia is injected during the deposition phase. Liquid at room temperature, the ammonia must be heated to take on its gaseous form. Our induction heating solution, which evaporates UHP ammonia more efficiently, allows our customers to use large volumes of this gas. Air Liquide proposes all of the gases intended for the manufacture of LEDs, including equipment and installation facilities.

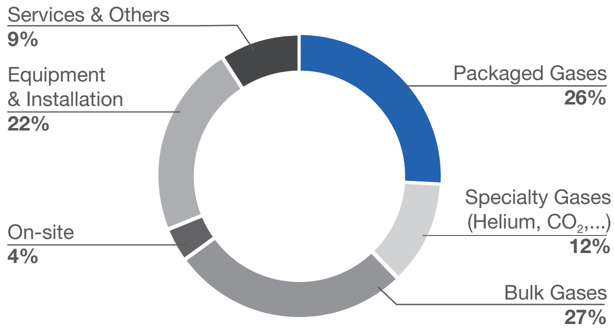
- **Professionals and Retail:** a wide range of gases are offered for use in plumbing, heating, ventilation, air conditioning, industrial maintenance and auto repair activities, mostly for welding. These gases are often sold in special-purpose packaging – cylinders in compressed gaseous form, tailored to customer usage requirements. Across a number of countries, notably in North America, Air Liquide also offers a complete range of welding equipment, wires and units, as well as all personal protective equipment required in order to be able to work safely, enabling customers, craftsmen and contractors to find quickly and in the same place all the elements they need to carry out their welding activities.

Industrial Merchant sells packaged gases (high-pressure gas cylinders) through multiple channels to cover all customer needs: over the phone, e-commerce and/or via its distribution network, to offer a one-stop gas/equipment shopping experience. Cylinders can also be delivered directly to the customers' doors with optimized inventory management based on cylinder traceability. Air Liquide's expertise in customer processes is always offered.

GAS SUPPLY MODES

Industrial Merchant provides gas using the supply mode which is best adapted to the customer's needs. These include one or several of the following supply modes:

- **On-site production units:** for Industrial Merchant customers with major volume requirements, small oxygen, nitrogen or hydrogen generators can be installed at customers' sites (called "on-site units"). Supply is contracted over a long period of time, up to 15 years, and includes a backup system which guarantees supply continuity. This supply mode also significantly reduces the number of kilometers traveled to deliver gases to customers.
- **Bulk:** for medium and large-scale needs or cryogenic systems, gases are provided in liquid form and distributed by tanker trucks. Bulk customers consume the gas directly in liquid form (for example, in the agri-business) or in gaseous form after vaporization.
- **Cylinders:** for smaller scale needs and use on building sites, gases are distributed in cylinders. From an operational point of view, the various gases (nitrogen, oxygen, argon, CO_2) are delivered in liquid form to a filling center where they are stored and then, after vaporization, transformed into gaseous form and transferred into cylinders of different capacities (typically 5 to 50 liters). Gases can be mixed together to better meet customers' needs. Cylinders are then directly delivered to customers or to distributors and stores by a fleet of adapted trucks.



The distribution of gas in cylinders and bulk remains traditionally local with transport distances rarely exceeding a radius of 200 to 250 kilometers around the production site. To ensure this local presence, the Industrial Merchant business relies mainly on the gas production capacity of Large Industries and thereafter develops its own distribution logistics. Air Liquide ensures the reliability of the gas supply and guarantees the quality of the materials used (storage tanks and cylinders). The gas usage and applications equipment are investments made by Air Liquide, who also covers their maintenance.

Industrial Merchant is characterized by a wide range of customers, markets, applications, and solutions and services. 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. Revenue comes from the sale of gas and related services.

It is a business based on expertise and services with a high technology and innovation content, extremely local, with dense geographic coverage as a key factor. The competitive environment can vary between areas.

Innovation with regards to markets, products and applications is a major growth driver. Business growth is generally dependent on local industrial production growth trends.

HEALTHCARE

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, and help protect the most vulnerable lives. Air Liquide is one of the world leaders in this business sector, which is subject to both stringent regulatory requirements as well as to multiple stakeholders (patients, doctors and payers). The business line provides products and services in hospitals and in patients' homes 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; nitrogen monoxide (KINOX™ and VasoKINOX™) for resuscitation.

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

- **Home Healthcare:** Air Liquide cares for more than 1.5 million patients in their homes suffering from chronic diseases. Once the diagnosis and treatment is 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 offer 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.

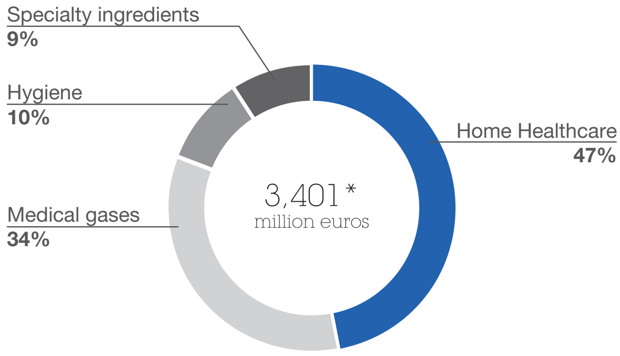
  Demographic and sociological factors such as an aging population and urbanization are contributing to the increase in the number of chronic diseases. Air Liquide's home healthcare activity strives to meet these public health challenges as well as the growing constraints on health spending in advanced 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.).

  For example, Air Liquide provides skin disinfectants for the pre-surgical preparation of patients as well as for medical staff, antiseptics and other products for wound-healing and medical instrument disinfection. These products can be found in operating units and patient rooms.

- **Healthcare specialty ingredients:** through its subsidiary SEPPIC, Air Liquide has designed and developed for over 60 years 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.

2017 HEALTHCARE REVENUE BY ACTIVITY



** 17% of Gas & Services revenue.*

Healthcare activities, in particular medical gases, mainly rely on the gas production capacities of Large Industries and develop its own distribution logistics. Medical gases have a drug designation status which requires market approval 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 Large Industries and Healthcare business lines has led to synergies and industrial efficiency.

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, around 70% of the Healthcare business line's sales are in Europe and around 23% in the Americas.

The Healthcare business line produces and distributes medical gases for hospitals and provides healthcare services for the care of patients at home. It operates in a strict regulatory framework. Density, quality of support services and efficiencies are essential criteria that help to offset pricing pressures of healthcare systems, particularly in advanced economies.

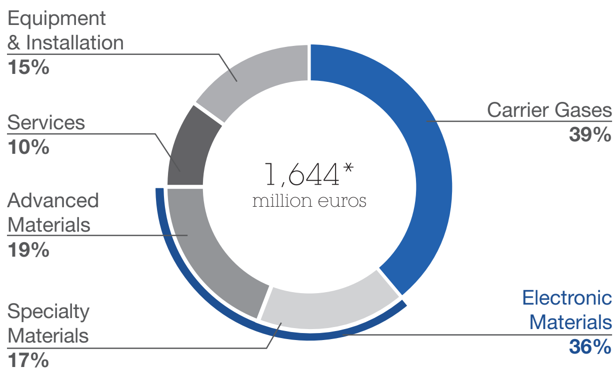
Air Liquide is present along the continuum of care: from treatment of acute diseases (with medical gases in hospitals), to treatment of chronic diseases at home (with Home Healthcare), and prevention/well-being (with activities in Hygiene and Healthcare Specialty Ingredients).

With 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, the Healthcare activity represents a solid growth driver for the Group.

ELECTRONICS

Thanks to its long-term vision, Air Liquide provides innovative solutions to the semiconductor, flat panel and solar cell markets, leveraging its expertise, global infrastructure and strategic proximity to manufacturers worldwide. Its products and services respond to increasingly challenging customer demands for improved mobility, connectivity, computing power and energy consumption. Technological progress is constant and a growth driver for industrial gases.

2017 ELECTRONICS REVENUE BY PRODUCT



* 9% of Gas & Services revenue.

- **Carrier Gases:** Carrier gases (primarily ultra-pure nitrogen) are supplied by on-site facilities, for the transport of molecules and materials most closely to the chip manufacturing, providing the inerting required to protect electronic systems. The need for a regular and constant supply of carrier gases requires long-term commitments from customers with the building of production units near their premises or even on the customer's site.
- Electronic Materials: **Specialty Materials** are used in semiconductor, flat panel and solar cell manufacturing. **Advanced Materials** are key to the processes used in semiconductor manufacturing. The acquisition of Voltaix in 2013 extended the Group's range of advanced deposition materials. The Group develops and markets offers with strong added value. The most sophisticated of these advanced materials are developed in cooperation with customers and are essential for the miniaturization of new microchips.
- **Equipment & Installation:** The Electronics business line also supplies equipment and installs distribution units and networks gas for ultra-pure gases and chemical products, at its customer's facilities.
- **Services:** On site, manufacturers can rely on the Group's expertise in the total management of fluids and equipment as well as on its cutting-edge analytical services used to continuously improve production processes.

The Electronics business model is primarily based on long-term carrier gas supply agreements with the necessity for continuous technological innovations to satisfy customer requirements by designing new advanced materials also called precursor.

Air Liquide's Electronics activities are based near its customers, including 68% in Asia, 22% in the Americas and 10% in Europe.

The Group's Electronics activity covers four different activities: 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; Equipment & Installation sales which are correlated to the growth of semiconductor plants; Services. In a growing electronics sector, the mix of activities specific to Air Liquide with its long term contracts, offers a true competitive advantage.

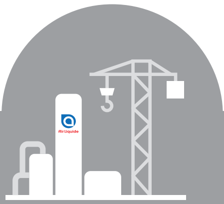
PRODUCTION AND LOGISTICAL SYNERGIES

The four business lines comprising the Gas & Services activities are closely tied by a strong industrial philosophy where proximity is key. The following chart illustrates the sharing of both production and distribution assets, between the different business lines. Due to this efficient industrial network, Air Liquide capitalizes on its proximity to its customers to anticipate their needs, understand market changes and offer innovative solutions.

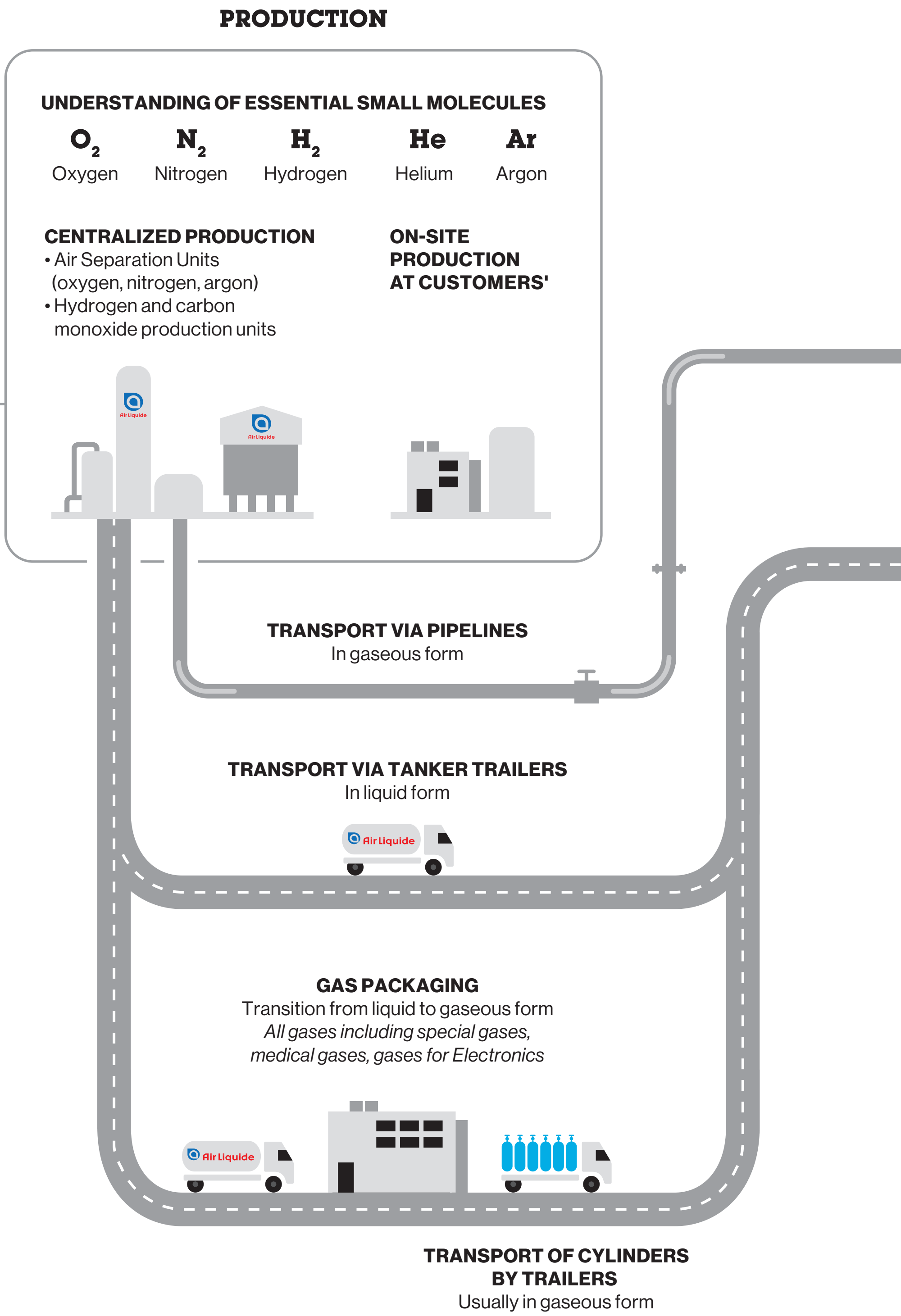
The strong integration of the various World Business Lines allows the Group to create synergies, become stronger and to grow while creating long-term value.

Our activities

Shared resources and expertise to serve diverse customers



ENGINEERING & CONSTRUCTION
DESIGNING AND BUILDING PRODUCTION UNITS
- Global solutions including proprietary technologies
- Technological independence
- Gives the Group a competitive edge
- Creates growth with third-party customers



GLOBAL MARKETS & TECHNOLOGIES
DEVELOPING NEW MARKETS REQUIRING A GLOBAL APPROACH OR MARKETS WITH SIGNIFICANT TECHNOLOGICAL CONTENT
- High level of technological expertise
- High potential markets

OFFERS

FOR INDUSTRY AND HEALTH:

- ESSENTIAL SMALL MOLECULES VALORIZATION
- PROPRIETARY TECHNOLOGIES INTEGRATION AND COMMERCIALIZATION
- SERVICES AND DIGITAL SOLUTIONS

SECTORS SERVED	GAS & SERVICES ACTIVITIES
Chemicals Refining Metals	**LARGE INDUSTRIES** **PRODUCE AND DELIVER IN BULK** • Strategy of industrial basins and pipeline networks • Long-term contracts (15 years), minimum volumes guaranteed by take-or-pay clauses and indexed energy cost
Materials & energy Automotive & manufacturing Food & pharmaceuticals Technology & research Professionals & retail	**INDUSTRIAL MERCHANT** **SUPPLYING INDUSTRIAL AND SPECIALITY GASES, APPLICATION TECHNOLOGIES AND SERVICES** • Tailor-made solutions for numerous customers' businesses • Diverse markets • Customer-specific supply methods
Hospitals Home healthcare Hygiene/ Specialty ingredients	**HEALTHCARE** **SUPPORTING PATIENTS, ALL ALONG THE CONTINUUM OF CARE, FROM HOSPITAL TO HOME** • Growing needs in healthcare • Solutions adapted to the increase in chronic diseases • Increasing demand in hygiene products and specialty ingredients
Semi-conductors Flat panels Photovoltaic	**ELECTRONICS** **DESIGNING, MANUFACTURING AND PROVIDING MOLECULES FOR THIS SECTOR** • Technological solutions with ultra-pure gases and advanced materials • Support solid growth in certain markets related to digital development
Energy transition Maritime Scientific exploration	

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, from the feasibility study stage through to the delivery of the complete installation, gas production units for its own use or for sale to customers who prefer insource their gas requirements. Air Liquide complies with the increasingly strict safety, reliability and competitiveness requirements of air gas 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 in the development of its customer processes, thus boosting sales growth.

The majority of Air Liquide's Engineering & Construction activity is geared toward industrial gas production technologies, and in particular the manufacture of air gases, 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 located mainly in North America, Europe and Asia.

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

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

The Engineering & Construction activity also acts for third-party customers. Air Liquide designs and builds customized units which customers will own and operate. Also, this third-party customer activity 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 activity, the strategy consists of favoring research and equipment supply contracts and to not support construction risks. Accordingly, Engineering & Construction's contribution to consolidated revenue can vary significantly from year to year.

The Engineering & Construction activity 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.

In 2017, consolidated third-party Engineering & Construction sales totaled 335 million euros.

GLOBAL MARKETS & TECHNOLOGIES

The Global Markets & Technologies (GM&T) WBU delivers technological solutions (molecules, equipment and services) to support the new markets of energy transition, maritime logistics and scientific exploration, in order to accelerate Air Liquide sustainable growth.

To support the energy transition, GM&T brings environmentally friendly solutions to the clean energy market with hydrogen energy and Bio–Natural Gas for vehicles, refrigerated transport using nitrogen, but also the treatment and injection of Biogas into the energy grid as a local power source.

As a player of the deep tech sector, GM&T commercializes technologies dedicated to Space, Aerospace and scientific exploration. GM&T also supplies gases for players in of the maritime sector and provides logistics for cryogenic transportation by sea of value added molecules, such as helium.

GM&T employs 1,800 people world-wide and generated a 2017 revenue of 372 million euros.

Competition

At a global level, the industrial gases industry comprises four main players: Air Liquide, Linde (Germany), Praxair (United States) and Air Products (United States). There are also a number of regional players, such as Taiyo Nippon Sanso (Japan), Messer (Germany), Yingde (China) and Hangzhou Hangyang (China). Finally, numerous smaller-sized players are also present in local markets. At the end of 2016, Linde and Praxair presented an agreement in principle on a merger of equals between the two companies. In 2017, Praxair shareholders approved the merger during a special meeting of shareholders while those of Linde accepted to tender their shares. The merger transaction remains subject to the approval of regulatory authorities.

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 65% of oxygen production globally, although with significant geographical disparities. Companies self-producing gas thus remain the Group's greatest competition. However, the potential to convert self-production into over-the-fence supply represents a major growth opportunity for the Large Industries business line. The level of self-production varies strongly depending upon the 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 three other major global players and the 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. 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 simply playing the role of a gas distributor.

In Electronics, five companies play a major role: Air Liquide, Linde, Versum, Air Products and Taiyo Nippon Sanso. Air Liquide is the leader in this industry.

Finally, in Healthcare, most gas industry players also supply hospitals with oxygen, but few are present in the treatment of chronic diseases at home. Air Liquide is number one in Europe in Home Healthcare. This market remains fragmented in almost all regions with a multitude of small companies and associations. This fragmentation provides bolt-on acquisition opportunities. Finally, Air Liquide is the only industrial and medical gases company to have developed a Hygiene and Specialty Ingredients activity.

In Engineering & Construction, Air Liquide also competes with industrial gas players. In "cold" technologies used for air separation, the main competitors are Linde, Hangzhou Hangyang (China), Kaifen (China), Air Products and Praxair. Chinese competitors are gaining ground due to high 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.

Risk factors

The Group identifies the risk factors to which it is exposed using a formal risk management approach.

The risks presented below, at the date of this Reference Document, are the risks of which the Group considers that the occurrence may have a significant negative impact on its business, results, outlook, or reputation. 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 the Group's 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 the internal control and risk management procedures described on page 31, as well as formalized and specific action plans.

SPECIFIC 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 capacity, high capital intensity, and substantial energy requirements.

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 specific contracts, a strict investment project authorization and management process, and a tailored energy policy.

Industrial risks

Industrial risks are linked to the various industrial processes and distribution methods implemented by the Group. They are distributed over a large number of sites from which it operates.

The Group's key priority is safety, with a formal objective of "zero accidents, on every site, in every region, in every unit". The safety results for the past 25 plus years illustrate the long-term effectiveness of Group's actions in this area.

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 certain products packaged by the Group classifies them in the dangerous materials category, for which tailored procedures and means of securing the products are required to ensure compliance with local regulations as a minimum;
- 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. The same applies for high temperature techniques, used in particular in the production of hydrogen. In addition, pressure is central to the Group's processes. Pressurized equipment must be designed with security features restricting uncontrolled release which may trigger accidents;
- logistics and transportation: each year, delivery vehicles, sales staff and technicians travel many kilometers. Non-compliance by the drivers with the highway code or the lack of regular maintenance of vehicles would expose drivers and third parties to risks of accidents. Preventive measures are regularly implemented, such as awareness campaigns. In addition, industrial sites use a lot of motorized lifting gears. Training and authorization are required to operate them;
- engineering and construction: industrial risks are factored in and must commence at the design phase of future installations. Subsequently, during the construction phase, the lack of prevention plans and rigorous organization would hamper the coordination among the various trades; the project and competences management tools aim to reduce these risks;
- delivery reliability: a variety of solutions aimed at reducing the risks of fault in the systems supplying gas to customers: direct pipeline connection from a production unit, on-site storage with remote surveillance enabling the automatic trigger of resupply or bar-coded gas cylinders ensuring the traceability of products;
- challenges in the medical area: the products and services for the healthcare and wellbeing of patients are regulated by internal standards and specific regulations, and must be subject to particular attention by the teams in question.

To manage these risks, the Group has an Industrial Management System (IMS), that is described in greater depth in Internal control and risk management procedures on page 33.

Moreover, considering the changing international climate and in particular the terrorist threat, the Group, its sites, and assets may be exposed locally to a higher security risk in certain countries, for which additional measures are being taken.

Industrial investment-related 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, the strength of its projects, and particularly the respect of its implementation schedule, the competitiveness of the site, as well as to design, cost estimates and the construction of gas production units.

The investment authorization process is led by Resources & Investment Committees, which apply extremely strict appraisal criteria to projects. These Committees comprise regional, technical and financial managers as well as World Business Lines managers that vary depending on the nature of the project considered, and are chaired by an Executive Committee member. They take place in each hub or World Business Unit. The investment decision-making process is detailed in the "Investment cycle and financing strategy" section on page 52.

Supply-related risks

Electricity and natural gas are the main raw materials used by production units. Their availability is thus essential to the Group. Due to the geographic spread of its activities, Group supply contracts are diversified. Where the local market permits, Group subsidiaries secure these resources through medium to long-term supply commitments and competitive bidding scenarios with the objective of achieving the most reliable and competitive energy costs available in any particular market. The Group passes on cost variations to its customers via indexed invoicing integrated into medium and long-term contracts.

Commodity risk is described in note 27.1 to the consolidated financial statements on page 281.

Engineering & Construction-related risks

Air Liquide enters into contracts to design and build gas production units worldwide. The primary role of Group Engineering is to undertake internal investment projects. It also performs projects for third-party customers that are selected based on criteria aimed at limiting the risks associated with these Engineering & Construction activities.

These projects generally extend over several years. Potential risks relating to design, purchasing, transport or construction and more generally to the overall quality of work may arise at different stages of the project. Risks relating to these projects are often greater during the construction stage, in particular for turnkey projects:

- the quality and delivery times for critical equipment on the one hand, and costs 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 as a result of new innovative processes being implemented. Preliminary tests on pilot or demonstration units are therefore meant to help reduce such risks prior to commercial implementation;
- certain projects are located in regions that may be a source of political risks and are therefore subject to constant monitoring.

The impact of the risks described above depends also on the contractual commitments given to customers.

Measures to limit commitments on the most complex projects are described in the Internal control and risk management procedures on page 34.

Business-related risks

The primary business-related risk is the risk of customer bankruptcy or closure of a customer's production site. The diversity of the Group's geographic presence in 80 countries distributes the risk among customers and markets. The Group's subsidiaries serve a very large number of customers (more than two million worldwide) in a broad range of industries: chemicals, steel, refining, food, pharmaceuticals, metals, automotive, healthcare, electronics, photovoltaic and research laboratories, etc. The Group's top customer represents around 2% of revenue, the Group's top 10 customers represent around 10% of revenue and the top 50 customers represent around 24% of revenue.

Moreover, 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 respectively rely on 15-year to 20-year, and 10-year, take-or-pay secured contracts, ensuring a guaranteed minimum revenue. These contracts provide 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.

In addition, some Group clients' business may be interrupted for climatic or major political events.

The impact on the Group of the risks of customer business interruption following major climatic or political events is, however, limited by the wide diversity of countries in which it operates. This impact can be reduced 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) and even sustain life (medical gases). They are therefore often protected or prioritized depending on the situation.

The amount of operating receivables as well as allowance for doubtful receivables are shown in note 19 "Trade receivables" to the consolidated financial statements on page 258.

Finally, on a worldwide level it is noted that the planned merger Linde and Praxair, if confirmed, will result in a change in the competitive landscape in certain regions, with a particular impact on divestiture operations that will involve the competition authorities.

DIGITAL RISKS

The Group's activities, expertise and, more generally, its relations with all the stakeholders (customers, suppliers, communities of experts, etc.) depend on increasingly dematerialized and digitalized operations. These operations depend 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 in both data confidentiality and in 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.

All these risks 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 cybercriminality, cyber attacks, and extortion). These attacks have the potential to affect all regions and businesses, with extremely significant impacts on the industrial activity (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.).

This constant and rapidly changing background requires continuous strengthening of the Group's preventative and monitoring measures and of its ability to react within the priority areas and activities. The Digital Security Policy and the associated risk management operational program are described on page 34.

FINANCIAL AND TAX RISKS

Financial risk management is a priority for the Group.

The financial risk management processes are detailed on page 35, in accordance with a governance structure that defines the role of the Finance Department, the various Committees and the role of local entities.

The Finance Department also analyzes country and customer risks on investment decisions; it participates in Investment Committee meetings.

Foreign exchange risk

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.

Foreign exchange transaction risk is related both to cash flows arising from royalties, technical support and dividends, as well as to foreign currency commercial cash flows from operating entities. These commercial cash flows in foreign currencies are not material when compared to consolidated revenue on an annual basis. This foreign exchange transaction risk is managed through the hedging policy implemented by the Finance Department.

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 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).

The Group presents its financial statements in euros. Foreign exchange risk related to the translation of local currency financial statements into euros mainly corresponds to the sensitivity to the main foreign currencies – the US dollar (USD), the Japanese yen (JPY) and the Chinese renminbi (CNY).

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 will have a more significant impact on the Group's published results than before the acquisition;
- these foreign exchange variations will have an impact on the figures presented in the Group's balance sheet, particularly concerning the debt.

Note 26.3 to the consolidated financial statements presents the net indebtedness by currency and note 27.1 to the consolidated financial statements describes the foreign exchange transaction risk management process and the derivative instruments used, as well as sensitivity to foreign currency exchange rates.

Interest rate risk

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. The Group's objective is to reduce the impact of interest rate fluctuations on its interest expenses and, guided by the principle of prudence, to finance long-term assets with shareholders' equity and fixed-rate long-term debt. Since most of Air Liquide's investments are based on long-term contracts (10 to 20 years), a policy promoting interest rate risk hedging ensures control over financing costs when deciding on long-term investments.

Group policy is to maintain, over a medium to long-term period, a majority of total debt at fixed rates, mainly by using firm or option hedges. This approach enables the Group to limit the impact of interest rate fluctuations on financial expenses.

Due to the increased level of indebtedness resulting from the 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 the debt.

Note 26.4 to the consolidated financial statements presents the fixed-rate portion of debt and note 27.1 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 involving credit ratings

As anticipated, following the Airgas acquisition, S&P downgraded L'Air Liquide S.A.'s credit rating for the long-term debt by two notches (from A+ to A-). A stable outlook was associated with this credit rating as well as the first credit rating issued by Moody's (A3) in May 2016. In addition, 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 their current levels, due to a higher level of indebtedness than expected or for other credit-related reasons.

Financial counterparty and liquidity risk

Financial counterparty risk primarily relates to outstanding amounts on short-term investments and derivative instruments for hedging, to trade receivables, and to credit facilities contracted with each bank. To ensure its development and independence, the Group must have sufficient and permanent sources of liquidity, meaning adequate financing resources available at any time and at the lowest cost from banks and financial markets. In this area, the Group adopts a prudent approach to counterparties and their diversification, applying a strict limit on individual outstandings.

Note 27.1 to the consolidated financial statements describes financial counterparty and liquidity risk for the year ended December 31, 2017. Notes 19.1 and 19.2 to the consolidated financial statements provide a breakdown of trade and other operating receivables and allowances for doubtful receivables.

Tax 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. Its Tax Department and operational Finance Departments monitor these changes carefully to ensure the Group complies with these regulations.

HUMAN RESOURCES MANAGEMENT RISKS

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

The Group may be faced with difficulties in finding and sustaining the required skills at the right time and in the right place, in particular in developing economies where the Group is expanding its activities.

The Group ensures the building of a performance-focused, motivating and involved professional environment, through a human resources policy aiming to identify, attract, retain and develop competent employees from all walks of life. The objectives of this policy are set out on page 36.

Moreover, considering the changing international climate and its presence in a large number of countries, the Group and its employees may be exposed locally to a higher security risk, for which additional measures are being taken.

LEGAL RISKS

The Group has a worldwide presence. Its companies operating industrial and medical gas production facilities must comply with the rules and regulations in force locally, particularly in the technical field, and monitor any changes.

In Healthcare in particular, the regulatory environment constantly evolves and specific regulatory constraints exist which relate notably to public markets, to the marketing of products which may be subject to drug regulatory control, and the protection of private information on each patient. In this domain, the evolution of the regulatory environment is monitored with particular vigilance and adapted reinforced means implemented.

In addition, the Group is faced with the risks relating to contracts and competition law, as well as anti-corruption and international trade issues that are also subject to individual monitoring.

To the Group's knowledge, there have been no governmental, judicial or arbitration proceedings, including any such proceedings which are pending or threatened, of which we are aware, which may have, or have had in the past 12 months, significant impacts on the financial situation or profitability of the Company and/or Group.

Liabilities and contingent liabilities related to disputes are described in notes 24 and 32 to the consolidated financial statements.

Innovation and intellectual property-related risks

The Group's activity is not dependent on third-party patents. It is mainly based on technology, processes and designs which are mostly protected by patents, drawings and models, and utility models as well as by brands; these technologies, processes and designs are developed internally, notably by its Research and Development, Marketing, Engineering and other innovation teams, as well as through partnerships with third parties. There is, nonetheless, a risk of third-party rights being infringed, in particular when several market players are developing similar technologies. The Group is also developing innovative activities through collaboration with partners, acquisitions, or buying shares in innovative entities: risks may arise in the breakdown between stakeholders of rights and obligations relating to intellectual property.

Measures aimed at ensuring the respect of intellectual property are set out on page 36.

ENVIRONMENTAL AND CLIMATIC RISKS

The industrial and medical gas business presents few environmental risks. Around 85% of the Group's large production units separate the components of atmospheric air, i.e. oxygen, nitrogen, argon and rare gases. These plants "without chimneys" do not use any combustion processes and consume almost exclusively electrical energy. They are particularly environmentally friendly as they emit almost no CO_2, sulfur oxides or nitrogen oxides.

Nonetheless, electricity consumption generates CO_2 emissions by the suppliers of this energy, known as indirect emissions.

Besides, the Group's two other main activities, namely hydrogen production and cogeneration, account for nearly 15% of large production units and use combustion processes emitting CO_2 and nitrogen oxides, as well as low quantities of sulfur oxides.

Water is a resource necessary to these three main Group processes. Air gas separation units use water exclusively for cooling purposes during the separation process. Hydrogen production units require water in the form of steam in the reaction producing hydrogen. Finally, the cogeneration units produce steam, which is mainly supplied to customers.

Environmental risks primarily comprise the following components that are subject to rigorous monitoring:

- the environmental footprint, involving the Group's activities worldwide: including direct and indirect greenhouse gas emissions which are measured at all production sites;
- respect for applicable legislation and its evolution.

Climatic risks notably comprise weather and climatic disasters which may disrupt the smooth running of operations in particular on the main sites in the regions at risk. Adaptation measures covering risks relating to extreme weather-related phenomena and to the scarcity of water in geographic regions under water stress exist at the main sites located in high-risk areas.

The scheme to manage environmental and climatic risks is detailed in the Sustainable Development Report on page 67 as well as on page 36.

INSURANCE MANAGEMENT

The Group has adequate insurance coverage, underwritten by first-rate insurers, for civil liability, property damage and business interruption.

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.

Civil liability

In terms of civil liability, the Group maintains two separate covers, one for the North American zone and another for the rest of the world. The North American zone is covered by insurance underwritten in the United States. For the other zones, the Group has subscribed an umbrella policy, underwritten in France, which covers both the Company and its subsidiaries outside of the United States and Canada, beyond any local coverage provided for the subsidiaries.

These two policies cover liability of the 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 amounts underwritten exceed 500 million euros. Both policies are 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 outside of North America. Under this umbrella, each foreign subsidiary has its own policy covering damages to third parties incurred through its activities 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.

The main exclusions are deliberate acts, war, nuclear incidents and repair of defective products.

Captive reinsurance

A portion of risks of damage and operating losses is kept by the Group via a captive reinsurance company located in Luxembourg, which also participates, since July 1, 2015, in the coverage of the Group's civil liabilities excluding the North American zone.

This company covers losses of up to a maximum of 5 million euros per loss over and above the deductibles to a maximum of 23.5 million euros per year. Beyond these amounts, risks are transferred to insurers. Their management is entrusted to a captive manager approved by the Luxembourg Insurance Commission.

This captive reinsurance company is fully consolidated. Its balance sheet as of December 31, 2017 totaled 75 million euros.

OTHER RISKS LINKED TO AIRGAS

The following paragraph summarizes, as of December 31, 2017, the risk factors more specifically linked to Airgas; the activities are exposed to types of risk that are very similar to Air Liquide's (industrial risks inherent in the production and distribution of industrial gases, in the sale of materials in a shop or on online platforms, as well as in issues relating to the medical field, with all these risks being spread over many sites).

After a period dedicated to operational integration and the realization of the synergies sought, Airgas could once more be exposed to certain operational risks linked in particular to the speed at which Air Liquide's products are adopted by existing Airgas customers and vice versa, to the final stages of integration for some information systems, or to the management of some supply contracts as they reach maturity. In human resources, Airgas, which is exposed to the risks inherent in managing a large number of employees that have differing career paths, pay structures, and cultures, has started to adopt some Group measures (succession and retention plans, management of certain populations, etc.). In industrial safety, Airgas, with an already strong industrial risk management system, launched actions aimed at strengthening the detection and reporting of incidents, as well as specific analyses of risks relating to manufacturing procedures.

Internal control and risk management procedures instituted by the Company

This section describes the main internal control and risk management procedures instituted by the Company.

They are 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 which were prepared with contributions from several departments (particularly Finance, Group Control, Legal, Safety and Industrial Systems, etc.).

INTERNAL CONTROL OBJECTIVES

In addition to the Principles of Action, (https://www.airliquide.com/group/groups-principles-action) which reaffirm the Group values with particular reference to stakeholders (shareholders, customers and suppliers, employees, etc.), the Group's policies are grouped together in an overall Reference Document, the BLUEBOOK, which is available to employees on the Intranet. They constitute a set of internal control and risk management procedures, 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.

The internal control system aims to ensure that:

- the Group's activities and the conduct of its members:
  - 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 contribute to the management of 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 2017, 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 Unit, the Group Control Department and the Finance Department. The latter two together organize these improvement measures and report on their progress and the Group's accounts to Executive Management then to the Audit 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.

In 2017, the Group continued its measures to improve the quality of its internal control and risk management system, and in particular:

- to support the changes in organization around the hubs and the grouping of countries into clusters, the adjustment of the management and control bodies with the setting up, on one hand, of SICR meetings (Strategy – Investment – Corporate Policies Review) that periodically review the strategy, large investments, and Group under the chairmanship of the Chairman and Chief Executive Officer and, on the other hand of a Group performance management committee, which meets every month under the chairmanship Executive Management;
- at Airgas, the integration process focused primarily on operating activities and industrial safety, then on other more functional areas such as human resources;
- in the area of digital security, the launch of the compliance program for European General Data Protection Regulation rules and certain targeted actions for industrial and operational systems to provide greater protection for assets and sensitive data; in addition, significant awareness-raising efforts and user training is being pursed;
- in the area of ethics, definition of an action plan aimed at integrating the new anti-corruption measures relating to the Sapin 2 Act within the Group's pre-existing measures (risk mapping, face-to-face training or e-learning, supplier and third party assessment, control – including of accounts, and whistleblowing systems);
- in the area of safety and industrial reliability, following an in-depth examination of the IMS, validation of proposals aimed at adapting the system to simplify its operational implementation;
- in the area of regulatory and operational compliance, in addition to the Group's pre-established anti-corruption, competition law, and export control programs, initiatives aimed at raising awareness within management teams of local non-compliance risks (identification and treatment);
- in the societal area, creation of an Environment and Society Committee alongside the Board of Directors that examines the Group's strategy and commitments in terms of sustainable development, assesses environmental and societal risks, and ensures monitoring of actions rolled out in this area (particularly relating to air quality, energy consumption, and greenhouse gas emissions).

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 organization has developed into a network structure that promotes communication and shortens decision-making circuits.

The organization breaks down into:

- hubs (Houston, Frankfurt, Shanghai and Dubai) which ensure the Group's presence in the main global regions. With the Base (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 that ensure that the Group strategy is properly implemented locally;
- entities, grouped in country groups (Clusters) for better sharing of resources, which ensure the operational management of their activities and implementation of the strategy in the countries where the Group is located;
- the World Business Lines, which:
  - with the hubs and Strategy Department, produce the mid-term strategic objectives for their related activities,
  - are responsible for strategic Marketing, transformation of their respective businesses, the industrial policy, and the appropriateness of skills in their field of activity;
- the World Business Units specific to certain activities (Healthcare, Engineering & Construction);
- the Innovation and Development Department, which groups the innovation and research means, technologies development, digital transformation, the World Business Unit Global Markets & Technologies, and Hydrogen Energy.

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 financial and tax risk management,
  - management control through the drafting of Group objectives and monitoring of performance, on the basis of financial data prepared by the accounting teams and analyzes conducted by the financial teams of the various entities;
- the Group Control Department, which:
  - provides expertise and assistance to entities in the roll-out of 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 itself. 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 (all these actions, organizations, and tools are presented in detail in the Sustainable Development Report), as well as with international trade regulations,
  - 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 also monitors the main litigation cases 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 order to ensure the prevention and control 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.

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 installations.

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 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 risk management level of each risk based on a common scale with respect to the quality of policies, organizations, processes and controls in place;
- the progress of the main corrective action plans undertaken to mitigate the risks, by focusing monitoring activities on a limited number of priorities.

This three-phase risk management process (mapping, management levels, 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 provide a summary thereof;
- the work of members of the Risk Committee that it coordinates. This Committee brings together the Corporate functions, which provide their expertise to the hubs, World Business Units and World Business Lines. Presided by the Chairman & CEO, it meets twice a year to report on the progress of initiatives, particularly in terms of priorities, and to establish a Group risk management synthesis as well as define the directions for the following year.

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 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.

CONTROL ACTIVITIES

The main internal control and risk management procedures established and communicated by the Group in the BLUEBOOK aim to:

1. Ensure the safety and security of people, products and installations, as well as the reliability of operations, in compliance with the rules and regulations for accident prevention

To this end, 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:
  - regulatory compliance,
  - design management,
  - industrial risk management,
  - hygiene, health and environmental management,
  - training and certification of personnel,
  - management of operating and maintenance procedures,
  - management of industrial purchasing,
  - change management,
  - analysis and treatment of incidents and accidents,
  - 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 relevant 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 indicators designed to review performance in terms of the safety and reliability of operations;
- the process audits conducted by the Safety and Industrial Systems Department to verify the implementation conditions and compliance of operations with IMS requirements;
- technical audits carried out by the Industrial Departments to ensure the compliance of operations with Group rules.

Safety performance of operations and their level of compliance with IMS requirements are regularly monitored by the Executive Committee.

Moreover, considering the changing international climate and in particular the terrorist threat, the Group, which is present in many countries, has defined and rolled out additional measures to protect its employees and secure its products and sites that are most exposed locally to an external threat.

2. Ensure extremely strict control of Group investments and commitments, with:

- an in-depth review of investment requests using very strict assessment criteria as well as the medium and long-term contractual commitments which may arise therefrom, within the Resources and Investments Committees. These Committees remain in each hub or World Business Unit; they comprise regional, technical and financial managers as well as World Business Lines managers that vary depending on the nature of the project considered, and are chaired by an Executive Committee member;
- 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 as well as execution;
- more in-depth profitability analyzes (comparative analyzes prior and subsequent to completion) for certain significant investments.

3. Ensure control of energy purchasing, particularly with respect to availability and matching with Group commitments to customers

The energy management policy defines rules governing energy purchasing and the related decision-making processes. The Enrisk Group Committee reviews the procurement strategies of the entities, validates the most significant commitments and ensures the relevant policies are properly applied.

Each month, the Enrisk Group Committee brings together the Vice President in charge of the Large Industries World Business Line, the Energy Vice President and the Group Deputy Chief Financial Officer.

Meeting minutes are sent to all Executive Committee members.

4. Ensure the protection of Group IT data and applications

The Digital Security Policy sets the basic rules governing the identification of digital security stakes 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 IT users and administrators.

The Digital Security Department reports directly to the Group Control Department and uses resources set aside in the hubs, Clusters, 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:

- the risk prevention and awareness raising for employees using teaching tools such as phishing campaigns, e-learning courses on information protection 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 and major cyber incidents that could affect the Group's activities;
- implementing regulatory compliance for the organization using specific projects or programs (Military Planning Act, General Data Protection Regulation, etc.);
- revision of the incident management system completed by undertaking diagnosis to assess the quality and efficiency of the protection of our sensitive digital assets.

5. Manage financial and tax risks

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.

The Company has defined financial policies, which forbid speculative transactions notably on financial instruments, and that are subject to regular review. These policies were brought together in a Group financial policy. These procedures set out the principles and procedures for the management of financial risks to which the activity is exposed, notably in relation to:

- foreign exchange risk: the Company has defined methods for hedging foreign exchange risk, whether this is carried by the holding companies or the operating entities, in terms of authorized hedging instruments, the decision process and the execution of transactions;
- interest rate risk: the Company has defined methods managed on a centralized basis for the hedging of interest rates related to indebtedness that is carried in major currencies (mainly EUR, USD, JPY, and CNY), which represent more than 90% of total net indebtedness with:
  - a selection of authorized tools,
  - the hedging decision processes,
  - the methods of executing transactions.

For other foreign currency indebtedness, rules have been defined in order to ensure that the transactions initiated to hedge interest rate risk are consistent with Group objectives:

- counterparty risks: the Company has defined rules aimed at ensuring that there is sufficient diversification and financial solidity of counterparties at Group level (commitment limits/minimum rating);
- liquidity risks: the Company has defined rules aimed at ensuring an appropriate level of "confirmation" and diversification (by type and maturity) for all external financing sources. The Group staggers short- and long-term repayment maturities over time in order to limit amounts to be refinanced each year and has precautionary facilities.

These measures are supplemented by treasury management rules adapted to local circumstances, which are aimed at ensuring compliance and security of transactions and optimizing the management of liquidity (forecasting of cash in/cash out, etc.).

The application of this financial policy is controlled by the Finance Department. The majority of transactions are executed directly on a centralized basis (financing and management of related interest rate risk, hedging of foreign exchange risk), 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 segregated duties, using a multilateral negotiation platform, cash management software, and a communication platform linked to the Swift banking network.

In terms of tax, the Group attaches great importance to compliance with local regulations which are monitored by its Tax Department and its Financial Departments.

6. Ensure the reliability of 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 for data which is unique and feeds both the Group consolidation process and the business 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 analyzes through the use of complementary indicators and data, particularly those which are specific to each activity;
- 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 indebtedness 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 by the Director and the controller within the entity, and are consolidated at Group level with a breakdown for each hub and activity;

- 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 may include:
  - 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 is to analyze and comment on the results, identify and explain any differences with respect to forecasts, and to update the forecasts.

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) and derivative financial instruments (IAS32/39, IFRS7) are subject to tighter controls or treated directly 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 depends on information systems which are increasingly integrated (such as ERP), a Group consolidation software package.

The project, which aims to further harmonize ERPs, continues (mainly in the Asia Pacific, Americas, and Middle East and Africa zones) based on the definition of an accounting and financial framework tailored to the various business lines.

7. Ensure the development of the Group's expertise and talents

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 requisite 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 55,000 in 2017) in a wide range of domains (ethics, industrial safety, competition law, etc.);
- accompanying employees in their personal development with the continuing roll-out of improvement tools for the management of training programs (LMS: Learning Management System), the management of careers and skills (TMS: Talent Management System) and the communication of career advancement opportunities (TAS: Talent Acquisition System);
- measuring and recognizing performance and contributions for all employees. Other than remuneration policies, the Group's specific programs promote, for example, technical expertise (Technical Community Leaders), inventors (inventor recognition program) and entrepreneurs.

8. Ensure that laws, regulations and internal management rules are respected within the Group, notably in the legal and intellectual property areas

- With the Group legal policy, which encompasses:
  - a Group procedure relating to Powers (limitations and delegations) for use by Group entities;
  - a Group procedure on the governance of subsidiaries (Boards of Directors);
  - an Insurance Guide for all Group entities;
  - Group codes on how to behave in order to comply with competition laws (including Europe and the United States), accompanied by surprise audits and training that includes e-learning;
  - a Group code recapping the rules of ethical behavior to prevent the risk of corruption, and related procedures, accompanied by regular training sessions;
  - a memorandum, specifying the rules to be observed to prevent market abuse (insider trading), various contract guides (for Large Industries, Engineering & Construction, Industrial Merchant, Electronics and Financing) and Codes of Good Practices (for Healthcare).
- In the intellectual property area, with a Group policy and procedures aimed at:
  - ensuring Air Liquide's compliance with valid patents held by third parties in its different areas of activity;
  - protecting Group intellectual property, by protecting its inventions, designs and brands through their identification (on an official filing basis) and in the event of partnerships or other third-party relations targeting innovation;
  - managing the Group's obligations in terms of the recognition of their inventors.

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.

9. Manage environmental and climate risks

The Group has a policy that aims to ensure its development while limiting its carbon footprint and its environmental impacts.

In particular, the carbon footprint and certain environmental risks (emissions into the atmosphere, annual water supply, etc.) are part of the criteria for analyzing investment projects.

In addition, the Group initiated an approach that promotes purchasing energy from suppliers with the best carbon footprint and aims to continually improve its energy efficiency (in particular for air gas and hydrogen production) and that of its transport used to deliver products to its customers. These improvements are monitored using indicators collected and consolidated at Group level.

Finally, as well as the vigilance it exercises over its own activities, the Group offers its customers many applications and services to help them reduce their own carbon footprint.

The Group is also attentive to climatic risks and particularly risks related to the extreme weather-related phenomena, which are the subject of specific adaptation plans on the main sites located in high-risk areas.

All these subjects are detailed in the Sustainable Development Report in chapter 2 of the Reference Document.

MONITORING OF CONTROL MEASURES

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 above (reports, debriefings, etc.).

Executive Management team exercises its control over risk management, particularly through:

- SICR meetings (Strategy - Investment - Corporate Policies Review) that periodically review the strategy, large investments, and Group policies. Taking part in these reviews together with the Chairman & CEO are the Executive Vice-President in charge of Finance, the Innovation and Development Director, and the Director of Strategy, and depending on the topic, the Vice-President of the hub or activity, or the Director of the Group function concerned. The Innovation and Development Director acts as secretary;
- monthly meetings of the Group performance steering committee which decides the investment budgets and the action plans to undertake or amend in order to achieve the annual or multi-annual objectives. They replace the Executive Management meetings and bring together, with the Chairman & CEO and Executive Vice-President in charge of Finance, the Executive Vice-Presidents and managers in charge of the hubs, the Innovation and Development Director, and the Strategy Director. The Group Operations Control Director acts as secretary.

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: Legal, Finance, Communication, Safety and Industrial System, Human Resources, Group Operations Control and Group Control (notably covering ethics and digital security).

Chaired by the Chairman & CEO and attended by two Executive Vice-Presidents and the Strategy Director, it meets twice a year to report on the progress of initiatives, particularly in terms of priorities, and to prepare a Group risk management synthesis.

THE FINANCE COMMITTEES

The Strategic Finance Committee

The purpose of this 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 Group Chief Financial Officer and the Group Corporate Finance and Treasury 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 Operational Finance Committee

The purpose of this 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 Group Chief Financial Officer, the Corporate Finance and Treasury Director, the head of Corporate Finance, and the head of Group Financing, 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

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 resource requirements that may arise therefrom.

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 business line concerned by the investment, as well as representatives of the Group Finance Department.

They meet regularly (usually once or twice a month) for each hub (Houston, Frankfurt, Shanghai, and Dubai) and World Business Unit (Healthcare, Engineering & Construction) and for the Innovation and Development Division (IDD).

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 setting 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 Transformation, and Digital Security managers and other Corporate Departments when required.

It meets each month under the chairmanship of a member of the Executive Committee.

2017 PERFORMANCE

2017 was marked by an acceleration in comparable sales growth during the second half and an improvement in operating performance which was reflected in an increase in operating margin and return on capital employed, and by a high level of cash flow.

Group revenue totaled **20,349 million euros** in 2017, up **+12.2%** as published, following the consolidation of Airgas sales over 12 months. Comparable growth stood at **+2.9%** and benefited from a marked step-up in Gas & Services sales growth throughout the year. The currency impact became strongly negative in the second half and stood at -1.6% for the year as a whole. The energy impact, at +1.5% for the year, eased significantly during the second half. **Gas & Services revenue** totaled **19,642 million euros**. Comparable growth, of **+3.5%** for the year, picked-up pace in the second half (+4.2%). Sales were up across all business lines, in particular Industrial Merchant (+3.8%) which enjoyed a strong recovery in growth quarter-by-quarter. Developing economies (+8.1%) and China in particular remained growth drivers.

The 2017 **operating margin** stood at **16.5%**, up **+70 basis points** compared with the adjusted 2016 operating margin and excluding the energy impact. Productivity efforts in 2017 generated **323 million euros of efficiencies** and **170 million US dollars of Airgas synergies**, 40 million US dollars more than the initial objective. **Net profit (Group share)** amounted to **2,200 million euros**, up **+19.3%**. Excluding the non-cash impacts of non-recurring items and the US tax reform, net profit (Group share) totaled **2,029 million euros**, up **+10.0%**. This "recurring" net profit will be the reference used to evaluate the 2018 performance.

Net cash flow after changes in working capital requirements was up **+15.1%** compared with 2016 and represented **20.9% of sales**, driven by a high level of operating cash flow and an improvement in working capital requirements. Net debt at December 31, 2017 reached 13,371 million euros, down 1,997 million euros compared with end-2016. The **debt-to-equity** ratio (gearing) stood at **80%** at the end of December 2017, down compared with 90% at the end of 2016.

The Group pursued its growth initiatives with **investment decisions** of **2.6 billion euros** compared with 2.2 billion euros in 2016. The increase is due to industrial decisions and reflects the momentum of the business in terms of biddings. **Gross industrial capital expenditure** represented **10.7% of sales** and was in line with the medium-term strategic plan.

The Board of Directors proposed a nominal **dividend** to be submitted to the Annual General Meeting of 16 May 2018 at **2.65 euros per share**. This represents a +12.4% increase taking into account the free share attribution in October 2017. The pay-out ratio is estimated at 53%.

Terms « published » and « comparable » used in this document refer to the definitions below:

- **Published growth** vs 2016 data is calculated in accordance with IFRS 5. Other Activities (Aqua Lung and Air Liquide Welding) are reported under "Net income from discontinued operations" in the 2016 and 2017 income statement. The 2016 Balance Sheet also presents Assets and Liabilities held for sale under a dedicated line.
- **Adjusted 2016 revenue and operating income recurring** are computed as if, on January 1, 2016, Airgas had been fully consolidated and the divestitures requested by the U.S. Federal Trade Commission completed, and Aqua Lung and Air Liquide Welding had been deconsolidated.
- **Comparable growth:** in 2017, Air Liquide communicates on a comparable variation **based on 2016 adjusted data, excluding currency, energy** (natural gas and electricity) **and significant scope impacts.**
- **Reference to Airgas** now corresponds to the Group's Industrial Merchant and Healthcare activities in the United States within the new scope, after the merger of Airgas and Air Liquide U.S. operations.

Unless otherwise stated, all variations in revenue and operating income recurring outlined below are on a **comparable basis**.

2017 Key Figures

(in millions of euros)	FY 2016	FY 2017	2017/2016 published change	2017/2016 comparable change [(a)]
Total Revenue	**18,135**	**20,349**	**+12.2%**	**+2.9%**
Of which Gas & Services	*17,331*	*19,642*	*+13.3%*	*+3.5%*
Operating income recurring	3,024	3,364	+11.2%	+7.5%
Operating income recurring *(as % of revenue)*	16.7%	16.5%	-20 bps	+70 bps [(g)]
Other non-recurring operating income and expenses	36	(344)		
Net profit (Group share)	1,844	2,200	+19.3%	
Adjusted earnings per share *(in euros)* [(b)]	**4.64**	**5.16**	**+11.2%**	
Adjusted net dividend per share *(in euros)* [(b)]	**2.36**	**2.65** [(f)]	**+12.4%**	
Net cash flows from operating activities [(c)]	3,697	4,254	+15.1%	
Net capital expenditure [(d)]	13,609	1,850		
Net debt	15,368	13,371		
Debt-to-equity ratio	90%	80%		
Return On Capital Employed – ROCE after tax [(e)]	**7.8%**	**8.2%**		

(a) Comparable growth based on 2016 adjusted figures excluding the currency, energy and significant scope impacts.
(b) 2016 figures restated for the impact of the free share attribution on October 4, 2017.
(c) Cash flow from operating activities after changes in working capital requirements and other elements.
(d) Including transactions with minority shareholders.
(e) Return on capital employed after tax: see definition in appendix.
(f) Subject to the approval of the Annual General Meeting on May 16, 2018.
(g) Excluding energy, variation 2017 vs 2016 adjusted.

2017 Highlights

INDUSTRIAL DEVELOPMENTS

Large Industries

- In early January 2017, Air Liquide and **ArcelorMittal**, signed **long-term contracts** for the supply of oxygen, nitrogen and argon to ArcelorMittal's production sites in Benelux and France.
- In January, Air Liquide announced having recently commissioned **the largest hydrogen storage facility in the world**. This underground cavern is located in Beaumont, Texas, in the Gulf Coast region of the U.S. This unique hydrogen storage cavern complements Air Liquide's robust supply capabilities along the Gulf Coast, offering greater flexibility and reliable hydrogen supply solutions to customers via Air Liquide's extensive Gulf Coast Pipeline System. This facility is **1,500 meters deep** and nearly **70 meters in diameter** and is capable of holding enough hydrogen **to back up a large-scale steam methane reformer (SMR) unit for 30 days.**
- Air Liquide inaugurated on January 26 in France, in the frame of the **Connect** project, an operation center that is unique in the industrial gas sector. It enables the **remote management of production** for 22 of the Group's production units in France, optimizing their energy consumption and improving their reliability. With **"technological showcase"** certification from the Industry of the Future Alliance, Connect represents an investment of **20 million euros**. This project is based on the implementation of new digital technologies at French production sites and on the creation of new skills.
- In early April, Air Liquide and **Oman Oil Refineries and Petroleum Industries Company** (Orpic), Oman's national refining company, signed a **long-term agreement** for the supply of nitrogen to the Liwa Plastics Industries Complex (LPIC), a new plastics production complex including the country's first steam cracker Orpic is adding to its existing production facilities, in Sohar industrial port area in Oman. Investing around **20 million euros** to build a state-of-the-art nitrogen production unit with a total capacity of 500 tons of nitrogen per day, Air Liquide will strengthen its leadership position in a key industrial area to support the growth of its customer Orpic.

- In early September, Air Liquide announced the signature of a new long term agreement with Pemex Transformación Industrial, a subsidiary of Petróleos Mexicanos (**PEMEX**), the state-owned oil & gas company, to supply hydrogen to PEMEX's refinery located at Tula de Allende, in the state of Hidalgo in the central region of Mexico. Through a **50 million euros investment for the take over and optimization of PEMEX's existing hydrogen production unit**, this agreement will allow Air Liquide to supply 90,000 Nm³ per hour of hydrogen to PEMEX and to strengthen its presence in central Mexico.
- In mid-October, Air Liquide entered into a new joint venture with **Sinopec** in Beijing, for **the takeover and optimization of three existing ASUs** (Air Separation Units) and the building of a **new nitrogen unit**, for a total investment of **40 million euros**. In the third quarter 2017, Air Liquide also **commissioned** a new state-of-the-art ASU for the supply of oxygen and nitrogen to Sinopec in South China.
- Air Liquide recently signed a **long-term contract** with Kumho Mitsui Chemical Inc (**KMCI**), a major chemical group in South Korea, according to which Air Liquide will increase its supply to this customer of both hydrogen and carbon monoxide at the Yeosu industrial complex. Air Liquide will invest around **100 million euros** to build a new state-of-the-art hydrogen production unit that will be integrated into its existing piping system in the industrial basin. The unit is **expected to start in 2020** and strengthens the Group's leadership position in a key industrial area of South Korea.

Industrial Merchant

- In June 2017, Air Liquide signed new **supply contracts** covering periods of **10 to 15 years** with **three major Chinese fiber optics manufacturers**. In the frame of these new contracts with Futong Group Communication Technology, Yangtze Optical Fibre, and Zhongtian Technology Fine Materials, Air Liquide will supply a total exceeding 6,000 Nm³ per hour of hydrogen and 4,000 Nm³ per hour of nitrogen via on-site generator solutions, together with bulk oxygen, helium, argon and carbon dioxide. Air Liquide will thus support the further development of China's fiber optics industry.

Electronics

- 2017 was a **record year** for the Electronics activity of Air Liquide in Asia: the Group announced the **signature** of **several new long-term contracts** with major electronics manufacturers in China, as well as Japan and Singapore. Air Liquide will invest more than **150 million euros** in the region to supply ultra-pure carrier gases to its customers' new fabs which manufacture integrated circuits, memory, imaging sensors and flat panel displays for customer electronics and mobile devices.

Engineering & Construction

- In May 2017, Air Liquide Engineering & Construction signed a **major contract amounting around 100 million euros** to design and build **three Air Separation Units** (ASU) for Yankuang Group, one of the largest energy and chemical companies in China. Each of the ASUs will have a production capacity of **3,200 tonnes per day of oxygen, plus nitrogen** for the production of methanol-based chemicals. All three ASUs **will start operation in the second half of 2019**.

DEVELOPMENTS IN HEALTHCARE

- In 2017, Air Liquide pursued its external growth strategy in Healthcare. The Group's subsidiary Seppic, designer and supplier of specialty ingredients for health and beauty, recently finalized the **acquisition** of the **Serdex** division of Bayer. This acquisition strengthens Seppic's footprint in **natural active ingredients for cosmetics**. The specialty active ingredients for cosmetics represent a global market over 900 million euros, of which natural active ingredients are a fast growing segment.
- The Group announced in January the acquisition of **Oxymaster**, a national **home healthcare sector player in Colombia**. Present in the Colombian market for almost 20 years, Oxymaster is specialized in **home treatment and support for patients suffering from respiratory conditions** (sleep apnea, Chronic Obstructive Pulmonary Disease, chronic respiratory failure). Oxymaster has more than 240 employees and serves over 21,000 patients. The company generated revenues of approximately **9 million euros in 2016**.
- Air Liquide strengthens its position in **home care for patients with diabetes** and participates in the **French artificial pancreas project**. By signing a partnership with CERITD, the French Center for Studies and Research for the Intensification of Diabetes Treatment, at the request of physicians, Air Liquide's nurses will be able to help provide even more personalized follow-up for patients with diabetes treated at home. In addition, Air Liquide has acquired an equity stake in the **French startup Diabeloop**, which is developing an **electronic artificial pancreas** composed of an insulin pump in the form of a patch and a glucose sensor both connected. The investment made by Air Liquide in Diabeloop confirms the **Group's commitment to digital technologies and healthcare**, in the aim of helping patients achieve a better quality of life and care.
- In early September, Air Liquide announced the deployment of "**Chronic Care Connect**™", a **remote monitoring** solution in order to support remotely patients with chronic conditions at home using digital. Depending on the medical monitoring protocol prescribed by the physician, patients use one or more connected systems (blood pressure monitor, scale, pulse oximetry, glucose meter or ventilator, for example). Thanks to this technology, patients are monitored remotely on a daily basis with **individualized support provided by Air Liquide nurses** via a certified nursing center. This solution helps to **improve their quality of life**. As for their physicians, they have access to an operational solution that allows for preventive management of patient condition evolution. By avoiding hospitalization, the Air Liquide **connected solution for the remote monitoring** of patients also meets the **challenges of healthcare costs control**.
- At the end of September, Air Liquide expanded its healthcare business in **Japan** with the **acquisition** of **Sogo Sangyo Kabushiki Kaisha** ("SSKK"), a major Japanese player with a strong presence in the home healthcare and medical gases markets especially in the Tokyo region. Present in the Japanese market for 60 years, **SSKK** is specialized in the medical gases field serving more than **2,000 hospitals and clinics** and home treatment for patients suffering from respiratory diseases. SSKK has more than **150 employees** and generated revenue of approximately **27 million euros** in 2016. This acquisition increases the number of **patients** served at home by Air Liquide in Japan to reach **20,000**.

PROJECTS IN INNOVATION AND TECHNOLOGY

- Air Liquide and 12 leading energy, transport and industry companies have launched in January, a global initiative, the "**Hydrogen Council**", to voice a united vision and ambition for hydrogen to foster the energy transition. In November 2017, at the COP23 in Bonn, the leaders of the Hydrogen Council (28 at the end of 2017) revealed the first ever globally quantified vision of the role of hydrogen. According to this study, developed with McKinsey's support, **hydrogen is not only a key pillar of energy transition**, but also has the potential to develop 2.5 trillion US dollars of business, creating more than 30 million jobs by 2050 and **contribute to roughly 20% of the CO_2 abatement required to limit global warming to two degrees Celsius.**
- In March, Air Liquide completed the construction of **two hydrogen charging stations in Japan**. The Fukuoka Miyata and Kobe Shichinomiya stations are respectively the 4th and 5th hydrogen charging stations for public use in Japan.
- On December 7, 2017, Air Liquide and Group ADP inaugurated, at the Paris-Orly Airport, the **first public hydrogen station installed in an airport zone in France**. Designed and installed by Air Liquide with the support of Fuel Cells and Hydrogen Joint Undertaking ("**FCH JU**"), it promotes the deployment of "**Hype**", the world's first hydrogen-powered taxi fleet. This collective project is opening up a new clean mobility option in the Greater Paris Area. To date, **more than 100 hydrogen charging stations have already been designed and installed by Air Liquide** worldwide.

BOND ISSUE

- In March, a transaction, issued under the Group's 12 billion euro Medium Term Note (EMTN) program, allowed the issuance of a **600 million euros** bond with a **10-year** maturity at a yield of **1.116%.** Proceeds from this bond allowed the Group to refinance its two bonds maturing in June and July 2017, and to continue funding sustainably its long-term growth while benefiting from very attractive market conditions.

PORTFOLIO MANAGEMENT

- At the end of July 2017, Air Liquide announced that it had **completed the sale of Air Liquide Welding**, its subsidiary specialized in the manufacture of welding and cutting technologies, to Lincoln Electric France SAS, subsidiary of Lincoln Electric Holdings, Inc. ("**Lincoln Electric**"). Lincoln Electric is the world leader in design, development and manufacture of arc welding products, robotic arc welding systems, plasma and oxy-fuel cutting equipment. Air Liquide focuses on its Gas & Services activities following the acquisition of Airgas, as well as the implementation of its company program NEOS for the 2016-2020 period.
- On October 10, Airgas completed **the sale of Airgas-Refrigerants, Inc.**, its subsidiary specializing in the distribution, packaging and reclamation of refrigerant gases, to **Hudson Technologies, Inc**. Airgas-Refrigerants had **a trailing 12-months revenue of 142 million US dollar** through the end of June 2017. The sale of this subsidiary is reflective of Airgas' focus on its core business.

NEW VISUAL IDENTITY

- The acquisition of Airgas and the launch of the NEOS company program for the 2016-2020 period mark a new milestone in the history of Air Liquide. The Group is transforming and is changing its visual identity with a **new logo**, the fifth since the company was founded 115 years ago. This new visual identity introduced in January 2017, which embodies the transformation of Air Liquide, is that of a leading Group, expert and innovative, that is close to its stakeholders and open to the world.

2017 Income Statement

CURRENCY, ENERGY AND SIGNIFICANT SCOPE IMPACTS

Applied method

In addition to the comparison of published figures, financial information is given excluding currency, natural gas and electricity price fluctuation 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.

(in millions of euros)	Group	Gas & Services
FY 2017 Revenue	**20,349**	**19,642**
2017/2016 published change *(in %)*	+12.2%	+13.3%
Significant perimeter impact (Refrigerant divestiture)	(19)	(19)
Currency impact	(311)	(301)
Natural gas indexation impact	243	243
Electricity indexation impact	52	52
2017/2016 adjusted comparable growth *(in %)*	**+2.9%**	**+3.5%**
FY 2017 Operating income recurring	**3,364**	**3,587**
2017/2016 published change *(in %)*	+11.2%	+10.8%
Significant perimeter impact (Refrigerant divestiture)	(6)	(6)
Currency impact	(62)	(60)
Natural gas indexation impact	-	-
Electricity indexation impact	-	-
2017/2016 adjusted comparable growth *(in %)*	**+7.5%**	**+7.2%**

The sale of **Airgas refrigerants** in October 2017 generated a significant scope effect. The 2017 revenue of the activity is broken down per quarter below:

(in millions of euros)	Q1 2017	Q2 2017	Q3 2017	Q4 2017
Airgas refrigerants	35	36	26	1

Operating income recurring (OIR) and OIR Margin:

(in millions of euros and %)	FY 2016	FY 2016 Adjusted	FY 2017	FY 17/16	FY 17/16 Comparable
Revenue	18,135	19,812	20,349	+12.2%	+2.9%
Operating income recurring	3,024	3,189	3,364	+11.2%	+7.5%
OIR margin	16.7%	16.1%	16.5%		+40 bps
OIR margin excluding energy effect [(a)]			16.8%		+70 bps

(a) Operating income recurring on revenue excluding energy = 3,364 / (20,349-243-52).

RETURN ON CAPITAL EMPLOYED – ROCE

Applied method

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 - net finance costs after taxes for the period in question.

For the denominator: the average of (total shareholders' equity + net indebtedness) at the end of the past three half-years.

ROCE FY 2017 *(in millions of euros)*		FY 2016 (a)	H1 2017 (b)	FY 2017 (c)	ROCE Calculation
	Profit for the period			2,291.6	2,291.6
	Net finance costs			(421.9)	(421.9)
	Group effective tax rate [(a)]			29.4%	29.4%
	Net financial costs after tax			(297.9)	(297.9)
	Profit for the period - Net financial costs after tax			**2,589.5**	**2,589.5**
Denominator ((a)+(b)+(c))/3	Total equity	17,125.0	16,049.0	16,718.4	16,630.8
	Net indebtedness	15,368.1	15,610.1	13,370.9	14,783.0
	Average of (total equity + net indebtedness)				**31,413.8**
ROCE					**8.2%**

ROCE FY 2016 *(in millions of euros)*		FY 2015 (a)	H1 2016 (b)	FY 2016 (c)	ROCE Calculation
	Profit for the period			1,926.7	1,926.7
	Net finance costs			(389.1)	(389.1)
	Group effective tax rate			28.2%	28.2%
	Net financial costs after tax			(279.2)	(279.2)
	Profit for the period - Net financial costs after tax			**2,205.9**	**2,205.9**
Denominator ((a)+(b)+(c))/3	Total equity	12,770.8	12,329.7	17,125.0	14,075.2
	Net indebtedness	7,238.7	19,859.8	15,368.1	14,155.5
	Average of (total equity + net indebtedness)				**28,230.7**
ROCE					**7.8%**

(a) Group effective tax rate excluding significant events.

Excluding the non-cash impacts of exceptional items and the US tax reform on 2017 net profit, the ROCE amounted to 7.7%, an improvement of +80 basis points compared to adjusted 2016 ROCE (6.9%) taking into account the acquisition of Airgas over the entire year.

REVENUE

Revenue *(in millions of euros)*	FY 2016	FY 2017	2017/2016 published change	2017/2016 comparable change
Gas & Services	17,331	19,642	+13.3%	+3.5%
Engineering & Construction	474	335	-29.3%	-28.1%
Global Markets & Technologies	330	372	+12.8%	+13.9%
TOTAL REVENUE	**18,135**	**20,349**	**+12.2%**	**+2.9%**

Group

Group revenue in 2017 totaled **20,349 million euros**, up +12.2% as published compared to 2016, following the consolidation of Airgas sales for twelve months. Comparable growth was **+2.9%** and benefited from a marked acceleration in sales growth for Gas & Services throughout the year and developments in Global Markets & Technologies partially offsetting a low level of activity in Engineering & Construction.

The currency impact turned sharply negative during the second half of the year, amounting to -1.6% for the full year due to the euro appreciating against the US dollar, the Japanese yen and the Chinese renminbi. The energy impact softened substantially between the first quarter (+2.7%) and the fourth quarter (+0.5%) to contribute +1.5% for the year.

Revenue by quarter *(in millions of euros)*	Q1 2017	Q2 2017	Q3 2017	Q4 2017
Gas & Services	5,046	4,932	4,787	4,877
Engineering & Construction	53	93	75	114
Global Markets & Technologies	77	92	82	121
TOTAL REVENUE	**5,176**	**5,117**	**4,944**	**5,112**
2017/2016 Group published change	**+38.5%**	**+19.5%**	**-0.3%**	**-0.8%**
2017/2016 Group comparable change	**+1.5%**	**+2.0%**	**+3.5%**	**+4.5%**
2017/2016 Gas & Services comparable change	**+2.8%**	**+2.7%**	**+4.0%**	**4.4%**

Gas & Services

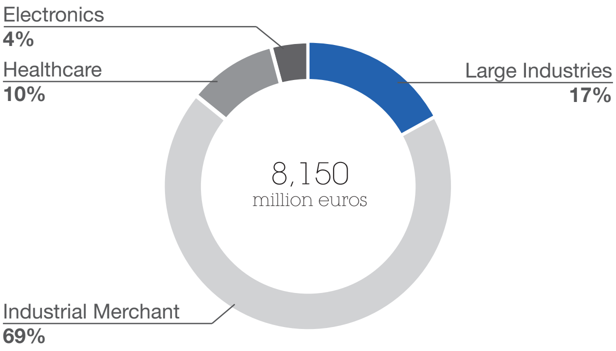
Gas & Services revenue totaled **19,642 million euros** in 2017. Published sales growth, at +13.3%, benefited from the consolidation effect of Airgas sales for twelve months. During the fourth quarter, the disposal of Airgas' refrigerants activity had an unfavorable scope impact on sales. The currency impact was negative for the year at -1.6%, but was almost entirely offset by a positive energy impact (+1.5%). Comparable growth came to **+3.5%** in 2017, with a faster pace during the second half (+4.2%) than during the first half (+2.8%). Sales increased overall in every business line, and particularly in Industrial Merchant, which experienced a sharp recovery in growth gradually throughout the year (first quarter +2.6%, second quarter +3.1%, third quarter +4.3%, fourth quarter +5.3%).

(in millions of euros)	FY 2016	FY 2017	2017/2016 published change	2017/2016 comparable change
Americas	6,230	8,150	+30.8%	+3.9%
Europe	6,593	6,776	+2.8%	+1.3%
Asia-Pacific	3,936	4,081	+3.7%	+5.3%
Middle East & Africa	572	635	+11.0%	+10.3%
GAS & SERVICES REVENUE	**17,331**	**19,642**	**+13.3%**	**+3.5%**
Large Industries	5,037	5,336	+5.9%	+1.7%
Industrial Merchant	7,565	9,261	+22.4%	+3.8%
Healthcare	3,111	3,401	+9.3%	+5.0%
Electronics	1,618	1,644	+1.6%	+3.8%

Americas

2017 revenue for Gas & Services in the Americas zone totaled **8,150 million euros,** up **+30.8%** as published following the consolidation of Airgas over the entire year and a very solid comparable growth at **+3.9%.** The fourth quarter reflects a high activity level in Large Industries and in Industrial Merchant, with sales catching-up slightly in particular after the hurricanes hit during the third quarter. In a more favorable economic environment, growth in Industrial Merchant sales improved gradually throughout the year. Healthcare continued to enjoy sustained growth in 2017, particularly in Canada and in South America.

AMERICAS GAS & SERVICES 2017 REVENUE

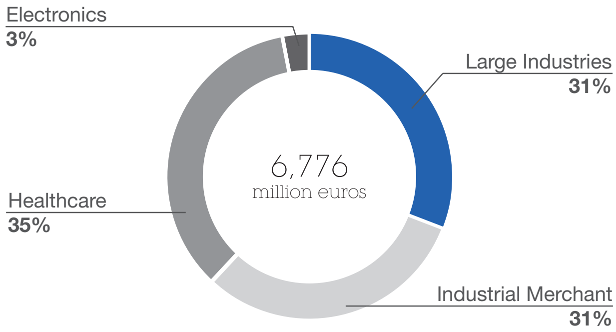


- **Large Industries** reported a **+2.8%** increase in sales in 2017. The strong growth during the fourth quarter (+4.7%) benefited in particular from a slight catch-up in sales after the hurricanes of the third quarter. In North America, oxygen volumes rose substantially over the year. In South America, demand for hydrogen contributed to the activity's development.
- In **Industrial Merchant,** 2017 was marked by a gradual and sustained pick-up in activity. Sales growth was **+4.1%** over the year and +6.1% during the fourth quarter. In North America, liquid gas and cylinder volumes as well as hardgoods sales posted a strong growth. In the United States, sales were up in almost all end-markets. In Canada, sales increased strongly in the Energy and Metal Fabrication sectors. Growth in South America remained dynamic and volumes continued to improve in Brazil. The price impact in the zone was **+1.7%.**
- **Healthcare** revenue rose **+6.6%** in 2017. Growth was solid in Canada, driven by bolt-on acquisitions in Home Healthcare. Business continued to develop in Latin America, where it benefited from a bolt-on acquisition in Colombia made at the beginning of the year.
- **Electronics** revenue posted a slight decline of **-1.0%** due to a weak level of Equipment & Installation sales.

Europe

Revenue in the Europe zone totaled **6,776 million euros**, up **+1.3%** over the year. In Large Industries, volumes were solid even though sales were down, particularly due to the stoppage of activity in Ukraine in the first quarter and a high comparison basis in the fourth quarter of 2016. Growth maintained momentum in Industrial Merchant, especially during the second half of the year, despite an unfavorable working day impact. Healthcare continued its steady development, while the contribution of bolt-on acquisitions to growth remained limited.

EUROPE GAS & SERVICES 2017 REVENUE

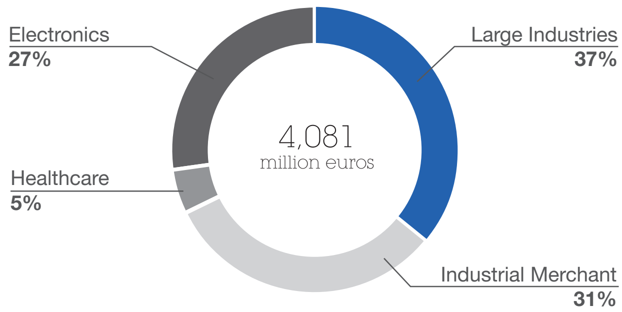


- Down **-3.4%** over the year, revenue for **Large Industries** was penalized by the stoppage of activity in Ukraine in the first quarter as well as by an exceptional indemnity related to a customer contract in the fourth quarter of 2016, creating an unfavorable comparison effect in 2017. Without these two impacts, revenue growth would be slightly positive. Hydrogen volumes grew substantially due to a good activity level in the refineries, especially in Benelux. Sales in Eastern Europe continued their development.
- Revenue for **Industrial Merchant** rose **+3.3%** in 2017. The increase in sales during the second half of the year (+3.8%) was higher than during the first half (+2.7%) despite an unfavorable working day impact, confirming a solid recovery after several years without growth. Activity improved in all countries, particularly in Southern Europe (Iberia, Italy), Benelux and Eastern Europe (Poland, Russia). Liquid gas as well as cylinder volumes grew. Recovery was noticeable in all end-markets, and especially in Materials & Energy and Automotive & Manufacturing. The price impact became positive during the second quarter and came to **+0.2%** in 2017.
- **Healthcare** continued its steady growth, with sales up **+3.8%** and a limited impact from bolt-on acquisitions. The number of patients continued to increase in Home Healthcare. Sales in Hygiene and Specialty Ingredients grew significantly, strengthened by a small acquisition.

Asia Pacific

Revenue in the Asia-Pacific zone for 2017 totaled **4,081 million euros,** up **+5.3%,** and was driven, in particular, by business momentum in China (> +10%). All business lines posted solid growth, stronger during the second half than the first. In Large Industries, the increase in revenue was driven by the start-up of new units and solid volumes. Industrial Merchant experienced a strong progression, in particular with very high growth in China since the second quarter. Electronics sales growth continued to accelerate throughout the year, reaching +12.2% during the fourth quarter.

ASIA PACIFIC GAS & SERVICES 2017 REVENUE



- **Large Industries** sales increased **+5.4%** in 2017, driven by the start-up of two Air Separation Units (ASU) in China during the third quarter, a takeover and the ramp-up of a unit in Australia. Customer demand was very robust, particularly in China, South Korea and Singapore.
- **Industrial Merchant** revenue rose **+3.3%** over the year, with +4.7% recorded during the second half of the year. Performance was contrasted by country. In China, growth was more than +15% for the last three quarters, driven by a price increase (argon, in particular) and a rise in liquid gas and cylinder volumes. Revenue in Japan declined this year, particularly due to lower equipment sales compared to 2016. Business in Australia fell slightly in a sluggish environment. The price impact strengthened to **+1.5%;** it was especially strong in China.
- **Electronics** revenue rose sharply **+5.8%** in 2017, with an acceleration of growth throughout the year, reaching +12.2% in the fourth quarter. After an unfavorable comparison impact in Equipment & Installation sales during the first half of the year, sales sharply increased during the second half. They benefited from good momentum in Advanced Materials, particularly in China, Taiwan and South Korea, start-ups in Carrier Gases, and strong Equipment & Installation sales during the fourth quarter of 2017.

Middle East and Africa

Revenue from the Middle East and Africa zone totaled **635 million euros,** up **+10.3%** in 2017. In Large Industries, sales benefited from the two large-scale hydrogen production units operating at full capacity in Yanbu, Saudi Arabia as well as the start-up at the end of the fourth quarter of the biggest Air Separation Unit (ASU) in the world in South Africa. In Egypt, production unit start-ups during the third quarter supported sales growth. Industrial Merchant improved in this zone during the fourth quarter. South Africa continued its sustained growth in Healthcare.

Engineering & Construction

Engineering & Construction revenue amounted to **335 million euros** in 2017, down **-28.1%** excluding the currency impact, due to the low level of order intake in 2016. However, sales gradually stabilized during the second half of the year and were up +3.0% during the fourth quarter.

Order intake reached **730 million euros** for the year, representing nearly twice the amount achieved in 2016. Around 70% of orders were for Air Separation Units (ASU). These mainly included Group projects and orders on behalf of third parties, in the Energy and Chemicals sectors in particular. The number of tenders continued to increase.

Global Markets & Technologies

Global Markets & Technologies revenue in 2017 was up **+13.9%** to **372 million euros.** This increase partially offset the decrease in Engineering & Construction revenue. Sales were particularly strong in the Maritime, Hydrogen Energy and Biogas sectors. They benefited from the contribution of an acquisition in Norway in Biogas and Liquefied Natural Gas sectors for industry and transportation.

Order intake amounted to **350 million euros** for the year.

OPERATING INCOME RECURRING

The **operating income recurring before depreciation and amortization** reached **5,142 million euros,** up **+11.5%** as published compared to 2016, and +13.4% excluding the currency impact. This increase reflected the consolidation of Airgas over all of 2017 as well as the improved performance over the year.

Purchases increased by +15.4%, at a higher rate than published sales growth of +12.2%: this difference was due to more trading activity at Airgas (hardgoods sales). Personnel costs also rose at a faster pace than sales (+13.1%), mainly due to the change in business mix. Indeed, Industrial Merchant, which now accounts for close to half of Group sales, requires more staff than other activities such as Large Industries. However, other expenses grew at a much slower pace (+6.7%), as Airgas' structure is lighter, for example without a Research & Development department.

Depreciation and amortization totaled **1,778 million euros,** up +12.0%. They went up slightly less rapidly than sales as the relative weight of Industrial Merchant, an activity that has a lower capital intensity than Large Industries, increased within the Group's business lines.

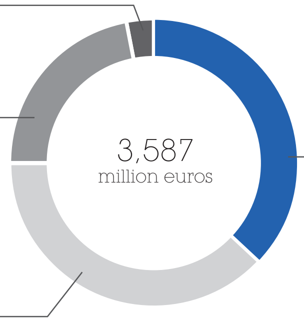
Over the year, **efficiencies** totaled **323 million euros** and were higher than the annual objective of 300 million euros of the NEOS program. They represent savings of 3.1% of the cost basis (excluding Airgas). More than 40% of these efficiencies came from industrial projects related in particular to reducing logistics costs, optimizing production unit operations and improving plant reliability by stepping up the integration of remote operations centers (Smart Innovative Operations, SIO). Savings on purchases accounted for more than one-third of the total efficiencies and were primarily related to the purchases of energy in Large Industries, molecules in Electronics and equipments in Home Healthcare in Europe. The balance of efficiencies mainly included administrative efficiencies and realignment plans in several countries and activities including Engineering & Construction.

Airgas synergies represent **215 million US dollars cumulatively** since the acquisition of Airgas in May 2016, and 170 million US dollars in 2017 alone – 40 million more than initial objectives. **Cost synergies** reached approximately 190 million US dollars cumulatively and materialized faster than anticipated. The savings made on Airgas purchases as well as on the Group's purchases thanks to the scale effect of the Airgas integration (for example, hardgoods purchases in Canada) exceeded expectations. Synergies from integrating cylinder operations, with site closures and restructuring plans, were achieved earlier than anticipated. **Growth synergies** totaled approximatively 25 million US dollars cumulatively and are in line with expectations. In total, cumulated synergies at the end of 2019 will be **higher than 300 million US dollars.,** cost synergies at the end of 2017 being higher than initial objectives, some synergies materializing faster than anticipated. Growth synergies are ramping-up.

The Group's **operating income recurring (OIR)** reached **3,364 million euros** in 2017, a published increase of +11.2%, or +7.5% on a comparable basis compared to the 2016 adjusted OIR. At **16.5%,** the operating margin (operating income recurring to revenue) was up +40 basis points compared to the 2016 adjusted operating margin. **Excluding the energy impact,** it stood at 16.8%, or an improvement of **+70 basis point** compared to the 2016 adjusted operating margin, in line with the Group's objective to improve profitability.

Gas & Services

GAS & SERVICES 2017 OPERATING INCOME RECURRING



Operating income recurring for Gas & Services amounted to **3,587 million euros,** an increase of +10.8% as published compared to 2016. The operating margin as published was **18.3%.** Excluding the energy impact, it stood at 18.5%, or a **+60 basis points** improvement compared to the 2016 adjusted operating margin.

In an environment where global inflation is limited, sales prices increased +0.6% for the year, thanks in particular to Industrial Merchant **(+1.3%).** Pressure on prices in Healthcare has continued, in particular in Europe.

Efficiencies totaled **297 million euros** in 2017 for Gas & Services.

Gas & Services Operating margin (a)	2016	2017
Americas	17.3%	16.8%
Europe	20.0%	19.3%
Asia-Pacific	18.5%	19.7%
Middle East & Africa	19.9%	17.2%
TOTAL	**18.7%**	**18.3%**

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

Operating income recurring in the **Americas** zone reached **1,365 million euros,** an increase of **+26.8%.** Excluding the energy impact, the operating margin was 16.9%, down -40 basis points compared to the 2016 margin as published, but **up +120 basis points compared to the adjusted 2016 margin.** Indeed, the change in business mix following the consolidation of Airgas, with reinforcement of the relative weight of Industrial Merchant, affected the margin by -160 basis points. The gradual recovery in the business, especially in Industrial Merchant, the efficiencies and synergies generated, supported a +120 basis point improvement in margin. The momentum is positive, with the margin substantially increasing between the first and second half of the year.

Operating income recurring in the **Europe** zone was **1,309 million euros,** nearly stable compared to 2016. Excluding the energy impact, the operating margin came to 19.6%, down **-40 basis points** due to an exceptional indemnity related to a customer contract received at the end of 2016. Excluding this impact, the margin was up +10 basis points, with efficiencies offsetting an unfavorable business mix within the zone and continued pricing pressure in Healthcare in 2017.

In the **Asia Pacific** zone, operating income recurring amounted to **804 million euros,** an increase of **+10.2%.** Excluding the energy impact, the operating margin amounted to 19.9%, a sharp increase of **+140 basis points**. This performance was driven by fast-growing volumes in Large Industries and Industrial Merchant, by price increases in Industrial Merchant, by a favorable business mix in Electronics with strong developments in Advanced Materials and Carrier Gases, and by a significant contribution from efficiencies.

Operating income recurring in the **Middle East and Africa** zone was **109 million euros,** down **-4.5%** compared to 2016. Excluding the energy impact, the operating margin totaled 18.5%, a decrease of **-140 basis points.** The 2016 margin had benefited from an exceptional profit related to a customer indemnity received at the end of the year. In 2017, the dynamic business expansion in the zone and the high loading rate of the Yanbu production units in Saudi Arabia partially offset this impact.

Engineering & Construction

Operating income recurring for Engineering & Construction totaled **-23 million euros,** penalized by a low volume of activity in a difficult environment. The Group's mid-term target range for the margin remains between 5% and 10%.

Global Markets & Technologies

The operating income recurring of Global Markets & Technologies amounted to **42 million euros** and the operating margin to 11.3%, improving by +100 basis points compared to 2016. A portion of these activities is in start-up phase and the margin level, which depends on the nature of the projects carried out during the period, may vary rather significantly.

Research & Development and Corporate costs

Research & Development (R&D) and Corporate costs totaled **242 million euros,** down -4.6% compared to 2016.

NET PROFIT

Other operating income and expenses showed a **balance of -344 million euros.** They include -400 million euros in non-cash exceptional items following a strategic review of the asset portfolio as part of the NEOS program. After the review, it was decided to impair certain assets or to provision risks linked to the sustainability of some assets in various countries such as India, China or Fort McMurray in Canada. It also concerned some E&C assets as well as intangibles related to evolving technologies. Excluding these items, the contribution was a positive +56 million euros. It corresponds in particular to the balance of gains on several business disposals, including Airgas' refrigerants, integration costs of Airgas and costs related to realignment plans realized in different countries and businesses.

The **financial result of -489 million euros** was +21.4% higher as compared with 2016. Net finance costs in 2017 totaled -422 million euros and were up +8.4%, notably due to financing of the Airgas acquisition over 12 full months in 2017. Excluding currency, the increase was +8.2%. The **average cost of net debt** of **3.2%** rose slightly by +30 basis points compared to 2016 (2.9%). Indeed, in 2017, finance costs for the Airgas acquisition via long-term bonds were taken into account over 12 months. In addition, net financing of larger projects located in developing economies in local currency (particularly in China, Saudi Arabia and South Africa), where interest rates are higher, contributed to the increase in the average cost of net debt. The increase in "other financial income and expenses" (+54 million euros) largely related to fees from bank card payments following the consolidation of Airgas.

Taxes reached **207 million euros,** down -540 million euros. An exceptional non-cash gain of 586 million euros was recognized in 2017, mainly due to US tax reform (the US Tax Cuts and Jobs Act) signed into law on December 22, 2017. Lowering the US federal income tax rate from 35% to 21% generated a deferred tax saving whose positive impact was partially offset by the estimation of a provision related to the new onetime repatriation tax for reserves accumulated abroad by subsidiaries of US-based companies, the payment of which will be spread out over eight years. Due to these exceptional impacts, the effective tax rate came to 8.2%. Excluding these items, the tax charge would come out to **793 million euros. In 2018,** the US tax reform should reduce the Group's tax expenses by **50 to 70 million US dollars,** applied to **a recurring effective tax rate currently at 29.4%.**

The **share of profit of associates** amounted to **5 million euros,** compared to 7 million euros in 2016. **The share of minority interests** is up **+11.2%** and reached 92 million euros as the profit from subsidiaries with minority shareholders rose, particularly in Saudi Arabia.

Net profit from discontinued operations was **-37 million euros** and reflected the impact on the 2017 fiscal year of the disposal of Air Liquide Welding finalized in July.

Net profit (Group share) amounted to **2,200 million euros** in 2017, up **+19.3%**. Excluding the non-cash impacts of non-recurring items and the US tax reform, the net profit (Group share) totaled **2,029 million euros,** a **+10.0%** increase. This "recurring" net profit will be the reference used to evaluate the 2018 performance.

At **5.16 euros, net earnings per share as published** was up **+11.2%** compared to 2016. The growth of net earnings per share as published was less than the net profit (Group share) due to the October 2016 capital increase. Excluding the non-cash exceptional items mentioned above, net earnings per share amounted to **4.76 euros,** a growth of +2.6% after taking into account the capital increase. Please note that net earnings per share for previous fiscal years was restated for the free share attribution carried out in October 2017. The average number of outstanding shares used to calculate net earnings per share as of December 31, 2017 was **426,409,142.**

Change in the number of shares

	2016	2017
Average number of outstanding shares [(a)]	**397,747,479**	**426,409,142**
Number of shares as of December 31, 2016		388,875,761
Options exercised during the year, prior to the free share attribution		462,734
Cancellation of treasury shares		(1,100,000)
Free shares issued		39,814,353
Options exercised during the year, after the free share attribution		344,702
NUMBER OF SHARES AS OF DECEMBER 31, 2017		**428,397,550**

(a) Used to calculate net earnings per share and adjusted in 2016 for the free share attribution that took place on October 4, 2017.

DIVIDEND

At the Annual General Meeting on May 16, 2018, the payment of a dividend of **2.65 euros per share** will be proposed to shareholders for fiscal year 2017. This represents a **+12.4%** increase taking into account the free share attribution that took place on October 4, 2017.

The total estimated pay-out taking into account share buybacks and cancellations would amount to **1,162 million euros,** representing a **pay-out ratio of 53%** as published or 57% of "recurring" net profit. The ex-dividend date is scheduled for May 28, 2018 and the payment is scheduled for May 30, 2018.

2017 Cash Flow and Balance Sheet

(in millions of euros)	2016	2017
Cash flow from operating activities before change in working capital	**3,523**	**4,133**
Change in working capital requirement	331	188
Other items	(158)	(67)
Net cash flow from operating activities	**3,696**	**4,254**
Dividends	(1,019)	(1,099)
Purchases of property, plant and equipment and intangible assets, net of disposals [(a)]	(13,609)	(1,850)
Increase in share capital	3,361	70
Purchase of treasury shares	4	(158)
Impact of exchange rate changes and net indebtedness of newly consolidated companies & others	(563)	780
Change in net indebtedness	**(8,129)**	**1,997**
Net indebtedness as of December 31	(15,368)	(13,371)
Debt-to-equity ratio as of December 31	**90%**	**80%**

(a) Including transactions with minority shareholders.

NET CASH FLOW FROM OPERATING ACTIVITIES

Cash flow from operating activities before changes in working capital requirements totaled 4,133 million euros, up **+17.3%** as compared with 2016, and stood at **20.3% of Group sales.**

Net cash flow from operating activities after changes in working capital requirements amounted to **4,254 million euros,** up **+15.1%** as compared with 2016 and reached **20.9%** of sales. This improvement is the result of measures taken to reduce working capital requirements.

CHANGES IN WORKING CAPITAL

The working capital requirements (WCR) **decreased by -188 million euros** in 2017. This improvement primarily came from Gas & Services; it was mainly due to a reduction in trade receivables, through factoring measures and a decrease in payment delays of certain customers, which more than offset the increase in inventory. The decrease in WCR for Engineering & Construction, which was due to a decline in activity, was more than offset by the increase in WCR of Global Markets & Technologies, where sales benefitted from good momentum. The working capital requirements excluding tax came to **6.4% of sales**, down compared with the ratio of 7.2% of 2016 adjusted.

CAPITAL EXPENDITURE

In 2017, **gross capital expenditures** totaled **2,327 million euros,** including transactions with minority shareholders.

(in millions of euros)	Industrial investments	Financial investments [(a)]	Total capital expenditures [(a)]
2011	1,755	103	1,858
2012	2,008	890	2,898
2013	2,156	401	2,557
2014	1,902	273	2,175
2015	2,028	395	2,423
2016	2,259	12,180	14,439
2017	**2,183**	**144**	**2,327**

(a) Including transactions with minority shareholders.

Proceeds from the sale of fixed assets, for a total of **477 million euros,** mainly related to the disposals of Air Liquide Welding and Airgas's refrigerants business.

Net capital expenditure, including the buyout of minority interests, amounted to **1,850 million euros.**

Industrial investments

Gross industrial capital expenditures for the Group amounted to **2,183 million euros** in 2017, down -3.4% compared with 2016. They represented **10.7% of sales.** For Gas & Services, these expenditures totaled 1,931 million euros and their geographical split is described below.

	Gas & Services				
(in millions of euros)	Europe	Americas	Asia Pacific	Middle East and Africa	Total
2016	566	737	599	155	2,057
2017	**578**	**690**	**509**	**154**	**1,931**

Financial investments

Financial investments amounted to **144 million euros,** including minority interest transactions of 4 million euros.

NET INDEBTEDNESS

Net indebtedness as of December 31, 2017 reached **13,371 million euros,** a significant decline of -1,997 million euros compared to the end of 2016 due to a very high level of net cash flow generated by operating activities in 2017. Currency and to a lesser extent scope impacts were also favorable and contributed -780 million euros. The **debt-to-equity ratio** (gearing) stood at **80%** at the end of December 2017, a decline compared to 90% at the end of 2016.

ROCE

The return on capital employed (ROCE) after tax was **8.2%,** a +40 basis point improvement compared to 2016. Excluding the non-cash impacts of exceptional items and the US tax reform on 2017 net profit, the ROCE amounted to **7.7%,** an improvement of **+80 basis points compared to adjusted 2016 ROCE** (6.9%) taking into account the acquisition of Airgas over the entire year. The Group confirmed the NEOS objective of returning to a ROCE above 10% by 2021/2022.

INVESTMENT CYCLE AND FINANCING STRATEGY

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 strategy to the nature of its projects, based on the diversification of funding sources, the prudent management of the balance sheet and innovative financing methods. This financing strategy is fundamental for the Group's continued development.

Investments

OVERVIEW

The Group's investments reflect its growth strategy.

They can be classified into two categories:

- industrial investments, which bolster organic growth or guarantee the efficiency, maintenance or 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.

The nature of the industrial investment 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 and management systems for Industrial Merchant, Electronics and Healthcare. Capital intensity varies greatly from one activity to another.

Capital intensity

Capital intensity is the ratio of capital required to generate one euro of supplementary revenue, when projects or activities 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 line to another:

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

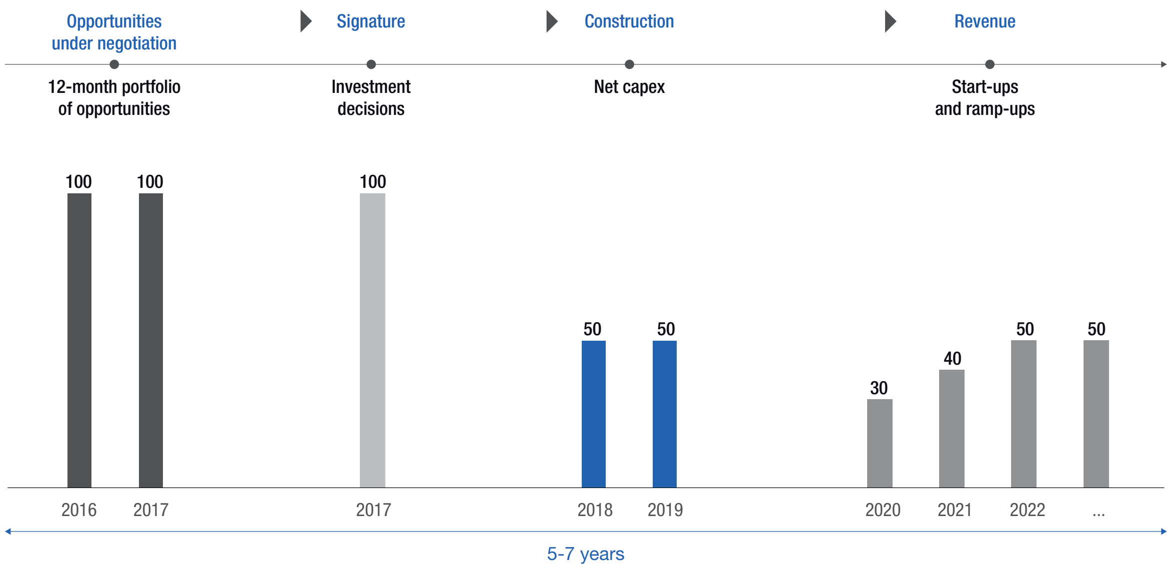
The Group's capital intensity continues to vary depending on the activity mix, project type and prices of raw materials.

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.

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

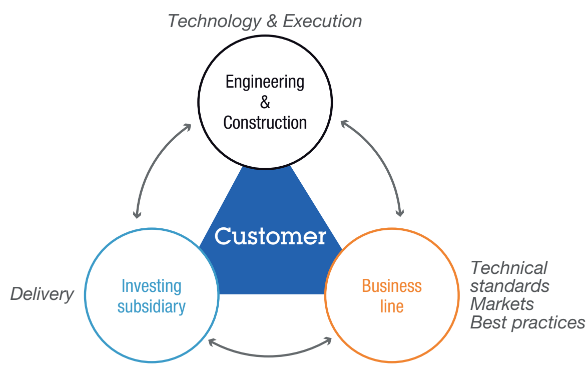


Applying a theoretical capital intensity of 2, an investment of 100 million euros in a new project should generate 50 million euros of sales per annum, fully ramped-up.

- **Identification 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 are monitored within the portfolio of potential opportunities and split between those for which a decision is expected within 12 months and 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 between 12 and 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.

Governance of major growth projects

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



The involved Business line ensures the global customer relationship, 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 development 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 part of the execution of 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), and the ERC (Engineering Risk Committee) which is responsible for assessing technical and execution risk.

Once the project has been validated through the decision process, approved 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 region.

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.

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 Resource requirements that may arise therefrom.

They meet regularly (usually once or twice a month) for each hub (Houston, Frankfurt, Shanghai, and Dubai) and each World Business Unit (Healthcare, Engineering & Construction, "Innovation and Development Division" (IDD), Headquarters).

Each Committee meeting is chaired by a member of the Executive Committee and brings together business managers concerned by the investment, as well as representatives of the Group Finance Department.

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 process and particularly of their environmental footprint, cost of raw materials and access to markets;
- customer risk;
- contract clauses;
- end products and the stability of future demand for these products;
- quality of the technical solution;
- country risk: evaluated on a case-by-case basis and can lead to changes in the financing policy and supplementary insurance cover;
- Corporate Social Responsibility criteria, in particular relating to greenhouse gas emissions, water consumption, and relations with local communities.

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

INVESTMENT OPPORTUNITIES

The **12-month portfolio of opportunities** totaled **2.1 billion euros,** as of December 31, 2017, down -100 million euros compared to the end of 2016. It is stable since the end of June 2017, new projects entering the portfolio offsetting those signed by the Group, awarded to the competition or delayed.

Developing economies accounted for nearly 40% of 12-month portfolio, a decline compared to the breakdown as of June 30, 2017, due in particular to substantial activity in North America. The Americas remained the first geographic zone for investment opportunities, followed by Europe, then Asia. This breakdown of the portfolio of opportunities is close to the breakdown of Group sales.

Around half of the investment opportunities corresponded to projects with investments of less than 50 million euros, and only a few projects were greater than 100 million euros. The smallest size projects contribute to a better distribution of risk.

INVESTMENT DECISIONS AND INVESTMENT BACKLOG

(in billions of euros)	Industrial investment decisions	Financial investment decisions (acquisitions)	Total investment decisions
2012	2.0	0.9	2.9
2013	2.2	0.5	2.7
2014	1.9	0.2	2.1
2015	1.9	0.5	2.4
2016	2.0	12.2	14.2
2017	**2.4**	**0.2**	**2.6**

In 2017**, industrial and financial investment decisions** reached **2.6 billion euros** compared to 2.2 billion euros in 2016 excluding the Airgas acquisition.

Industrial decisions represented **more than 90%** of this amount and were greater than in 2016 excluding the acquisition of Airgas. Industrial Merchant represented a third of investment decisions, Large Industries nearly 30%, Healthcare and Electronics close to 15%, with the remainder in Global Markets & Technologies. These decisions concerned projects located for almost 40% in the Americas, a third in Europe, nearly a quarter in Asia and the remainder in Middle East and Africa.

Financial investment decisions reached approximately **180 million euros** in 2017 and were almost stable compared to 2016. They mainly involved bolt-on acquisitions in Healthcare, in Industrial Merchant and in Global Markets & Technologies.

The **investment backlog** amounted to **2.1 billion euros,** stable compared with the end of 2016. The investment backlog should lead to a future contribution to annual revenue of approximately 0.8 billion euros per year after the plants are fully ramped up.

START-UPS

In 2017, **19 new production units** started up, including a major Air Separation Unit in South Africa for the customer Sasol at the end of December. Start-ups are broken down between ten units in Asia, including eight in China, three units in Middle East and Africa, three units in the Americas and three units in Europe.

As a result, for 2017, the **contribution of unit ramp-ups and start-ups to sales** reached **190 million euros,** slightly higher than the latest forecasts. This contribution should be **significantly higher in 2018, greater than 370 million euros,** benefiting from numerous large unit start-ups at the end of the year in 2017 and during the first half of 2018.

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 >5 million euros for Large Industries and >3 million euros for other business lines. Includes replacement assets and efficiency projects. Excludes maintenance and security-related investments.

Decisions during the period
Cumulative value of industrial and financial investment decisions. Growth and non-growth industrial projects, including replacement, efficiency, maintenance and security assets. 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 >10 million euros, including replacement assets and efficiency projects, excluding maintenance and security, alone.

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 14.1 to the consolidated financial statements on page 254) without threshold or activity criteria.

Financing Strategy

The financing strategy is regularly reviewed to provide 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" rating. This credit profile depends on key ratios such as net debt to equity and cash flow from operating activities before change in working capital requirements to net debt.

Following the acquisition of Airgas in 2016, Air Liquide's long-term credit rating was downgraded two notches, from "A+" to "A-", by Standard & Poor's on May 24, 2016. At the time of this acquisition and the preparation of its funding, the decision was taken to add the long-term rating of a second rating agency. Long-term rating from Moody's for Air Liquide is "A3", the equivalent of Standard & Poor's "A-". Moreover, the short-term ratings attributed to Air Liquide are "A2" for Standard & Poor's and "P2" for Moody's. Standard & Poor's, on July 7, 2017, and Moody's, on May 19, 2017, confirmed their ratings and have maintained their stable outlook.

In 2017, the existing principles of prudence were maintained:

- 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.

DIVERSIFYING 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.

Air Liquide also has a Euro Medium Term Note (EMTN) program to issue long-term bonds of up to an outstanding maximum amount of 12 billion euros. As of the end of 2017, outstanding bonds issued under this program amounted to 7.9 billion euros (nominal amount). The Group's EMTN 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 ruble).

Thus, in March 2017, under its EMTN program, the Group conducted a public bond issue for an amount of 600 million euros. This issue enabled the Group to meet its financing needs.

As of December 31, 2017, funding through capital markets accounted for 90% of the Group's total gross debt, for an amount of bonds outstanding of 13.3 billion euros, across all programs, and 0.2 billion euros of commercial paper. The total amount of bonds outstanding includes the Airgas issues for a total of 1.15 billion US dollars (equivalent to 1.0 billion euros), following the early redemption, on December 21, 2017, of the 400 million US dollars bond issue, issued on August 11, 2015.

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 aims to limit its short-term debt maturities to an amount which is covered by committed credit facilities. As of December 31, 2017, the amount of bilateral credit facilities totaled 1.8 billion euros, the same amount as of December 31, 2016. In addition, the Group has a 1.3 billion euros syndicated credit facility reaching maturity in November 2020.

As of December 31, 2017, the amount of debt maturing in 2018 was 2.5 billion euros, compared to 2.0 billion euros to December 31, 2016. This evolution is related to the increase of the annual maturities after the Airgas acquisition, regarding several bonds, mainly in euros and in US dollar, maturing in 2018. These bonds will be partly renewed, in particular on the European capital market.

NET INDEBTEDNESS BY CURRENCY AS OF DECEMBER 31

	12/31/2016	12/31/2017
Euro	25%	31%
US dollar	59%	52%
Japanese Yen	4%	3%
Chinese renminbi	5%	5%
Other	7%	9%
TOTAL	**100%**	**100%**

Investments are generally funded in the currency in which the cash flows are generated, creating a natural currency hedge. In 2017, US dollar debt decreased because of sales of non-strategic assets, along with a very high level of net cash flows. It also benefited from a favorable currency impact. The weighting between the euro and the US dollar has thus shifted slightly, in favor of the euro. Despite a higher average debt, the share of the debt denominated in Chinese renminbi remains stable at December 31, 2017. Debt denominated in Japanese yen has decreased due to lower funding requirements.

CENTRALIZATION OF FUNDING AND EXCESS CASH

To benefit from economies of scale and facilitate capital markets financing (bonds and commercial paper), the Group uses a dedicated subsidiary, Air Liquide Finance. As of December 31, 2017, this subsidiary centralized the vast majority of the Group's financing transactions. It also 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 cashpooling of these outstanding balances or through term loans. When this method is not possible, there exist, nonetheless, local cashpoolings which allow periodic intercompany loans to Air Liquide Finance. In 2017, Air Liquide Finance included the Japanese yen and the Hong Kong dollar in its daily cashpooling.

As of December 31, 2017, Air Liquide Finance had granted, directly or indirectly, the equivalent of 15.6 billion euros in loans and received 4.9 billion euros in excess cash as deposits. These transactions were denominated in 25 currencies (primarily the euro, US dollar, Japanese yen and Chinese renminbi) and extended to approximately 220 subsidiaries.

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.

Furthermore, the purpose of the European Market Infrastructure Regulation (EMIR) covering OTC ("Over the Counter") derivatives is to improve the transparency of OTC markets and reduce the systemic risk of financial markets. It applies to all derivative transactions carried out by entities within the European Union.

Pursuant to this regulation which came into force in August 2012, Air Liquide Finance, the Group's centralizing entity for financial transactions, continues to be classified as a non-financial counterparty (NFC-), since the transactions were still below the clearing thresholds at the end of 2017. It is thus required to apply risk mitigation measures and report all its derivative transactions to the chosen trade repository, "DTCC", in accordance with the technical standards published by ESMA. The mandatory reporting arising from the 2010 Dodd-Frank Act of the United States is also centralized via the "DTCC".

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

DEBT MATURITY AND SCHEDULE

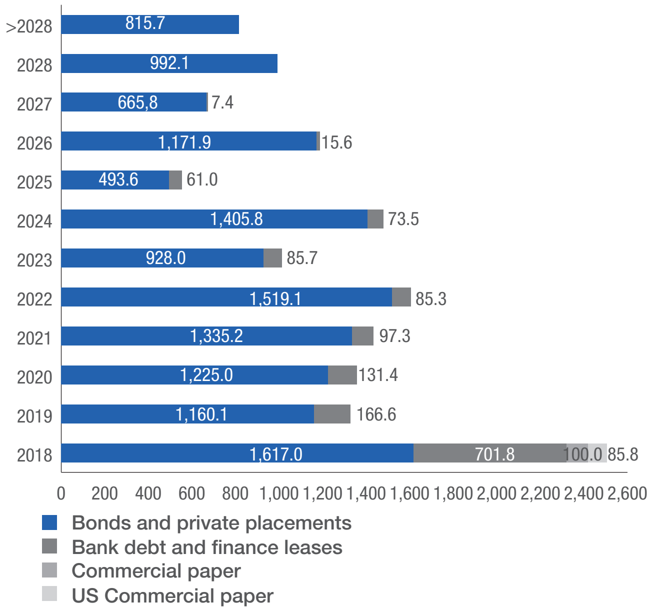
To minimize the refinancing risk related to debt maturity schedules, the Group diversifies financing sources and spreads maturities over several years. This refinancing risk is also reduced by the regularity of the cash flow generated from Group activities.

The average of the Group's debt maturity is 6.2 years at December 31, 2017, stable compared to December 31, 2016.

The following chart represents the Group's debt maturity schedule. The single largest annual maturity represents approximately 17% of gross debt.

DEBT MATURITY SCHEDULE

(in millions of euros)



BANK GUARANTEES

The Group's subsidiaries grant bank guarantees essentially in favor of Engineering & Construction 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 extended to customers to secure the contractual performance are advance payment bonds and performance bonds.

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 when guarantee payment calls become probable, the necessary provisions are recorded in the consolidated financial statements.

INNOVATION

Innovation is one of the pillars of the Group's strategy. As part of its customer-centric transformation strategy in the NEOS company program, open innovation, through external partnerships, represents the predominant path to growth.

Innovating and transforming the Group

The **Group's innovation expenses** amounted to **292 million euros** in 2017. This amount is higher than that of the past five years. Innovation expenses correspond to the OECD definition, namely research and development, market launch and marketing expenses for new offers and products. Likewise, applying the OECD definition, **3,800 employees** work in entities dedicated to innovation or contribute to innovation through the development and the market launch of new offers and products.

Air Liquide Group's **Innovation and Development Division (IDD)** brings together:

- **R&D,** with a focus on science and the knowledge of Essential Small Molecules (oxygen, hydrogen, nitrogen, CO_2, etc.) which embed the Group's scientific territory;
- The drive and financing of **Engineering & Construction's Innovation initiatives;**
- **The Digital Transformation teams** (including i-Lab, La Factory and ALIZENT) working with the Information Systems, Digital Security and World Business Lines teams, with the aim of providing digital solutions to become the leader in customer experience;
- **The Global Markets & Technologies WBU,** which was strengthened in 2017 to support the new markets of energy transition, maritime logistics and scientific exploration;
- **The Hydrogen Energy WBU,** created in 2017, to develop markets opened by the use of hydrogen in energy transition;
- **ALIAD,** Air Liquide's capital venture arm, whose role it is to invest in **minority stakes in technology start-ups,** by encouraging the implementation of **technological and/or business agreements** between the start-ups and the Group's entities, in three sectors: energy transition, healthcare and digital;
- The **Intellectual Property** Department.

The Group's network organization has improved **collaborative work between the Hubs and clusters and the Innovation and Development teams.** Both, the implementation of R&D projects in the clusters to support operations and customers, and the Digital Fabs, project teams dedicated to a digital transformation subject, with diverse expertise including an operating entity, allow the Group to **innovate close to customer usages.** The Innovation and Development teams also work in close partnership with the World Business Lines.

The operational teams in the 80 countries where the Group operates are responsible for rolling out innovations on a local basis as soon as they come on to the market. They also contribute to incremental innovation on the ground and act as pilot in the definition and development of new solutions.

In 2017, Air Liquide continued to **invest in new innovation centers.** The Group is building its new Paris-Saclay Research Center, which will replace the existing center. It will be home to 350 researchers and experts in the area of environment, healthcare and digital, at the heart of the Paris-Saclay science and technology ecosystem. This new building will provide the opportunity to implement innovations emerging from R&D projects. More than 50% will involve renewable energy sources like solar power and biogas, with a focus on the use of a fuel cell to meet the heating, cooling and electricity needs of the center. Moreover, in September 2017, Air Liquide laid the foundations of its **innovation center in Japan,** which will house, in particular, as of 2019, the R&D, Innovation and Development teams, in the city of Yokosuka near Tokyo.

The number of **patented new inventions** reflects, in particular, the Group's innovation capacity. **More than 300 new inventions** were protected in 2017. These are complemented by **third-party intellectual property rights,** obtained by partnerships, which contribute to exploring new growth opportunities or testing new technologies and digital solutions. Air Liquide has a portfolio of **3,335 inventions,** which are protected by at least one patent. Air Liquide's portfolio contains **over 11,000 patents,** and the Group applies for the registration of around 1,000 new patents every year.

In 2017, **Air Liquide continued to strengthen its open innovation strategy:**

- by **relying on the Group's teams contributing to innovation,** placing an emphasis on collective intelligence;
- by **leveraging external ecosystems** to identify relevant technologies and reduce development times;
- by **focusing on major trends** which represent growth opportunities, while responding to the challenges of the Group's customers and patients: energy transition, healthcare and digital transformation.

Relying on the Group's teams contributing to innovation

The inventiveness of the teams that interact with customers and patients on a day-to-day basis enables Air Liquide to reinvent its business, anticipate the challenges of its markets and take into account new customer usages. 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 internal entrepreneurs.

The **recognition of technical expertise** is a key factor for innovation. In 2003, Air Liquide launched **Technical Community Leaders (TCL),** a promotion and recognition program for the technical field and for the expertise of Group employees. Since TCL was created, **more than 3,000 experts** have been recognized, thus, playing a key role in sharing expertise, knowledge and technical excellence. In 2017, three International Fellows, 24 International Senior Experts and 52 International Experts from different regions of the world (Europe, Asia Pacific, North and South America) received this recognition.

This community of the Group's technology experts contributes to the transfer of technical know-how, to the sharing of best practices, and to the long-term development of the skills that Air Liquide will need in the future. This is carried out in close collaboration with the World Business Lines and with R&D which houses the communities of experts.

The Group's Inventors Recognition Program, #iNVENT, rewards the 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 among the patent applications filed within each World Business Line in the past two years, and a bonus to inventors when a patent is delivered. This program ensures greater responsiveness for rewarding inventors, and better monitoring of inventions. Air Liquide celebrated 20 years of the #iNVENT program in 2017, the oldest employee recognition program of the Group. More than 2,500 rewards have been awarded to inventors employed by Air Liquide since 1997.

These patented inventions mainly come from the employees in the Group's R&D, Engineering & Construction and Global Markets & Technologies teams, but also from certain operating entities. The geographic spread of new patent applications filed in 2017 was as follows: 34% in Europe, 25% in Americas, 30% in Asia Pacific and 11% in Middle East & Africa.

Air Liquide also recognizes its **employee entrepreneurs** who contribute to innovation by imagining new ways of developing the Group's business or by adapting Group offerings to make them more customer-centric. In 2017, Air Liquide honored **99 internal entrepreneurs, in Paris and in all its Hubs.**

This **collective intelligence approach,** which involves the creation of transversal teams, with a strong diversity of profiles, contributes to the efficiency of innovation.

Leveraging external ecosystems

The dynamic management of interactions between internal communities and external innovation ecosystems, known as **"open innovation",** is a key innovation factor for the Group. Thanks to the development of collaborations between, on one hand, its operating and Innovation entities, and, on the other hand, its customers, scientific partners and technology institutes, SMEs, suppliers and start-ups, this "open innovation" has enabled Air Liquide to accelerate the pace of its innovation.

R&D PARTNERSHIPS

More than 60% of Research and Development projects were conducted in the frame of partnerships with laboratories, start-ups, industrial players and customers in 2017. Air Liquide steers **85 industrial partnerships and 101 scientific partnerships,** and supports **three research chairs** in France with the École Centrale Paris, the Mines ParisTech school and the Paris Sud University. The diversity of these partnerships is part of the R&D strategic roadmap.

In 2017, **three new partnerships, established with the winners of the 2016 Air Liquide Essential Molecules Challenge, were implemented:** the École Polytechnique Fédérale de Lausanne in Switzerland, the Kyoto University and the Nagoya University in Japan, as well as the Paris-Diderot University and the Centre National de la Recherche Scientifique (CNRS) in France. These partnerships aim to transform the scientific proposals into innovative, market-adapted technologies.

In Europe, Air Liquide continued its partnerships with **the CEA and the CNRS** as part of long-term strategic agreements and projects with its partners in Germany: the **Freiberg University of Technology and the Erlangen-Nuremberg University.** In Healthcare, the Group has continued its partnerships with the **Institut Pasteur** on new therapeutic applications of medical gases and with the **Institut du Cerveau et de la Moelle épinière sur les Maladies neurodégénératives** (Brain and Spine Institute – Neuronal Degeneration).

In the United States, Air Liquide works in partnership with several **DoE** (Department of Energy) laboratories and participates in six multi-partner consortia, in particular the CELDI, led by the **Carnegie Mellon University** working on decision-making tools for the optimized management of production units. In 2017, teams at the Delaware Research & Technology Center entered a partnership with the **University of Princeton,** New Jersey, in data and applied mathematics to develop expertise in the use of mathematical models as decision-making tools. In Canada, Air Liquide is working with the University of Montreal on the treatment and monitoring of patients suffering from Chronic Obstructive Pulmonary Disease (COPD).

In Asia, the **Shanghai Research and Technology Center (SRTC),** which was opened in 2016, and which houses almost 250 employees including researchers, experts in customer applications and business development teams, has become a major center of innovation for the Group in the Asia Pacific region. The center focuses on energy transition, reduction of CO_2 emissions, wastewater treatment, air quality, food safety and healthcare. Covering 12,000 m^2, the center houses laboratories, offices, a showroom and pilot demonstration platforms and welcomes on average **500 visitors per month,** of which half are external to the Group, who collaborate with the Air Liquide teams to develop new innovative solutions. Moreover, in Japan, the partnership with **Kyoto University and Nagoya University** on organic metals has led to encouraging results in gas separation and storage.

COLLABORATIONS WITH START-UPS

As part of its open innovation strategy, Air Liquide works with **more than 100 start-ups worldwide,** within supply, distribution and co-development agreements.

ALIAD, Air Liquide's capital venture arm, is fully integrated into this strategy. ALIAD has completed **more than 30 investments in technology start-ups** since its creation in 2013 with a total commitment of **around 80 million euros** in three sectors: energy transition, healthcare and digital. Air Liquide makes minority investments in these start-ups, with a specificity which provides a strong business foothold: each equity investment is accompanied by a business partnership or technological agreement with the start-up.

In 2017, ALIAD invested in **Ubleam,** a start-up based in Toulouse that specializes in the Internet of Things, which is developing a tag technology to enhance the information delivered to the customer; in **Dietsensor,** a French company in the health-nutrition sector, which has developed an application for diabetic patients that helps them track the carbohydrate levels of their meals; in the private equity firm **Investisseurs & Partenaires,** which offers financial support to the development of microfinance institutions and small to mid-size businesses located across 15 African countries; in **Libhéros,** which has developed an online platform as well as a mobile application which simplifies the booking of appointments for at-home treatments; in **CombaGroup,** a Swiss start-up which is developing an environmentally-friendly solution based on aeroponics technology for growing lettuce with a longer shelf-life; in **Diabeloop**, which is developing an artificial pancreas to improve the treatment of diabetes patients; and in ENS Urban, a Dutch start-up which has developed a solution to capture particulate matter to improve air quality. ALIAD has also increased its financial commitment in six companies in its portfolio, underlining its long-term strategy to provide ongoing support for start-ups.

In terms of **co-development,** the Group's innovation entities (R&D, i-Lab, Digital Transformation teams...) and Operations work in partnership with start-ups to develop offerings and digital solutions in agile mode by rapidly accessing complementary technologies. For example, a chat bot which provides the Group's industrial operators with better spare parts management for maintenance operations was developed as a Proof of Concept with the start-up **Zelros** in France; **ALIZENT,** Air Liquide's entity dedicated to the industrial Internet of Things, signed a partnership agreement with **Sigfox** to market a joint offering.

Air Liquide relies on **incubators and accelerators** to source start-ups and support their growth. In 2017, Air Liquide became a **founding-member of Techstars,** a US start-up accelerator, when it launched its new Paris-based program. The Group was again the partner of **Hello Tomorrow and its Challenge** - an international competition for technology start-ups open to young researchers and entrepreneurs throughout the world, and took part in major events, accompanying start-ups to **CES in Las Vegas,** in the United States, and to **Viva Technology** in Paris.

Air Liquide was recognized in November 2017 as one of the three most advanced major groups in the **"Co-development" category of The French Tech Barometer of Start-up Corporate Collaborations,** among 40 major companies. This barometer, which measures the economic success of these collaborations and identifies best practices to improve the ecosystem, rewards the companies which are the most committed and perform the best with start-ups.

Innovation preventing the global warming, improving healthcare and supporting digital transformation

The allocation of the Group's innovation spending focuses on subjects which correspond to the three major trends which are shaping the Group's markets.

Almost 60% of innovation expenses in 2017 were related to projects that contribute to improve the environmental footprint, air quality and healthcare. Innovation expenses correspond to the OECD definition, namely research and development, market launch and marketing expenses for new offers and products.

Projects related to reducing the environmental impact mainly included:

- research and development programs for new technologies that improve the **energy efficiency** of the Group's production units and thus, reduce the environmental impact, in particular CO_2, of the Group's activities and help to improve that of its customers and partners;
- all the **hydrogen production and distribution** processes, and the development of new technologies to support the roll-out of hydrogen energy;
- **biogas** purification and valorization to market it in the form of Natural Biogas and as Bio-NGV fuel to inject back into the energy grid.

Close to 30% of the Group's innovation expenses in 2017 is devoted to **reducing CO_2 emissions,** by reducing the carbon content of its products or those of its customers.

BLUE HYDROGEN®

Blue Hydrogen® is an Air Liquide initiative that aims to gradually lower the carbon content of its hydrogen production dedicated to energy applications. Concretely, Air Liquide is committed to achieving at least 50% of low carbon hydrogen necessary for these applications by 2020, by combining:

- the use of low carbon energies, water electrolysis and reforming of biogas;
- carbon capture and valorization technologies for the CO_2 emitted during the production of hydrogen from natural gas.

Even when produced using natural gas, hydrogen is a virtuous energy: over an equal distance traveled, the use of hydrogen fuel cell electric vehicles decreases greenhouse gas emissions by 20% compared with combustion vehicles and does not emit any particulate matter.

Healthcare-related innovations include:

- research and development on **medical gases,** in particular for analgesia and in respiratory diseases;
- support for patients through **connected monitoring solutions;**
- development of **specialty and active ingredients** for cosmetics;
- work on **hygiene** and disinfection products to fight against nosocomial infections.

Finally, to support the **digital transformation,** Air Liquide created a **Data & Decisions Lab** in 2017, the aim of which is to ensure the Group's scientific excellence in areas of data science including data analysis, machine learning and artificial intelligence, and in areas of decision sciences such as financial mathematics and game theory. This initiative will help identify new scientific opportunities, support the adoption of data science within the Group and broaden the Group's range of digital services for its customers.

Some initiatives carried out in 2017

INNOVATING FOR PATIENTS AND HEALTHCARE PROFESSIONALS

In Healthcare, Air Liquide has rolled out its first e-health solution, **"Chronic Care Connect™"**, a medical telemonitoring solution to provide remote support to patients suffering from chronic diseases in their homes thanks to digital advances which make the daily monitoring and personalized support of patients possible. According to the medical care protocol defined by the doctor, the patient uses one or more connected measuring devices (e.g., blood pressure monitor, scale, pulse oximeter, blood glucose monitor), which are linked to a digital tablet and provide the patient with access to his or her monitoring. The patient's medical data is transferred and remotely analyzed by nurses at Air Liquide's monitoring center, who have regular discussions with the patient and his or her doctor. This connected monitoring solution helps patients improve their quality of life by staying at home, and helps doctors manage in a preventive fashion any changes in the health of their patients. It also helps manage the health system's expenses, by avoiding hospitalization. In 2017, this solution was rolled out in France and Spain, for patients suffering from heart failure and diabetes.

By signing a partnership with **CERITD, the French Center for Studies and Research for the Intensification of Diabetes Treatment,** Air Liquide is strengthening its position in home healthcare for patients with diabetes. With this new collaboration, Air Liquide continues the approach based on cooperation between hospital teams and homecare nurses. Moreover, Air Liquide has acquired an equity stake in the French start-up **"Diabeloop",** which is designing an **electronic artificial pancreas** composed of a connected insulin pump in the form of a patch and a glucose sensor. Driven by an algorithm, which determines the correct insulin dose, this system will allow the automated delivery of insulin in real time and thus, reproduce the functions of the defective pancreas and improve the patient's glucose regulation.

Air Liquide also inaugurated in Thiès, Senegal the **first Oxygen House,** a central location for the Access Oxygen offering. This offering aims to make medical oxygen accessible to small health posts and health centers which care for patients living in suburban and rural areas in emerging countries. Medical oxygen is essential for the treatment of respiratory and cardiac diseases and in the fight against infant and maternal mortality. After Thiès, a region that has more than 140 small health structures without access to medical oxygen, Access Oxygen is being rolled out throughout **Senegal.** This solution includes training and maintenance programs for healthcare professionals led by an Air Liquide biomedical engineer, and a digital application designed for doctors and nurses in these small health structures. This project was led by **i-Lab,** Air Liquide's innovation laboratory, and is part of the Group's **Inclusive Business** approach, which proposes a new offering for the BoP (Bottom of the Pyramid) market while creating a social impact.

INNOVATIVE ELECTRONIC MATERIALS TO DECREASE THE ENVIRONMENTAL IMPACT OF THE SECTOR

Air Liquide continued to roll out its new **innovative etching materials** to meet the architectural challenges of **chips,** and with a priority on increasingly complex memories, linked to their reduction in size and etching on three sides. The current trend is to increase the performance of these memories and to decrease the energy consumption of electronic equipment. In response to these technological challenges, Air Liquide's R&D teams in the United States and Japan, and the operational subsidiaries of the Electronics activity, started developing new etching molecules back in 2010, in active partnership with customers, universities and equipment manufacturers. In preparation for the transition to an architecture of three-dimensional (3D) chips, the R&D centers invested in additional competencies and capabilities to identify and develop more than one hundred etching molecules.

The **enScribe™** product offering covers a family of etching materials for applications which provide greater technological value in the production of memories and logic circuits. Etching gases have a high Global Warming Potential (GWP): the chemical structure of enScribe™ molecules was reworked so that they have a shorter lifespan in the atmosphere, but maintain the same level of performance. The enScribe™ materials address technical challenges, but also reduce the environmental impact carried by semi-conductor manufacturing.

INTRODUCTION OF NEW OFFERS FOR CRAFTSMEN AND INDUSTRIES

EXELTOP™, the next generation of **built-in regulators for industrial gas cylinders,** continues to be deployed throughout the world. Current territories include Singapore, Middle East, South Africa, France, UK, some Northern and Eastern European countries and Canada. EXELTOP™ provides users with stability and accuracy thanks to its two-stage built-in regulator and a quick connection available for all gases. This product has an intuitive design with an on/off lever, an easy-access graduated handwheel and greater resistance with a strengthened metallic valve, which improves the safety of cylinders.

Air Liquide is a partner of the "LIFE CleanOx" project, supported by the European Commission, which aims to validate the relevance of the new **HeatOx™** generation, a solution based on oxy-combustion for the **glass industry.** Energy efficiency and the reduction of emissions are two major challenges for the glass sector, where large amounts of energy are needed to reach the very high temperatures required to melt glass. This solution consists of extracting heat from combustion fumes in order to heat oxygen and fuel. This technology improves the performance of the oxy-combustion process by 10% and provides up to 50% energy savings and up to 50% CO_2 emission reductions compared to air combustion.

DIGITAL TRANSFORMATION: DEPLOYMENT OF THE SMART INNOVATIVE OPERATIONS PROGRAM

The Group continues to deploy its Smart Innovative Operations program which aims to transform its Large Industries activity. In January 2017, Air Liquide inaugurated, near Lyon, a **remote operation and optimization center** for Air Liquide sites in France, as part of the *Connect project*. Through a national view of its customers' needs and the ability to adapt plant production levels according to customer demand, this center allows the Group to remotely pilot the production of 22 plants in France and to optimize their energy consumption. With the analysis of big data, Air Liquide has strengthened its reliability through the development, for example, of predictive maintenance with the identification of the weak signals that precede a malfunction. With the creation of the pilot center and the introduction of new technologies (touch tablets, 3D scanning, video tutorials, etc.) in the daily work of employees, this project is part of Air Liquide's open innovation approach which brings together production site, IT and Digital Transformation teams, and the French ecosystem of technology start-ups. Air Liquide has also launched its **remote operation center in Shanghai** which, in the long-term, will pilot all the large production units in China.

CONTINUING ROLL-OUT OF HYDROGEN STATIONS

The Group commissioned 13 new **hydrogen stations** in 2017. **Air Liquide's** Anaheim **station**, in the **United States,** where the State of **California** has launched a program to support the deployment and use of hydrogen vehicles, has carried out 6,400 **fill-ups,** which represents **almost 20,000 kg of hydrogen**.

In **Dubai,** Air Liquide opened, in partnership with Al-Futtaim Motors, Toyota's exclusive retailer in the country, the first hydrogen charging station in the United Arab Emirates. Moreover, Air Liquide has opened seven new stations in **Germany,** in the towns of Cham, Limburg, Mülheim, Bad Rappenau, Wolfsburg, Koblenz, and Hirschberg, and two in **Japan,** in Fukuoka and Kobe. In the Paris region, Air Liquide opened a second hydrogen charging station, at **Paris Orly** airport. This station fuels the fleet of STEP, with 75 taxis under deployment. Two further openings are expected in France in 2018, near Versailles and at Paris Roissy Charles de Gaulle airport, as well as 13 in Germany, one in Japan and 7 in the United States. To date, Air Liquide has already developed and installed **100 hydrogen charging stations** worldwide, of which the Group invested directly in 40.

All hydrogen stations installed by Air Liquide can fill in less than five minutes for a **range of around 500 kilometers**. Used in a fuel cell, hydrogen combines with oxygen from the air to produce electricity, with water as the only by-product. Air Liquide masters the entire hydrogen 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.**

In 2017, the **Hydrogen Council,** a global committee which brought together 28 leaders in the energy, transport and industry sectors, to promote hydrogen with a view to achieve climate change-related objectives (as agreed in the Paris Agreements), was created. During the launch of the first global initiative of its kind, the members of the Hydrogen Council demonstrated their desire to intensify their investments in the development and marketing of hydrogen and fuel cells. Their investments are currently estimated at 1.4 billion euros per year. At the end of 2017, the Council was co-managed by Air Liquide and Toyota. According to a study presented by the Hydrogen Council in November 2017, hydrogen could contribute to the energy transition, **accounting for 20% of the reduction of CO_2 emissions targets by 2050.** This study also highlights that hydrogen has the potential to generate 2,500 billion US dollars in revenue and create more than 30 million jobs.

ACCELERATION IN THE PRODUCTION OF BIOGAS AND THE DEPLOYMENT OF MULTI-ENERGY STATIONS

Air Liquide has completed the **acquisition of ENN Clean Energy UK.** This acquisition marks an additional step in Air Liquide's development of transportation solutions that reduce CO_2 emissions in the **United Kingdom.** The company operates three natural gas stations dedicated to trucks in the United Kingdom, which are now part of Air Liquide's European network of **more than 60 bio-NGV** (Natural Gas for Vehicle) **stations,** mostly supplied by the Air Liquide biogas purification units in the United Kingdom, France, Sweden and Norway.

Air Liquide has entered the **biogas market in Norway** through the acquisition of a majority stake in the Norwegian company **Skagerak Naturgass SA.** The company operates a distribution network delivering natural gas to industry and **biomethane** to the Norwegian transport sector through four bio-NGV stations. This new joint venture allows Air Liquide to pursue its business development in the Scandinavian biogas market which is one of Europe's key markets in the development of sustainable mobility. The Norwegian government has declared targets for reducing greenhouse gas emissions and is committed to phasing out fossil fuels in the transportation sector altogether by 2030.

Air Liquide has inaugurated **two new multi-energy stations** in Servon and Crépy-en-Valois **in France** in partnership with Carrefour, a French retailer. These stations will provide NGV and bio-NGV for transport vehicles. Carrefour is rolling out **bio-NGV** stations throughout France in order to ensure fuel for its trucks, with a target of 200 biomethane-fueled trucks by the end of 2017. Air Liquide is partnering with major retailers and transport specialists to support the development of clean fuel alternatives. Bio-NGV is a clean and renewable energy that reduces CO_2 emissions by 90% and noise by up to 50% compared with diesel fuel. This renewable biofuel is produced using waste at Air Liquide's biogas valorization plants. At the end of 2017, Air Liquide operated **8 multi-energy stations** in France.

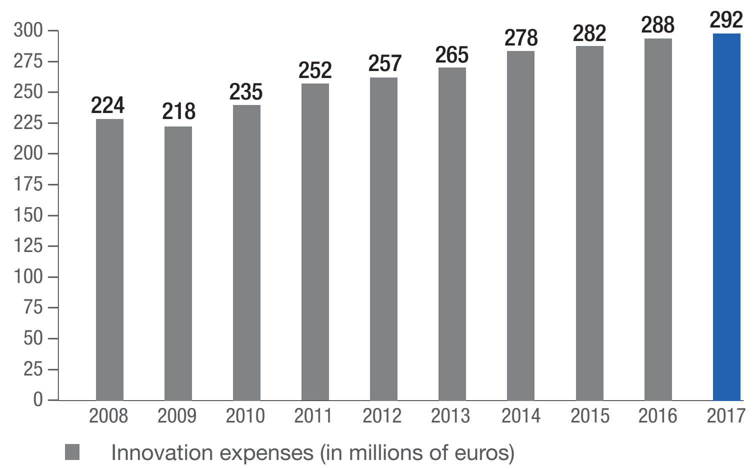
Moreover, a project led by Air Liquide was chosen in a 20-million-pound government-led program for the deployment of zero-emission vehicles in the **United Kingdom.** This project will involve carrying out **tests on 80 natural gas-powered trucks.** The aim of these tests will be to measure the consumption of these vehicles, along with their performance and cost.

In **China,** Air Liquide has built its first **biomethane production plant,** which processes agricultural waste and contributes to reducing greenhouse gas emissions. This plant supplies NGV stations, bearing in mind that China is the world's largest NGV market with five million vehicles.

Innovation indicators concerning the Group as a whole (a)

	As at December 31, 2017
Number of employees working on innovation	3,800
including researchers	1,100 researchers of 41 nationalities
including Global Markets & Technologies employees	1,800
including employees working on innovation in E&C and further entities	900
R&D industrial partnerships	85
R&D scientific partnerships (academic and technology institutes)	101
Start-ups collaborating with the Group	100

INNOVATION EXPENSES (a)



Patents	2013	2014	2015	2016	2017
Number of inventions protected by at least one patent	3,288	3,369	3,200	3,363	3,335
New patent applications filed during the year	321	287	271	296	318

(a) Applying the OECD definition.

STRATEGY AND OUTLOOK

Strategy

Air Liquide's ambition is to lead its industry, deliver long-term performance and contribute to sustainability. Its 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 addresses energy and environmental transition, changes in healthcare, and digitalization through the commitment and inventiveness of its collaborators.

COMPOUND ANNUAL GROWTH RATE (CAGR) OVER 30 YEARS

- Revenue: +6.0%
- Cash flow from operating activities before changes in working capital: +6.9%
- Net profit: +8,1%
- Earnings per share [a]: +7.5%
- Dividend per share [a] [b]: +8.6%

(a) Adjusted for the 2-for-1 share split in 2007, for attribution 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) Subject to the approval of the Shareholders' Meeting on May 16, 2018.

The industrial gases industry has enjoyed steady growth over the last 100 years due to the ever increasing needs of new and growing economies, the emergence of new applications supported by innovation and technological research, and increased customer outsourcing of gas production. The demand for industrial gas, therefore, has risen faster historically than industrial production.

Within this framework, the Group's strategic approach has shifted from a geographical viewpoint, where industrial growth came mainly from capacities increase in developing economies, to a **market-based focus,** where each country aims to attract new investments in growth sectors.

A SOLID MODEL

Two Business lines, Large Industries and Healthcare, are the least dependent on economic cycles. Industrial Merchant is impacted by local industrial production momentum, whereas Electronics is correlated 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 incorporate take-or-pay clauses which guarantee a minimum level of revenue. Underlying market for Healthcare activities ensure growth in demand which is decorrelated from economic cycles. Industrial Merchant serves a very wide range of markets and multiple customers in various industrial processes. The development of the semi-conductor industry with its numerous digital applications is the main source of Electronics sales growth, an industry which is maturing. Moreover, through its four World Business Lines, the Group serves numerous customers in a variety of industries and across a wide range of geographies. These characteristics, which are inherent to the Industrial Gas and Healthcare businesses, reinforce the strength of the business model.

CORPORATE PROGRAM NEOS

The previous strategic program of Air Liquide named ALMA™ finished at the end of 2015. Following the Airgas acquisition, the Group acquired a new dimension and thus entered a new phase of its development. On the occasion of its Capital Markets Day on July 6, 2016, Air Liquide has presented its vision of the evolution of its markets, its strategy, its growth prospects, and its new company program NEOS for the period 2016-2020, which marks a new step in the development of the Group.

In an economic environment characterized by moderate global growth and major changes related to scientific and technological advances, Air Liquide has identified three major long-term trends, which are sources of growth for its businesses. These trends are energy and environment transition, changes in healthcare, and digitization. The latter affects both asset management and the way in which the Group interacts with customers and patients, and is part of an open ecosystem.

Air Liquide's ambition is to lead its industry, deliver long-term performance and contribute to sustainability. To address these key challenges and this new market potential, Air Liquide can rely on its leading positions in the major industrial basins worldwide, its proprietary technologies, its capacity for innovation, its solutions and services, its operational excellence, and its network organization.

The financial aims of the NEOS program for the 2016-2020 period are based on: a revenue compound annual growth rate (CAGR) of +6% to +8%, including in 2017 the scope effect relating to the consolidation of Airgas, which contributes +2% to the CAGR; substantial recurrent efficiency gains of more than 300 million euros on average per year from 2017, in addition to synergies related to Airgas for a total amount above 300 million US dollars; a Return On Capital Employed (ROCE) in excess of 10% after five to six years; and, finally, maintaining its long-term "A" range rating thanks to the strength of its balance sheet.

With NEOS, the Group is able to deliver a long-term performance by being more connected to its stakeholders as well as more innovative.

PERFORMANCE AND SUSTAINABLE DEVELOPMENT

The Group has confirmed its ambition to be the leader in its industry, by demonstrating its long-term performance and behaving responsibly in its contribution to a more sustainable world. As part of the NEOS program, the Group has reinforced its actions aimed at improving the air quality for a better environment and health. Air Liquide will pursue an active dialog with its stakeholders to contribute to a more sustainable world. The Group set up the Corporate Sustainability Program (CSP), see pages 81 to 92.

The Group thus creates a virtuous dynamic where sustainable development is an integral part of performance.

Outlook

The year 2017 marks a new step for the Group, which successfully integrated Airgas and which has acquired a new scale, with annual sales surpassing 20 billion euros.

In a more favorable global economic environment, all Gas & Services activities grew in 2017, in particular Industrial Merchant, which accounts for nearly half of our revenue and whose recovery is being confirmed quarter after quarter. On a geographic level, growth was mainly driven by the developing economies, China in particular, the solid level of activity in the Americas, and the Large Industries projects in the Middle East.

The Group's operating performance is improving, with high efficiency gains globally and synergies related to Airgas ahead of our forecast that contribute to the increase in the operating margin and to higher net profit. The balance sheet is strong: the high level of cash flow making a significant contribution to lowering debt by nearly 2 billion euros in the year.

The Group can also rely on its investment decisions, particularly in favor of innovation, which reached a total of 2.6 billion euros in 2017, as well as on its 2.1 billion euros investment backlog to fuel its future growth. Thanks to its new size, efforts to improve competitiveness, and initiatives launched in connection with its strategic program, the Group is well-positioned for future growth and development.

Accordingly, assuming a comparable environment, Air Liquide is confident in its ability to deliver net profit growth in 2018, calculated at constant exchange rate and excluding 2017 exceptionals [a].

(a) 2017 exceptionals: exceptional non-cash items having a net positive impact on 2017 net profit.

2

2017 SUSTAINABLE DEVELOPMENT REPORT

INTRODUCTION

Air Liquide's ambition is to lead its industry, deliver long-term performance and contribute to sustainability.

The United Nations' 2030 Sustainable Development Goals, and in particular climate change, are major issues.

Through its business, Air Liquide has always made a significant contribution to improving the environment and society. The Group is keen to take an active role in protecting the planet and the quality of life of its inhabitants by developing solutions to help the transition to a carbon-free economy and improve air quality.

Listening to and in-depth dialog with various stakeholders and its presence in 80 countries, help Air Liquide better understand local and global usage trends and act, in particular in favor of the environment and local development.

The 2017 Sustainable Development Report summarizes the Group environmental and societal actions. These actions are monitored using key indicators which track their progress. Just like the financial report, this extra-financial report is reviewed each year by an independent verifier. In 2017, 24 industrial sites and subsidiaries were audited.

For further information, the Group's website has a section dedicated to Sustainable Development:
https://www.airliquide.com/group/ambition-commitments-objectives

PREREQUISITES TO ACTION: SAFETY, ETHICS AND THE RESPECT OF HUMAN RIGHTS

The General Statement of the Air Liquide Group's Principles of action, which is shared with all entities and is available in the Group section of the website at (https://www.airliquide.com/group/groups-principles-action) is as follows:

"Safety is our licence to operate.

The Air Liquide Group adheres to the highest standards in conducting business and is particularly committed to respecting Human and labor Rights and to protecting the environment.

Wherever Air Liquide is present its subsidiaries blend into the local cultures and traditions while transmitting the Group's values through their actions and local engagement. Air Liquide complies with all laws and regulations, notably on fair competition, and will not accept corruption in any form. Integrity, transparency, constant questioning, improving performance through innovation and rigorous management all shape our behavior and our actions."

The Principles of action explain the Group approach to all its stakeholders.

Air Liquide is a signatory of the United Nation's Global Compact and has set standards in terms of ethics and the respect of Human Rights for conducting its business. Moreover, its businesses comply with a regulatory framework in both societal and environmental terms. Complying with these standards is a prerequisite that is independent of Air Liquide's Sustainable Development approach.

1. Safety: Air Liquide's priority

Objective: **0 accidents**

Successful integration: Airgas lost-time accident frequency rate in line with the rest of the Air Liquide Group at **1.6**.

FREQUENCY OF ACCIDENTS (a)

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

The Group's frequency rate is in line with previous years.

No fatal accidents within the Group, at our subcontractors or among temporary workers.

Safety is an integral part of Air Liquide's operational excellence. It is a Group fundamental. Air Liquide, as a responsible industry player, is committed to the efficient and ongoing reduction of its employees, customers, subcontractors and suppliers' exposure to professional and industrial risks. Commitment to safety must be total, visible, accompanied by unshakable vigilance and must allow the achievement of the zero-accident objective.

By respecting and by actively managing safety rules, understanding the risks in all situations, adapting behavior and looking out for others, all Group employees and subcontractors are encouraged to act in a safe manner.

Safety is a joint commitment and the responsibility of each individual. Prevention, protection, early detection and rapid reaction are at the heart of the Group's concerns.

A central team of experts leads networks of specialists on-site to see to the proper implementation of the IMS (Industrial Management System). Together, they provide local managers in the Group's various entities with technical and methodological support and participate in managing industrial risks.

In 2017, the Group continued its programs in three separate complementary areas which are: employee safety, process safety, and road safety. Group-wide initiatives exist involving both managers and their teams.

"Life-Saving Rules" apply to all production sites. These rules are aimed at Air Liquide employees as well as temporary workers and subcontractors.

Feedback is also an essential practice in the Group's safety approach. Lost-time accidents and potentially serious safety incidents are analyzed using the Fault Tree method. The combination of events that were generated are determined and depicted and their root causes identified so that lessons can be learned and an action plan set up. These elements are then shared to prevent similar events occurring. This approach is a fundamental element in ongoing prevention for safety.

Safety at Airgas

The number of accidents at Airgas has decreased significantly since its acquisition by Air Liquide. This is due to the organization's strong will which provided leadership to all managers in terms of safety. A new safety management program, which is now led by a central team, has enabled the introduction of safety action plans that are in line with Group recommendations and which focus on harmonizing and improving practices:

- **for example, an initiative was introduced to identify and manage industrial risks;**
- **the use of risk analysis and change management was stepped up;**
- **special attention was paid to road safety.**

1.1. Industrial Management System (IMS)

More than 10 years ago, Air Liquide introduced an Industrial Management System (IMS) dedicated to its businesses. It is designed to profoundly transform the way of working and to strengthen the process for managing safety, reliability, environmental protection and industrial risk management. It has been rolled out throughout the Group and its implementation is controlled though IMS internal audits.

An indicator was implemented in order to track the percentage of revenue covered by these audits over the last five years. Between 2013 and 2017, 76 entities were audited, representing nearly 84% of the Group's activity [(a)]. The integration of Airgas provided an opportunity to assess how to improve management's protocol for Air Liquide's industrial risks by drawing on Airgas' best practices.

Alongside this approach and to meet the requests of certain customers, the Group entities carry out other initiatives such as ISO certifications (see page 114).

1.2. Prevention in the field of health in the workplace

Air Liquide is particularly concerned with ensuring that its employees' working conditions do not present any health risks. This includes preventive measures in various areas.

In many countries, employees are given first aid training and some are certified to use an AED (Automated External Defibrillator).

For example, in Russia, the safety matrix for the electronic activities of TGCM (Total Gas and Chemical Management) has been updated. This easy to use matrix presents the risks of each chemical product as well as the PPE (Personal Protective Equipment) to be used when manipulating these products.

(a) In revenue terms and including Airgas.

In several Group entities, preventative screening was offered to employees:

- dermatological screening to prevent skin conditions;
- breast cancer screening;
- nutritional advice;
- awareness raising of diabetes and screening;
- dental examinations, etc.

Throughout the year, the "Healthy Elements" program offers employees in several US entities, as well as their spouses, medical tests (for example, cholesterol levels), individual support to improve their health (for example, measures to help stop smoking) as well as challenges to encourage cardiovascular activities.

In Canada, Air Liquide has shared a list of checks and practical advice with its employees to prepare individuals and sites for the winter.

1.3 Subcontractors' safety

Working with subcontractors implies that each party understands the role entrusted to it in terms of health and safety. At the subcontractor selection stage, health and safety specifications are included in the call for tender to guarantee the Group's requirements in these areas. Moreover, several departments are involved in the validation of a new subcontractor (Procurement, HSE, Logistics and the local entity).

Communication with subcontractors is very important to ensure that requirements in terms of health and safety in the workplace are fully understood. When suppliers themselves subcontract, they must also follow and comply with the same rules and this must be included in the contractual provisions.

Regular meetings with subcontractors at the managerial and operational level are organized to discuss the culture of safety, their compliance with life-saving rules, feedback or analysis of any accidents or near-miss incidents.

2. Ethics

Integrity and transparency are the cornerstones of the Group's ethical approach. They govern behaviors and actions. Integrity includes honesty and impartiality. Transparency is based on the principles of sincerity and openness. Individual and collective commitment is key to adopt ethical behavior based on integrity and transparency.

The Group's ethical approach is structured so that rules of conduct are shared and respected by all, in particular in regards to the respect for Human Rights, social rights and the environment.

This approach is set out in an Ethical program which includes the following points:

- behavior expected from all employees which are part of the General Statement of the Group's Principles of action described page 69;
- the tools: codes relayed through internal procedures;
- the awareness-raising and training program;
- the whistleblowing and control system.

To support the roll-out of this Ethical program, a dedicated organization has been set up:

- an Ethics Committee, composed of Air Liquide's various global functions (Human Resources, Legal, Group Control, Operations, Sustainable Development Departments, etc.), validates the Ethical program's guidelines and may, if necessary, make post-fraud 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 four above-mentioned areas and in the treatment of fraud and deviations. This Officer also suggests improvements to the Ethical program by integrating strategic challenges, best practices and regulatory developments. For example, the Ethics Officer integrated the anti-corruption obligations set out in the Sapin 2 Act into the Group's existing procedures. He relies on a network of ethics correspondents present in each of the Group's geographic regions and World Business Lines.

2.1. 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.

The BLUEBOOK is the Group's reference framework which includes policies, codes and procedures which apply to all the entities. This reference framework is accessible to all employees.

The Code of Conduct: employees' ethics charter

Each Group subsidiary must implement an ethics charter known as the Code of Conduct. This decentralized approach combines respect for local customs and regulations and the Group's ethical commitment. The subsidiaries thus embrace the Group's ethical principles by writing their own Codes of Conduct themselves in their working language.

In 2017, 97% of the Group's employees belonged to subsidiaries that have a local Code of Conduct. The employees who do not yet have a local Code of Conduct primarily belong to entities recently acquired by the Group and undergoing consolidation. Currently, these Codes of Conduct have been translated into more than 20 languages to ensure their appropriation by Group employees.

The implementation of this ethics charter must adhere to the following key concepts:

- respect for laws and regulations;
- respect for people: health and safety conditions in the workplace, prevention of discriminatory actions, respect for third parties;
- respect for the environment;
- respect for competition law;
- respect for rules on market abuse, particularly insider trading;
- prevention of conflicts of interest: links to a competitor, customer or supplier, respect for anti-corruption and bribrery rules;
- protection of Air Liquide's activities: protection of information, property and resources;
- transparency and integrity of information;
- internal controls and audits;
- sanctions for disregard of the Code of Conduct.

Full details of these key concepts are available in the Group section of the website at https://www.airliquide.com/group/key-principles-code-conduct.

An e-learning module exists on the Employee Code of Conduct. It introduces the Group's ethical 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

Within the Group, the anti-corruption program demonstrates the importance of this subject and underlines Air Liquide's commitment to preventing acts of corruption.

As part of this program, the Group has formalized an anti-corruption Code of Conduct. This Code has been made available to all entities and an extract is available on the website at https://www.airliquide.com/group/anti-corruption-code-conduct. This anti-corruption Code of Conduct provides a reminder of the anti-corruption laws and deals with relations with intermediaries, particular 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 also has a Supplier Code of Conduct which includes a chapter on the prevention of corruption.

An e-learning module 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. This training is mandatory each year and, in addition, these categories of employees also attend classroom-based training every three years.

Respect for Competition Law

Codes at the Group level were established in regard to proper behavior concerning respect for competition law, especially in Europe and the United States. The most important rules on competition law 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 attorney. They carry out tests and interviews to identify and correct practices at risk in this area or any deviations observed. Awareness-raising meetings on compliance with competition law are regularly held throughout the Group. Finally, an e-learning program was launched at the Group level on competition law-related practices and international principles.

2.2. The whistleblowing system

The Group has a formal whistleblowing 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, accessible via the Group's Intranet. 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 taken. It also reiterates in the Code of Conduct that the processing of reports is supervised by the Group's Ethics Officer.

This system is an additional 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.

180 reports were received during 2017 mainly from the United States, Brazil, the United Arab Emirates and France, as well as from 22 other countries. Human Resources issues accounted for 78% of reports and the remaining 22% covered fraud or potential conflicts of interest and other subjects such as safety, for example. Around one third of reports processed were sufficiently detailed to implement correctional measures or disciplinary sanctions which led in around 15% of cases to the departure of an employee. The whistleblowing system is also accessible to external collaborators (temporary workers, service providers, etc.)

3. Respect for Human Rights and the environment

Air Liquide is dedicated to the highest standards for the conduct of its business. Air Liquide, through its Chairman and Chief Executive Officer, has signed the United Nations Global Compact, an initiative in which the 10 founding principles relate to Human Rights, international labor standards, the environment and the fight against corruption.

- Businesses should support and respect the protection of internationally proclaimed Human Rights.
- Make sure that they are not complicit in Human Rights abuses.
- Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining.
- The elimination of all forms of forced or compulsory labor.
- The effective abolition of child labor.
- The elimination of discrimination in respect of employment and occupation.
- Businesses should support a precautionary approach to environmental challenges.
- Undertake initiatives to promote greater environmental responsibility.
- Encourage the development and diffusion of environmentally friendly technologies.
- Businesses should work against corruption in all its forms, including extortion and bribery.

THE GLOBAL COMPACT
WE SUPPORT

Air Liquide also complies with the international rules of the International Labour Organization (ILO) in terms of labor law and follows guidelines for multinational 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 has signed the Responsible Care® Global Charter, an initiative 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.

Responsible Care®
OUR COMMITMENT TO SUSTAINABILITY

4. Vigilance plan

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 affiliates, or suppliers and subcontractors with whom Air Liquide have an established business relationship. These actions fall within the scope of the French law of March 27, 2017 which introduces into French law a "duty of vigilance on the part of parent companies and contracting companies".

Air Liquide's vigilance plan applies to all Group subsidiaries, subcontractors and suppliers with whom the Group have an established business relationship. The plan is applied as follows:

4.1. Related risks

In order to refine Air Liquide's main environmental and societal risks related to the vigilance plan, mapping covering all Group businesses was applied based on the Group's main risk map. The main risks identified are those relating to health and safety, in particular industrial risks and risks to individuals, as well as accidental pollution risks.

Moreover, supplier mapping has been carried out based on the methodology drawn up by the Group Procurement Department. This methodology allows subsidiaries to identify the suppliers which present the highest levels of risks in terms of sustainable development taking into account the following parameters:

- the supplier's activity;
- the geographic location of the supplier;
- Air Liquide's annual expenditure with the supplier;
- the supplier's dependency ratio to Air Liquide.

The Group Procurement Department, in partnership with EcoVadis, allocates a risk level to each purchasing category and draws up a list of high-risk countries. Factsheets present sustainable development challenges specific to certain purchasing categories and certain geographic locations. These enable buyers to identify the most critical subjects and provide substance for discussions with suppliers.

The identification of critical suppliers by subsidiaries was introduced in 2017, in anticipation of regulatory changes, and will continue in 2018.

4.2. Regular assessment of subsidiaries, subcontractors and suppliers

All Group subsidiaries are subject to social, safety and environmental reporting each year. Data is reported, analyzed, consolidated and published in the Group's Sustainable Development Report. This data is audited by the independent verifier and is subject to an action plan when non-compliance with Group expectations is identified.

In addition to these reportings, audits will gradually be launched by the internal audit teams and their counterparts in the different Hubs.

For suppliers recognized as critical, the Group regularly carries out, with the support of EcoVadis, comprehensive performance evaluations covering the following subjects: environment, social, business ethics and their procurement policies. Since this approach was introduced in 2010, more than 900 suppliers have been assessed in this way, of which almost 200 in 2017.

Air Liquide's ambition is to assess all critical suppliers by 2020.

4.3. Risk mitigation measures and the prevention of serious harm

Air Liquide has formalized in a set of documents called the BLUEBOOK, its values, policies, procedures and internal Codes of conduct. The aim of the BLUEBOOK is to:

- spread good practices among the Group;
- mitigate risks;
- accompany Group development;
- feed the Local Management System of each entity.

In terms of safety and the environment, the IMS provides a framework for operations.

To reduce risks and prevent the grave abuse of Human Rights by suppliers, ensure the health and safety of individuals, and protect the environment, Air Liquide has formalized the following minimum requirements.

The Supplier's Code of Conduct drawn up by Air Liquide is routinely sent to all Group suppliers in order to promote and enforce practices relating to Human Rights, ethics, the environment and safety. This Code, which can be found on Air Liquide's website, applies to existing and new suppliers.

Air Liquide expects each of its suppliers to respect the Group's ethical principles and ensure that all their employees and subcontractors comply with this Code of Conduct.

The Supplier Code of Conduct is based on internationally recognized principles such as the Universal Declaration of Human Rights, the United Nations Guidelines on companies and Human Rights, the United Nations Global Compact, OECD Guidelines for Multinational Enterprises and the fundamental conventions of the International Labour Organization (ILO). It imposes on suppliers, in particular, the prohibition of child labor and forced labor, that they guarantee decent and healthy working conditions without danger for all employees, that they fight against corruption and that they respect the environment and the preservation of natural resources.

A sustainable development clause is included in the Group's new contracts and framework agreements. 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 supplier, in particular on safety, energy and water consumption and atmospheric emissions, and human resources.

During the assessment of suppliers' performances in terms of sustainable development:

- suppliers performing below Air Liquide's sustainable development expectations are examined and are presented with a corrective action plan that may go as far as the disqualification of the supplier;
- progress made is monitored by Air Liquide during performance reviews, the frequency of which varies according to the score obtained by the supplier (from one year for suppliers with an unsatisfactory score, and up to five years for the best performing suppliers).

Since 2014, the Group also conducts on-site Sustainable Development audits for certain suppliers that are considered to be particularly at risk in this area, due to unsatisfactory evaluations. These audits mainly cover social and environmental factors. They are conducted according to recognized external benchmarks, often by a specialized external auditor. Around ten on-site audits of suppliers were carried out, in Asia, South America and Europe. Following these audits, corrective action plans were drawn up. In certain cases, business relationships were suspended while the supplier brought its practices into compliance.

4.4. Whistleblowing mechanism and compilation of reports

The current whistleblowing tool, Ethicall, allows employees, and more recently external collaborators, to report deviations from the Code of Conduct, including on subjects relating to Human Rights, health, hygiene and safety in the workplace as well as environmental protection. Wider use of this whistleblowing tool as part of the Group's vigilance plan is currently being considered.

4.5. Monitoring system

The monitoring system, including key indicators and reports on actions, will be described in the 2018 Sustainable Development Report.

The Board of Directors' Environment and Society Committee will be informed of the monitoring of these actions.

SUSTAINABLE DEVELOPMENT STRATEGY

1. The Group's ambition

Air Liquide's ambition is to lead its industry, deliver long-term performance and contribute to sustainability.

The major environmental and societal challenges, such as the climate, air quality and access to care, also represent growth opportunities for the Group. The Sustainable Development strategy is part of this dynamic, proposing solutions to these environmental and societal needs in an innovative and competitive manner.

In certain situations, temporary support is required to develop or implement solutions. The Air Liquide Foundation therefore contributes to fundamental research and local development.

Air Liquide's contribution to the United Nation's Sustainable Development Objectives

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.

For clarity, each action of the Corporate Sustainability Program will indicate the associated SDGs.

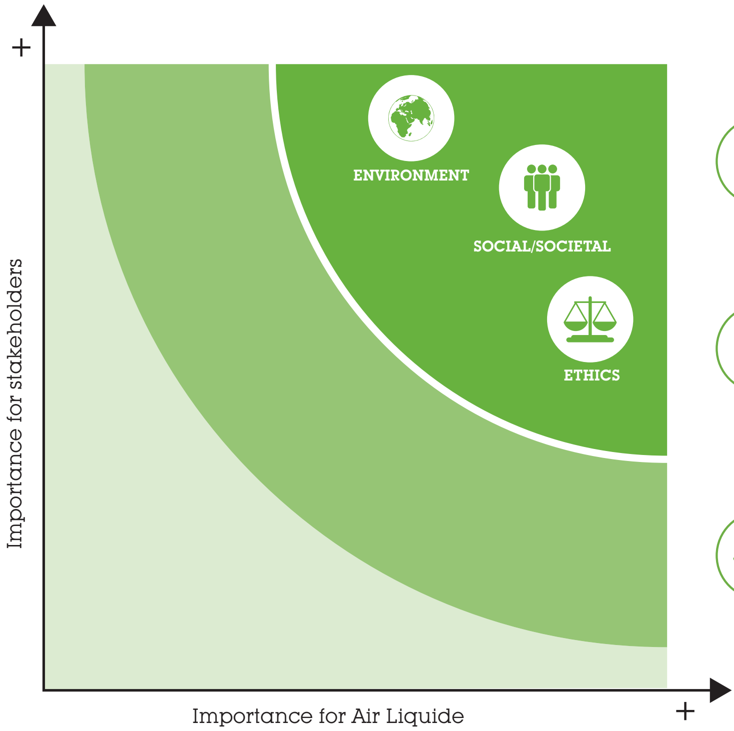
2. Air Liquide's main Sustainable Development stakes

To remain relevant in its approach, Air Liquide regularly reviews its own sustainable development stakes through consultations with its stakeholders.

In 2015, Air Liquide consulted its stakeholders on these stakes and the importance they place on them. This consultation allowed Air Liquide to draw up a map [(a)] (or a materiality matrix).

Following this initial consultation, ten sustainable development stakes were identified and classified according to these categories: environment, social & societal, and ethics.

MAPPING OF SUSTAINABLE DEVELOPMENT STAKES



10 most pertinent CSR stakes

- Production energy efficiency
- Mitigation of greenhouse gas emissions

- Products and services protecting life and the environment [(a)]
- Dialogue with stakeholders
- Innovation linked to protecting life and the environment [(a)]
- Health and Safety [(b)]
- Employee development
- Human Rights

- Shareholder dialogue
- Ethics / Internal Governance

(a) Particularly for climate change and air quality.
(b) Including the safety of Group employees, subcontractors, and temporary workers; the safety of Air Liquide facilities, product transport safety; safety of products and their implementation at the customers' sites.

Of these ten stakes, Air Liquide believes that safety, ethics and the respect of Human Rights and the environment are prerequisites for any action carried out by the Group.

Air Liquide seeks to ensure that these key stakes remain based on its operations and, in 2017, the Group launched a survey of its Managing Directors across all countries in which it operates.

Moreover, Air Liquide, in partnership with other French industrial groups and an external body, launched the first joint materiality survey of French civil society. This survey of a representative sample of the population (more than 1,000 individuals), highlighted that the environment, and more specifically air quality and the climate, are unavoidable social challenges for the years ahead. Human Rights, healthcare, integration and job creation were also deemed to be major priorities. Finally, those surveyed felt that industrial companies should play greater roles in responding to some of these challenges.

(a) The methodology used is described page 120.

3. The two lines of action of the Group's Sustainable Development strategy

Moreover, Air Liquide affirms its ambition to contribute to a more sustainable world. For these reasons, given its understanding of the issues at stake, the Group has drawn up a Sustainable Development strategy which covers two of the lines of action defined in its NEOS company program:

- improve air quality and prevent global warming;
- strengthen dialog with stakeholders.

These two priorities, along with Air Liquide's businesses, drive the Corporate Sustainability Program (CSP) implemented by the Group. The latter relies heavily on its operations, but also implements measures in favor of local development, notably through its Foundation. Thus:

- in response to the societal and environmental challenge of improving air quality and preventing climate change, the CSP applies to operations to develop solutions for cleaner industry and cleaner transportation;
- to contribute to the societal challenge of strengthening dialog with stakeholders, the CSP undertakes actions mainly in favor of local development, primarily through its Foundation's projects.

4. Background information

4.1. A shift in ecosystems

Regulatory changes in favor of the climate and air quality

Several regulations governing the climate and the environment have been enacted through the world in recent years: including the Paris Agreement, Article 173 of the energy transition law and Grenelle II in France, the Air Quality Plan in the United Kingdom, among others. Air Liquide's multi-disciplinary teams anticipate these regulatory changes to provide a proactive response.

Countries are actively committed to ambitious climate policies, including several European countries and China which is investing massively in wind power and electric mobility. Territories are also actively committed to reducing their environmental footprint: towns and cities are aiming to make the switch to 100% renewable energy sources, polluting vehicles have been banned from certain city centers and greener public transport is being introduced.

Nonetheless, to reach the level of commitments championed in the Paris Agreement, the major involvement of industrial players is also required.

The Paris Agreement

The Paris Agreement was signed at the end of 2015 during the COP21 and showcased the desire of almost all states to limit the increase in the planet's average temperature to under 2°C compared with the pre-industrial era. This agreement has now been signed by 195 countries (and the European Union).

According to certain predictive models [(a)], limiting an increase in temperature to 2°C at the most requires limiting the total cumulative emissions of carbon dioxide (CO_2) in the atmosphere to 2,900 gigatons (Gt) of CO_2. This is called the "carbon budget".

Considering what humans have already emitted, there remains around 900 Gt "that can be emitted" to limit the temperature increase to 2°C. At the current pace of emission of 40 $GtCO_2$ per year, the budget will be fully used in 25 years. Of the 40 $GtCO_2$ (or 40,000 Mt) emitted each year, only 200 Mt is recovered in various industries such as enhanced oil recovery (which helps significantly increase oil extraction from an oil field), food preservation and the gasification of water and fizzy drinks.

(a) IPCC - Climate Change 2014: Synthesis Report - http://www.ipcc.ch/report/ar5/syr/

4.2. Air quality

Living well in towns and cities in terms of health and well-being has become a challenge of attractiveness for large metropolitan areas.

According to the World Health Organization, more than 80% of the population is affected by air quality issues. Hundreds of millions of people breathe in highly polluted air which leads to the premature death of 3.5 million people each year and major costs for society running into hundreds of billions.

Air Liquide contributes to improving air quality in industry, transport and throughout its value chain. The Group's activities, its expertise in terms of air, breathing and healthcare as well as its products and services related to the energy transition, enables it to work towards improving air quality.

4.3. Climate change

Air Liquide has introduced concrete measures as part of its Corporate Sustainability Program (see pages 81-92) in a response to climate stakes by developing solutions which reduce greenhouse gas emissions.

CO_2, a molecule which is essential to life, involved in climate change

CO_2, or carbon dioxide, is a colorless and odorless gas present in the air at about 0.04%. It contributes to making our planet habitable by playing a key role in the regulation of the average temperature of the Earth's surface (15°C). Without CO_2 in the atmosphere, its temperature would fall below 0°C, putting life on Earth at risk.

CO_2 contributes to approximately 20% of the natural greenhouse effect, through its ability to absorb heat. CO_2 and methane are the main Greenhouse Gases (GHG). It is now common to express greenhouse gas emissions in "CO_2-equivalent".

Almost 40 $GtCO_2$ are emitted each year by human activity, 60% of which remain stored in the atmosphere.

To avoid negative consequences for the climate, permanent solutions must therefore be implemented to decrease CO_2 emissions, store CO_2 elsewhere than in the atmosphere and recover more CO_2.

The Air Liquide Foundation and the Climate

The Foundation also supports scientific research in the field of environmental protection. For example, the Foundation has renewed its support to the WHY Expéditions association for an environmental scientific exploration - Under The Pole III – in Greenland and in the archipelagos of French Polynesia. The research teams and the Under the Pole divers study the role of ecosystems in climate change: the sequestration of CO_2 deep in the Arctic Ocean and the emission by the Polynesian coral reefs of a gas called dimethylsulfide (DMS). Scientists believe that this gas plays an important role in the creation of cloud cover and therefore in climate change. Clouds partly reflect the sun's rays which alleviates global warming. The original feature of this research is the depth at which the study will be carried out. The expertise of the Under The Pole III divers will allow the team to explore coral reefs that are between 30 and 150 meters under water. The composition of these reefs and their role in the interactivity between the ocean and the atmosphere remain relatively unknown.

4.4. Local development

Air Liquide is present in communities for which respect is at the heart of the Group's concerns.

The Group implements philanthropic actions to protect the environment and life and to promote local development. The Air Liquide Corporate Foundation illustrates the Group's commitment to sustainable development, and aims to support projects in the countries where the Group operates.

These philanthropic actions are implemented either directly by the Group's subsidiaries, or via the Air Liquide Foundation.

5. Strategy management and implementation

In May 2017, the Board of Directors created a new committee, the Environment and Society Committee (ESC) whose mission is to assess the Group's strategy and commitments in terms of sustainable development and draw up any relevant recommendations.

The ESC monitors the Group's environmental and societal actions. It focuses in particular on subjects relating to air quality, energy consumption, greenhouse gas emissions, and measures implemented by the Foundation. The ESC also examines environmental risk management as well as the quality of the Group's reporting in this field. The Committee's missions are described on page 147, chapter 3 of the 2017 Reference Document. The Committee meets in principle twice a year.

As part of its NEOS 2016-2020 company program, the Group introduced a Corporate Sustainability Program (CSP), which supports the development of solutions for environmental and societal needs.

To ensure that this program is rolled out at the operations level, a PMO (Project Management Office or project team) has been set up. The PMO ensures that operating entities implement the aims defined by the Group and introduce monitoring indicators. It also suggests criteria for variable remuneration related to this program for Group managers.

Moreover, the PMO steers a working group composed of various Group departments, the aim of which is to draw up the Group's climate objectives.

THE CORPORATE SUSTAINABILITY PROGRAM

In the past year, Air Liquide has been rolling out its Corporate Sustainability Program (CSP) within the Group to build projects and launch measures that improve air quality and which will limit climate change.

The CSP aims to protect the planet and its inhabitants. It includes:

- solutions for clean industry;
- solutions for clean transport;
- measures to promote local development.

1. Solutions for clean industry

Industry accounts for one third of total direct and indirect greenhouse gas emissions [a]. A 10% reduction in greenhouse gas emissions in industries supplied by Air Liquide, such as the steel and chemistry industries, would reduce emissions by 900 million tons of CO_2-equivalent each year.

In order to reduce its environmental footprint and that of its customers, Air Liquide offers products and services which have a low impact on air quality and the climate. To do so, the Group is improving the carbon content of its solutions as well as those of its energy purchases. Air Liquide has made these solutions a competitive advantage.

Almost 60% of the Group's innovation expenses in 2017 were related to work to improve air quality, health and the environmental footprint.

Close to 30% of the Group Innovation expenses is devoted to reducing CO_2 emissions (by reducing carbon content of its products or those of its customers).

Numerous applications of industrial and medical gases protect the environment for the Group's customers and the life of patients. These applications represent more than 40% of Group revenue in 2017.

1.1. Contribute to the reduction of industrial emissions

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE | 13 CLIMATE ACTION | 17 PARTNERSHIPS FOR THE GOALS

The use of industrial gases during certain processes and over-the-fence supply of products and services enable the Group's industrial customers to reduce their greenhouse gas and atmospheric pollutant emissions.

Air pollutants

Particulate Matter (PM)

Affects more people than any other pollutant. It is composed of a mix of sulfates, nitrates, ammonia, sodium chloride, black carbon, mineral dust and water. Reduces life expectancy 6-18 months*. PM10 concentrations should be < 20µg/m³.

Nitrogen oxide (NOx)

Can cause inflammation of the airways (asthma, lung conditions); also a source of particulate matter & O_3. NOx concentrations should be < 40µg/m³.

Sulfur oxide (SOx)

Can affect the respiratory system. It is also responsible of acid rain. Concentrations should be < 20µg/m³.

** Data from World Health Organization.*

(a) Source: World Bank.

The use of oxygen to reduce CO_2 emissions

Air Liquide supplies the steel industry with significant volumes of oxygen to reduce CO_2 emissions during oxy-combustion processes:

- the injection of oxygen in blast furnaces reduces the consumption of coke, whose production and use release an important volume of CO_2 and other pollutants, by partially replacing it with pulverized coal or natural gas;
- the use of oxygen in electric furnace burners can significantly reduce their consumption of electricity.

A detailed methodology has been introduced in order to assess the avoided CO_2 emissions through these two oxy-combustion applications. It is based on an analysis of the oxygen volumes supplied by Air Liquide in 2017, site by site and customer by customer. The avoided emissions are calculated by using ratios derived from the modeling of customer processes.

Air Liquide thus estimates that these uses of oxygen have helped avoid the emission of 11.5 million tons of CO_2 broken down as follows:

- 11 million tons related to the injection of oxygen into blast furnaces;
- 0.5 million tons related to the use of oxygen in electric furnace burners.

In the glass manufacturing industry, heat oxy-combustion is another innovative technology which makes the oxy-combustion process even more efficient. It consists of extracting heat from combustion fumes in order to heat oxygen and fuel, thus improving the performance of the process by 10%. Compared to air combustion, this technology provides up to 50% energy savings and up to 50% CO_2 emission reductions. These oxy-combustion technologies reduce the nitrogen oxide emissions of glass furnaces by 60% to 95%.

This technology is of particular interest for the Chinese market which represents about 50% of worldwide glass production.

Over-the-fence supply: an efficient solution for the planet

Air Liquide is well known for its expertise and the efficiency of its processes and produces the necessary industrial gases to meet its customers' needs. This helps significantly reduce energy and raw material consumption and, as a result, the CO_2 emissions of the entire value chain. In total, 4.6 Mt of CO_2 emission have been avoided in this way (see details page 85). So, even though Air Liquide's GHG emissions tend to increase with the volumes of industrial gases produced, this over-the-fence supply nevertheless minimizes the global environmental footprint of its customers' products.

The CO_2 market

CO_2 is a greenhouse gas that can have negative consequences for the climate in large concentrations. To avoid these consequences, permanent solutions must therefore be implemented to decrease CO_2 emissions, store CO_2 elsewhere than in the atmosphere and recover more CO_2. Most countries committed to implementing such solutions as part of COP 21.

Recovering CO_2 involves using it as a raw material in the food, chemical and transport industries. It is a promising market: in 2017, 3.5 million tons of CO_2 were purified and delivered to customers by Air Liquide.

In France, Air Liquide operates the first commercial CO_2 capture unit using a cryogenic process at a hydrogen production unit. Cryocap™ H_2 captures up to 90% of CO_2 emissions while at the same time increasing production at the hydrogen unit by 5%. Cryocap™ captures 100,000 tons of CO_2 each year, which is used by the region's greenhouses and by the food industry for the carbonation of sparkling drinks.

Air Liquide has adapted the Cryocap™ technology to electrical power plants, thus providing its customers in this industry the ability to capture large quantities of CO_2 and reduce their atmospheric emissions. This technology is called Cryocap™ Oxy.

CO_2 is becoming a commodity for manufacturing concrete for construction. The partnership between Air Liquide and US start-up Solidia Technologies develops and markets a "sustainable concrete". Solidia's process, which hardens concrete with CO_2 instead of water, reduces the environmental footprint of the pre-cast concrete by up to 70%.

This technology also reduces the hardening time of the concrete to less than 24 hours and the required amount of water. In addition to capturing large quantities of CO_2, the quality of the concrete achieved is greatly improved.

Hydrogen for sustainable steel production

Steel is an essential material in modern life. Steel recycling is already well organized, but its production generates very high levels of CO_2. Air Liquide has been exchanging and working in R&D for many years with its customers in the steel industry to implement solutions aimed at reducing these CO_2 emissions. For example, Air Liquide was part of the ULCOS European consortium which studies more than 80 innovative technologies aimed at achieving this goal.

The use of hydrogen produced by water and electricity electrolysis is a promising approach to reducing industrial CO_2 emissions. Hydrogen injected into a traditional blast furnace helps reduce coal consumption and therefore the quantity of CO_2 emitted per ton of steel (a 10-15% reduction could be possible).

Another solution which could help reduce CO_2 emissions by up to 80%, is in the preliminary research phase at several major steel groups. This solution involves using hydrogen, again produced in a carbon-free manner, to achieve the direct reduction of iron ore (or "DRI") without the use of coal.

Today's challenge is therefore to create favorable economic conditions so that these virtuous technologies are optimized via test and pilot schemes, then rolled out.

Air Liquide has used medium-sized electrolyzers for on-site hydrogen production for many years. To meet the needs of the iron industry, large scale projects are currently being studied.

Water treatment solutions at customers' sites

Only 64% of the world's population has access to drinking water and 80% of wastewater is discharged into the environment without any treatment [(a)]. Moreover, the world's population is expected to increase from 7.5 to 9 billion inhabitants by 2050, but the quantity of available fresh water will remain the same. Finally, the scarcity of water and environmental challenges are leading industrial players to seek reliable and economic technologies to treat and recycle water. Air Liquide has been a benchmark in water treatment for 35 years, and provides its customers with adapted solutions for the production of drinking water, the treatment of wastewater, cooling water and pH testing:

- using pure oxygen to replace the air injected into the biological basins that are used in the wastewater treatment process increases the basins' treatment capacity by up to 50%;
- Air Liquide helps replace mineral acids with carbon dioxide in order to test the pH value of the water (and therefore its acidity) in a safer and more environmentally friendly manner;
- to eliminate bacteria and viruses, the Group produces and sells ozone which, thanks to its greater oxidizing power than chlorine for example, disinfects water quicker and without leaving a residual smell or taste. This also improves the efficiency of later treatment.

1.2. Develop products with a low environmental footprint

The Group strives to improve the energy and environmental footprint of its products and services.

Sustainable Development criteria in the Group's investment decisions

Sustainable Development criteria, particularly those relating to greenhouse gas emissions, water consumption and relations with local communities, are included in the decision-making processes of the main Group investments.

Moreover, for all major projects, Air Liquide incorporates an internal carbon price of 50 euros per ton in its investment decision process. This internal carbon price is voluntarily set by Air Liquide in order to assess the economic cost of greenhouse gas emissions. The analysis of each project using this internal carbon price ensures the sustainability of the customer's project. It also helps validate the relevance and viability of the investment solution envisaged by Air Liquide compared with alternative solutions.

"Buy clean": the Group's electricity procurement

69%

The percentage of electricity consumed by the Group which is low-carbon or renewable (up 15% over the past five years).

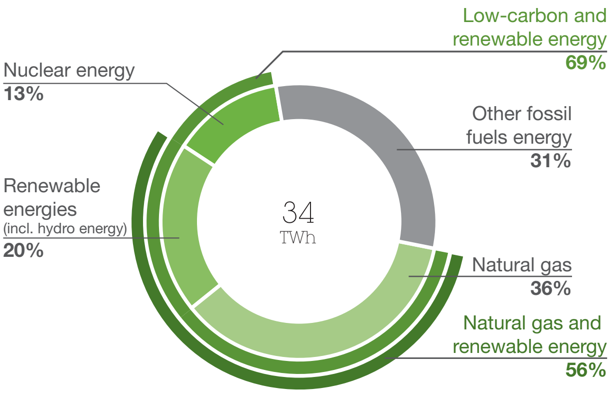
The role of energy procurement is essential for Air Liquide, in particular for its impact on the Group's indirect emissions (Scope 2).

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 2017, this criterion was decisive for the renewal of contracts in Germany and Chile. Moreover, to step up the pace of the transition towards supplying electricity with lower carbon content, Air Liquide launched an initiative in 2017 to sign renewable electricity procurement agreements with competitive wind and/or solar power suppliers. This initiative has already helped identify major opportunities, which should lead to procurement decisions in 2018.

By taking into account the different natures 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 nature of the electricity used. This calculation takes into account the electricity produced from natural gas by the Group's cogeneration units. In 2017, 20% of electricity consumed was from a renewable source and 36% from natural gas composed mainly of methane, a molecule which contains a carbon atom and four hydrogen atoms, the combustion of which generates around two-times less CO_2 emissions than coal per kWh of electricity produced. Moreover, the combustion of natural gas produces small amounts of atmospheric pollutants.

(a) *Water Quality and Wastewater on unwater.org (2017, Unesco).*

ORIGIN OF ELECTRICITY USED IN 2017 [(a)]



(a) Calculation takes into account the primary energy source that each country uses to produce electricity (source: International Energy Agency).

Air Liquide's energy efficiency

Air Liquide has always been concerned with minimizing its energy consumption and environmental footprint as well that of its partners and customers.

Through its Engineering & Construction activity, 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 energy efficient whenever circumstances enable it.

Air Liquide builds increasingly large units that generally have a better energy efficiency, thanks to scale effects.

For example, the oxygen production unit for SASOL in South Africa enables energy savings up to 30% compared with the first unit provided to SASOL by Air Liquide in the 1980s.

The significant improvement in SMR technologies (hydrogen production) by Air Liquide has become real with SMR-X. This technology has enabled the production of hydrogen without simultaneously producing steam, leading to a 5% decrease in natural gas consumption compared to conventional technology.

Large units are often interconnected through a pipeline system supplying a customer industrial basin. This system creates energy production and consumption synergies. The steady development of the oxygen, nitrogen and hydrogen pipeline systems helps improve their energy efficiency. Lastly, smart technologies are being rolled out in order to centralize the monitoring and management of large units so that production can be adjusted to customers' needs.

Reliability

Air Liquide has also set up a program in order to improve the reliability of its units' operation. In addition to providing better service to customers, this has direct consequences on energy efficiency. Every shutdown and start-up of these units creates a sequence that consumes energy. Increasing reliability, i.e., reducing the number of untimely shutdowns, results in more energy-efficient production units.

The Green Origin offer

The Green Origin offer, which is marketed in certain countries, is an additional option for standard liquid industrial gases supply agreements, to guarantee that these gases are entirely produced using renewable energies. The energy required to produce and transport the gases in this offer is compensated by the purchase of renewable energy certificates and CO_2 emission rights.

Air Liquide thus contributes to the development of renewable energies and provides its customers with the possibility of improving the environmental footprint of their supply chain. As part of this offer, a certificate is given to customers by an external control organization.

Energy production through cogeneration

Certain technologies developed by the Group allow energy to be produced in a cleaner manner.

Cogeneration units operated by Air Liquide produce heat and electricity simultaneously. They consume natural gas and water, mostly converted into steam and supplied to customers. The steam can be condensed in customers' processes 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 other units of the Group. Combustion of natural gas produces CO_2 and leads to low nitrogen oxide (NOx) emissions, but practically no sulfur oxide (SOx) emissions.

Greenhouse gas emissions avoided in operations

Energy efficiency is a key focus of the Group's business lines and activities, with the Group constantly striving to improve its energy and environmental footprint. This optimization is a combined result of:

- technological solutions in production processes;
- scale effects, co-production and synergies, in particular through the development of its pipeline systems;
- the operational optimization of its production units;
- and the solutions chosen for energy and raw materials supplies.

The set of products and services that Air Liquide supplies enable its customers to consume less energy, and as a result avoid more CO_2 emissions than an "alternative reference system" where customers own and operate their own production units.

Digital solutions driving energy optimization

The Smart Innovative Operations program developed by Air Liquide is based on the automation and centralization of operations, anticipating outages and optimizing the performance of a plant. It uses the operational data of production units and analyses it to optimize equipment maintenance and anticipate incidents. Measures which, in the end, will provide a better service to customers for whom the reliability of the gas supply (oxygen, nitrogen or hydrogen) is essential.

The Group has already deployed its digital predictive maintenance tools at 15 sites worldwide (including China, Japan, Singapore, Germany, Belgium, Russia, Argentina, the United States and Saudi Arabia).

The performance optimization program was successfully implemented in 2016 in the United States for the hydrogen unit network along the Gulf Coast. This program combines economic and environmental performance through the reduction of the plants' energy consumption.

In 2015, the Group introduced a detailed methodology in order to assess the corresponding avoided CO_2 emissions. This assessment is carried out within the Large Industries activity, which represents 90% of the Group's energy consumption, and thus CO_2 emissions. The methodology is based on an analysis of the total volume of industrial gases supplied to customers over 2017, site by site and customer by customer, i.e., at over 1,400 delivery points per pipeline. For each customer facility, we assess the emissions of the reference system by modeling the energy consumption and CO_2 emissions, both direct and indirect, that would be generated by a production unit dedicated to supplying the facility. This model is based on a protocol which takes into account the latest developments in terms of energy efficiency, as well as the size and type of production unit.

Air Liquide therefore estimates that the total emissions avoided by its production operations in 2017 were 4.6 million tons of CO_2, most of which is broken down as follows:

- 1.4 million tons of indirect CO_2 emissions for the supply of air gases;
- 2.2 million tons of direct CO_2 emissions for the supply of hydrogen and carbon monoxide;
- 0.9 million tons of direct CO_2 emissions for cogeneration units that produce steam and electricity from natural gas simultaneously, which are on average 20% more efficient in terms of CO_2 emissions than technologies which produce steam and electricity separately.

Moreover, in the Industrial Merchant activity, small on-site nitrogen, oxygen and hydrogen units reduced truck deliveries, a source of CO_2 emissions. In 2017, these on-site units saved 57.2 million kilometers in truck deliveries, thus avoiding 57,500 tons of CO_2 emissions.

Water management

In 2017, Air Liquide used 81 million m^3 of water, broken down as follows:

- approximately 60% by air separation units for cooling air after compression. 70% of this water is evaporated and 30% is treated on-site or by treatment plants in neighboring municipalities;
- approximately 40% in other industrial processes such as hydrogen production units and cogeneration units. Approximately 80% of the water used by these units is supplied and then consumed in the form of steam by Air Liquide's customers.

With regard to air separation units, there are several types of cooling systems. Around 82% of these units have semi-open water recirculating systems which require back-up water. Around 8% of these units have open systems. In such cases, water comes from natural resources or third-party industrial systems. It is discharged back into the original source, without causing pollution or changing the water's physical-chemical characteristics. Lastly, around 6% of these units have closed systems that consume no water. 4% of Air Liquide's sites are located in countries that, according to the World Resources Institute, will be under extremely high water stress in 2020. Today, this represents 6% of the annual water consumption of Air Liquide's industrial sites.

Air Liquide Large Industry production plants manage their fresh water supplies to minimise water usage by efficient water recycling and minimal non-polluting water discharge, returning it to the original source or to an authorised municipal or client treatment plant. Water consumption is typically through evaporation for process cooling and steam generation or as a raw material for production of hydrogen. Where appropriate the required process cooling may be achieved using closed cooling circuits which do not consume water at all, or in coastal regions by sea water cooling.

A team of some 70 Water Technology Experts, located worldwide, support local operations to care for water.

	2013	2014	2015	2016 [b]	2017
Annual water consumption *(estimation in millions of m^3)*	68	70	79	77	81*[a]

* *Indicator verified by the independent verifier.*
(a) Represents less than 0.5 one-thousandth of the industrial water consumption of the economies under review.
(b) Excluding Airgas.

1.3. Summary of greenhouse gas emissions

In 2017, Air Liquide's CO_2 emissions totaled 26.2 Mt of CO_2-eq. [a], broken down into:

- 11.7 Mt of indirect emissions [b], 94% of which were due to the operation of air gas separation units (ASU);
- 5.1 Mt of emissions from cogeneration units;
- 8.6 Mt of CO_2 from hydrogen production units (HyCO);
- 0.7 Mt of CO_2 from the transportation of gases;
- 0.1 Mt of CO_2-eq. from other Group activities.

1.4. Emissions avoided and other positive contributions

Air Liquide's products and operational efficiency enabled the Group to avoid 16.1 Mt of CO_2 emissions, broken down into:

- 11.5 Mt of CO_2 at customers' premises, through the use of oxygen produced by the ASUs [c];
- 4.6 Mt of CO_2 due to the Group's operational efficiency compared with in-house production by customers [d].

Moreover, 3.5 Mt of CO_2 was purified and supplied to customers by Air Liquide in 2017 to be used in various applications including greenhouses and the food industry.

Finally, the majority of hydrogen produced is used to desulfurize fuels and thus helps avoid 1.5 Mt of SOx emissions.

1.5. Biodiversity

The impact of Air Liquide's activities on biodiversity is limited because the Group's production units are generally located on small sites in industrial zones.

However, Air Liquide supports biodiversity preservation via its Foundation, which funds micro-initiatives around the world on environment-related local development, and scientific research projects in the field of environmental protection, focusing on projects that contribute to the preservation of our planet's atmosphere.

In recent years, the Foundation has sponsored the following:

- the Under The Pole expeditions to Greenland and to the archipelagos of French Polynesia. By supporting these environmental research programs, the Foundation contributes to the protection of biodiversity;
- the work of the Institut de Recherche pour le Développement (IRD) and WWF France respectively on mangroves in the Indo-Pacific region and the Gabonese forests. These works aim at quantifying and qualifying the carbon cycle of mangroves and forests with an objective: protecting these ecosystems which are the home to a wide range of biodiversity;
- the Observatoire Français d'Apidologie's (OFA) project aims at increasing bee populations in Europe. The OFA is carrying out a study on the selection of bees capable of resisting a parasite called varroa which attacks certain types of bees. The decline in bee populations is a major threat to biodiversity and agricultural production. The aim of the OFA's project is to develop a natural and non-chemical solution that can sustainably be used to fight against this parasite.

(a) *CO2-equivalent.*

(b) *Emissions linked to electricity production and steam purchased.*

(c) *Details page 82.*

(d) *Details page 85.*

2. Solutions for clean transport

Global warming and air pollution make the transition towards new modes of transport necessary. The mobility of people and goods account for the emission of around 7.5 GtCO_2 per year. In response to this challenge, Air Liquide provides efficient solutions which will help reduce the carbon footprint of transport.

Converting 10% of transportation to low-carbon or carbon-free hydrogen would help avoid annual emissions of 750Mt of CO_2-equivalent and significantly improve air quality.

Hydrogen, a molecule for energy transition

Hydrogen is a high potential energy vector that is clean and safe. It can be used in order to produce energy or as a raw material in the industry and can easily be stored on a large scale.

This gas can be produced from electricity (renewable) or from low carbon emission fossil fuels and its use generates zero emissions. Multiple uses are possible because it can be stored and transported at high energy density in liquid or gas and recovered or used in fuel cells to generate heat and electricity. This versatility provides hydrogen with an essential role in the area of transportation, but also in the residential and industrial sectors as well as for large scale storage of renewable energies: a promising solution to meet energy transition challenges.

2.1. Hydrogen

Hydrogen has serious potential to meet the challenges of clean transport: reducing greenhouse gas emissions, urban pollution through particles and noise, and dependency on oil-based fuels. Air Liquide is a committed player in the hydrogen energy sector thanks to its expertise and management of the entire chain: production, storage, distribution and use by the end customer. For example, the Group is part of the Hydrogen Council, a global initiative which brings together energy, transport and industry leaders, for which one of its aims is to highlight that hydrogen is one of the key solutions in the energy transition. In this respect, the Hydrogen Council aims to:

- intensify investments in the development and marketing of hydrogen and fuel cells;
- encourage decision-makers to increase their support for the role of hydrogen in the future energy mix, in particular through public policies and relevant programs.

For further information, please refer to page 108.

Hydrogen-powered cars produce their own electricity "on board" through a fuel cell powered by hydrogen. In addition to enjoying similar performance characteristics as a classic car, hydrogen-powered vehicles are also silent and only discharge water. They are very efficient over long distances which currently represent 75% of CO_2 emissions in the transport sector.

One hydrogen recharge, which takes less than 5 minutes, already provides cars currently on the market with a range of more than 500 kilometers.

In addition to the passenger vehicle market, Air Liquide also provides charging stations for buses, in particular in Norway.

In Europe, Canada and the United States, several programs to develop and market hydrogen fuel cells for forklift have already been launched.

H_2

The development of the network of hydrogen charging stations in Japan

Air Liquide has joined a consortium of 11 Japanese companies to develop hydrogen in Japan. The aim is to create 160 hydrogen charging stations to charge 40,000 vehicles across the country by 2020. Air Liquide has already built six stations on the archipelago. This alliance of companies should be formed during spring 2018.

A growing network

Air Liquide participates to the development of hydrogen distribution infrastructures in Germany (400 stations by 2023 through the H_2 Mobility initiative), France (100 stations by 2022 and 600 by 2030 according to the Mobilité Hydrogène France plan), Japan, North East Europe and the United States. To date, Air Liquide has already developed and installed almost 100 hydrogen stations worldwide.

Air Liquide thus contributes, alongside automobile makers and public authorities, to the development of hydrogen energy.

HYPE: hydrogen taxis in Paris

STEP (Société du Taxi Electrique Parisien), which has Air Liquide among its shareholders, is deploying its fleet of hydrogen-powered electric taxis in Paris and currently has almost 75 taxis on the capital's roads.

These taxis refuel at two hydrogen charging stations that Air Liquide developed and installed, one in central Paris and the other at Orly airport.

Air Liquide continues to support the growth of this offering with the opening in 2018 of new hydrogen charging stations in the Paris region, in particular near Versailles and at Paris-Charles de Gaulle airport.

Blue Hydrogen, an Air Liquide initiative

Blue Hydrogen® is an Air Liquide initiative that aims to gradually lower the carbon content of Air Liquide's hydrogen production dedicated to energy applications. Concretely, Air Liquide is committed to achieving at least 50% of low carbon [(a)] hydrogen necessary for these applications by 2020, by combining:

- the use of low carbon energies, water electrolysis and reforming of biogas;
- carbon capture and valorization technologies for the CO_2 emitted during the production of hydrogen from natural gas.

Transition to low-emission transport in Home Healthcare

Hydrogen-powered electric utility vehicles were recently added to the car fleet of VitalAire, an Air Liquide subsidiary in Home Healthcare. These vehicles have a range of 150 kilometers in hydrogen, that can be doubled through the electrical recharge of their batteries. They meet VitalAire's autonomy needs in the Île-de-France region. The technicians who drive these vehicles are impressed by the quality of their driving experience, their comfort and their silence. With the opening of new hydrogen charging stations in the Île-de-France region, VitalAire intends to continue with this initiative. They will purchase several hydrogen-powered electric utility vehicles between now and summer 2018.

2.2. Biomethane

Recovery of biogas

Air Liquide promotes several initiatives which follow the circular economy model, such as the recovery of biogas. In cooperation with various partners, Air Liquide recovers waste products by transforming them into biogas using a methanization process. This biogas is then injected into the natural gas pipeline system or distributed to end customers with biomethane stations or clean multi-energy stations. The end customer is often the producer of the waste products and therefore completes the loop of the circular economy.

In 2017, Air Liquide continued to invest in Scandinavia, an advanced market in this field, by acquiring a majority stake in Norwegian company Skagerak Naturgass SA, a subsidiary of Skagerak Energi which belongs to the Statkraft Group, the leading European producer of renewable energies.

The biomethane recovered by Air Liquide is mainly used as fuel, and is therefore called Bio-Natural Gas for Vehicles (Bio-NGV). This Bio-NGV comes in two forms:

- CNG (Compressed Natural Gas), a fuel which is used in stations for light-duty vehicles that are part of a captive fleet, cars, trucks, vans, buses;
- LNG (Liquefied Natural Gas), which is easy and safe to transport, and is used in stations for trucks and buses.

Biomethane is also used in the production of carbon-free hydrogen for clean mobility as part of Air Liquide's "Blue Hydrogen" commitment.

(a) According to definitions recognized by third parties, for example the work of the CertifHy project at the European level.

Hitting the road with less polluting and quieter trucks!

In 2017, with its partners in the logistics chain, Air Liquide set itself a target of transitioning a large share of its 1,700 trucks in Europe to cleaner and quieter solutions to reduce the emissions of pollutants and particulate matter. Addressing the air quality challenge, in particular in towns and cities, requires national or European infrastructures and the mobilization of several partners. The first Liquefied Natural Gas (LNG) trucks are already on the roads in Spain. The Group's commitment to clean mobility, its expertise and territorial presence has allowed Air Liquide to become a committed player in the energy transition.

2.3. Multi-energy stations

Air Liquide operates more than 60 bio-NGV stations in Europe as well as eight multi-energy stations which supply:

- bio-NGV to vehicles and;
- liquid nitrogen for refrigerated trucks with cryogenic air conditioning.

These trucks are equipped with the blueeze™ cryo-cooling solution, are silent, require no combustion motors and do not emit greenhouse gases through their refrigeration units. Moreover, the drop in temperature is twice as fast as traditional technologies.

Cryocity™, an innovative refrigerated unit prototype for last-mile logistics

Air Liquide, in partnership with Petit Forestier, a specialist in refrigerated transport and Comptoir du Frais, a fresh produce retailer for non-domestic catering, is currently testing the Cryocity™ prototype, an onboard refrigerated unit specially designed for light utility vehicles.

Cryocity™ is autonomous, clean and silent. Its patented technology is based on the use of dry ice, a powerful source of cold that can keep produce cold for the duration of the delivery route. Dry ice is instantly produced from a liquid CO_2 source that is transformed in an exchanger tank in the truck designed to optimize its load capacity.

The Cryocity™ unit is entirely independent from the vehicle's engine which allows for silent deliveries day and night and contributes to reducing pollutants emitted by delivery vehicles. Its carbon footprint is 75% lower than systems powered by fossil fuels. With Cryocity™, Air Liquide is testing a new technology which will complement its range of cryogenic solutions for transport at managed temperatures.

2.4. Improve air quality

2.4.1. THE DESULFURIZATION OF OIL-BASED FUELS THROUGH HYDROGEN

Sulfur oxides released in the atmosphere cause serious respiratory difficulties. They are also responsible for smog and acid rain that leads to deforestation and the acidification of water.

Hydrogen is mainly used in refineries in order to desulfurize fuels and as a result to contribute to cleaner transportation. The use of these fuels almost no longer generates sulfur oxide emissions, one of the main atmospheric pollutants. In 2017, the hydrogen supplied by Air Liquide to its customers' refineries resulted in the avoidance of 1.5 million tons of sulfur oxide emissions being discharged into the atmosphere, which is more than ten times as much as the total sulfur oxide emissions of a country like France.

Overall, CO_2 emissions from the desulfurization of fuels by industrial gases companies like Air Liquide are only around 30 million tons, where emissions from the combustion of fuels for transportation stand at 7.5 billion tons.

In 2017, Air Liquide signed a new contract with a subsidiary of national oil and gas company Petróleos Mexicanos (PEMEX) for the hydrogen supply of the PEMEX refinery located in Tula de Allende in central Mexico. With an investment of 50 million euros for the acquisition and optimization of an existing hydrogen production unit, Air Liquide could supply 90,000 Nm^3 of hydrogen per hour to PEMEX.

2.4.2. INNOVATE TO IMPROVE AIR QUALITY

Purify indoor air

To expand its portfolio of solutions aimed at improving air quality, Air Liquide has developed and launched an indoor air purification pilot project. This procedure is based on a gas purification technology that the Group has mastered for a long time: adsorption. With this procedure, a solid material captures certain gas molecules for better air quality.

This system was installed in May 2017 in the Lyon area of France, in a building which served as a pilot site and where Air Liquide, among other companies, is present. The aim is to roll out the offer to commercial premises, universities, shopping malls and industrial customers.

AIRLAB: step up innovation for air quality

In large metropolitan areas such as Paris, air quality is a major challenge: many citizens remain exposed to pollution levels which exceed the World Health Organisation's recommendations. AIRLAB is the first innovation accelerator for air quality in France. This initiative was launched in 2017 during the national air quality day of Airparif and its partners, including Air Liquide. This event brings together a community of major companies, SMEs and start-ups, research institutions, local authorities and citizens. Everyone contributes ideas, expertise, and means to improve air quality.

AIRLAB aims to encourage the development and implementation of new solutions in Paris and the Ile-de-France region and their enhancement at the national and international level.

For further information on Air Liquide's innovation projects: see the Innovation chapter on page 58.

3. Measures to promote local development

Air Liquide's local presence

Air Liquide's teams across the globe are wholeheartedly committed to playing their part in the 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, craftsmen, and others thanks to the large diversity of its industrial gas applications. The Group provides solutions which are adapted to the competitive or innovative needs of each customer and supports them in their development. In healthcare, Air Liquide is present in the development of infrastructures by supplying medical gases and dedicated equipment to hospitals and by training their staff in their use. The Home Healthcare activity, where Air Liquide cares for more than 1.5 million patients with chronic diseases, is an exceptional outreach activity, with a very strong human dimension. Air Liquide employees regularly visit each patient in their homes, provide advice to them and their relatives on their treatment, discuss with their doctor, all in the aim of helping each patient live with his or her condition as best as possible.

In addition, the Group's activities, as well as the means implemented in order to prevent and manage industrial risks, are regularly presented to the populations near Air Liquide's sites. In France, the industrial sites participate in two local committees, CLICs and CLIEs. These committees provide information and regulatory consultations at the communes' initiative, with the aim of providing transparent information on their activities to representatives of the local populations.

3.1. Extend access to care: the Access Oxygen offer

In 2017, Air Liquide launched the "Access Oxygen" project in Senegal, aimed at providing medical oxygen to isolated areas. Due to major waiting times for hospital transfer, the lack of oxygen is particularly key in the event of a medical emergency, notably during childbirth, with sometimes fatal consequences.

Air Liquide's Access Oxygen is a full-service enabling small health structures to benefit from both the equipment and services needed to use oxygen therapy in the treatment of acute diseases. These structures offer first level access to healthcare for patients living in suburban and rural areas in developing economies.

This solution includes a fixed oxygen source, a mobile oxygen source and a pulse oximeter. The service also provides the maintenance of equipment and the training of medical staff. Access Oxygen is based on a specific digital application designed for doctors and nurses in these small health structures. It is aimed at assisting them in making decisions as to whether an adult, child, or infant patient should be given emergency oxygen. The Access Oxygen application also enables them to create a patient record.

The first Oxygen House inaugurated in Thiès, Senegal is part of this offering and is used as an "oxygen base". This is where cylinders are filled and medical devices are stored and maintained. The head of Access Oxygen lives on site and the Oxygen House is also the training center for medical teams and technical center for local healthcare structures. The head of Access Oxygen is the unique contact person for health posts and health centers. He is responsible for the monitoring and maintenance of equipment and the safety and reliability of the offering.

3.2. The Group's commitment to communities

3.2.1. SUBSIDIARY 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.

Air Liquide Canada raised money to improve the quality of life of people affected by a serious illness. The contribution of the employees and subsidiaries of Air Liquide Canada and VitalAire Canada totaled 100,672 dollars, i.e. almost 70,000 euros. The amount was donated to PartenaireSanté and its 16 charities.

In China, Air Liquide organized a tree-planting day, an IT equipment donation scheme and conferences to raise awareness about road safety. Moreover, Air Liquide offered first aid training to 40 employees for the second year in a row. Certified employees volunteered to be first aiders at more than 20 sporting events, including the Shanghai marathon on November 12, 2017, totaling more than 490 hours of voluntary work.

Air Liquide Brazil supported 10 projects in 2017 with funding of more than 250,000 euros. The subsidiary in particular supported 300 theatrical performances of 5-15 minutes each in hospitals: a humorous approach to improve the conditions of hospital stays and waits. The entity also contributed to a socio-educational project aimed at preventing juvenile delinquency and drug dealing which included technical football training and nutrition information.

The welding study program in Philadelphia

Since 2012, Airgas has set up a partnership with the A. Phillip Randolph technical high school in Philadelphia to address the shortage of qualified welders seen over recent decades and offer a career path to students who may come from disadvantaged backgrounds. In 1988, there were 570,000 welders in the United States but by 2012 there were less than 360,000. The American Welding Society forecasts that the welding profession will be short of 290,000 qualified experts by 2020.

Airgas provides financial support and donates equipment to the technical high school's welding program. Airgas has also established a mentoring program with employees and high schoolers during which welding site visits are organized. Currently, 58 students between the ages of 15 and 17 are part of this program.

3.2.2. SUPPORT FROM THE FOUNDATION, IN PARTNERSHIP WITH OUR EMPLOYEES

In the framework of its local micro-initiatives support program, the Foundation favors actions aimed at developing local communities over the long term in countries in which the Air Liquide Group operates.

In 2017, the Foundation supported projects in the fields of education and training, access to care, disability, social welfare and access to water and energy.

The Foundation is supported in its work by Air Liquide employees who sponsor local development micro-initiatives. It provides employees the opportunity to take part in community work and to express their social and human commitment. The role of a sponsor is broken down into three steps:

- making contact and feasibility study: the sponsor visits the project site. The sponsor checks that the micro-initiative meets the Foundation's selection criteria and is eligible to receive its support;
- follow-up and support: the sponsor visits a project supported by the Foundation at its mid-way point and prepares a project advancement report with the project initiator;
- final evaluation: when the project is completed, the sponsor visits the site of the initiative to compile a report on the implementation of the project.

Moreover, Group employees are also encouraged to recommend projects in organizations close to their hearts.

Currently, 345 employees are involved in the Foundation's actions.

Focus on education and training

Education and training play a predominant role in the Foundation's Local Development mission and represent more than 30% of the micro-initiatives supported since its creation in 2008. In 2017, ten projects were supported across four continents: the fight against school drop-out in Canada and French Guiana, training courses for careers in digital technology in the Philippines and in tradesmanship in Morocco, fields which encourage the economic growth of communities.

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.

3.3. Develop the local economy

The total amount of Group procurement in 2017 was 11 billion euros, including energy and transportation procurement.

Subcontracting

In 2017, subcontracting for Air Liquide came to a total of 1.7 billion euros. Subcontracted activities are mainly those which are too far-removed from the Group's activities or that require specific resources or that are linked to a concentrated workload at particular times.

Since 2008, Air Liquide has published the number of lost-time accidents of its subcontractors and temporary workers. In 2017, there were 90 lost-time accidents of this type recorded.

Local procurement

More than 80% of Air Liquide's procurement expenditures are made locally, 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. In 2016, of the 55 public and private corporate accounts, the association gave Air Liquide the best score for its exemplary approach to the development of collaborative working relationships with SMEs. One of the Group Procurement initiatives involves the launch of a physical network for the coordination and consolidation of the work done in France by the Air Liquide's Procurement teams. This approach rallies the Group's Procurement teams around a central objective: the creation of value through the development of collaborative working relationships with our ecosystem of suppliers (open innovation platform, sharing of expertise, best practices in terms of intellectual property, etc.) which contribute to the growth of French SMEs.

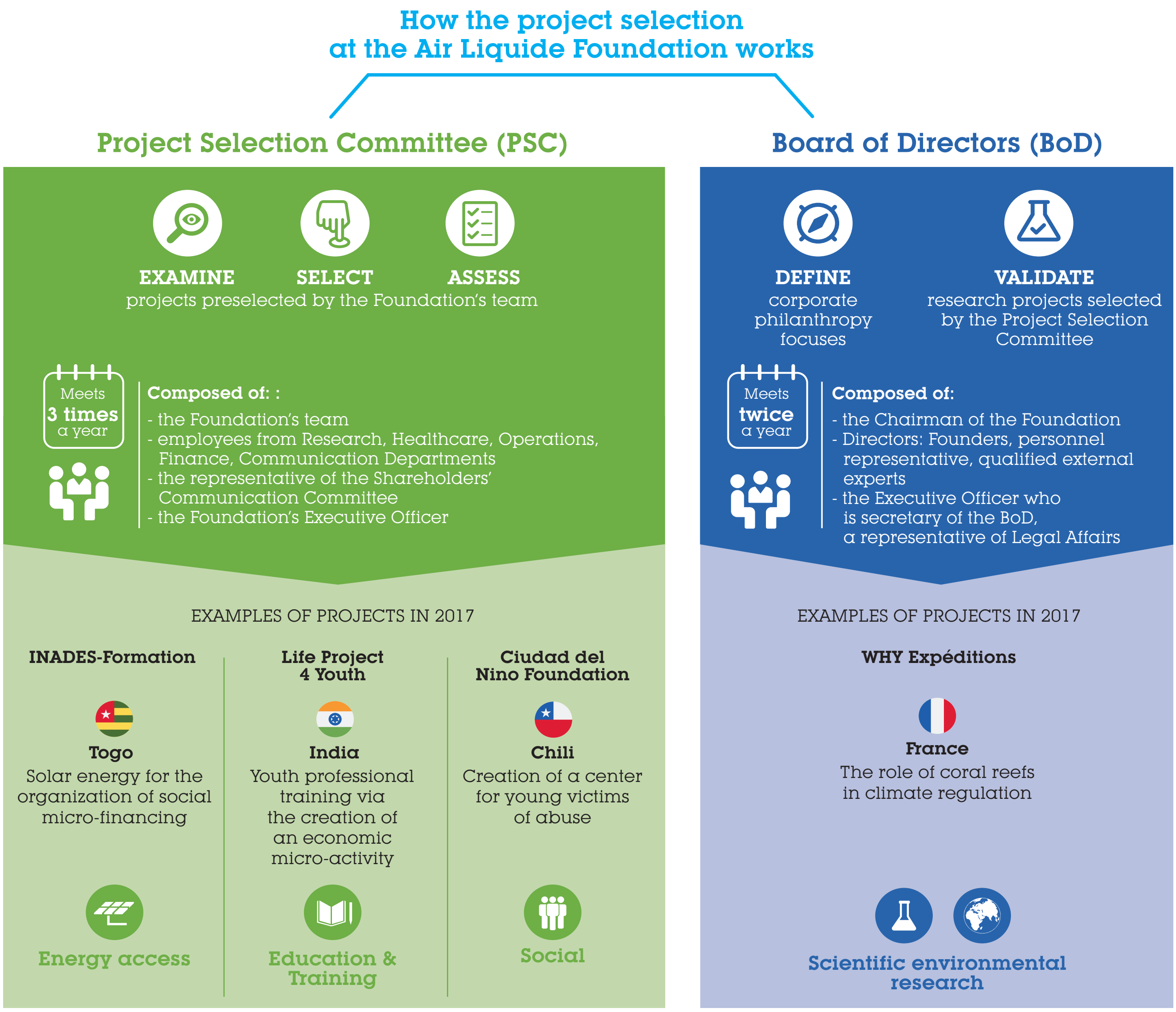
DIALOG WITH STAKEHOLDERS

1. The Air Liquide Foundation's initiatives in favor of local communities

Created in 2008, the Air Liquide Foundation represents the Group's commitment to being a responsible enterprise. With a budget of almost 3 million euros over five years, the Air Liquide Foundation provides financial, material and Human Resources means to the projects which it supports in the countries where the Group is present.

The Air Liquide Foundation's action is in line with the Group's Corporate Sustainability Program which aims to improve air quality and is committed to the stakeholders of the Group. In this context, it has set itself the following three missions:

- environment: support scientific research projects in the environmental protection field that contribute to preserving our planet's atmosphere;
- health/breathing: support scientific research projects aimed at improving respiratory function and gas metabolism in the human body in the healthcare field or exploration fields (space, deep-sea diving, sport);
- local development: support local development micro-initiatives which contribute to improving living conditions in communities in the following fields: access to water, energy and care, education and training, the environment, disability, micro-entrepreneurs, social.



Foundation's projects approved in 2017 were located in 20 countries, including one new country, Chile:

- an environmental research project;
- three health/breathing research projects;
- 26 local development micro-initiatives.

The Air Liquide Foundation has supported 284 projects, including 248 local development micro-initiatives and 36 environment and health/breathing scientific research projects in around 50 countries since its creation.

A dedicated Air Liquide Foundation website enables projects to be directly submitted online, in French or English. The website address is: www.fondationairliquide.com/en.

2. The long-term commitment of employees

Air Liquide brings together 65,200 men and women of more than 150 nationalities, in 80 countries, who form multi-cultural teams with a host of skills. Air Liquide strives to promote this diversity, encourage innovation and the commitment of employees, to meet customers' expectations and guarantee the Group's long-term performance.

As part of the NEOS 2016-2020 company program, Air Liquide's Human Resources has set an objective of valorizing individual and collective performance, while promoting new ways of working that are more collaborative and digital though a network-based structure. The development, recruitment and commitment of employees in a constantly changing world are the main priorities of Human Resources.

Employees' voices - commitment surveys

The commitment and motivation of employees is one of Human Resources' priorities. Commitment surveys are carried out in the various Group entities to give employees the opportunity to voice their views. Against this backdrop and in order to guarantee confidentiality and the sincerity of results, the surveys are carried out by external companies.

Over the past three years, commitment surveys were sent to 63% of Group employees, excluding Airgas [(a)].

Participation of employees in the capital of L'Air Liquide S.A.

The Group wishes to continue increasing the involvement of its employees at the global level in its development by having its employees more broadly participate in the capital of L'Air Liquide S.A.

Thus, since 1986, 13 capital increase operations have been reserved especially for Group employees, so that they can take advantage of preferential conditions. These employees share ownership transactions contribute significantly to increasing employee motivation and their sense of belonging to the Group.

At the end of 2017, the share of capital held by the Group's current and former employees was estimated at 2.2%, of which 1.5% (within the meaning of article L. 225-102 of the French Commercial Code (Code de commerce)) correspond to shares subscribed by employees during employee reserved capital increase operations or held through mutual funds.

2.1. Develop talent

Training

Air Liquide takes particular care to develop the competencies and expertise of its employees. The Group enables its employees to improve their performance, their contribution and their employability. In 2017, excluding Airgas, the percentage of Group's employees who had at least one training session during the year is increasing at 73% [(b)].

University for all!

Through its Corporate University, Air Liquide develops its training programs to meet the needs of employees while incorporating the Group's values. The University has a dual objective:

- formalizing and rolling out the training processes and disseminating good practices that go hand in hand with the Group's training dynamic;
- offering about 20 specific programs, ranging from integrating new employees to developing leadership abilities, as well as "professional" training programs given by the different business lines. The Group's values, Principles of action and key challenges are systematically included in the various modules.

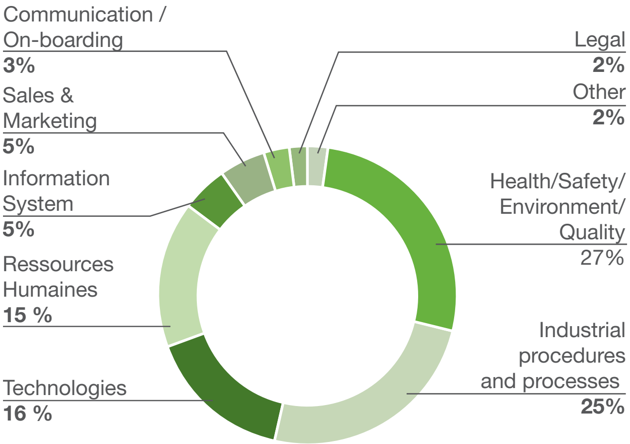
Campuses are held by the University with the Human Resources teams of the various hubs. This allows us to roll out the training programs and helps employees build their network.

An e-learning platform provides employees with support for their training. It offers over 3,200 interactive training modules (in more than 22 languages). At end-2017, more than 170,000 e-learning training modules were followed, which represented a total of 54% of training carried out within the LMS, i.e. 30% more than in 2016.

(a) 45% including Airgas who didn't have the possibility yet to organize these commitment surveys.
(b) Training data for Airgas cannot be consolidated yet due to the recent integration of the entity.

The online training offer is upgraded every year and covers many topics such as safety, ethics, Human Resources processes, management and, more recently, digital technology.

BREAKDOWN OF TRAINING TOPICS (a)



(a) *Excluding Airgas – This breakdown includes almost all Group entities in which the Learning Management System has been rolled out.*

Employee performance reviews

Employee performance is monitored and measured during performance review meetings that each employee has every year with his or her direct supervisor, but also during career development meetings that enable each employee to talk about more long-term prospects with the local Human Resources Department. The Group's Human Resources Department fosters these meetings as they are one of the cornerstones of the Company's Human Resources policy. In 2017, 81% of employees had a performance review meeting with their immediate supervisor.

Through many Air Liquide University programs, Air Liquide enhances a Feedback Culture within the Group. In different leadership or management programs of the University such as STRECH, LEAD, INSPIRE or GEAR UP, different tools are used to develop managers competencies around feedback.

For example, 360° feedback has been implemented in these programs for many years. The objective of this tool is to help managers to grow through a personal development plan based on the feedback received from one's own manager and direct reports. In this program, managers are trained on how to give and receive feedback in order to improve self-esteem thanks to an efficient communication.

Technical expertise recognition and enhancement

The Technical Community Leaders (TCL) program enables talent in the technical sectors to access careers that offer recognition, satisfaction and influence. More than 3,000 experts have been recognized, playing a key role in sharing expertise, knowledge and technical excellence.

In 2017, three International Fellows, 24 International Senior Experts and 52 International Experts from several regions of the world received recognition. 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. Experts are selected for their strong expertise in science and technology and their active contribution to innovation and knowledge transfer.

Each TCL expert contributes in the following four areas:

- communication & network: submit publications, grow networks, deliver audits and represent the Group externally;
- innovation & technology: lead their technological area, contribute to strategic decision-making, develop creative new ways of working and anticipate needs;
- business development: design solutions customer oriented, submit patents and identify new opportunities;
- transfer of knowledge: design and deliver training, mentor talent and peers, develop TCL locally and contribute to knowledge sharing.

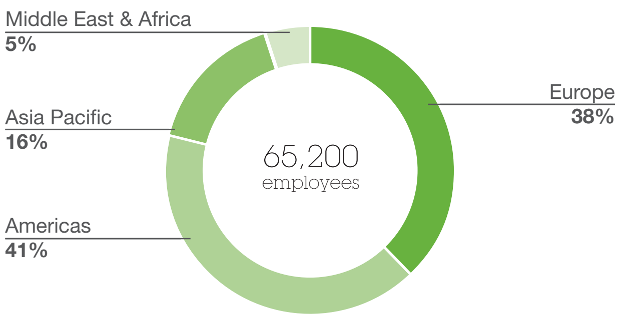
Internal mobility: a key element in career development

Mobility corresponds to an employee's ability and wish to change job or location, either within the same country or abroad, to meet the Company's needs and develop on a personal level.

Internal mobility, whether in terms of shifting job function or geography, is encouraged by the Group. This talent management practice not only promotes diversity within teams, but also opens a wide range of career opportunities for employees. Internal mobility also builds extremely strong and lasting networks within the Group.

The Group's presence in 80 countries gives employees the opportunity to develop themselves abroad.

BREAKDOWN OF GROUP EMPLOYEES BY GEOGRAPHIC REGION IN 2017



2.2. The choice of diversity

Diversity is a priority of Air Liquide's Human Resources 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 business lines and employees, and drives the Group's long-term performance. A team within the Human Resources Department is responsible for managing diversity projects. The five axes of the Group's Human Resources diversity policy are: nationality, gender, educational background, age and disability. Through this diversity policy, Air Liquide is strongly committed to fighting any form of discrimination.

Diversity jam session

A 48-hour jam session on diversity and inclusion was organized in 2017. Employees from all over the world shared their ideas, best practices and their success stories.

Air Liquide's various entities were actively involved: almost 1,200 participants and more than 5,000 posts, comments or likes on the Google+ "Valuing our differences" community. The entities organized more than 100 local events, which enriched online discussions and highlighted the diversity and creativity of Air Liquide's teams. Moreover, employees were able to follow Air Liquide managers' presentations through live video conferences.

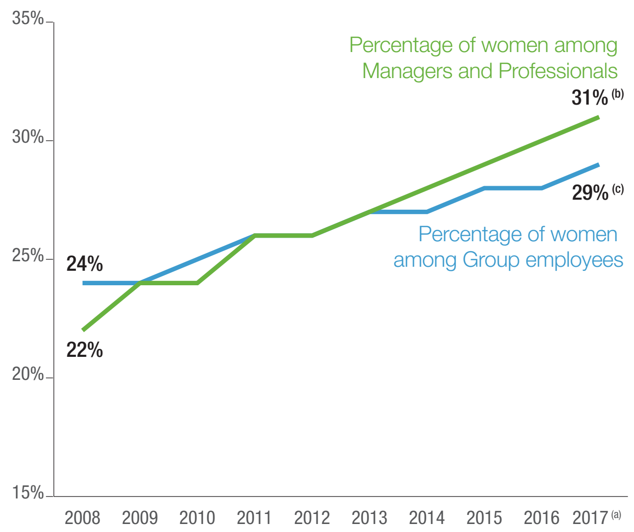
Nationality

Air Liquide's senior managers are of 33 different nationalities. The Group's Board of Directors is composed of six different nationalities. In terms of total employees, more than 150 different nationalities are employed by the Group.

Gender

Equality between men and women is an essential point in the expression of this diversity. The percentage of women increases each year, in particular among managers and professionals, which now exceeds the percentage of women in the Group. Women now represent 40% of employees considered as high potential. Five women are now members of the Group's Board of Directors and two women are members of the Group Executive Committee.

PERCENTAGE OF WOMEN AMONG MANAGERS AND PROFESSIONALS



(a) Excluding Airgas.
(b) 29% including Airgas.
(c) 26% including Airgas.

These results are the fruit of a concrete, global Human Resources strategy based on the following four priorities:

- **Recruiting to strengthen the place of women in the Group, in particular through hiring managers and professionals.**
- **Developing careers and increasing responsibilities for women in the Company:**
  - for every management position that becomes available, Human Resources examines the application of at least one woman among the applicants;
  - a meeting before and after maternity leave has been organized in a certain number of entities.
- **Involving all the managers.**

  In the framework of Air Liquide's policy on promoting equality, the hiring and career development of women and strengthening their place and responsibilities in the Company, a program on awareness-raising and discussions on the benefits that equality brings was organized in the Group, aimed at managers.
- **Better balancing of professional and private life.**

  The Diversity Charter in France that Air Liquide signed in 2009 is available online and is an illustration of the Group's commitment to diversity. Within the Air Liquide management training program called GEAR UP, one session is dedicated to the theme of diversity and the value of differences. More than 8,000 managers worldwide have already received this training.

Each year, Air Liquide joins forces with International Women's Day, celebrated on March 8. This is also when Air Liquide takes part in the annual InterElles seminar. The Cercle InterElles brings together the networks of 14 technology companies which are focused on promoting gender equality and equal opportunities. The Cercle InterElles network has stood out in recent years as a pioneer in the battle against stereotyping and as a supporter of gender equality in companies and of equal opportunities.

Educational background

Air Liquide is continually looking to recruit different profiles to build multi-disciplinary and complementary teams.

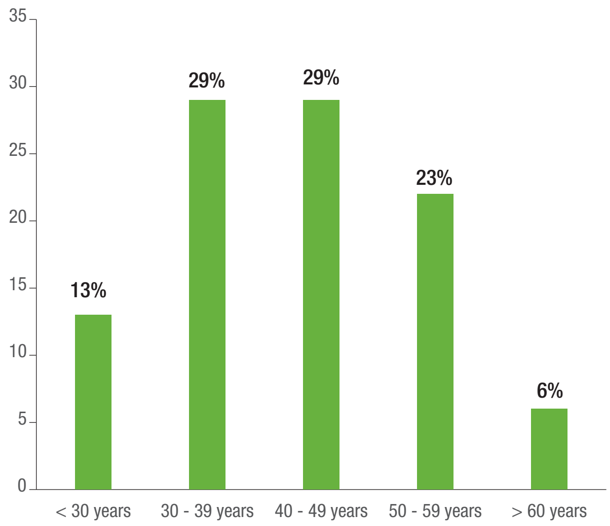
The Group's diversity is characterized by the fact that there is no "standard career path". Quite the contrary, each employee adapts his or her career path according to their individual objectives and the career opportunities offered by the Group. Internal mobility and technical expertise are two major factors in career development.

Age

The Group has invested in better professional qualifications and training programs for young people to facilitate their integration into the business world. As a result, in France, almost 527 young people have benefited from work-study contracts and around 415 from an internship, combining theoretical learning in 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 and training programs aimed at younger generations will be further promoted.

DISTRIBUTION OF EMPLOYEES BY AGE BRACKET IN 2017



Disability

As is the case for other diversity cornerstones, disability can be a factor of openness, innovation, unity and performance. That is why Air Liquide is committed to making the integration of employees with disabilities commonplace within the Company.

"Our differences are our strength" is the Group's disability policy slogan. This slogan is the main driver of the actions in favor of the inclusion of disabilities today and in the future.

In France, thanks to the actions and involvement of a network of players, a set of subsidiaries has seen an increase in the rate of employees with a disability over the past decade, from 1.75% in 2007 to 4.4% in 2017.

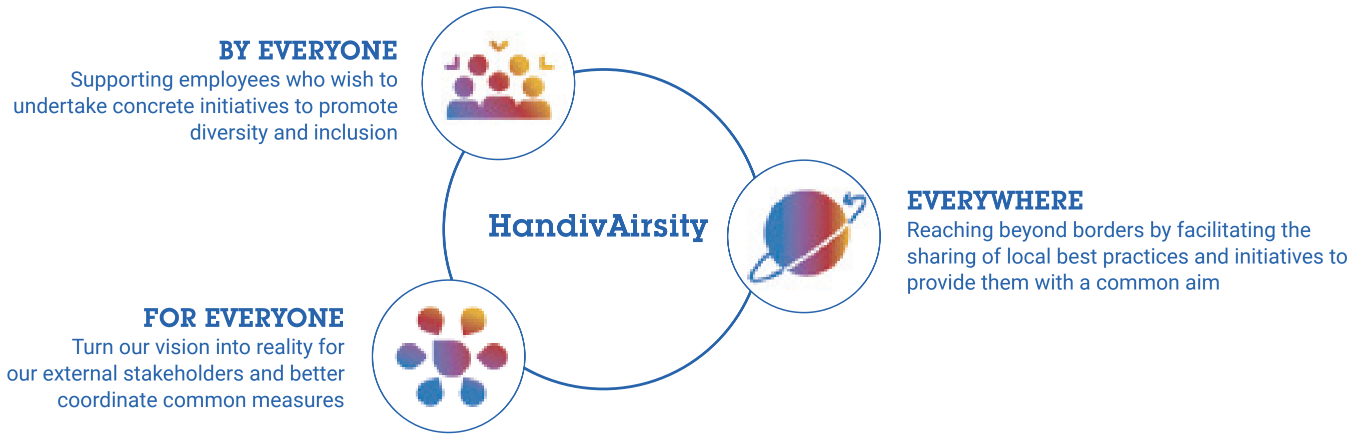
Air Liquide enables employees with a disability to be fully integrated and maintained in their jobs thanks to:

- the application of a company agreement in favor of job entry for disabled workers, approved by the DIRECCTE departmental unit;
- the employment of people with a disability;
- the signing of contracts with companies in the adapted sector and the protected sector;
- welcoming disabled persons on internships who benefit from a right to professional training,

In 2017, to coincide with the 10-year anniversary of Mission Handicap in France and drawing on the momentum of transformation driven by the NEOS company program, the Group reviewed the organization of its Disability policy and added an additional dimension.

Mission Handicap therefore becomes HandivAirsity; an initiative which involves a whole ecosystem of players on an European scale such as employees, shareholders, customers, and suppliers and provides the means to commit to working together to promote diversity and the inclusion of disability.

HandivAirsity is the driving force behind the change desired: "by everyone, everywhere, for everyone".



This new initiative underlines the Group's commitment to becoming a well-known and recognized player by valuing the uniqueness of each person for the benefit of all.

A Charter has been drawn up to provide clear guidelines for the desired change and to drive the new momentum for the inclusion of disability internally.

The project was officially launched on November 16 during European Disabled Workers Week and was attended by more than 400 participants either in person or remotely.

Actions encouraged by the Group can take many forms:

- the recruitment and integration of employees with a disability, interns or work-study placements for all positions;
- job security and career development for employees with a disability;
- training;
- informing and raising awareness among all employees;
- the development of subcontracting to firms in the adapted and protected sector [(a)];
- involvement and support of the development of external voluntary initiatives, in particular through the Air Liquide Foundation;

For example, in terms of training, an e-learning module was developed with a start-up specialized in learning methods and raising awareness regarding diversity to encourage employees to support more initiatives in favor of inclusion.

The Air Liquide Foundation takes part in Group measures to promote the inclusion of people with disabilities. It supports disability-related projects as part of its Local Development mission. In 2017, seven initiatives in France, Romania, China, Tunisia and Singapore were supported, including projects supporting mobility, access to news and culture for the deaf and hard of hearing, as well as projects that support the personal development of children and adults with disabilities. Since its creation in 2008, the Foundation has supported 42 disability-related projects in eight countries which represents 17% of projects supported by the Foundation.

2.3. New ways of working

Today's trends encourage companies to adapt rapidly to their external environment by responding to changes in the world of work which include digital transformation, collaboration and performance.

A new organizational structure

To meet these challenges and encourage efficient decision-making, Air Liquide has introduced a more 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.

Kite: a collaborative workplace

A collaborative workplace called "Kite" was launched Group-wide in 2014. Kite is changing every year to offer new services to its users. To assist users, Kite Champions within each team provide local support. In March 2017, the 100% Kite week was organized to adjust employees' ways of working: success stories and experience were shared. Training sessions were organized throughout the week, as well as workshops, demonstrations and a challenge for employees.

To support the Group's Digital Transformation, Air Liquide University has launched a training course which leads to the award of a digital passport. This consists of several self-assessment questionnaires on digital culture in general, but also on the knowledge of Kite.

(a) Sector of economic activity giving priority to employing workers with disabilities.

Google+ communities

Networking and collective intelligence drive innovation and entrepreneurship. The Group therefore provides employees with the opportunity to create and access Google+ communities through the Kite collaborative workplace. The communities get employees involved in various subjects – expertise, tools, events, processes, shared interests, etc. – but they are all based on the same desire to share information and best practices. They transform ways of working, placing an emphasis on agility, efficiency, diversity and collective intelligence.

To get employees involved in diversity and inclusion measures, a community called "Valuing our differences" exists and helped organize the Jam dedicated to this subject.

Digital solutions and Human Resources management

G+ communities dedicated to Human Resources exist and allow teams to share their best practices and raise awareness of the Group's Human Resource's policy.

The "MyTalent Online" platform harmonizes Human Resources processes within the Group. It is accessible to all employees and covers, in the same personalized area, internal and external mobility offers, talent management and the training platform.

2.4. Working conditions

Remuneration

The comprehensive remuneration of Group employees is based on three criteria:

- the position held;
- the degree of responsibility;
- performance.

Plus the factoring in of the situation of the local market, the Group's fair pay at hiring policy and current legislation. It is generally made up of a basic salary plus additional remuneration elements.

The variable portion 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. In 2017, 57% of employees received an individual variable portion as part of their remuneration (66% excluding Airgas, up 5% compared to 2016). Most of the managers and professionals have a variable remuneration, which includes sustainable development objectives. 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, safety for example, but also Corporate Sustainability Program targets for their entity.

Remuneration may also include benefits such as disability-incapacity-death insurance, health insurance, profit sharing [a] or solutions to help balance work and family life which vary by country (for example, childcare places).

In 2017, almost 100% of employees benefited from some sort of social security coverage through the Group, in particular in terms of pension plans.

Well-being

The official definition of well-being in the workplace provided by the World Health Organization (WHO) considers well-being in the workplace 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, in 2015, the 193 UN Member States set 17 Sustainable Development Goals (SDGs) for 2030. Almost all of these goals have a health component or contribute to improving global health. One of these Sustainable Development Goals is specifically focused on health and well-being. It aims to "ensure healthy lives and promote well-being for all at any age".

The quality of life in the workplace may also have a direct impact on the motivation of employees and their productivity. In order to strengthen occupational well-being within Air Liquide, various initiatives were implemented in France to promote the personal/professional life balance of its employees:

- an e-portal enabling employees to access practical, administrative and legal information to facilitate daily life. It can be used by the employee and his or her family via a personal access code. Over 50% of the Group's employees in France now have access to this e-portal;
- a telephone service enables employees to call, from their office or home, specialists (for example, doctors, legal specialists, social workers, guidance counselors, etc.) who answer their questions with complete confidentiality on areas as varied as the family, housing, well-being and healthcare, unforeseen events, budget management, taxation and retirement. Air Liquide is a forerunner in this area as the Group is currently one of the few in France to offer its employees such a large range of services;
- nursery places in inter-company crèches are offered to employees of subsidiaries covered by this partnership. At the end of 2017, 51 places had already been financed by Air Liquide for its employees;

(a) This method of remuneration, used in certain countries, is at the Company's initiative or in response to local legislation or market requirements.

- the CESU (Universal Service Employment Check), whose aim inter alia is to facilitate childcare in the home, has been implemented for certain entities in France for Group employees who have young children;
- in November 2017, workshops were offered to employees at the head office in Paris to discover, learn and experiment with what could help to improve their well-being and in particular in terms of employees rights to logout and disconnect from work. These workshops promoted better use of digital tools, and were run by external consultants.

Social dialog

In accordance with its Principles of action, Air Liquide is particularly committed to respect the highest standards in ethics and safety. The Group ensures that social dialog is encouraged and in this context, an increasing number of Air Liquide's employees (85% in 2017) have access to a representation, dialog or consultation structure.

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 three times in 2017, for two ordinary and one extraordinary meeting. Two other meetings of the Council's presiding officers also took place. The main themes dealt with during information and consultation meetings are safety, the news on the Group's activities, especially in Europe, the annual financial statements, the Sustainable Development policy, strategy and its implementation in the different countries of Air Liquide's operations. The following subjects were discussed this year: the disposal of welding activities, commitment surveys, news on the NEOS company program in Europe, the digital and collaborative policy, customer relations, procurement in Europe, the activities of the World Business Lines.

In 2017 in France, several agreements were signed with the unions in key areas.

In terms of employee savings plans, new contribution and supplementary incentive payment agreements were signed with Group companies. In addition, all optional profit-sharing agreements were renewed for the 2017-2019 period which allow employees to be more involved in the Company's performance. In France, 96% of employees benefited from these provisions.

In terms of disability agreements, an initiative was taken with a view to extend measures to the European scope. "Youth-employment contracts" were implemented. These include an initiative which allows employees to prepare for their retirement, and in particular take early retirement.

Finally, an agreement was signed to designate employee representatives on the Board of Directors and an Employee Director was appointed on December 6, 2017.

Organization of legal working hours

In France, the general framework of legal working hours is defined in agreements signed with the unions.

A few activities 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 activities, as well as those in Healthcare, include on-call systems that are regularly discussed and are subject to agreements with the unions.

Finally, in terms of telecommuting, the pilot program launched in France in 2013 in agreement with the unions has now been extended to several Group entities which represent 40% of employees in France. This approach is a response to employees' wishes in terms of work-life balance. The agreements signed with the unions demonstrate the wish of all parties to modernize collaboration practices.

3. Air Liquide and its shareholders: a long-term relationship

More than **62%** 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 yet 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 shareholders, 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 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.

At end-2017, the Group's 410,000 individual shareholders owned 32% of the capital, the highest percentage among companies in the CAC 40.

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Individual shareholders	38%	38%	36%	37%	37%	36%	37%	36%	33%	32%
French institutional investors	26%	26%	23%	21%	19%	19%	17%	18%	20% (a)	19%
Non-French institutional investors	35%	36%	40%	42%	44%	45%	46%	46%	47% (a)	49%
Treasury shares	1%	> 0%	< 1%	> 0%	> 0%	> 0%	> 0%	> 0%	> 0%	> 0%
Registered capital	33%	32%	34%	35%	36%	35%	36%	36%	33%	34%
Capital eligible for the loyalty bonus	26%	25%	25%	28%	29%	30%	30%	30%	26%	25%

(a) In 2016, the proportion of institutional investors in the Group's capital increased due to their over-subscription to the capital increase.

3.1. A steady long-term performance and an attractive remuneration policy

Since its IPO 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, free share attribution and a loyalty bonus.

Over the last 20 years, Air Liquide's revenue has shown an average annual growth rate of +6.4%. This growth has been profitable: the Group's adjusted net earnings per share have followed a similar trend with an average annual growth rate of +7.7%. Over the same period, the dividend has seen an average annual growth rate of +9.5%.

During the last 10 years, more than 50% of earnings have been distributed to shareholders.

TSR, Total Shareholder Return, at December 31, 2017

Over 20 years, Total Shareholder Return (TSR) on invested capital is +10.5% for Air Liquide registered shares [a], and +10.1% for Air Liquide bearer shares [a], versus +6% for the CAC 40 index with reinvested dividends [a]. TSR is an annualized return rate for a shareholder who buys shares at the beginning of a period and sells them at the end of the period. This calculation takes into account the share price performance, dividends paid, including loyalty bonuses, considering that they are reinvested in shares, as well as free share attributions. Since 1962, the Group has carried out 30 free share attributions.

(a) Adjusted price based on the average annual number of shares (excluding treasury shares) to account for increases in capital via capitalization of reserves or additional paid-in capital, cash subscription and the two-for-one share split on June 13, 2007.
Preferential Subscription Rights related to the capital increase carried out in September 2016 are accounted for as if they had been sold and then reinvested in shares.

3.2. Made-to-measure services

Shareholder Services, with approximately thirty employees, is a unique service at 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. As was the case with initiatives launched as part of the NEOS company program for a customer-centric strategy, Air Liquide has adopted a comprehensive active response to its shareholders and their expectations. The aim 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 the 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.

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 attribution 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 attribution.

Air Liquide is the only CAC 40 company which manages internally all aspects of its shares on behalf of its 93,000 registered shareholders: account administration-holding, record keeping, centralization of the Shareholders' Meeting. They pay no handling fees, and broker fees are 0.18% excluding tax of the gross amount of the transaction, and reduced to 0.10% (excluding tax) for stock market orders placed online and paid by bank card or account debit.

Different shareholding options

Direct registered shares

Direct registered shares are managed by Air Liquide and recorded in its register. They are held in a securities account opened at Air Liquide.

Intermediary registered shares

Intermediary registered shares are registered in the Air Liquide account and held in a securities account or a personal equity plan at the shareholder's financial institution.

Bearer shares

Bearer shares are held in a securities account or a personal equity plan at a financial intermediary.

Innovation for the benefit of shareholders

Information documents and media for shareholders such as the Annual Report, the Shareholders' Guide, Shareholders' Newsletter "Interaction" and the Invitation to Shareholders' 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 Shareholders' Meeting that is sent to all shareholders who exercised their right to vote and presents all the discussions.

Direct registered shareholders have access to a personal secure space on the Internet, so that they can consult their share portfolio and documents useful 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 share 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 as well as 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 Chief Executive Officer is personally involved in Shareholders' Meetings, shareholders' conferences and Shareholders' Communication Committee.

3.3. Promoting dialog and meetings

Air Liquide regularly receives rewards for the quality of its financial communication and its transparency. In 2017, the Group received eight shareholder-related awards, including the Agefi's 1st prize for "Shareholding democracy, transparency of information and quality of communication", the "Prize for the Best General Shareholders' Meeting" decided by the readers of the French magazine *Investir*, Silver prize for the best investor relations in the CAC40 awarded by French magazine Le Revenu and the "Investor Awards for education" voted by Boursorama and Opinion Way.

The Chairman and Chief Executive Officer is personally involved in Shareholders' Meetings, shareholders' conferences and Shareholders' Communication Committees.

Meeting with shareholders

The Shareholders' Meeting: the 2017 Shareholders' Meeting welcomed 4,000 people and 130,000 votes are counted each year. The dates for the next Air Liquide Combined Shareholders' Meeting are Wednesday May 16, 2018; Tuesday, May 7, 2019; and Tuesday May 5, 2020.

"Post-Shareholders' Meeting" conferences: the Chairman and Chief Executive Officer visits several town and cities in France to present the Group's results, strategy and outlook. For the first time this year, one of these regional meetings was broadcast in a live webcast on the Group website, allowing Internet users to ask questions directly online.

Conferences and trade shows: the Director of Shareholders Services and his teams regularly meet with shareholders. In 2017, more than 6,000 individual shareholders attended these meetings. Talks at business schools, universities and colleges are also organized, so that the decision-makers of the future have an early awareness of the culture of the stock market and of the major role of the shareholder in financing the economy.

The Shareholders' Meeting, the expression of shareholder democracy

Each year, all the Air Liquide shareholders who hold at least one share are invited to the Shareholders' Meeting. They receive all the documentation relating to their vote either by mail or by email more than one month before the Shareholders' 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 Shareholders' Meeting by collecting the votes of its shareholders directly and offers voting by Internet.

Shareholder Services and Sustainable Development

Shareholders have had the option for many years of receiving their documents in digital form and voting by Internet. This measure saves some 5 tons of paper each year. Moreover, for all mailings, the Shareholder Services uses a film which is 99% biodegradable. As of January 1, 2018, regulations will gradually increase the use of a film that can be composted at home (50% in 2018, 70% in 2019, 100% in 2020). Shareholder Services decided to anticipate this obligation by using compostable film only for all documents in question as of January 1, 2018.

Dialog with the institutional investors

To demonstrate the solidity of Air Liquide's business model, the dynamism of its growth levers, and the soundness of its strategy, the Investor Relations Department meets more than 300 institutional investors each year during roadshows, conferences and individual meetings. Executive Management takes part in some of these meetings. Investor Days, bringing together the financial community and Air Liquide's management are also exceptionally organized according to economic issues and current events.

In light of the financial community's increased interest in environmental and societal issues, the Sustainable Development Department takes part in these meetings, some of which are dedicated to this subject.

3.4. Recognizing and promoting the shareholder's key role

The accelerated 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 supports, 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 Investors and Investment Clubs).

CONTACTS

Shareholders Services:

Air Liquide – 75, quai d'Orsay, 75007 Paris, France
0 800 166 179 Service & appel gratuits ou + 33 (0)1 57 05 02 26 from abroad
http://contact.actionnaires.airliquide.com

Investor Relations:

Air Liquide – 75, quai d'Orsay, 75007 Paris, France
+ 33 (0)1 40 62 51 50 – IRteam@airliquide.com

Investor Relations – North America:
+1 610 263 8277

4. Listening to customers and patients

3.5 million customers and patients worldwide currently place their trust in Air Liquide. They all live in changing environments. Energy and environmental transition, changes in healthcare, as well as digital transformation are giving rise to new usages and new challenges. Moreover, the industrial offer is gradually shifting towards a focus on the end user, transforming the traditional value chain.

4.1. The customer at the heart of Air Liquide's strategy

The Group is implementing a customer-centric transformation strategy which targets long-term profitable growth. It relies on operational excellence, the quality of its investments, open innovation, and a network-based organization. This transformation strategy is innovation based and leverages digital solutions.

The NEOS company program commits Air Liquide employees to offering an exceptional customer experience across all businesses. This approach is part of the continuous improvement process.

"Safety culture": safety is Air Liquide's priority. This strong focus on safety relates to employees and subcontractors, industrial facilities, transport and the implementation of Group products and services at its customers' premises and in its patients' homes.

Reliability requirement: the Group pays particular attention to the quality of its products and compliance with current standards and regulatory requirements. It takes care to supply its customers on time and under all circumstances, thus guaranteeing the continuity of their operations.

Strengthening of our competitiveness: Air Liquide's differentiating strength is its in-depth understanding of its customers' needs and industrial procedures, and it provides them with targeted solutions which make it more competitive on its markets. Competitiveness is not just limited to cost and price, it also factors in quality, reliability and safety.

Solutions for the environment: drawing on its ability to innovate, the Group designs original solutions to serve industry and for cleaner transportation. It enables its customers to reduce their CO_2 emissions and improve their environmental footprint. More generally, Air Liquide helps its customers, in particular in developing economies, make the transition from "producing more" to "producing better".

Easy interaction: Air Liquide is committed to making its customer experience smoother through easier interaction. Digital technologies play a key role in this aim, along with the attentiveness and commitment of the teams on the ground.

Air Liquide, a golden supplier

Since 2016, and for the second year in a row, Air Liquide was scored 67/100 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.

4.2. Patient care

Our current society is faced with many public healthcare challenges including:

- an aging population: in the near future, almost a quarter of the population will be over 60 years old;
- the increase in chronic diseases, pandemics and nosocomial infections;
- urbanization and lifestyle changes;
- changes at hospitals and their role in light of these challenges.

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.

Home Healthcare

Air Liquide's Home Healthcare activity cares for more than 1.5 million patients worldwide in their homes suffering from chronic diseases. These treatments require medical respiratory equipment or nutritional assistance and treatment through perfusion to be made available in the patient's home. The human dimension is extremely important in this field as it involves raising awareness of the challenges of treatment and having patients and their families accept a treatment which can be long-term and constraining.

Air Liquide's employees provide home support to patients suffering from chronic pathologies such as respiratory insufficiency, sleep apnea, diabetes or Parkinson's disease. These multi-disciplinary teams of pharmacists, nurses, nutritionists and technicians are dedicated to providing services as cost-effectively as possible. Innovative training and support programs therefore aim to improve the patients' quality of life by helping reinforce treatment follow-up and increasing their autonomy.

The Home Healthcare activity sits at the heart of the healthcare system between the patient, hospital, doctors, nurses, health insurance organizations and pharmacists. Air Liquide supplies the products and 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, therefore, makes a major contribution to the care chain by ensuring patients' follow-up care at home. This activity 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.

Hospital care

Air Liquide is one of the world leaders in medical gas production and distribution for hospitals and related services. The medical gases that Air Liquide provides, such as medical oxygen, are mainly used in emergency wards, operating theaters and intensive care units.

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 has developed a global solution bringing together gas, medical equipment, and services to provide care for pulmonary arterial hypertension. It also provides a medical gas for pain relief, used in some countries during childbirth and for procedures mainly carried out at dental surgeries. 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.

Hygiene and specialty ingredients

According to the World Health Organization (WHO), 5 to 10% of people hospitalized in advanced economies contract a nosocomial infection, and this proportion can exceed 25% in some developing economies [a]. This is a major public health issue, often caused by pathogenic multi-drug resistant bacteria. Prevention and hygiene help to reduce these risks. With its subsidiary Schülke, a specialist in hygiene and hospital disinfection, Air Liquide is developing an offer particularly dedicated to hospital hygiene, which will contribute to the fight against nosocomial infections and ensure the safety of patients and medical staff. The Group supplies disinfectants for hospitals, medical instruments and hand-cleansing for medical staff. It also supplies skin cleansers for pre-operative preparation for patients and antiseptics for wound-healing.

Air Liquide currently supplies more than 15,000 hospitals and clinics worldwide with these products and services.

As an Air Liquide Healthcare company, for over 70 years SEPPIC has created and supplied innovative specialty ingredients for the healthcare and beauty markets, in particular excipients and active ingredients for the cosmetics, pharmaceutical, and nutraceutical markets.

(a) *WHO – Background to Clean Care is Safer Care.* http://www.who.int/gpsc/background/en/

Partnership with patient associations

Since 2011, the Group's Healthcare World Business Line has worked in partnership with the EFA (European Federation of Allergy and Airways Diseases Patients' Associations). This Brussels-based European organization brings together the national associations of patients with respiratory ailments, with 22 countries represented. In the framework of this partnership, Air Liquide supports the actions on information and raising awareness initiated by the EFA in public opinion and the European authorities.

Through its partnership with the EFA, Air Liquide also contributed to a publication establishing care standards for patients with COPD [a], incorporating the patients' point of view and distributing the publication to the European Commission and healthcare professionals. Air Liquide has also supported a study on patients with portable oxygen concentrators wishing to travel by air in Europe.

5. 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 and sustainable development are also taken into account. Air Liquide therefore strives to build long-lasting and balanced relationships with its suppliers, in an environment of mutual trust. The Group, for example, formalized this commitment in France by signing the Mediation Des Enterprises' Charter for responsible supplier relations.

The recognition of ethics and sustainable development-related challenges in our practices are set out in:

- the Procurement Code of Conduct, translated into 13 languages, which applies to all Group employees engaged in Procurement activities. It sets out the ethical and sustainable development principles that govern the Group's procurement;
- the Sustainable Procurement policy, updated in 2017, 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 supplier risk prevention approach in terms of sustainable development.

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:

- a Sustainable Procurement e-learning module has been developed. It is aimed at everyone in the Group that is involved in procurement and allows:
  - the presentation of consistency between the Sustainable Procurement approach and the Group's strategy,
  - the challenges of the Sustainable Procurement approach to be explained and positioned as a source of value creation for the Company,
  - for the presentation of various tools to facilitate the roll-out of this approach.

  To date, e-learning has been completed by 600 Air Liquide employees. Almost 70% of those who have completed this module 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, in line with preceding years;
- since 2015, a Sustainable Procurement network of correspondents from the Group's main procurement organizations has been set up and is used as a local intermediary for the implementation of the Sustainable Procurement approach;
- 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. Nine projects were submitted in this category in 2017.

ALIGHT: an "enlightening" project

The ALIGHT project was awarded in the Sustainable Procurement category. This initiative consisted of replacing classic lighting with LED lighting at some twenty of Air Liquide's production and storage facilities and offices in the United Kingdom. This upgrade generated energy savings of around 70% and a reduction in CO_2 emissions of 300 tons per year. This project is the perfect example of measures which promote a reduction in our carbon footprint, an improvement in working conditions in terms of employee quality and safety, and the generation of economic efficiency. The Group had therefore decided to promote the rolling out of this project to all Air Liquide entities, under the close sponsorship of the Procurement, Sustainable Development and HSE Departments. Several tens of facilities across various geographic areas are currently testing the eligibility of this project in their territories. In the long term, several hundred facilities will be affected.

(a) Chronic Obstructive Pulmonary Disease is chronic and progressive lung disease.

6. Public sphere relationships: a constructive and transparent policy

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 involving 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 specialized 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 signatory of the French Business Climate Pledge

At the One Planet Summit launched by the French President on December 12, 2017, 91 French companies of all sizes and from all sectors signed the French Business Climate Pledge, a collective commitment in favor of the climate. More than 320 billion euros in funding, research and development and innovation will be pledged by these companies between 2016 and 2020 to transition to a low-carbon society.

For further information:

http://www.medef.com/fr/communique-de-presse/article/one-planet-summit-89-entreprises-francaises-investissent-320-milliards-deuros-pour-le-climat

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), currently chaired by Air Liquide's Chairman and CEO, Benoît Potier.

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, biogases, photovoltaic, wind turbines, etc.), 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;
- at the European level, space exploration;
- the defense of intellectual property and the launch of the European unitary patent and of the Unified Patent Court;
- extra-financial 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.

H_2

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 for transport. The group is currently composed of 28 multinationals, including Air Liquide. In November 2017, during COP 23, the Hydrogen Council presented the first quantified conclusions on the role of hydrogen on a global scale. This report, entitled Hydrogen, Scaling up, presents a deadline and complete roadmap on the deployment of hydrogen and the possibilities that this energy offers in terms of energy transition. If deployed on a large scale, hydrogen could represent one fifth of total energy consumed by 2050. This would help reduce annual CO_2 emissions by around 6 gigatonnes compared with current levels and account for 20% of the decrease required to limit global warning to 2°C. Moreover, hydrogen could generate revenue of 2,500 billion US dollars and create more than 30 million jobs by 2050.

EXTRA-FINANCIAL REPORTING AND METHODOLOGY

Unless stated otherwise, all data for 2017 includes data relating to Airgas, a company which was acquired in May 2016. Group data for 2016 however only includes Airgas when the indicator in question was available and its measurement in line with the Group's calculation criteria.

1. Safety indicators

SAFETY INDICATORS FOR THE GROUP AS A WHOLE

	2008	2009	2010	2011	2012	2013	2014	2015	2016 (f)	2017
Number of accidents involving lost time of at least one day of Group employees (a)	137	131	153	144	149	151	144	152	137	198
Accident frequency of Group employees (b)	1.8	1.7	1.9	1.7	1.7	1.6	1.6	1.6	1.4	1.6*
Accident severity rate (c)				< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Number of accidents of subcontractors and temporary workers (d) (e)	154	148	155	118	142	110	92	94	91	90
Frequency of accidents of subcontractors and temporary workers						2.2	2.3	2.2	2.0	2.1

(a) *Fatal work accidents since 2011: 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 and one in 2013 were road accidents.*

(b) *Number of accidents involving lost time of at least one day, per million hours worked by Group employees. Accidents defined following the recommendation of the International Labour Office. Working hours are defined according to local employment laws.*

(c) *Average number of days of lost time per thousand hours worked. Accidents defined following the recommendation of the International Labour Office.*

(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 2011: none in 2017, one road accident in 2016, one road accident in 2015, one road accident in 2014, one road accident in 2013, three fatal work accidents in 2012 including a road accident, four fatal work accidents in 2011 including three road accidents.*

(f) *Excluding Airgas.*

* *Indicator verified by the independent verifier.*

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 the Air Liquide Sustainable Development reporting are described below. They cover a total of 533 Air Liquide production units worldwide.

Type of production unit	Number of production units	Applications and environmental footprint
Large air separation units (ASU)	333	Large air separation units produce oxygen, nitrogen and argon, with some sites also producing rare gases such as krypton and xenon. These factories "without chimneys" do not use any combustion processes. Since they discharge almost no CO_2, sulfur oxide (SOx) or nitrogen oxide (NOx), they are particularly environmentally friendly. They use almost exclusively electricity: worldwide they use about 3,700 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)	45	Large hydrogen and carbon monoxide 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 oxide (SOx). They also consume electricity and their cooling systems require back-up water.
Cogeneration units	18	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 other units of the Group. Combustion of natural gas produces CO_2 and leads to low nitrogen oxide (NOx) emissions, but practically no sulfur oxide (SOx) emissions.
Acetylene units	55	These units produce acetylene, a gas primarily used in metal welding and cutting. 53 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	64	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 some cases, it is found naturally in underground deposits, while in others 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. In this unit, carbon dioxide is reused for other industrial applications instead of being emitted directly into the atmosphere.
Units for the Hygiene and Specialty Ingredients activity	6	These production units for the Hygiene and Specialty Ingredients activity are located in France, Germany and China and belong to the subsidiaries Schülke (Hygiene activity) and SEPPIC (Specialty Ingredients activity). 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	5	Units for the Engineering & Construction activity 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.

2.2. Environmental footprint of road transportation

TRANSPORTATION: INDUSTRIAL MERCHANT ACTIVITY

	2013	2014	2015	2016	2017
Kilometers traveled by all vehicles delivering gas in liquid or cylinder form *(in millions of km)*	420	428	426	540	588*
Estimate of CO_2 emissions generated by these vehicles in the Industrial Merchant activity *(in thousands of tons)*	462	471	468	600	653*
Evolution of the distance traveled per ton of liquid industrial gas delivered (oxygen, nitrogen, argon, carbon dioxide) [(a)] *(truck delivery)*	95.3	94.8	92.2	90.3 [(b)]	93.3*
Estimate of truck transport kilometers avoided through on-site customer units *(in millions of km)*	-72	-72	-74	-63 [(b)]	-57
Estimate of CO_2 emissions avoided by these on-site units *(in thousands of tons)*	-72	-72	-74	-63 [(b)]	- 58
Percentage of deliveries of air gases and hydrogen via pipeline or on-site	86%	86%	87%	85% [(b)]	85%

(a) In kilometers per ton delivered for the Industrial Merchant activity. 2008 base of 100.
(b) Excluding Airgas.
** Indicator verified by the independent verifier.*

TRANSPORTATION: HEALTHCARE ACTIVITY

	2013	2014	2015	2016 [(a)]	2017
Transportation in the Home Healthcare activity					
Kilometers traveled *(in millions of km)*	161	149	161	173	184
Associated CO_2 emissions *(in thousands of tons)*	38	35	39	38	35
Transportation in the Medical Gases activity					
Kilometers traveled *(in millions of km)*	26	26	28	27	33
Associated CO_2 emissions *(in thousands of tons)*	23	23	25	24	29
TOTAL KILOMETERS TRAVELED HEALTHCARE BUSINESS LINE *(in millions of km)*	**187**	**175**	**189**	**200**	**217**
TOTAL ASSOCIATED CO_2 EMISSIONS *(in thousands of tons)*	**61**	**58**	**64**	**62**	**64**

(a) Excluding Airgas.

2.3. Summary of the Group's greenhouse gas emissions

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.

  Nearly 94% of the direct emissions 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 [(a)].

- 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 1 and 2 emissions represent 99% of the Group's total reported emissions in 2017.

- Scope 3 corresponds to other indirect emissions generated, for example, by Group employees' business travel or emissions linked to home-office commuting.

(a) Some hydrogen and carbon monoxide production unit also use other raw materials such as naphtha (a liquid similar to gasoline that comes from the distillation of oil) and various gases produced by refineries.

Group Scope 1 and Scope 2 emissions

	2013	2014	2015	2016 [(a)]	2017
Scope 1: total direct greenhouse gas emissions (GHG) *(in thousands of tons of CO_2 eq.)* [(b)]	11,846	11,569	13,552	14,062	14,476*
Scope 2: total indirect GHG emissions *(in thousands of tons of CO_2)* [(c)]	9,915	11,405	11,716	11,174	11,679*
TOTAL DIRECT AND INDIRECT EMISSIONS OF GHG *(in thousands of tons of CO_2 eq.)*	**21,761**	**22,974**	**25,268**	**25,236**	**26,155***

(a) *Excluding Airgas.*
(b) *Includes CO_2 emissions and nitrous oxide emissions.*
(c) *Total of indirect GHG emissions generated by the production of electricity purchased outside the Group. The indirect emissions only concern CO_2 emissions. Calculation takes into account the primary energy source that each country uses to produce electricity (source: International Energy Agency).*
* *Indicator verified by the independent verifier.*

The Group's direct emissions increased from 14.1 million tons of CO_2 equivalent in 2016 to 14.5 million tons in 2017, i.e., an increase of 2.9%. This growth is mainly due to the first complete year of fully-stocked operation of the large hydrogen production unit in Yanbu (Saudi Arabia) and increased hydrogen production in Texas (USA). In both cases, the hydrogen produced is used to produce sulfur-free fuels and meet environmental standards.

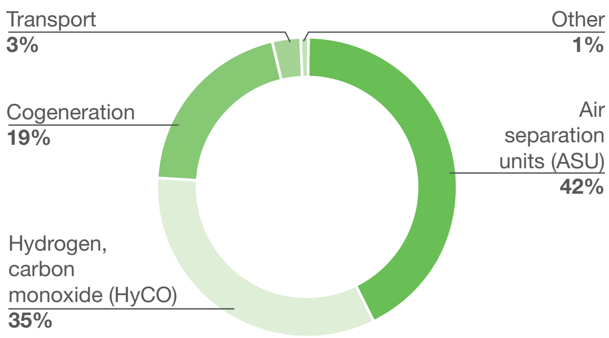
The Group's indirect emissions increased from 11.2 million tons of CO2 in 2016 to 11.7 million tons in 2017, i.e., an increase of 4.5%. This increase is directly due to the full-year integration of Airgas plants within the Group's scope.

Scope 3 emissions related to business travel

Business travel by plane, road or train is the source of reported Scope 3 CO_2 emissions.

These emissions represent less than 200,000 tons of CO_2 in 2017 for all subsidiaries, representing less than 1% of the Group's total reported emissions.

BREAKDOWN OF DIRECT AND INDIRECT GREENHOUSE GAS EMISSIONS BY UNITS



2.4. Energy efficiency of production units

ENERGY AND EFFICIENCY INDICATORS FOR THE GROUP AS A WHOLE

	2013	2014	2015	2016 [(a)]	2017
Annual electricity consumption *(in GWh)* [(b)]	28,305	30,341	31,650	32,834	34,062*
Annual thermal energy consumption *(in LHV terajoules)* [(c)]	232,270	226,036	266,153	281,043	290,285* [(d)]
Evolution of energy consumption *(per m^3 of air gas produced)* [(e)] [(f)]	99.0	99.3	98.7	100.3	98.1*
Evolution of energy consumption *(per m^3 of hydrogen produced)* [(e)] [(g)]	97.9	97.5	99.3	99.5	98.6*

(a) *Excluding Airgas.*
(b) *Includes a share of steam and compressed air purchased by the Group.*
(c) *LHV: Lower Heat Value, which includes the fact that energy from water vaporizing in fuel is not recovered.*
(d) *Approximately 80,000 GWh LHV.*
(e) *Calculated using a base of 100 in 2007.*
(f) *Gases produced (oxygen, nitrogen, argon) calculated in m^3 of equivalent gaseous oxygen.*
(g) *Hydrogen and carbon monoxide.*
* *Indicator verified by the independent verifier.*

The energy efficiency indicator of oxygen units improved by 2% in 2017. This was mainly due to optimization in the value chain resulting from the integration of Airgas plants, as well as the high activity level in France and Spain within the metals sector. Efficiency programs in China also continue to provide energy efficiency gains.

The energy efficiency indicator for hydrogen units also improved by 1% in 2017, principally as a result of the first complete year of fully-stocked operation of the Yanbu plant, in addition to efficiency gains related to large volumes produced in Northern Europe.

2.5. Discharges into air and water

DISCHARGES INTO AIR AND WATER *(in tons)*

	2013	2014	2015	2016 [a]	2017
Air discharge: NOx *(nitrogen oxide)*	4,400	3,200	3,270	3,563	3,542
Air discharge: SOx *(sulfur oxide)*	< 250	< 250	< 250	< 250	< 250
Volatile organic compounds (VOCs) discharged into the atmosphere *(estimate)*	110	110	99	76	146 [b]
Discharge to water: oxidizable matter	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000
Discharge to water: suspended solids	< 1,500	< 1,500	< 1,500	< 1,500	< 1,500

(a) Excluding Airgas.
(b) This increase is mainly due to the acquisition of Serdex on January 1, 2017.

2.6. Waste and by-products

WASTE AND BY-PRODUCTS

	2013	2014	2015	2016 [e]	2017
Non-hazardous waste and by-products					
Annual quantity of lime produced *(extracted dry equivalent)* by the acetylene production units *(in tons)*	32,500	32,000	29,000	26,000	25,000
% recycled	*> 80%*	*> 90%*	*> 80%*	*> 80%*	*> 90%*
Metal waste *(in tons)* [a]	9,800	9,000	7,600	5,700	61,513 [b]
% recycled	*> 99%*	*> 99%*	*> 99%*	*> 99%*	*> 99%*
Total non-hazardous waste and by-products *(estimate in tons)*	**42,300**	**41,000**	**36,600**	**31,700**	**86,513**
Hazardous waste					
Paints and solvents *(in tons)*	150	100	104	106	79
% recycled	*63%*	*63%*	*59%*	*63%*	*31%* [c]
Oils *(in tons)*	800	600	650	696	821
% recycled	*88%*	*83%*	*92%*	*91%*	*93%* [d]
Total hazardous waste and by-products *(estimate in tons)*	**950**	**700**	**754**	**802**	**899**
TOTAL WASTE AND BY-PRODUCTS	**43,250**	**41,700**	**37,354**	**32,502**	**87,412**

(a) Non-hazardous metal waste.
(b) This figure includes cylinders as well as replacement of equipment in production sites. The sharp increase is explained by the nature of Airgas activity. For example, Air Liquide uses around 61,000 cylinders while Airgas uses 120,000.
(c) In addition, 58% is incinerated (35% in 2016).
(d) In addition, 7% is incinerated.
(e) Excluding Airgas.

Due to its industrial activity, the fight against food waste is not considered as a priority area for Air Liquide.

2.7. Regulations

CERTIFICATIONS (GLOBAL SCOPE - EXCLUDING AIRGAS)

	2013	2014	2015	2016	2017
Estimate of revenue of Group entities covered by an ISO9001 quality certification	72%	70%	72%	66%	73%
Estimate of revenue of Group entities covered by an ISO14001 environmental certification	27%	27%	27%	26%	30%
Estimate of revenue of Group entities covered by the OHSAS18001occupational Health and Safety certification	15%	16%	15%	14%	16%

European REACH regulation

REACH (Registration, Evaluation, Authorization and restriction of CHemicals) is a European Union regulation that governs the registration, assessment and authorization of chemical substances produced in or imported to the European Union. 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. This rule is part of the product stewardship approach developed by the chemicals industry.

The European REACH regulation went into effect on June 1, 2007 and registration and authorization procedures were spread over about 12 years for products already on the market.

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 molecules, in particular specialty gases in the Electronics business (NF_3, CF_4, C_4F_8, SiF_4, etc.). Until now, several other products (carbon monoxide, acetylene, methanol [(a)], lime [(b)], nitrous oxide, ultra-pure fuels) have been registered in compliance with the schedule established by this regulation.

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 has complied with the various deadlines imposed by this regulation since it came into effect. As well as the European cases submitted under the REACH regulation, SEPPIC also complies with similar non-European regulations.

Air Liquide must also make sure that the raw materials in use are in compliance with the REACH regulation. In 2017, Group sales subject to REACH registration represent less than 3% of the Group's revenue.

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 and safety data sheets.

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 applicable, Air Liquide subsidiaries have already implemented the principles of GHS in terms of product compliance with local and regional regulations.

Seveso 3 Directive

This European directive focuses on preventing major industrial risks. It applies to any facility where 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, 102 "lower tier" and 24 "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, 39 other Group sites would be covered.

(a) Methanol is the raw material used to produce hydrogen at one of the Group's units.

(b) Lime is a by-product of the Acetylene business.

CO_2 emission quotas

Air Liquide is present in a number of regions that have implemented, or are in the process of implementing, a quota system for greenhouse gas emissions. Air Liquide's Corporate teams and dedicated teams based in these regions monitor and assist these regulatory developments in order to ensure that their operations are fully compliant with the objectives and obligations related to these quota systems. Thanks to the energy efficiency of its production systems, Air Liquide is able to naturally minimize the energy footprint, and therefore the carbon footprint of its products and services.

In the European Union, the European directive ETS (Emission Trading Scheme) established a quota system for greenhouse gas emissions in 2005, in compliance with the Kyoto Protocol and EU targets on climate change. Following 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 expanded the scope of industrial facilities subject to the ETS. For Air Liquide, seven cogeneration sites in Germany, France and the Netherlands, and all of the Group's large hydrogen product sites in Europe were affected by this directive in 2017. With regard to hydrogen production units, CO_2 emission quotas are mostly allocated for free, according to a benchmark set for the top performing European facilities. Air Liquide obtains CO_2 quotas from the market or its customers in order to cover the emissions from hydrogen production sites not covered by the free allocations and for all emissions from the cogeneration sites.

A greenhouse gas emissions quota system was put in place in South Korea in 2015. It affects all of Air Liquide's air gas production and hydrogen and carbon monoxide units in Korea, with an allocation of free emission quotas based on historical emissions. This free emission quota volume will then be gradually reduced.

China announced ambitious targets for reducing the carbon intensity of its economy by 2030. 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, in which Air Liquide participates actively, relate to four Group production sites located in these regions (air gas and hydrogen units). At the end of 2017, the Chinese government implemented a national emissions trading scheme. China's national ETS only covers the electricity production sector for the moment. Other countries, including Kazakhstan and Singapore plan to implement their own ETS programs in 2018.

2.8. Environmental incidents and risks related to climate change

An Air Liquide procedure, available for all Group employees and fully integrated into Air Liquide's Industrial Management System (IMS), defines environmental incidents based on three levels of severity. All incidents reported at Group level are subject to a systematic, in-depth analysis, depending on the nature of the incident, so that preventative measures can be stepped up. Environmental risks related to industrial processes and risks related to climate change are taken into account by the Group and are presented in the "Risk factors" section of the Reference Document.

Most of the time, environmental incidents in the industrial and medical gases business have a very low impact on the environment compared to the traditional chemicals industry. For example, in air gas production, any possible leak of these gases does not represent any danger for the atmosphere. Likewise, the water used in Air Liquide's processes is primarily used in cooling and steam production. The risk of possible pollution of the water used is therefore very low. In 2017, there were a total of 14 environmental incidents in the Group, mainly involving air gas and oil leaks.

Climate risks are reviewed at both Group and site level. Weather-related and climatic disasters, water stress and the increased frequency of cyclones constitute a risk that could disrupt the smooth running of operations. Preventive measures targeting extreme weather-related phenomena exist at the main sites located in high-risk areas.

The amount of financial provision and guarantees earmarked for environmental risks is 11,8 million euros.

3. Specific indicators for the Home Healthcare activity linked to the issue of socially responsible bonds

In 2012, Air Liquide issued its first SRI-labeled bond [a] 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 activity led to this issue being given an SRI label. This evaluation is based on the social, environmental and governance criteria of the Home Healthcare activity that concerns more than 1.5 million patients worldwide.

In the framework of this SRI bond issue, Air Liquide made a commitment to publishing during the life of these bonds, i.e. nine years, indicators specific to the Home Healthcare activity in the area of the environment, safety and employee diversity.

Number of patients treated	2013	2014	2015	2016	2017
Total number of patients treated by the Air Liquide Home Healthcare Division	1,100,000	1,200,000	1,300,000	1,400,000	1,550,000
Group employees					
Home Healthcare activity employees [a]	7,748	8,183	9,112	9,492	10,015
Safety					
Number of lost-time accidents of at least one day among employees [b]	77 [b]	62 [b]	79 [b]	63 [b]	66 [b]
Number of accidents of subcontractors and temporary workers [c]	13 [b]	9 [b]	16 [b]	21 [d]	8 [b]
Equality					
% of women among managers and professionals	56%	58%	58%	57%	58%
% of women among managers and professionals hired during the year	70%	56%	58%	62%	59%
Training					
Average number of days of training per employee, per year	2	2	1.6	2.1	1.9 [e]
Kilometers driven and CO_2 emissions related to transportation					
Kilometers driven per patient monitored per year	147	124	123	131	118
CO_2 emissions related to transportation per patient *(kgCO_2/patient)* per year	35	29	30	29	23

(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) 14 hours a year according to counting in hours (base: 1 day = 7.5 hrs).

(a) Socially Responsible Investment: application of sustainable development principles to investment. Approach consisting in systematically considering the three dimensions – environment, social/societal, governance – in addition to the usual financial criteria.

4. Human Resources indicators

GROUP EMPLOYEES [(a)]

Headcount [(a)]	2013	2014	2015	2016	2017
Group employees	50,250	50,300	51,500	66,700	65,200*
Women [(e)]	13,500	13,600	14,200	17,000	16,900
as a %	27%	27%	28%	25%	26%
Men [(e)]	36,750	36,700	37,300	49,700	48,300
as a %	73%	73%	72%	75%	74%
Joining the Group [(b)]	14.9%	14.8%	16.5%	17.1%	16.7%
Leaving the Group [(c)]	13.1%	14.7%	14.0%	15.1%	18%
% of employees having resigned during the year [(d)]	4.9%	5.8%	5.3%	5.4%	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 IN THE GROUP

	2013	2014	2015	2016 (a)	2017
Parity and diversity					
Equality					
% of women among managers and professionals	27%	28%	29%	30%	29%*
% of women among managers and professionals hired during the year	36%	31%	34%	39%	37%*
% of women among employees considered as high potential	40%	41%	38%	40%	40%
Number of nationalities					
Among expatriates	45	44	50	44	53
Among Senior Managers	28	31	33	30	33
Among employees considered as high potential	46	44	48	49	52
Number of nationalities among senior managers/ Number of countries where the Group is present	35%	39%	41%	38%	41%
Training (b)					
% of total payroll allocated to training	About 2%	About 2%	About 2%	About 2%	About 2%
Average number of days of training per employee, per year *(order of magnitude)*	3.5 days	3.5 days	3.5 days	3.1 days	3.0 days (c)
% of employees who attended a training program at least once during the year *(order of magnitude)*	75%	78%	77%	72%	73%*
Performance review					
% of employees who have had a performance review meeting with their direct supervisor during the year	78%	79%	80%	76%	81%*
% of employees who have had a career development meeting with the HR Department during the year	14%	16%	15%	17%	12% (d)
Remuneration					
% of employees with an individual variable share as part of their remuneration	56%	58%	60%	63%	57%
Absenteeism					
Absence rate of Air Liquide employees *(estimate)*	3.6% (e)	2.4% (f)	2.7% (f)	2.7% (f)	2.5% (f)
Ethics					
% of employees belonging to a unit with a local Code of Conduct	94%	94%	97%	96%	97%
Employee loyalty					
Average seniority in the Group	10 years	10 years	10 years	10 years	10 years
Retention rate of managers and professionals over a year (g)	94.8%	93%	95%	95%	93%
Social performance					
% of employees with disabilities (h)	1.4%	1.3%	1.4%	1.4%	1.1% (i)
% of employees having access to a representation/dialog/consultation structure	76%	76%	79%	82%	85%
% of employees belonging to an entity at which an internal commitment survey was conducted within the last three years	> 50%	> 55%	68%	65%	45% (j)
Employee shareholders					
% of capital held by Group employees (k)	1.6%	1.5%	1.5%	1.5%	1.5%
% of Group employees that are shareholders of L'Air Liquide S.A.	More than 55%	More than 50%	Almost 50%	More than 50%	36%

(a) Excluding Airgas.
(b) Excluding Airgas. This indicator covers 72% of the consolidated scope. For more information, see page 94.
(c) 23 hours a year according to counting in hours (base: 1 day = 7.5 hrs).
(d) 17% excluding Airgas.
(e) Calculated for Europe.
(f) Calculated Worldwide.
(g) This rate takes only resignations into account.
(h) For the countries where regulations allow this data to be made available.
(i) 1.5% excluding Airgas.
(j) 63% excluding Airgas.
(k) Within the meaning of article L. 225-102 of the French Commercial Code (Code de commerce).
** Indicator verified by the independent verifier.*

5. Reporting Methodology

5.1. 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 progressively 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, the 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 IMS (Industrial Management System) and the global protocol for Group Policies, Codes and Procedures called the BLUEBOOK.

5.2. 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.

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 certain specific ones:

- information on the impact of transportation (kilometers traveled by delivery trucks, 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 kilometers saved and CO_2 emissions avoided through on-site air gas production units and efficiency measures pertains to fully consolidated subsidiaries;
- 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 Division.

5.3. Reporting 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 Management System Department using a dedicated Intranet tool, and includes:
  - for all units, the data of the Group's accident reporting,
  - 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, carbon dioxide units and Hygiene and Specialty Ingredients activities), the Engineering & Construction business units, the Research & Development sites and the Technical Centers, all indicators (energy use, atmospheric emissions, water consumption, discharge to water, etc.);

- indicators on Industrial Merchant transportation are the responsibility of this business line;
- indicators on the transportation of 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 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.

5.4. Methodology used for the mapping of Sustainable Development stakes

To draw up this map or materiality matrix, Air Liquide brought together a working group composed of various Group departments. The main stakeholders were consulted to assess the importance of these stakes to each of them: customers, patient associations, suppliers, investors, journalists, NGOs, panels of employee representatives and of individual shareholders.

This consultation was supplemented by the data analysis of non-financial rating agencies and the conclusions of a quantitative survey of the French general public which was carried out on this subject in 2015. The results were then consolidated by assigning an equal weighting to the statements of each stakeholder.

The horizontal X-axis positions these stakes according to their importance to the Company and on the Y-axis they are positioned according to their importance to the stakeholders.

5.5. 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.

5.6. 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 CO_2 emissions avoided, water consumption, kilometers avoided per on-site unit, and training.

INDEPENDENT VERIFIER'S REPORT

Independent verifier's report on consolidated social, environmental and societal information presented in the management report

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

To the shareholders,

In our quality as an independent verifier accredited by the COFRAC [(a)], under the number n° 3-1050, and as a member of the network of one of the statutory auditors of the company L'Air Liquide, we present our report on the consolidated social, environmental and societal information established for the year ended on the December 31, 2017, presented in chapter "Corporate Social Responsibility and Sustainable Development Report" of the management report, hereafter referred to as the "CSR Information," pursuant to the provisions of the article L.225-102-1 of the French Commercial Code (Code de commerce).

RESPONSIBILITY OF THE COMPANY

It is the responsibility of the Board of Directors to establish a management report including CSR Information referred to in the article R. 225-105 of the French Commercial Code (Code de commerce), in accordance with the protocols used by the company (hereafter referred to as the "Criteria"), mainly composed of BLUEBOOK protocols, supported by the procedures defined in the Industrial Management System which were applicable in 2017, and of which a summary is included in the chapter "Reporting Methodology" of the management report and available on request.

INDEPENDENCE AND QUALITY CONTROL

Our independence is defined by regulatory requirements, the Code of Ethics of our profession as well as the provisions of article L. 822-11 of the French Commercial Code (Code de commerce). In addition, we have implemented a quality control system, including documented policies and procedures to ensure compliance with ethical standards, professional standards and applicable laws and regulations.

RESPONSIBILITY OF INDEPENDENT VERIFIER

It is our role, based on our work:

- to attest whether the required CSR Information is present in the management report or, in the case of its omission, that an appropriate explanation has been provided, in accordance with the third paragraph of R. 225-105 of the French Commercial Code (Code de commerce) (Attestation of presence of CSR Information);
- to express a limited assurance conclusion, that the CSR Information, overall, is fairly presented, in all material aspects, in according with the Criteria;

Nonetheless, it is not our role to give an opinion on the compliance with other legal dispositions where applicable, in particular those provided for in the article L. 225-102-4 of the French Commercial Code (vigilance plan) and in the Sapin II law n°2016-1691 of 9 December 2016 (anti-corruption).

Our verification work mobilized the skills of nine people between August 2017 and February 2018 for an estimated duration of fifteen weeks.

We conducted the work described below in accordance with the professional standards applicable in France and the Order of 13 May 2013 determining the conditions under which an independent third-party verifier conducts its mission, and in relation to the opinion of fairness and the reasonable assurance report, in accordance with the international standard ISAE 3000 [(b)].

(a) Scope available at www.cofrac.fr

(b) ISAE 3000 – Assurance engagements other than audits or reviews of historical information.

1. Attestation of presence of CSR Information

NATURE AND SCOPE OF THE WORK

We obtained an understanding of the company's CSR issues, based on interviews with the management of relevant departments, a presentation of the company's strategy on sustainable development based on the social and environmental consequences linked to the activities of the company and its societal commitments, as well as, where appropriate, resulting actions or programs.

We have compared the information presented in the management report with the list as provided for in the article R. 225-105-1 of the French Commercial Code (Code de commerce).

In the absence of certain consolidated information, we have verified that the explanations were provided in accordance with the provisions in article R. 225-105-1, paragraph 3, of the French Commercial Code (Code de commerce).

We verified that the information covers the consolidated perimeter, namely the entity and its subsidiaries, as aligned with the meaning of the article L. 233-1 and the entities which it controls, as aligned with the meaning of the article L. 233-3 of the French Commercial Code (Code de commerce).

CONCLUSION

Based on this work, we confirm the presence in the management report of the required CSR information.

2. Limited assurance on CSR Information

NATURE AND SCOPE OF THE WORK

We undertook that ten interviews with people responsible for the preparation of the CSR Information in the departments in charge of the data collection process and, if applicable, the people responsible for internal control processes and risk management, in order to:

- Assess the suitability of the Criteria for reporting, in relation to their relevance, completeness, reliability, neutrality, and understandability, taking into consideration, if relevant, industry standards;
- Verify the implementation of the process for the collection, compilation, processing and control for completeness and consistency of the CSR Information and identify the procedures for internal control and risk management related to the preparation of the CSR Information.

We determined the nature and extent of our tests and inspections based on the nature and importance of the CSR Information, in relation to the characteristics of the Company, its social and environmental issues, its strategy in relation to sustainable development and industry best practices.

For the CSR Information which we considered the most important [(a)]:

- At the level of the consolidated entity and business lines, we consulted documentary sources and conducted interviews to corroborate the qualitative information (organization, policies, actions, etc.), we implemented analytical procedures on the quantitative information and verified, on a test basis, the calculations and the compilation of the information, and also verified their coherence and consistency with the other information presented in the management report;
- At the level of the representative selection of entities and sites that we selected [(b)], based on their activity, their contribution to the consolidated indicators, their location and a risk analysis, we undertook interviews to verify the correct application of the procedures and undertook detailed tests on the basis of samples, consisting in verifying the calculations made and linking them with supporting documentation. The sample selected therefore represented on average 24% of the energy consumption (thermal and electric), and 13% of Group employees, that were considered as representative characteristics of the environmental and social domains.

For the other consolidated CSR information, we assessed their co nsistency in relation to our knowledge of the company.

Finally, we assessed the relevance of the explanations provided, if appropriate, in the partial or total absence of certain information taking into account, if relevant, professional good practices.

We consider that the sample methods and sizes of the samples that we considered by exercising our professional judgment allow us to express a limited assurance conclusion; an assurance of a higher level would have required more extensive verification work. Due to the necessary use of sampling techniques and other limitations inherent in the functioning of any information and internal control system, the risk of non-detection of a significant anomaly in the CSR Information cannot be entirely eliminated.

CONCLUSION

Based on our work, we have not identified any significant misstatement that causes us to believe that the CSR Information, taken together, has not been fairly presented, in compliance with the Criteria.

Paris-La Défense, February 23, 2018

French original signed by:

The independent verifier

ERNST & YOUNG et Associés

Sustainable Development – Partner Éric Duvaud	Partner Bruno Perrin

(a) **Social informations :**

- *Indicators (quantitative information) : Headcount (Nb), recruitments and departures (% headcount), rate of women within the managers and professionals population (present and hired %), rate of employees having attended at least a training session during the year (%), rate of performance appraisals performed by managers during the year (%), accident frequency rate of the group employees.*
- *Qualitative information: health and safety at the work place for the group employees and its subcontractors, employee engagement, retention of employees, and responsible purchasing.*

Environmental and Societal information :

- *Indicators (quantitative information) : Annual electricity (GWh) and thermal energy consumption (TJ PCI), evolution of energy consumption per m3 of air gas produced and per m^3 of hydrogen produced (base 100 in 2007), evolution of the distance traveled per ton of industrial gas delivered as liquid (oxygen, nitrogen, carbon monoxide, base 100 in 2007), direct & indirect greenhouse gas (GHG) emissions (scopes 1&2, in $MtCO_2$), estimation of the annual water consumption (Mm_3).*
- *Qualitative information: General environmental policy (management of the industrial system and certification), sustainable use of resources (energy consumption, measures undertaken to improve energy efficiency), climate change (significant sources of greenhouse gases generated as a result of the company's activities).*

(b) Environmental Indicators: Air separation units of Cherepovets 11 & 12 (Russia), air separation units of Jurong 8 & 9 and Air Liquide Singapore Pipeline (Singapore), air separation units of Düsseldorf (Duisburg – Ruhr Network) (Germany), hydrogen unit of Jurong 10 (Singapore), hydrogen unit of Dormagen (Germany), cogeneration unit of Dresden (Germany), conditioning sites of industrial merchant of Germany. Follow up audits of the air separation units of Bayport 3 & 4 (USA), hydrogen unit of Bayport (USA), hydrogen units of Yanbu 1 & 2 (Saudi Arabia) and cogeneration unit of Bayport (USA).

Safety and Social Indicators: On-site audits of Gasmedi (Spain and Portugal), Vitalaire (Germany), Schülke & Mayr (Germany), AL German Industry (Germany), AL France Industrie (France). Follow-up audits of Al Khafrah Industrial Gases (Saudi Arabia) and AL Advanced Materials (USA).

APPENDIX

Link between Air Liquide's Sustainable Development indicators and the indicators of the Global Reporting Initiative (GRI)

Page	Indicateurs Air Liquide	Indicateur GRI
	Human Resources	
117	Group employees	G4-LA1
95	Distribution of employees by geographic area	G4-LA1
97	Distribution of employees by age bracket	G4-LA1
117	Turnover of employees (leaving the Group)	G4-LA1
118	Retention rate of managers and professionals	G4-LA1
117	% of women in the Group	G4-LA12
118	% of women among managers and professionals	G4-LA12
118	Average number of days of training per employee, per year	G4-LA9
118	% of employees who have had a performance review meeting with their direct supervisor during the year	G4-LA11
118	Diversity indicator (number of nationalities)	G4-LA12
	Safety	
109	Number of lost-time accidents of Group employees	G4-LA6
109	Accident frequency of Group employees	G4-LA6
109	Number of lost-time accidents of subcontractors and temporary workers	G4-LA6
	Energy and environment	
112	Total annual electricity consumption	G4-EN3
112	Total annual thermal energy consumption	G4-EN3
112	Evolution of energy consumption per m^3 of air gas produced (ASU)	G4-EN5
112	Evolution of energy consumption per m^3 of hydrogen produced (HyCO)	G4-EN5
111	Evolution of the distance traveled per ton of gas delivered	G4-EN30
85	Total annual water consumption	G4-EN8/EN22
112	Total direct greenhouse gas emissions	G4-EN15
112	Total indirect greenhouse gas emissions	G4-EN16
113	Emissions into the atmosphere (NOx, SOx)	G4-EN21
82; 85	GHG emissions avoided in Air Liquide operations and at customers' facilities	G4-EN19
113	Estimate of emissions into the atmosphere (VOCs)	G4-EN21
113	Discharge to water (oxidizable matter, suspended solids)	G4-EN22
113	Total mass of waste by type and waste treatment	G4-EN23
	Transportation	
111	Estimate of CO_2 emissions generated by truck delivery	G4-EN30
111	Estimate of CO_2 emissions avoided through on-site units	G4-EN19

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 14, 2018, on the recommendation of the Appointments 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

Board of Directors

DIRECTORS CURRENTLY IN OFFICE

	Changes in 2017							
Members of the Board	**Appointment**	**Renewal**	**Nationality**	**Age [(a)]**	**Gender**	**Year of first appointment**	**Years of service on the Board [(a)]**	**End of current term**
Benoît POTIER Chairman and Chief Executive Officer			French	60	M	2000	13	2018 [(d)]
Jean-Paul AGON Lead Director			French	61	M	2010	7	2018 [(d)]
Geneviève BERGER			French	62	F	2015	2	2019
Philippe DUBRULLE Director representing the employees			French	45	M	2014	3	2018 [(f)]
Pierre DUFOUR			Canadian	62	M	2012	5	2020
Brian GILVARY			British	55	M	2016	1	2020
Siân HERBERT-JONES			British	57	F	2011	6	2019
Xavier HUILLARD	May 3, 2017		French	63	M	2017	7 months	2021
Karen KATEN			American	68	F	2008	9	2020
Sin Leng LOW			Singaporean	65	F	2014	3	2018 [(d)]
Thierry PEUGEOT		May 3, 2017	French	60	M	2005	12	2021
Annette WINKLER			German	58	F	2014	3	2018 [(d)]

(a) Number of full years of service as of December 31, 2017. The term of office of Mr Benoît Potier as President of the Management Board (2001-2006) is not taken into account.
(b) Pursuant to the decision of the Board of Directors of February 14, 2018; for information regarding independence criteria, please refer to this Reference Document – page 130.
(c) In accordance with the recommendation of the AFEP/MEDEF Code.
(d) Renewal of term proposed to the Shareholders' Meeting of May 16, 2018.
(e) Please refer to information concerning Mr Benoît Potier – page 150.
(f) At a plenary meeting on December 6, 2017, the France Group Committee reappointed Philippe Dubrulle as Director representing the employees for a term of four years expiring at the close of the Shareholders' Meeting held in 2022 to approve the financial statements for the fiscal year ending December 31, 2021.

CENTRAL WORKS COUNCIL DELEGATES

Laurence DEZIER	Central Works council delegate
Frédéric ROUSSEAU	Central Works council delegate

Independant Director (b)	Board Committees: Audit and Accounts Committee	Appointments and Governance Committee	Remuneration Committee	Environment and Society Committee	Number of directorships in listed companies (c)	Experience and expertise
No					2 (e)	Chairman and Chief Executive Officer
Yes		President	President		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	2	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 oil and gas industry, financial expertise, as well as the global vision of a large international group
Yes	President				2	Finance and knowledge of the Service sector in an international listed company
Yes			Member		3	Experience as Chairman and Chief Executive Officer of a large international group and knowledge of the automotive sector
Yes		Member			1	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	Senior Management of a division of a large German industrial group with an international reach in the automotive sector

Executive Management and Executive Committee as of December 31, 2017

Benoît Potier Chairman and Chief Executive Officer [(a)] Born in 1957 – French	**François Jackow** Senior Vice President In charge of Healthcare activities Supervises the Dubaï hub supervising Africa, Middle East and India Vice President Customer Experience Born in 1969 – French
Michael J. Graff Executive Vice President Houston hub Executive Vice President supervising America Supervising Electronic World Business Line, Safety and Industrial systems Chairman of the Board of Airgas Born in 1955 – American	**François Venet** Senior Vice President Strategy Vice President Supervising Large Industries Business Line and Engineering & Construction Born in 1962 – French
Fabienne Lecorvaisier Executive Vice President in charge of Finance, Operations Control and General Secretariat Born in 1962 – French	**François Abrial** Shanghai hub Executive Vice President supervising Asia Pacific Born in 1962 – French
Guy Salzgeber Executive Vice President Frankfurt hub Executive Vice President supervising Europe Industries Supervising Group Procurement Born in 1958 – French	**Pascal Vinet** Chief Executive Officer of Airgas Born in 1962 – French
François Darchis Senior Vice President Innovation and Development Vice President Supervising Information Technologies, Industrial Merchant Business Line and the Group's Sustainable Development program Born in 1956 – French	**Armelle Levieux** Vice President Group Human Resources Born in 1973 – French
Jean-Marc de Royere Senior Vice President in charge of International, Governance and the Group's Sustainable Development program Chairman of the Air Liquide Foundation Born in 1965 – French	

(a) Within the meaning of the French Commercial Code.

Pierre Dufour has decided to claim his pension entitlement in 2017 and not to request the renewal of his offices as Senior Executive Vice President at the end of the Shareholders' Meeting of May 3, 2017. He will continue to be a Director of L'Air Liquide S.A.

Kwong Weng Mok left his position as Deputy Head of Asia on December 31, 2017, to exercise his right to retirement.

COMPOSITION, PREPARATION AND ORGANIZATION OF THE WORK OF THE BOARD OF DIRECTORS

As at December 31, 2017, the Board of Directors comprises 12 members: 11 members appointed by the Annual Shareholders' 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. Expiry dates of terms of office are staggered. In May 2018, at the close of the Shareholders' Meeting, subject to the approval of the proposed resolutions, the Board of Directors will comprise 12 members and the structure of the composition indicated above will remain unchanged.

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, as last updated in November 2016, is available on the website http://www.afep.com/contenu/focus/code-de-gouvernement-d-entreprise-des-societes-cotees.

At the meeting in January 2018, the Appointments and Governance Committee and the Remuneration Committee reviewed the AMF Report of November 22, 2017 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 - HCGE (French High Committee on Corporate Governance) of October 2017.

Pursuant to article L. 225-37-4, 8° 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 148.

The principles governing the professional ethics of Directors, the composition, role and rules of operation of the Board and its Committees are defined in the internal regulations. The text of the internal regulations is published in its entirety on the Company's website.

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 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, 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 internal regulations include guidelines for the Board's composition, although not written in stone, particularly in terms of the number of Directors appointed by the Shareholders' Meeting (normally 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 Shareholders' 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. Since 2014, a Director representing the employees and appointed by the France Group Committee has served on the Board. 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; 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. In this regard, the Board of Directors issued a favourable opinion concerning the acceptance by Benoît Potier of a term of office as member of the Supervisory Board of Siemens AG (a German listed company) with effect from February 2018 and on the amendments to the terms of office of Pierre Dufour who was appointed Director of National Grid Plc in 2017 (a listed company which operates in the United Kingdom and in the North-East of the USA). The Board has, moreover, been informed of the expiry of the terms of office as Director of Sin Leng Low at companies which are connected to the Sembcorp group.

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."

The criteria used are very largely based on the aforementioned AFEP/MEDEF Code of corporate governance.

In this regard, and in order to comply with the best governance practices, the Board of Directors, at the proposal of the Appointments and Governance Committee, confirmed its consent for the amendment of the Board's rules in order to include the criterion of terms of office for more than 12 years in the list of criteria to be reviewed in order to classify members of the Board as independent. This new provision was incorporated into the internal regulations of the Board of Directors in May 2017.

Moreover, the Board continues to consider that former employees or Senior Management Executives of the Company cannot be considered as independent **even if their duties ended more than five years ago.**

An assessment of the independence of its members appointed by the Shareholders' Meeting is included on the agenda for a Board Meeting once a year. The Board of Directors reviews each of the criteria for assessing the independence of each Director. For the criteria relating to business relations, the Board relies upon a chart summarising 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 Shareholders' 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 2017 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 1.2% of the total sales or purchases by the Air Liquide Group or by any of the relevant group.

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 decentralised 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.

After review, the Board thus determined that, at the end of the 2017 fiscal year, the following members elected by the Shareholders' Meeting were independent: Jean-Paul Agon, Geneviève Berger, Brian Gilvary, Siân Herbert-Jones, Xavier Huillard, Karen Katen, Sin Leng Low, Annette Winkler (namely 73% as independent Directors).

Further to the recommendation made by the AMF, a table showing the list of Directors in 2017 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 12/31/2017 Independence of the Directors elected by the Shareholders' 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) Lenght of term of office exceeding 12 years.

Professional ethics of Directors – Rights and obligations of Directors

The internal regulations summarise 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, under the conditions provided for by law. 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 Shareholders' Meetings. The individual attendance rate in 2017 of each Director whose term of office is proposed for renewal (namely Benoît Potier, Jean-Paul Agon, Annette Winkler and Sin Leng Low) is 100% both for meetings of the Board and those of the Committees of which they are members.

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 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. 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.

An internal memo on the prevention of market abuse was sent to the Directors at the beginning of 2018, 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.

Combination of the roles of Chairman and Chief Executive Officer

The Board of Directors confirmed its intention of maintaining the combination of the roles of Chairman and Chief Executive Officer, both roles being held by Benoît Potier, at the close of the Shareholders' Meeting on May 16, 2018 deciding upon the renewal of his term of office as Director. Within the scope of the evaluation questionnaire concerning the way in which the Board operates, which was prepared at the end of 2017, the Directors confirmed their agreement to this General Management organization.

The Board of Directors considered that maintaining the combination of the roles held by Benoît Potier is the most appropriate formula and is in the Company's best interests.

This mode of management of the Company allows for regular, personalised 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 2017), accompanying the Group over the long term.

The Company regularly organizes, in particular through its Shareholder Services, meetings between the Chairman and Chief Executive Officer and the shareholders. Accordingly, the Chairman and Chief Executive Officer chairs the Shareholders' Communication Committee which, in 2017, met three times at the Company's head office. Each year, after the Shareholders' Meeting, two meetings are organized in two cities in France: accordingly, in 2017, they were held in Lille (May 11, 2017) and Marseille (May 23, 2017). These "post-Shareholders' Meeting" encounters are followed by a question and answer session (as at the Annual Shareholders' Meeting) and a cocktail party, during which the Chairman and Chief Executive Officer has discussions with the shareholders. Finally, on November 23, 2017, Benoît Potier also attended the Actionaria fair and accordingly had 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. Accordingly, in 2017, Benoît Potier met several dozens of institutional investors at meetings in Paris, London and Boston.

Over the past 12 years, during which Benoît Potier has held the office of Chairman and Chief Executive Officer, the Group has achieved a consistent performance (an average annual growth over the 2006-2017 period of +5.8% in revenue and of +7.4% in published net profit), based on solid organic growth and large-scale acquisitions, the most important of which was Airgas in 2016.

The combination of the roles of Chairman and Chief Executive Officer complies with balanced governance rules, ensuring the continued success of the Group and the loyalty of its shareholders. These rules are based on:

THE STRUCTURE AND FUNCTIONING OF THE GOVERNANCE BODIES

- the presence of an independent Lead Director, Jean-Paul Agon having replaced Thierry Desmarest in this capacity in May 2017. The Lead Director has specific powers, including in particular the power to ask the Chairman to convene the Board of Directors on a given agenda, the Chairman being bound by that request (for a detailed description of these powers, see p. 134);
- a composition of the Board which ensures a preponderance of independent Directors and a balance of skills and nationalities;
- specialist Committees on appointments and governance, remuneration and audit which are almost exclusively composed of independent members;
- the possibility of setting up working groups within the Board in the event of a significant acquisition;
- the power granted, by the articles of association, 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;
- a monitoring task entrusted to the Appointments and Governance Committee which is responsible for ensuring the proper functioning of the governance bodies.

  In this regard, pursuant to the internal regulations, the Committee is the instrument 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 the actual attendance by 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.
- the existence of review commissions at certain subsidiaries (in North America, Africa and Asia).

ADDITIONAL GOVERNANCE MEASURES INTENDED TO CONSOLIDATE THE MEASURES WHICH ARE IN PLACE

In 2017, the Board of Directors carried out a review of the governance measures, by taking into consideration the comments made by the shareholders. It thus decided, on the recommendation of the Appointments and Governance Committee, to consolidate these measures as follows:

- An executive session now replaces the annual session of the Appointments and Governance Committee and the Remuneration Committee. It is held without the presence of the Executive Officers and former Executive Officers and of any person internal to the Group. Benoît Potier, in his capacity as Chairman and Chief Executive Officer, and Pierre Dufour, in his capacity as former Senior Executive Vice President, shall not attend the executive sessions, nor shall the Director representing the employees or the employee representatives;
- Promote exchanges between the Lead Director and the other Directors; the latter may ask the Lead Director for individual interviews as often as they deem necessary;
- Enrich the Company's dialogue with the shareholders. A procedure allows the Board of Directors to be kept informed of regular contacts between the Chairman and Chief Executive Officer and the principal shareholders, and the latter also have the possibility, upon request, of meeting with the Lead Director, if applicable;
- The evaluation questionnaire of the Board has been completed, and the Directors are now systematically questioned about their level of dialogue with the Lead Director;
- Consolidation of the Directors' commitment, in 2017, with the creation of the Environment and Society Committee (see page 147 for the role and tasks of this Committee), each Director now being a member of a specialist committee;
- The incorporation of a length of term of office of more than 12 years in the list of criteria to be taken into consideration when assessing the independence of the Directors.

INTERACTIONS BETW EEN 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 power 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,
  - the regular information 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 comprises 12 members, ensures the coordination between the various Group programs and activities. The Executive Committee focuses principally on the review of operational management, in terms of objectives, state of progress and action plans, the conduct of projects for change, human resources strategy and development. The three Executive Vice Presidents form part of the Executive Committee.

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 replaces Thierry Desmarest, whose term of office as Director came to an end at the Shareholders' Meeting on May 3, 2017. The renewal of Jean-Paul Agon's term of office as Director is proposed to the Shareholders' Meeting on May 16, 2018. The Board of Directors confirmed its intention to renew Jean-Paul Agon's term of office as Lead Director at the close of the Shareholders' Meeting on May 16, 2018, subject to the renewal 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:

"Responsibilities and powers of the Lead Director

The Lead Director has the following 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 Commitee, 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 Commitee, 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 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 are systematically asked to indicate whether it appears to them to be necessary for the Company's General Management organization to be re-examined.

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 also ask the Chairman to convene a meeting of the Board of Directors on any specified agenda; this right may be exercised at any time and as often as required in the interests of the company. The Chairman is bound by such request.

In 2017, certain governance measures were further consolidated in order to promote exchanges between the Lead Director and the Directors and dialogue between the Lead Director and the shareholders (see page 133).

See page 145 for the 2017 report on the exercise of the Lead Director's term of office.

Role 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.

Subject to the powers attributed to the Shareholders' 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 Shareholders' 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' fees, etc.). The Board also exercises **the powers delegated to it by the Shareholders' 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.

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 authorisation 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 an amount of 250 million euros.

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 dealing with key items on the agenda. 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 authorisation or opinion. 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.

Each meeting gives rise to the preparation of a preparatory file covering the principal items on the agenda, which is provided several days before the meeting; since 2013, the file is also accessible in electronic format. For major substantive issues, a very detailed summary note is prepared. During the meeting, a summary presentation of the items is then made, allowing considerable time for exchanges and discussions.

The Statutory Auditors are also heard during the meetings to review the financial statements.

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 by 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 (see below).

The Board of Directors decided to create a fourth Committee in May 2017, the Environment and Society Committee, which is in charge of examining environmental and societal issues. The internal regulations have been amended, in order to specify its tasks and operating procedures (see page 147).

Training measures: the internal regulations stipulate that training relating to the Company's businesses 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.

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 2017, group and individual meetings were arranged between certain Directors and each of the Executive Committee members in charge of the Europe, Asia and Americas hubs. Training/information was also provided by the Executive Committee members in charge of the Electronics and Healthcare business lines.

Participation of employee representatives on the Board of Directors

WITH A DELIBERATIVE VOTE

Philippe Dubrulle, the Director representing the employees, who was appointed by the France Group Committee, in 2014, is subject to all the provisions of the internal regulations governing the rights and obligations of the Directors described above. He sits on the Board with a deliberative vote. Since his appointment, he has had several training opportunities.

Pursuant to the decree of June 3, 2015, on the recommendation of the Appointments and Governance Committee, the Board of Directors has 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). This time is considered as actual working time and remunerated as such. Within this framework and in agreement with the person concerned, the Board adopted the internal training program for the end of the 2015 fiscal year and the external training program for 2016. 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. Included within the scope of those trainings requested and followed by Philippe Dubrulle in 2017, are in particular training/information concerning the Global Markets & Technologies (GM&T) activity, conducted by the member of the Executive Committee who is in charge of that branch of activity.

Within the scope of the agreement entered into with the various stakeholders (see below) 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 directors' fees.

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 term of office of the employee Director will expire at the close of the Shareholders' Meeting in May 2018. At a plenary meeting on December 6, 2017, the France Group Committee, which is in charge of appointing the Director representing the employees, pursuant to the provisions of the articles of association, reappointed Philippe Dubrulle to this office for a term of four years expiring at the close of the Shareholders' Meeting which will review the accounts for the 2021 fiscal year.

The European Works Council is the competent body to appoint a second Director representing the employees, if a second post needs to be filled.

WITH AN ADVISORY VOTE

The law of June 14, 2013, which provides for the system of a Director representing the employees, in principle reduces the number of Central Works Council delegates participating on the Board with an advisory vote to one, inasmuch as the number of members on the Board elected by the Shareholders' Meeting does not exceed 12.

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 Central Works Council delegated by this Council had the possibility to attend all the Board of Directors' meetings held during the 2017 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 systematically held 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 Central Works 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.

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 under the authority of the Chairman of the Board of Directors 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 to be re-examined."

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 the light of the recommendations made.

Following on from the formal appraisals carried out most recently in 2015, the functioning of the Board of Directors and its Committees was fully evaluated in 2017. 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 Appointments and Governance Committee to the February 2018 Board Meeting reveals a very positive assessment overall of the functioning of the Board of Directors and its Committees. The members highlight, in particular, the quality of the files, of the information provided at the meetings and in-between meetings, and the wide-ranging nature of the discussions at the Board Meetings. They consider the ability to speak freely to be excellent. They also state that they appreciate the on-site meetings, both for the quality of information provided there and for the discussions which are facilitated, as a result, between members and management. The members consider the implementation of an executive session (held without the presence of the Executive Directors, former Executive Directors or any internal members) to be positive; the executive session was held for the first time on November 21, 2017, chaired by the Lead Director, and permits spontaneous discussion of any subjects desired by the participants. A few points to which attention needs to be paid can be seen from the evaluation, in particular concerning the mix of skills on the Board, given the new Group context after the acquisition of Airgas; the desire of certain Directors to improve even further the contacts between the Board and management; the organization, in connection with the implementation of the Environment and Society Committee, of joint sessions with the Audit Committee concerning issues which relate to both Committees (in particular concerning risk analysis).

In light of the collegiate nature of the Board, the assessment questionnaire concentrates on an appraisal of the collective contribution of members to the Board's operation. However, in order to improve the Group's practices by ensuring compliance with the AFEP/MEDEF Code, the questionnaire invites the Directors to make an evaluation of the participation by Directors in developing the reflections of the Board of Directors. In any event, the contribution by each Director is assessed 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.

Executive session of the non-executive members of the Board of Directors

Concerning the possibility for non-Executive Directors to meet 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."

The executive session was held for the first time in November 2017.

The Board of Directors' work in 2017

In 2017, the Board of Directors met seven times with an effective attendance rate, or telecommunication attendance rate, of 96.70% of its members.

The Board's activities related to the following issues:

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, used to determine the dividend distribution policy;
- reviewing the group's financial position regularly, and more specifically: financing and debt management strategies;
- reviewing the minutes of the meetings of the four Committees;
- 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;
- share buyback/cancellation policy;
- the granting of stock options and 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;
- preparing the Annual Shareholders' Meeting (agenda, proposed resolutions, Annual Management Report and other reports or sections contained in the Reference 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 signature of a three-year professional gender equality agreement within Air Liquide S.A.; the involvement of the employees within the scope of the process for consultation of the Central Works Council on the Company's strategic orientations pursuant to the law of June 14, 2013;
- the annual review of ongoing regulated related-party agreements.

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 2017:

(i) the progress reports relating to the integration of **Airgas,** and the costs and growth synergies;

(ii) questions relating to **strategy** and particularly the Group's objectives determined as part of the "NEOS" medium-term company-wide program including Airgas; the reflections conducted concerning hydrogen energy; the IMS (industrial management system); review of the portfolio of businesses; examination of ongoing transactions (mergers-acquisitions, sales) including the sale of the Welding business completed on July 31, 2017; examination of the mergers taking place in the industry;

(iii) the **governance** issues concerning the maintenance of the combined roles of Chairman and Chief Executive Officer and the implementation of additional governance measures to strengthen those measures already in place; the in-principle agreement concerning the intended modifications to the termination indemnity and the supplementary pension plan "S" for the Executive Officer; the change in composition of the Board and its Committees; the replacement of the Lead Director and his appointment as Chairman of the Appointments and Governance Committee; the consideration by the Board of Directors of a new criterion added to the list of criteria to be considered in order to classify Directors as independent;

the introduction of an executive session to be attended by the Directors but without the presence of the Group's Executive Directors (or former Executive Directors) or Internal Directors and the employee representatives to be organized, coordinated and chaired by the Lead Director, as a replacement for the joint annual session of the members of the Appointments and Governance Committee and the Remuneration Committee; the review of the monitoring of risks in conjunction with the Audit Committee; the review of the composition of the "Shareholder Relations" working group;

(iv) the questions relating to Corporate Social **Responsibility within the scope of the Corporate Sustainability Program** launched in September 2016 and the creation in May 2017 of a new specialist Board Committee, in charge of examining the Group's environmental and societal issues;

(v) the amendment of the internal regulations of the Board of Directors in order to take into account the regulatory and governance modifications.

FUNCTIONING OF THE CORPORATE GOVERNANCE BODIES

With respect to the functioning of the corporate governance bodies, as well as applying the AFEP/MEDEF Code of corporate governance, the Company strives to reflect the international environment in which the Group carries out its business activities.

In 2017, the work of the Board of Directors concerned more specifically the aspects set forth below.

Concerning the Executive Officers:

Benoît Potier, Chairman and Chief Executive Officer, was, until May 2017, assisted with the General Management by Pierre Dufour, Director and Senior Executive Vice President.

Pierre Dufour having decided to claim his pension rights, his term of office as Senior Executive Vice President of L'Air Liquide S.A. came to an end at the close of the Shareholders' Meeting on May 3, 2017. His term of office as company manager of the German subsidiary came to an end on July 14, 2017. Pierre Dufour remains a Director, his term of office terminating at the close of the Ordinary Shareholders' Meeting in 2020.

Employment contract/corporate office of the Chairman and Chief Executive Officer

In accordance with 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 Executive Officers in respect of the 2016 fiscal year and determined the amount of remuneration for the Executive Officers in respect of that fiscal year.

The Board also determined the remuneration policy applicable to the Executive Officers as from 2017.

The Board decided upon the remuneration policy for the Chairman and Chief Executive Officer for the 2018 fiscal year, in keeping with the 2017 policy. This policy is described in more detail in the section on remuneration set forth below on pages 162 et seq.

The elements of remuneration due or allocated to the Executive Officers in respect of 2017 described in this section are subject to the opinion of the shareholders at the Shareholders' Meeting on May 16, 2018.

The Annual Shareholders Meeting on May 16, 2018 will be invited to decide upon (i) the elements which make up the total remuneration and the benefits of any kind that may be paid or awarded to the Executive Officers in respect of the 2017 fiscal year ("Say on Pay ex post" – first application of the Sapin 2 law) and (ii) the remuneration policy for the Chairman and Chief Executive Officer for the 2018 fiscal year ("Say on Pay ex ante").

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 out later in this document (see pages 172, 173 and 182).

Concerning the Group's operational governance:

The new organization and functioning of the Group was reported to the Board, together with the appointment of three Executive Vice Presidents with effect from July 1, 2017: Michael Graff, Fabienne Lecorvaisier and Guy Salzgeber.

Concerning the Board of Directors:

Composition

Appointment – Renewal of terms of office:

- The Board proposed to the Shareholders' Meeting on May 3, 2017 to renew the term of office of Thierry Peugeot for four years and to appoint Xavier Huillard as a new Board member. The Board of Directors also took note of the expiry of the term of office of Thierry Desmarest, at the close of the Shareholders' Meeting on May 3, 2017.
- Following the Shareholders' Meeting on May 3, 2017, the Board renewed the term of office of Thierry Peugeot on the Audit and Accounts Committee, appointed Xavier Huillard as a member of the Remuneration Committee, appointed Jean-Paul Agon as Lead Director (thus replacing Thierry Desmarest) and appointed Pierre Dufour, Geneviève Berger and Philippe Dubrulle as members of the Environment and Society Committee.
- The Board proposed to the Shareholders' Meeting on May 16, 2018 to renew the terms of office of Benoît Potier, Jean-Paul Agon, Annette Winkler and Sin Leng Low for four years; these terms of office will expire at the close of the Shareholders' Meeting on May 16, 2018.

Directors' fees

The Board set the formula for distributing Directors' fees among its members for 2017 within the budget authorised most recently by the Shareholders' Meeting of May 7, 2014 for a maximum amount of 1 million euros per fiscal year. On the Remuneration Committee's recommendation and after a review of market practices, the Board decided to amend the distribution formula in order to take account of the creation of a new Board Committee formed in May 2017, the Environment and Society Committee. This new formula includes the fixed remuneration for the Chairman of this Committee and a variable remuneration for attendance at the meetings (identical amounts to those for the Appointments and Governance Committee and the Remuneration Committee).

It is proposed at the Shareholders' Meeting of May 16, 2018 that this budget be increased to 1.15 million euros per fiscal year. (See the detailed presentation in the section on remuneration below, on pages 190 and 191).

Appraisal

As detailed previously:

- In 2017, the Board carried out an evaluation of its functioning as part of a full, new investigation.
- The Board assessed the independence of each of its members.

The Commitees of the Board of Directors

The Board of Directors has set up four Board Committees; the Environment and Society Committee in charge of environmental and societal issues was formed in May 2017.

THE AUDIT AND ACCOUNTS COMMITTEE

As at December 31, 2017, the Audit and Accounts Committee comprised **four members: Siân Herbert-Jones, Chairman of the Committee, Thierry Peugeot, Sin Leng Low and Brian Gilvary. 75% of the members, including the Chairman, 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 150 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, in which she was Group Chief Financial Officer from 2001 until December 2015. Siân Herbert-Jones, in her capacity as Chairman of the Audit and Accounts Committee, provides the Committee with her extensive financial expertise. Moreover, Brian Gilvary, the Chief Financial Officer of the company BP, also provides the Committee with his expertise in this sector, given his considerable experience in Finance.

Composition and tasks 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 legislation on legal audit (the ordinance of March 17, 2016 and the European Regulation on the statutory audit of financial statements and public-interest entities of April 16, 2014) led the Board of Directors to review the tasks of the Audit and Accounts Committee (see below) and to stipulate, moreover, in the internal regulations the obligations of confidentiality which apply more specifically to its members (see page 131 of this Reference Document).

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 the 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 judgement 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 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.

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 Commitee'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 Chairman. 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 2017

The Audit and Accounts Committee met four times with an effective attendance rate, or attendance rate by telecommunication, of 100% of its members.

The Committee reviewed the annual and interim consolidated financial statements and the annual parent company financial statements. The Committee 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 analysed provisions, the "Other operating income and expenses" items, cash flow, taxation, risk exposure and off-balance sheet items. 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 noted that as part of the statutory audit reform, the statutory auditors must now issue two reports, pursuant to European Regulation No. 537/2014: a detailed one intended for the Audit Committee and another which is intended to be made public and is in regulated format. In this regard, the Committee was informed of the framework for the two draft reports which will include the principal audit topics.

The Committee reviewed those matters relating to the procedure for the integration of Airgas, including from the point of view of risk management, the gradual implementation of growth synergies, the Group's financing policy, debt and cash management and the organization of human resources responsible for this.

Furthermore, specific presentations were made to the Committee on the following points: the introduction of the Digital Transformation and the reflections carried out in this regard; Group strategy on intellectual property with regard to the "Digital open innovation"; the protection of sensitive digital assets; the management of business practices (including the anti-corruption obligations introduced by the Sapin 2 law); changes to the organization of Engineering & Construction; litigation and tax risks.

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 Reference Document concerning the internal control and risk management procedures and recommended its approval by the Board of Directors.

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 identified by the Group (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 fiscal year 2018 is in line 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 2017 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 has been reviewed in February 2018.

Several days prior to each meeting, a file of meeting documentation is sent out to Committee members and is now also available in electronic form. 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, assisted by the Committee Secretary, 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 specialising 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 Chairman 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.

THE APPOINTMENTS AND GOVERNANCE COMMITTEE/THE LEAD DIRECTOR

As at December 31, 2017 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 purpose as defined in 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 Commitee 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 Commitees;
- periodically evaluate the structure, size and composition of the Board of Directors and submit to it recommendations regarding any potential change;
- the Commitee 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 with the corresponding funding in such a case.

The Lead Director, upon delegation from the Chairman of the Committee when he is not 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 conflict of interest on the Board; he draws the attention of the Chairman of the Board of Directors to potential situations of conflict of interest which are identified in this manner.

He reports on these matters to the Board of Directors."

The powers and tasks of the Lead Director are described page 134.

The Appointments and Governance Committee's work in 2017

The Appointments and Governance Committee met four times in 2017 with an effective attendance rate, or attendance rate by telecommunication, of 91.67% of its members.

Concerning the Board of Directors

The Committee reviewed the desirable future changes in the composition of the Board of Directors in the short and medium term.

It recommended proposing the renewal of Thierry Peugeot's term of office as Director to the Shareholders' Meeting on May 3, 2017 and the terms of office of Benoît Potier, Jean-Paul Agon, Annette Winkler and Sin Leng Low to the Shareholders' Meeting on May 16, 2018.

It continued to coordinate the procedure for the search for and assessment of possible candidates, which led in particular to proposing the appointment of Xavier Huillard to the Shareholders' Meeting on May 3, 2017.

Concerning the Committees, the Lead Director and the working group

The Committee reviewed the composition of the Committees and the Shareholder Relations working group following, in particular, the changes that had taken place in the composition of the Board at the end of the May 2017 Shareholders' Meeting and recommended new appointments.

As Thierry Desmarest's term of office ended at the close of the Shareholders' Meeting on May 3, 2017, the Committee proposed to the Board of Directors that Jean-Paul Agon be appointed as Lead Director at the meeting held at the close of that Shareholders' Meeting.

The Committee proposed to the Board of Directors that it set up an Environment and Society Committee and that the purpose and rules of composition and running of this Committee be incorporated in the internal regulations. The Committee was created in May 2017 (for further details, see page 147).

Concerning the Chairman and Chief Executive Officer and the management teams

In connection with the renewal of Benoît Potier's term of office as Director to be proposed to the Shareholders' Meeting on May 16, 2018, the Committee recommended that the roles of Chairman and Chief Executive Officer should both continue to be held by Benoît Potier. It recommended that this decision to continue the combined roles should be accompanied by additional governance measures. All the governance measures accompanying the combined roles are detailed on pages 132 and 133. The Committee also made recommendations concerning communication on governance matters.

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 looked at the change in responsibilities of the management team following the retirement of Pierre Dufour, Senior Executive Vice President and Jean-Pierre Duprieu, Executive Vice President. Against this background, it reviewed the new composition of the Executive Committee and the appointment of three Executive Vice Presidents.

Concerning governance

The Committee recommended the introduction of an executive session to be held without the presence of the Executive Officers or any persons who are internal to the Group and which will henceforth replace the annual joint session of the Appointments and Governance Committee and the Remuneration Committee (see page 138 concerning the holding of this session in 2017).

The Committee recommended the modification of the internal regulations in order to include the creation of the executive session and that of the Environment and Society Committee. It also recommended that the criterion relating to terms of office of over 12 years recommended by the AFEP/MEDEF Code be incorporated in the internal regulations and contained in the list of matters to be taken into consideration when assessing the Directors' independence. The Committee also proposed a few adaptations relating to the new provisions of the AFEP/MEDEF Code of November 2016 and the most recent regulatory changes. The internal regulations, as amended, were put online on the Company's site after they were adopted by the Board of Directors in May 2017.

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 summarising 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. It made its recommendations to the Board.

The Committee took note of the information provided by the Directors concerning their terms of office as Directors which are external to the Group and made its recommendations.

It reviewed the recommendations of the AMF Annual Report on corporate governance published on November 22, 2017 and the Report of the Haut Comité de gouvernement d'entreprise of October 2017 and made its recommendations concerning the practices followed by the Company. It examined the draft of this section of the reference 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 which is set out on page 148.

At the start of 2017, the Committee reviewed the summary of the replies to the evaluation questionnaire on the actions conducted in 2016 to respond to the points raised by the Directors in the full evaluation questionnaire in 2015. This has been reported to the Board of Directors. At the end of the 2017 fiscal year, the Committee reviewed the contents of the evaluation questionnaire for 2017 and recommended that a few additional questions be added concerning, in particular, the executive session (held for the first time at the close of the Board Meeting in November 2017), the contacts between the Directors and the Lead Director and the functioning of the Environment and Society Committee.

Tasks of the Lead Director: report on his activities

As Thierry Desmarest's term of office ended at the close of the Shareholders' Meeting on May 3, 2017, Jean-Paul Agon replaced him as Lead Director.

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 governance measures relating to the combined roles of Chairman and Chief Executive Officer at Air Liquide and the proposal for additional measures. The interviews with the institutional investors which were held in the autumn of 2017 allowed for discussion with the latter concerning the combined roles and all these measures;
  - in general, 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 2017 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 Lead Director presented to the Board in February 2018 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.
- A review of the expectations expressed by the shareholders at the Shareholders' Meeting on May 3, 2017 through an analysis of voting on certain resolutions (remuneration for 2016; remuneration policy for Executive Officers pursuant to the so-called "Sapin 2" Law of December 9, 2016). Based on this review, in-depth interviews were held with numerous institutional investors as from the autumn of 2017 in order to prepare for the Shareholders' Meeting on May 16, 2018.
- In general, 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 independent Directors** ensuring in particular that the Directors who had joined the Board more recently were well-informed.
- Finally, the Lead Director chaired the **executive session** which was held for the first time at the end of the Board Meeting on November 21, 2017 and was attended by all the Directors apart from the Executive Directors (or former Executive Directors) or members who are internal to the Group and the employee representatives.
- He reported to the Board on his activities in February 2018.

During the fiscal year 2017, the Lead Director participated in all the Board Meetings (seven meetings), the meetings of the Appointments and Governance Committee which he has chaired since May 2017 (four meetings) and of the Remuneration Committee which he also chairs (four meetings).

THE REMUNERATION COMMITTEE

As at December 31, 2017, the Remuneration Committee had **three members: Jean-Paul Agon, Chairman of the Committee and Lead Director, Annette Winkler and Xavier Huillard. 100% of the Committee members are independent.**

Composition and purpose as defined in 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 Executive Committe;
- 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 2017

The Remuneration Committee met four times in 2017 with an effective attendance rate, or attendance rate by telecommunication, 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 Shareholders' Meeting, the Committee Chairman reports on the Board's decisions concerning the Group's Executive Officer remuneration policy.

Executive Officer remuneration/long-term incentive policy

The Committee examined the principles of the Executive Officer remuneration policy and its various components.

For the 2017 fiscal year, the Committee made recommendations that the remuneration policy which applies to the Chairman and Chief Executive Officer be changed in order to take account of the increased level of responsibility resulting from the Group's new size after the Airgas acquisition. With regard to this point, see page 164.

The Committee recommended changes to the structure of the annual variable part with effect from 2017 (in particular the introduction of a target variable part, an objective of growth in revenue and the increase of the weight assigned to the quantifiable criteria as compared to the qualitative criteria). Pursuant to its earlier recommendation, it ensured, in particular, that a Corporate Social and Environmental Responsibility criterion is structurally included in the personal objectives set for the determination of the variable remuneration of the Executive Officers.

In order to take into account the remarks made by shareholders, the Committee made its recommendations concerning the granting of long-term incentives, in particular the performance conditions and the simplification of the relative TSR criterion so that it includes a comparison with only one index, the CAC 40 index, reinvested dividends.

The Committee reviewed the draft resolutions to be put to the Shareholders' Meeting on May 16, 2018 on the 2017 remuneration for Executive Officers pursuant to article L. 225-100-II of the French Commercial Code (resulting from Law No. 2016-1691 of December 9, 2016 on transparency, the fight against corruption and the modernisation of economic life).

The Committee reviewed the satisfaction of the performance conditions for the performance share and share subscription plans.

In order to take into account the remarks made by shareholders relating to the grant of performance shares pursuant to the "Airgas" Plan dated July 29, 2016, the Committee made recommendations concerning the additional performance condition which applies to the Chairman and Chief Executive Officer and which was communicated on the Company's Internet site on August 1, 2017.

The Committee reviewed the rules for holding shares which apply to the Executive Officers.

It made its recommendations to the Board concerning the financial conditions for Pierre Dufour's retirement in 2017.

The Committee looked at the measures on transparency and communication and issued its recommendations.

For the 2018 fiscal year, the Committee made recommendations concerning the remuneration policy for the Executive Officers and as to how it should be applied to Benoît Potier. It reviewed the draft resolutions and presentations to be put to the "ex ante" vote of the Shareholders' Meeting on May 16, 2018 on Executive Officer remuneration policy as presented pursuant to article L. 225-37-2 of the French Commercial Code. When preparing the Shareholders' Meeting and as part of the changes made in 2017, it made additional proposals for improving the structure of the variable part (weighting of each personal criterion) and recommended that proration rules be put in place for the long-term remuneration tools in the event of the departure of Executive Officers (for further details, see pages 177 et seq.).

At the time of renewal of the terms of office of Benoît Potier in 2018, the Committee reviewed all the regulated related-party agreements concerning him. It recommended, in particular, an amendment of the activation and performance conditions for the termination indemnity and also of the performance conditions which apply to the increase of Benoît Potier's conditional rights in connection with his defined benefit pension plan (pursuant to the "Macron" Law of August 6, 2015).

Directors' fees

The Committee made recommendations concerning the level of directors' fees to be granted in respect of fiscal year 2017 within the total amount authorised by the Shareholders' Meeting. It also recommended proposing to the Shareholders' Meeting on May 16, 2018 that the amount be increased to 1.15 million euros per fiscal year with effect from 2018. The proposed increase takes into account, in particular, the creation of a fourth Committee in 2017 (the Environment and Society Committee), the increasing number of meetings and the expansion of the work handled by the Board and the Committees, together with the desire to promote the diversity of skills and nationalities on the Board at the time of any future recruitments (see the Section on Remuneration of Executive Officers pages 190 and 191).

Corporate governance

The Committee reviewed the practices adopted by the Company in the light of the recommendations of the AMF's Annual Report on Executive Officer Remuneration in Listed Companies published on November 22, 2017 and the Report of the Haut Comité de gouvernement d'entreprise of October 2017 and made its recommendations.

The Committee 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.

THE ENVIRONMENT AND SOCIETY COMMITTEE

The Board of Directors decided to introduce a Committee on the Board which would be responsible for environmental and societal issues. The Air Liquide Group's ambition is to contribute to a more sustainable world and it has defined guidelines, in particular as part of the NEOS corporate program and its Corporate Sustainability Program launched in 2016. In this context, the Environment and Society Committee, which focuses on Corporate Social and Environmental Responsibility issues, was formed on May 3, 2017. As at December 31, 2017 it comprises **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 Commitee 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 in charge of sustainable development, concerning the Group's strategy on sustainable development and its implementation.

The Environment and Society Committee's work in 2017

The Environment and Society Committee has met twice since its formation, with an effective attendance rate, or attendance rate by telecommunication, of 100% of its members.

At these first two meetings, the Committee defined its tasks and the topics to be covered by its work program.

The Committee reviewed the Group strategy on sustainable development, starting with the objectives set by the Group in its Corporate Sustainability Program, namely to contribute to the air quality and the development of communities (for which the Group acts, in particular, through the Air Liquide Foundation), and intending more generally, in the future, to adopt a broader framework which will identify all the significant Group issues on sustainable development, thus enabling the impact of its actions to be assessed.

The Committee was also informed of the work carried out to date in order to define:

- the Group's climate issues;
- the role which Air Liquide can play in energy transition and the reduction of emissions which are harmful for the environment; and
- the methods for the roll-out of the actions thus defined within the Group.

The results of the work thus carried out internally will be presented to the Committee at subsequent meetings.

The Committee initiated a reflection on the notion of environmental and societal risk. The Committee has been informed of the identified environmental and societal risks and the monitoring of those risks which has been implemented within the Group.

The Committee reviewed the structure of the Sustainable Development Report included in the 2017 Reference document. This Report now includes the elements relating to the duty of vigilance on the part of parent companies, pursuant to the provisions of the Law of March 27, 2017; as part of its work, the Committee had monitored the regulatory watch on sustainable development concerning the duty of care owed by parent companies.

The Committee read the report summarising the Group's extra-financial ratings and was informed that Air Liquide was generally well-rated.

The Committee also drew up a draft work program for 2018.

Furthermore, a specific presentation was made to the Committee on the proposed changes to the Air Liquide Foundation, by the Foundation's Chairman, Jean-Marc de Royere.

The Committee was reminded that the Air Liquide Foundation's activity includes a scientific section (financial participations in research projects in the Healthcare and Environment sectors in Europe) and a social section (financial participations in local micro-initiatives which are sponsored by employees, in the access to care, disabilities and education sectors, etc.).

The Air Liquide Foundation will celebrate its ten-year anniversary in 2018 and changes are envisaged at the time of its renewal. The Committee has taken note of the proposed changes which focus, in particular, on the expansion of the Foundation's corporate purpose and its functioning.

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.

Application of the AFEP/MEDEF Corporate Governance Code: summary table

Air Liquide applies the AFEP/MEDEF Code (as revised in November 2016), apart from the following recommendations:

Recommendations	Air Liquide's practice and justification
Independence criteria for the Directors Article 8.5: 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 Executive Officers of the Company cannot be considered as independent, even if their duties ended more than five years ago (see page 130).
Remuneration Committee Article 17.1: "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.
Article 17.3: "When the Report on the Remuneration Committee's work is presented, the Board should deliberate on the elements of remuneration of the Executive Officers in their absence."	At the Remuneration Committee meeting, the Chairman and Chief Executive Officer does not attend deliberations by the Committee relating to his personal case (see page 146).

Shareholder relations working group

In connection with the renewal of the Directors' terms of office, at the proposal of the Appointments and Governance Committee, the Board of Directors on July 27, 2017 decided to review the composition of the Shareholder Relations working group and appointed alongside Benoît Potier, as Chairman, Jean-Paul Agon, Xavier Huillard and Brian Gilvary for the remaining terms of their office as Director.

During the past fiscal year, the tasks of the Shareholder Relations working group have essentially focussed on shareholder strategy within the context of the new Group size and of Air Liquide's relations with its shareholders.

Participation by shareholders at the Shareholders' Meeting

Pursuant to article L. 225-37-4-9° of the French Commercial Code, it is specified that the specific terms and conditions relating to the participation of shareholders at the Shareholders' Meeting are set out in articles 5 to 10 and 18 and 19 of the Company's articles of association (set out on pages 349 et seq. of this Reference Document).

Delegations of authority granted by the Shareholders' Meeting

Pursuant to article L. 225-37-4-3° of the French Commercial Code, it is specified that the summary table of the valid delegations of authority granted by the Shareholders' Meeting in connection with increases in the share capital is set out on pages 346 and 347 of this Reference Document.

INFORMATION CONCERNING MEMBERS OF THE BOARD OF DIRECTORS AND EXECUTIVE MANAGEMENT

(Information as of December 31, 2017)

Listed companies are indicated by an asterisk (*).

Benoît POTIER

Chairman and Chief Executive Officer

Nationality: French
Born in 1957
Date of first appointment: 2000
Start of current term: 2014
End of current term: 2018 [(a)]
Number of shares owned as of December 31, 2017: 289,893
Business address: Air Liquide – 75, quai d'Orsay – 75321 Paris Cedex 07 – France

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 2017

Functions within the Air Liquide Group

- **Chairman and Chief Executive Officer:** L'Air Liquide S.A.* (Chairman of the Working Group "Shareholder Relations"), Air Liquide International, Air Liquide International Corporation (ALIC)
- **Director:** American Air Liquide Holdings, Inc.
- **Chairman:** Air Liquide Foundation (until March 2017)
- **Director:** Air Liquide Foundation (since March 2017)

Positions or activities outside the Air Liquide Group

- **Director:** Danone* (member of the Appointment and Remuneration Committee, member of the Strategy Committee, then Chairman of this Committee since December 2017)
- **Chairman:** European Round Table (ERT)
- **Director:** CentraleSupélec, Association nationale des sociétés par actions (ANSA)
- **Member of the Board:** Association française des entreprises privées (AFEP)
- **Member of the French Board:** INSEAD

POSITIONS AND ACTIVITIES HELD DURING THE LAST FIVE YEARS AND THAT HAVE EXPIRED

2014

- **Vice Chairman:** European Round Table (ERT)
- **Director:** Cercle de l'Industrie, La Fabrique de l'industrie

2013

- **Member of the Supervisory Board:** Michelin* (member of the Audit Committee)

(a) Renewal of term proposed to the Shareholders' Meeting of May 16, 2018.
N.B.: Mr Benoît Potier has been appointed member of the Supervisory Board of Siemens AG* during the General Assembly on January 31, 2018. He is also member of the Nominating Committee. His term of office as Chairman of the ERT expires in May 2018.

Thierry PEUGEOT
Director

Nationality: French
Born in 1957
Date of first appointment: 2005
Start of current term: 2017
End of current term: 2021
Number of shares owned as of December 31, 2017: 2,011
Business address: Peugeot S.A. – 75, avenue de la Grande-Armée – 75116 Paris Cedex 16 – 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 2016

Functions within the Air Liquide Group

- **Director:** L'Air Liquide S.A.* (member of the Audit and Accounts Committee)

Positions or activities outside the Air Liquide Group

- **Director:** Société anonyme de participations
- **Senior Executive Vice President:** Société anonyme de participations (since February 2017)
- **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)
- **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)

2015

- **Director:** Société FFP*
- **Senior Executive Vice President:** Établissements Peugeot Frères

2014

- **Chairman of the Supervisory Board:** Peugeot S.A.*
- **Member of the Supervisory Board:** Peugeot S.A.*
- **Vice Chairman of the Supervisory Board:** Gefco
- **Chairman:** Association nationale des sociétés par actions (ANSA)

Karen KATEN

Independent Director

Nationality: American
Born in 1949
Date of first appointment: 2008
Start of current term: 2016
End of current term: 2020
Number of shares owned as of December 31, 2017: 2,186
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 2017

Functions within the Air Liquide Group

- **Director:** L'Air Liquide S.A.* (member of the Appointments and Governance Committee)

Positions or activities outside the Air Liquide Group

- **Director:** Home Depot*
- **Chairman of the Board:** Armgo Pharmaceuticals
- **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 Booth School of Business

POSITIONS AND ACTIVITIES HELD DURING THE LAST FIVE YEARS AND THAT HAVE EXPIRED

2016

- **Director:** IMS Health, Takeda Global Advisory Board

2015

- **Director:** Catamaran Inc.*, Harris Corporation*

2013

- **Director:** Catalyst

N.B.: For information regarding independence criteria, please refer to this Reference Document – page 130.

Jean-Paul AGON

Independent Director - Lead Director

Nationality: French
Born in 1956
Date of first appointment: 2010
Start of current term: 2014
End of current term: 2018 [(a)]
Number of shares owned as of December 31, 2017: 1,609
Business address: L'Oréal – 41, rue Martre – 92110 Clichy – France

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 2017

Functions within the Air Liquide Group

- **Director:** L'Air Liquide S.A.* (Chairman of the Remuneration Committee, member of the Appointments and Governance Committee, then Chairman of this Committee since May 2017, Lead Director since May 207)

Positions or activities outside the Air Liquide Group

- **Chairman and Chief Executive Officer:** L'Oréal*
- **Chairman:** L'Oréal Foundation

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)

2012

- **Chairman of the Board of Directors:** Galderma Pharma S.A. (Switzerland)
- **Vice-Chairman and Director:** The Body Shop International plc (United Kingdom) - L'Oréal Group

(a) Renewal of term proposed to the Shareholders' Meeting of May 16, 2018.
N.B.: For information regarding independence criteria, please refer to this Reference Document – page 130.

Siân HERBERT-JONES

Independent Director

Nationality: British
Born in 1960
Date of first appointment: 2011
Start of current term: 2015
End of current term: 2019
Number of shares owned as of December 31, 2017: 913

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 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 2017

Functions within the Air Liquide Group

- **Director:** L'Air Liquide S.A.* (Chairman of the Audit and Accounts Committee)

Positions or activities outside the Air Liquide Group

- **Director:** Cap Gemini* (member of the Audit and Risks Committee); Bureau Veritas* (member of the Appointments and Remuneration Committe until May 2017; member of the Audit and Risks Committee since May 2017); Compagnie Financière Aurore Internationale (Sodexo Group – Belgium)

POSITIONS AND ACTIVITIES HELD DURING THE LAST FIVE YEARS AND THAT HAVE EXPIRED

2015

- **Chief Financial Officer and member of the Executive Committee:** Sodexo Group*
- **Chairman:** Etin SAS (France); Sodexo Etinbis SAS (France); Sofinsod SAS (France)
- **Director:** Sodexho Awards Co, Sodexo Japan Kabushiki Kaisha Ltd., Sodexho Mexico SA de CV, Sodexho Mexico Servicios de Personal SA 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 SA, Universal Sodexho Empresa de Servicios y Campamentos SA, 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)

N.B.: For information regarding independence criteria, please refer to this Reference Document – page 130.

Pierre DUFOUR

Director

Nationality: Canadian
Born in 1955
Date of first appointment: 2012
Start of current term: 2016
End of current term: 2020
Number of shares owned as of December 31, 2017: 80,610

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 2017

Functions within the Air Liquide Group

- **Senior Executive Vice President and Director:** L'Air Liquide S.A.* (until May 2017)
- **Director:** L'Air Liquide S.A. (Chairman of the Environment and Society Committee since May 2017)
- **Chairman of the Board of Directors:** Airgas, Inc. (until March 2017)
- **Director:** Airgas, Inc. (since March 2017)
- **Senior Executive Vice President and Director:** Air Liquide International (until June 2017)
- **Director:** American Air Liquide Holdings, Inc. (until June 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)

Positions or activities outside the Air Liquide Group

- **Director:** Archer Daniels Midland Company* (member of the Audit Committee and the Compensation / Succession Committee); National Grid plc* (member of the Safety, Environment and Health Committee, Remuneration Committee and Nominations Committee since February 2017)

POSITIONS AND ACTIVITIES HELD DURING THE LAST FIVE YEARS AND THAT HAVE EXPIRED

2015

- **Chairman of the Board of Directors and Director:** Air Liquide Middle East

2013

- **Director:** Air Liquide Japan

2012

- **Director:** Air Liquide Arabia

Sin LENG LOW

Independent Director

Nationality: Singaporean
Born in 1952
Date of first appointment: 2014
Start of current term: 2014
End of current term: 2018 [(a)]
Number of shares owned as of December 31, 2017: 1,371
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 2017

Functions within the Air Liquide Group

- **Director:** L'Air Liquide S.A.* (member of the Audit and Accounts Committee)

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)

(a) Renewal of term proposed to the Shareholders' Meeting of May 16, 2018.
N.B.: For information regarding independence criteria, please refer to this Reference Document – page 130.

Annette WINKLER

Independent Director

Nationality: German
Born in 1959
Date of first appointment: 2014
Start of current term: 2014
End of current term: 2018 [(a)]
Number of shares owned as of December 31, 2017: 685
Business address: Daimler AG, Head of smart – Werk 059, HPC: H324, Leibnizstr. 2, 71032 Böblingen – 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 is Chief Executive Officer of smart (with overall responsibility for the brand, also in charge of the smart factory in Lorraine).

POSITIONS AND ACTIVITIES HELD DURING 2017

Functions within the Air Liquide Group

- **Director:** L'Air Liquide S.A.* (member of the Remuneration Committee; member of the Appointments and Governance Committee since May 2017)

Positions or activities outside the Air Liquide Group

- **Vice President:** Daimler AG *, head of smart
- Member of the Counsel for Foreign Economic Affairs of the German Ministry for Economics

POSITIONS AND ACTIVITIES HELD DURING THE LAST FIVE YEARS AND THAT HAVE EXPIRED

(a) Renewal of term proposed to the Shareholders' Meeting of May 16, 2018.
N.B.: For information regarding independence criteria, please refer to this Reference Document – page 130.

Philippe DUBRULLE

Director representing the employees

Nationality: French
Born in 1972
Date of first appointment by the Group Committee in France: 2014
Start of current term: 2014
End of current term: 2018 [(a)]
Business address: Air Liquide Advanced Technologies – 2, rue de Clémencière – 38360 Sassenage – France

CAREER

An engineering graduate from 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 groups both in France and abroad. He joined the Air Liquide group in 2008. Based in Sassenage, he is an employee of the subsidiary Air Liquide Advanced Technologies. He is Business Line Manager for "Aeronautical Systems". Philippe Dubrulle was appointed as the Director representing the employees by the Group Committee in France on June 18, 2014 [(a)]. 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 2017

Functions within the Air Liquide Group

- **Director:** L'Air Liquide S.A.* (member of the Environment and Society Committee since May 2017)
- **Business Line Manager – Aeronautical Systems:** Air Liquide Advanced Technologies

POSITIONS AND ACTIVITIES HELD DURING THE LAST FIVE YEARS AND THAT HAVE EXPIRED

(a) At a plenary meeting on December 6, 2017, the France Group Committee reappointed Philippe Dubrulle as Director representing the employees for a term of four years expiring at the close of the Shareholders' Meeting held in 2022 to approve the financial statements for the fiscal year ending December 31, 2021.

Geneviève BERGER
Independent Director

Nationality: French
Born in 1955
Date of first appointment: 2015
Start of current term: 2015
End of current term: 2019
Number of shares owned as of December 31, 2017: 550
Business address: Firmenich SA – Route des Jeunes – 1 P.O. Box 239 – 1211 Geneva 8 – Switzerland

CAREER

With a Ph.D. in physics, holder of a thesis in physics, Doctor of Medicine 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 from 2008 to 2014. She has been the Head of the research department at the Swiss company Firmenich since July 1, 2015.

POSITIONS AND ACTIVITIES HELD DURING 2017

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

2014

- **Scientific Director:** Unilever

2012

- **Non-Executive Director:** Smith & Nephew plc

N.B.: For information regarding independence criteria, please refer to this Reference Document – page 130.

Brian GILVARY

Independent Director

Nationality: British
Born in 1962
Date of first appointment: 2016
Start of current term: 2016
End of current term: 2020
Number of shares owned as of December 31, 2017: 619
Business address: BP p.l.c. – 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 2017

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 Director:** BP p.l.c.*
- **Director:** BP Capital Markets p.l.c., BP Car Fleet Limited, BP Corporate Holdings Limited, BP Finance p.l.c., BP Global Investments Limited, BP Holdings North America Limited, BP International Limited, BP P.L.C. (Member of the "Results Committee"), The BP Share Plans Trustees Limited
- **Vice Chairman:** the 100 Group Committee
- **Non-Executive Director:** Royal Navy (since January 2017)

POSITIONS AND ACTIVITIES HELD DURING THE LAST FIVE YEARS AND THAT HAVE EXPIRED

2016

- **External Advisor:** HM Treasury Financial Management Review Board

N.B.: For information regarding independence criteria, please refer to this Reference Document – page 130.

Xavier HUILLARD

Independent Director

Nationality: French
Born in 1954
Date of first appointment: 2017
Start of current term: 2017
End of current term: 2021
Number of shares owned as of December 31, 2017: 8,467
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 2017

Functions within the Air Liquide Group

- **Director:** L'Air Liquide S.A.* (member of the Remuneration Committee since May 2017)

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 Énergies, 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
- **Chairman:** Institut de l'Entreprise (until January 25, 2017)
- **Member of the Bureau:** Institut de l'Entreprise (since January 25, 2017)
- **Vice Chairman:** Aurore Association

POSITIONS AND ACTIVITIES HELD DURING THE LAST FIVE YEARS AND THAT HAVE EXPIRED

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 Aéroports de Paris

2013

- **Director:** Vinci plc; Vinci Investments Ltd.

2012

- **Chairman:** Vinci Concessions
- **Permanent Representative** of Vinci Concessions on the Board of Directors of ASF Holding

N.B.: For information regarding independence criteria, please refer to this Reference Document – page 130.

REMUNERATION OF THE EXECUTIVE OFFICERS AND DIRECTORS OF L'AIR LIQUIDE S.A. [a]

(pursuant to article L. 225-37-3 of the French Commercial Code)

This section describes the remuneration and the benefits granted to the corporate officers during the 2017 fiscal year in accordance with article L. 225-37-3 of the French Commercial Code and the remuneration structure adopted for the 2018 fiscal year as approved by the Board of Directors on February 14, 2018. To determine all the components of the remuneration for the Executive Officers, as proposed by the Remuneration Committee, the Board of Directors takes into account the principles of comprehensiveness, balance, comparability, consistency, understandability and proportionality as recommended by the AFEP/MEDEF Code of corporate governance. Taking account of several external studies, the Board of Directors adopts **a remuneration policy which provides strong incentives for the Executive Officers and is related to the regular operating performance which the shareholders expect from Air Liquide over time.**

This remuneration policy includes incentive elements reflecting 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 favour, in particular, of innovation, employee training, safety and security and energy efficiency. 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 "LTI") through the grant of share subscription options and performance shares, both tools being subject to all the same performance conditions calculated over three years;
- **other benefits** attached to the performance of the Executive Officers' terms of office, including:
  - a defined benefit **pension plan** which applies to eligible senior managers and executives and Executive Officers,
  - a **group 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.

A full description of all these components of remuneration is set out below, and, when such commitments are subject to the regulated agreements and commitments procedure, they are also described in the Statutory Auditors' Special Report on pages 335 et seq. 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.

The information included in this document 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 in October 2017) and the AMF's recommendations included in the Guide on the preparation of reference documents and the AMF Report on corporate governance and the remuneration of Executive Officers of listed companies dated November 22, 2017. For a summary of the application of the AFEP/MEDEF Code, see the summary table in the Report on Corporate Governance, page 148.

Pursuant to article L. 225-100-II of the French Commercial Code [b], the Annual Shareholders' Meeting on May 16, 2018 is invited to vote upon the elements which make up the total remuneration and the benefits of all kinds paid or granted to each Executive Officer in respect of 2017, in a specific resolution for each Executive Officer (see the tables on pages 192 et seq. below). Furthermore, in accordance with article L. 225-37-2 of the French Commercial Code, the principles and criteria for the determination, allocation and distribution of the fixed, variable and exceptional elements of the total remuneration and the benefits of all kinds that may be granted to the Executive Officers, as described in the presentation contained at pages 201 et seq., are subject to the approval of the Annual Shareholders' Meeting.

(a) For the purposes of transparency and in order to ensure the provision of complete information, all references to the remuneration of Pierre Dufour in this document take into account his remuneration in respect of his offices in France and in Germany.

(b) Applies for the first time at the Annual Shareholders' Meeting on May 16, 2018.

Summary of the remuneration of the General Management

Table 1 below presents a summary of all remuneration components paid to the Executive Officers with regard to fiscal years 2015, 2016 and 2017. They are then more fully described in the following tables.

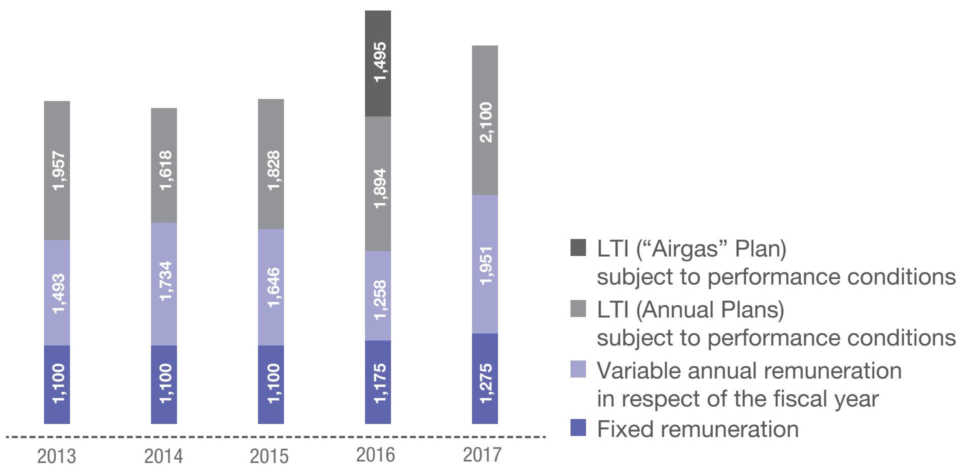
TABLE 1 – SUMMARY OF THE REMUNERATION AND STOCK OPTIONS AND PERFORMANCE SHARES GRANTED TO EACH EXECUTIVE OFFICER

(in thousands of euros, rounded off)	2015	2016	2017
Benoît Potier – Chairman and Chief Executive Officer:			
Remuneration due in respect of the fiscal year (see breakdown in Table 2)	2,757	2,443	3,236
Value of stock options granted during the fiscal year (see breakdown in Table 4)	893	619	425
Value of performance shares granted during the fiscal year (see breakdown in Table 6):			
■ Annual Plan	935	1,275 [(a)]	1,675
■ July 29, 2016 "Airgas" Plan	N/A	1,495	N/A
TOTAL	**4,585**	**5,832**	**5,336**
Pierre Dufour – Senior Executive Vice President: [(b)]			
Remuneration due in respect of the fiscal year (see breakdown in Table 2)	1,653	1,498	959
Value of stock options granted during the fiscal year (see breakdown in Table 4)	509	N/A	N/A
Value of performance shares granted during the fiscal year (see breakdown in Table 6):			
■ Annual Plan	533	N/A [(a)]	N/A
■ July 29, 2016 "Airgas" Plan	N/A	747	N/A
TOTAL	**2,695**	**2,245**	**959**

(a) *November 29, 2016 plan.*
(b) *Pierre Dufour has decided to claim his pension entitlements in 2017 and his terms of office of Senior Executive Vice President and of Managing Director of the German subsidiary ALGMS came to an end respectively on May 3 and July 14, 2017. His fixed and variable remuneration and the other elements of his remuneration for 2017 depend upon the amount of time he worked in 2017. Furthermore, Pierre Dufour was not granted any performance shares or stock options in 2017.*

BREAKDOWN OF THE REMUNERATION OF THE CHAIRMAN AND CHIEF EXECUTIVE OFFICER OVER THE LAST FIVE YEARS

(in thousands of euros, rounded off)



As an annualized average, Benoît Potier's remuneration (fixed, variable and LTI [(a)]) increased by +6.2% over 3 years, +3.8% over 5 years and +2.4% over 10 years.

(a) Excluding the "Airgas" Plan.

2017: Total annual remuneration (fixed remuneration, variable remuneration, LTI)

Summary of the principles and criteria approved by the Annual Shareholders' Meeting in 2017

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** in respect of his term of office, as decided upon by the Board of Directors on February 14, 2017 and presented in the Company's 2016 Reference Document (pages 191 to 197) were **approved by the Annual Shareholders' Meeting on May 3, 2017** (10th resolution).

This new remuneration policy, which applies to the Chairman and Chief Executive Officer, was adopted following the **acquisition of Airgas, which was a major, transforming event for the Group** (the United States representing 34% of sales). It (i) reflects the increased level of responsibility of the Group's executive and (ii) is adapted to the Group's new 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.

The principal elements of this 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 element of long-term incentive (hereafter "LTI") 40% of the total annual remuneration.** Accordingly, **the combined weight of the variable remuneration and the LTI represents approximately 75% of this remuneration;**
- the variable remuneration is expressed as a **target variable remuneration and as a maximum** (as a % of the fixed remuneration). For the quantifiable criteria (formerly the "quantitative criteria"), the target variable remuneration corresponds to an achievement of 100% of the target objective set at the start of the year. The target objectives are exacting 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. There are three quantifiable criteria and they now include an objective of revenue growth, which is one of the four objectives in the NEOS strategic plan.

In the new Group context following the acquisition of Airgas, it was also decided to **reposition the total remuneration** of the Chairman and Chief Executive Officer so that, for 2017, the total annual target and maximum remuneration is increased by around +8%.

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 **Senior Executive Vice President** in respect of his term of office, as presented in the Company's 2016 Reference Document (pages 197 to 199) were approved by the Annual Shareholders' Meeting on May 3, 2017 (11th resolution). With regard to Pierre Dufour, who decided to claim his pension rights in 2017 and not to request the renewal of his office as Senior Executive Vice President of L'Air Liquide S.A. at the close of the Annual Shareholders' Meeting in May 2017, the fixed and variable remuneration and the other elements of remuneration depend upon the amount of time he worked in 2017 [a].

The elements of the remuneration for Benoît Potier and Pierre Dufour in respect of 2017, as determined by the Board of Directors pursuant to the principles and criteria approved by the Annual Shareholders' Meeting on May 3, 2017, are described below.

(a) In addition to his duties as Senior Executive Vice President, Pierre Dufour was in charge of the management of the Frankfurt hub. In these context, a service agreement entered into with the German subsidiary, Air Liquide Global Management Services (ALGMS), set forth the terms of exercise by Pierre Dufour of his office as Managing Director. The elements of remuneration received by Pierre Dufour in respect of this office, which terminated on July 14, 2017, are included in Tables 1 and 2 of this section.

1. SHORT-TERM BENEFITS

Gross annual remuneration before tax paid to each of the Executive Officers of L'Air Liquide S.A. by the Company (and all Group companies), with respect to his corporate office for the Chairman and Chief Executive Officer and for his duties as Executive Officer in France and since 2014 in Germany for the Senior Executive Vice President (up until the termination of his executive duties in 2017), including the benefits in kind, amounts, for fiscal years 2015, 2016 and 2017, to the figures shown in the following Table 2:

TABLE 2 – SUMMARY OF THE REMUNERATION OF EACH EXECUTIVE OFFICER

	2015		2016		2017	
(in thousands of euros, rounded off)	**Amounts due**	**Amounts paid**	**Amounts due**	**Amounts paid**	**Amounts due**	**Amounts paid**
Benoît Potier – Chairman and Chief Executive Officer (a) (b)						
■ Fixed remuneration	1,100	1,100	1,175	1,175	1,275	1,275
including Directors' fees	-	-	-	-	-	-
■ Variable annual remuneration	1,646	1,734	1,258	1,646	1,951	1,258
■ Benefits in kind	11	11	10	10	10	10
TOTAL	**2,757**	**2,845**	**2,443**	**2,831**	**3,236**	**2,543**
Pierre Dufour – Senior Executive Vice President (b) (c)						
■ Fixed remuneration	650	650	675	675	321	321
including Directors' fees (d)	-	-	-	-	-	-
■ Variable annual remuneration	739	755	564	739	437	564
■ Benefits in kind	14	14	9	9	5	5
■ Other elements of remuneration (e)	250	250	250	250	196	196
TOTAL	**1,653**	**1,669**	**1,498**	**1,673**	**959**	**1,086**

(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 2017, the Group paid contributions to third parties, for the benefit of Benoît Potier, pursuant to the supplementary defined contribution pension plan (9,379 euros), pursuant to the collective life insurance contract (208,526 euros) and pursuant to the collective death and disability benefit plan (8,850 euros including an amount corresponding to the correction in 2017 of the basis for the calculation of contributions), and for the benefit of Pierre Dufour, pursuant to the savings contract entered into by the German subsidiary (383,562 euros, including 250,000 euros in respect of 2016 and 133,562 euros in respect of 2017 and calculated pro rata the amount of time he worked). The total sum of these contributions amounts to 610,317 euros.

These plans are described in further detail below.

(c) For Pierre Dufour, the amounts include the remuneration due in respect of his duties as Managing Director of ALGMS GmbH, it being understood that Pierre Dufour did not receive any remuneration from other Group companies.

Since Pierre Dufour claimed his pension rights in 2017, his annual fixed and variable remuneration, the benefits in kind and the other elements of his remuneration in respect of 2017 will depend on the amount of time he worked in 2017.

(d) In accordance with the Group's internal practice, Pierre Dufour did not receive any Directors' fees until the end of his executive duties at the Group on July 14, 2017. With effect from that date, he received Directors' fees in respect of his office as non-Executive Director. These amounts are mentioned in the section headed "Remuneration of non-Executive Directors - Directors' fees" (on page 190 of this Reference Document).

(e) Payments by the German subsidiary, including an indemnity corresponding to the benefits in kind (housing) from which Pierre Dufour benefited under his employment contract in France. This amount also includes, for 2017, the sum of 60,667 euros corresponding to the balance of the paid leave which had not yet been taken by Pierre Dufour on the expiry of his service agreement entered into with the German subsidiary ALGMS.

1.1. Fixed remuneration for 2017

In accordance with the principles and criteria determined by the Board of Directors on February 14, 2017 and approved by the Annual Shareholders' Meeting on May 3, 2017, the fixed remuneration was determined by taking account of the level of responsibilities, the experience in the executive management functions and market practices.

The amount of the fixed remuneration for the Executive Officers is shown in the following table. **Over the last five years, Benoît Potier's fixed remuneration has undergone an average annual increase of +3%** (see graph on page 163).

	2016 *(in thousands of euros)*	**% variation 2016/2017**	**2017** *(in thousands of euros)*
Benoît Potier	1,175	+8.5	1,275
Pierre Dufour	675	0 (a)	321 (b)

(a) On an annual basis.

(b) This amount corresponds to a fixed remuneration of 675,000 euros on an annual basis (in respect of Pierre Dufour's executive offices), calculated pro rata the amount of time he worked in 2017.

1.2. Variable remuneration of the Chairman and Chief Executive Officer for 2017

1.2.1. Criteria and objectives for 2017

Financial criteria (quantifiable criteria)

Pursuant to the principles and criteria decided upon by the Board of Directors on February 14, 2017 and approved by the Annual Shareholders' Meeting on May 3, 2017 (10th resolution), the variable remuneration is based on **three financial criteria:**

- the increase in **net earnings per share (recurring EPS)** (excluding foreign exchange impact and significant exceptional items; calculation made on the basis of the consolidated financial statements of the Group for 2017 compared to the estimated financial statements for 2016 including Airgas as of January 1 and excluding the businesses available for sale);
- the **return on capital employed, after tax (ROCE);**
- the comparable growth in **consolidated revenue** (excluding significant scope impact, excluding foreign exchange impact and energy costs; calculation made on the basis of the consolidated financial statements of the Group for 2017 compared to the estimated financial statements for 2016 including Airgas as of January 1 and excluding the businesses available for sale).

The increase in **EPS** criterion makes it possible to take into account all the income statement items. The **ROCE** criterion, which makes it possible to measure the return on capital employed, is relevant in **a highly capital-intensive industry.**

These three criteria - **revenue,** EPS and ROCE - reflect **the balance achieved each year between profitable growth and return on investment.**

For each criterion, the Board of Directors had defined a target objective. The **objectives were exacting.** They are completely consistent with the **trajectory of the NEOS Company Program** which targets, for the period 2016-2020, an average annualised **growth in Group revenue** of +6% to +8% (including a scope impact linked to the consolidation of Airgas corresponding to +2% as an annualised average) and a **return on capital employed (ROCE)** of more than 10% after five to six years.

For each financial criterion, a formula adopted by the Board makes it possible to calculate the amount of the variable remuneration due (within the limit of a maximum) 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 limit of the maximum set for each criterion. **In the event of a performance that is below the lower limit set for each objective, 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 the objectives for the variable remuneration as a % of the fixed remuneration and, hence, as a % of the target variable remuneration for this criterion is communicated in the summary table below.

Personal criteria (qualitative criteria)

Benoît Potier's variable remuneration for 2017 was also based on personal (qualitative) criteria relating:

- **for two-thirds to the following three fields:**
  - **Integration of Airgas:**
    - finalising the integration of Airgas,
    - achieving the amount of synergies announced for 2017,
  - **CSR:**
    - safety and reliability – Continuing the efforts to improve safety in terms of the lost-time accident frequency rate – Increasing vigilance with regard to prevention in terms of road/professional accidents,
    - continuing the deployment of the Corporate Sustainability Program (CSP). Ensuring the due and proper setting-up of the specialist Commitee on the Board (Environment and Society Committee),
  - **Organization/Human resources:**
    - progress by young managers,
    - organization of the succession plans;
- **for 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 unfavourable environment which was not anticipated at the time the objectives were set, or disadvantageous if the environment ultimately turns out to be more favourable than anticipated.

1.2.2. Rate of achievement of the objectives for 2017

At its meeting on February 14, 2018, the Board of Directors made an assessment of the performance of the Executive Officers for 2017. The amounts of the variable remuneration for each criterion are shown in the summary table below.

Financial criteria (quantifiable criteria)

The results in 2017 were above the target set for the criterion of recurring EPS and close to the target set for the ROCE and the consolidated revenue criteria. The amount of the variable remuneration in respect of these criteria is as follows:

- Recurring EPS: 47% of the fixed remuneration, representing 117.5% of the target remuneration for this criterion,
- ROCE: 43.7% of the fixed remuneration, representing 97% of the target remuneration for this criterion,
- Revenue: 19.6 % of the fixed remuneration, representing 98% of the target remuneration for this criterion.

Personal criteria (qualitative criteria)

The performance, with regard to the personal objectives (qualitative objectives), was considered to be **excellent**. **The amount of the variable remuneration for these criteria is as follows:**

- Integration of Airgas, CSR, Organization/Human resources: 27.8% of the fixed remuneration, representing 92.5% of the target remuneration for this criterion,
- Individual performance: 15% of the fixed remuneration, representing 100% of the target remuneration for this criterion.

i.e. in total 42.75% of the fixed remuneration, representing 95% of the target remuneration for the personal objectives.

When assessing performance with regard to personal criteria, the Board of Directors noted the following:

- **Integration of Airgas and synergies:** the integration of operations is completely finalised and a shared organization, supported by integrated systems, is now in place. The Air Liquide processes are also gradually implemented at Airgas (in particular safety, human resources policy and Research and Development).

  Airgas synergies represent 215 million US dollars cumulatively since the acquisition of Airgas in May 2016 and 170 million US dollars in 2017 alone - 40 million more than initial objectives.

- **CSR:** in 2017, with regard to safety, lost-time accidents were reduced in terms of their frequency (drop from 1.76 in 2016 to 1.61 in 2017) and in terms of their number (drop from 229 in 2016 to 198 in 2017). A significant drop in the number of accidents has been noted at Airgas, together with a drop in the number of business-related and process-related incidents.

  Moreover, the Environment and Society Committee is now in place and has already met on two occasions during the second half of 2017. It is responsible for the deployment of the Corporate Sustainability Program, and tackles those issues which are a priority for Air Liquide: energy transition and development of chronic diseases. Quantitative objectives linked to the climate are in the process of being drawn up, a task force having been set up for this purpose. Moreover, Benoît Potier is Co-Chair of the Hydrogen Council created in January 2017. First global initiative of its kind, the Hydrogen Council is determined to position hydrogen among the key solutions of the energy transition; it was represented at the COP23 and the One Planet Summit. An investor day of the Hydrogen Council was organized in September in New York.

- **Organization/Human Resources :**
  - Implementation of organizational changes in the management teams: following the recent retirements of Pierre Dufour, Senior Executive Vice President, and Jean-Pierre Duprieu, Executive Vice President, three Executive Vice Presidents and two new Company Directors were appointed on July 1, 2017. The method of operational management was also changed in mid-2017 in order to promote interaction and to allow for more agility in decision-making; it proved to be successful right from the second part of the year. In line with these changes, succession plans have been determined.
  - A program dedicated to young managers who show strong potential is in place and ensures their advancement within the organization. For the last few years, more employees have been involved with the Company's long-term objectives through the performance share program.

- **Individual performance:** the year 2017, which saw an improvement in the macro-economic climate, was also marked by continued geopolitical uncertainty (which affected the Group's activities, particularly in Eastern Europe and the Middle East) and an unfavourable foreign exchange impact for the year (which affected the Group, in particular as a result of the consolidation of activities in the USA). Against this background, the individual performance of the Executive Officers was considered to be excellent. With regard to Benoît Potier, was emphasised his strong commitment to long-term investments (development of the Hydrogen Energy business, Group innovation in particular through the renewal of the research centers).

Total variable remuneration

In total, the amount of the variable remuneration represents 153% of the fixed remuneration (compared to a target of 150% and a maximum of 167%), which is 55.1% higher than the variable remuneration for 2016. This variation can be explained by the fact that, although the variable remuneration for 2017 is on target in light of the 2017 results, on the contrary in 2016, in the context of moderate world growth, the results obtained for the recurring EPS and the ROCE were lower than the objectives set, which had a significant impact on the level of variable remuneration (a decrease of -24% in the variable remuneration for 2016 as compared to 2015).

As an annualized average, Benoît Potier's variable remuneration increased by +4% over 3 years, by +3.4% over 5 years and by +3.2 % over 10 years.

SUMMARY TABLE

Variable remuneration for 2017 – Benoît Potier

			Target [a]		Maximum		Rate of achievement [e]		
Type of criterion	**Indicator**	**Measure**	*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 [e]*	*As a % of the fixed remuneration*	*As a % based on 100*
Financial criteria (quantifiable)	Net earnings per shares (recurring EPS) [b]	Increase in recurring EPS [d]	40	26.7	47	28.1	117.5	47	31
	Return on capital employed, after tax (ROCE)	Value [f]	45	30	52	31.1	97	43.7	29
	Revenue [c]	Comparable growth in consolidated revenue [d]	20	13.3	23	13.8	98	19.6	13
	SUB-TOTAL		**105**	**70**	**122**	**73**	**-**	**110.3**	**72**
Personal criteria (qualitative)	Integration of Airgas	Finalising the integration of Airgas and achieving the amount of synergies announced for 2017							
	CSR	■ Safety and reliability – Continuing the efforts to improve safety in terms of the lost-time accident frequency rate – Increasing vigilance with regard to prevention in terms of road/ professional accidents. ■ Continuing the deployment of the Corporate Sustainability Program (CSP). Ensuring the due and proper setting-up of the specialist committee on the Board.	30	20	30	18	92.5	27.8	18
	Organization / Human Resources	Progress by young managers and organization of the succession plans.							
	Individual performance	Assessment by the Board of Directors, in particular against the external environment for that year	15	10	15	9	100	15	10
	SUB-TOTAL		**45**	**30**	**45**	**27**	**-**	**42.8**	**28**
TOTAL			**150**	**100**	**167**	**100**	**-**	**153**	**100**

(a) The target corresponds to 100% achievement of the performance criterion.
(b) Excluding foreign exchange impact and significant exceptional items.
(c) Excluding significant scope impact, impact of foreign exchange impact and energy.
(d) Calculation made on the basis of the consolidated financial statements of the Group for 2017 compared to the estimated financial statements for 2016 including Airgas as of January 1 and excluding the businesses available for sale).
(e) As per decision of the Board of Directors on February 14, 2018.
(f) As at December 31, 2017.

The total amount of the variable remuneration due for the 2017 fiscal year in respect of the term of office will be paid in 2018, after approval of the financial statements by the Annual Shareholders' Meeting it being noted that its payment is conditional on approval by an Annual Shareholders' Meeting of the elements of Benoît Potier's remuneration for 2017, under the conditions provided by article L. 225-100 of the French Commercial Code.

1.3. Variable remuneration of the Senior Executive Vice President for 2017 (pro rata the amount of time worked in 2017)

1.3.1. Criteria and objectives for 2017

Financial criteria (quantifiable criteria)

For the year 2017, during which Pierre Dufour decided to claim his pension entitlements [a], it had been decided, in accordance with the principles and criteria adopted by the Board of Directors on February 14, 2017 and approved by the Annual Shareholders' Meeting on May 3, 2017 (11th resolution), that the financial criteria for Pierre Dufour's variable remuneration would be, for simplicity, identical to those for 2016:

- increase in **recurring net earnings per share** (recurring EPS) (excluding foreign exchange impact and significant exceptional items). For 2017, the calculation is made on the basis of the consolidated financial statements of the Group for 2017 compared to the estimated financial statements for 2016 including Airgas as of January 1 and excluding the businesses available for sale;
- the level of **return on capital employed, after tax** (ROCE).

For each criterion, the Board of Directors defined an **exacting objective. This objective has not been made public for confidentiality reasons.**

A formula adopted by the Board makes it possible to calculate the amount of the variable remuneration due (within the limit of a maximum) 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 limit of the maximum set for each criterion. **In the event of a performance that is below the lower limit set for each objective, the variable remuneration corresponding to this criterion is equal to zero.**

Personal criteria (qualitative criteria)

The qualitative criteria determined by the Board of Directors for Pierre Dufour's variable remuneration for 2017 were identical to those set for Benoît Potier (see page 166) and were related:

- for two-thirds, to the following three fields:
  - Integration of Airgas,
  - CSR,
  - Organization/Human Resources;
- for one-third, to an individual performance.

Weight of each criterion

For the record, in respect of 2017, the variable remuneration, expressed as a percentage of the fixed remuneration, could amount to a maximum of 140% for the Senior Executive Vice President.

The weight of each criterion and the maximum amount of the variable remuneration, expressed as a percentage of the fixed remuneration, were identical to those in 2016 and were as follows:

(as a percentage of the fixed remuneration)	**Pierre Dufour**
Financial criteria (quantifiable)	**85**
Recurring EPS	50
ROCE	35
Personal criteria (qualitative) including: *Integration of Airgas, CSR, Organization/Human Resources and individual performance*	**55**
TOTAL *(maximum expressed as a percentage of the fixed remuneration)*	**140**

(a) *Since Pierre Dufour has decided to claim his pension entitlements, his term of office of Senior Executive Vice President of L'Air Liquide S.A. came to an end at the close of the Annual Shareholders' Meeting of May 3, 2017. His term of office of Managing Director of the German subsidiary ALGMS came to an end on July 14, 2017.*

1.3.2. Rate of achievement of the objectives for 2017

The Board of Directors on February 14, 2018 made an assessment of Pierre Dufour's performance for 2017.

Financial criteria (quantifiable criteria)

The results in 2017 were above the objective set for the **Recurring EPS** and slightly below the objective for the **ROCE**. Pierre Dufour's variable remuneration in respect of the financial criteria amounts to:

- Recurring EPS: 50% of his fixed remuneration;
- ROCE: 34% of his fixed remuneration.

Personal criteria (qualitative criteria)

The performance with regard to **personal objectives,** which were common to the Executive Officers, was considered to be **excellent** (see §1.2.2 above).

The amount of the variable remuneration in respect of the personal objectives represents 52.3% of Pierre Dufour's fixed remuneration.

Total variable remuneration

In total, the amount of the variable remuneration, as a percentage of the fixed remuneration, represents 136.25% (compared to a maximum of 140%) of the fixed remuneration, which is 63.1% higher than the variable remuneration for 2016 (on an annual basis for 2017). The reasons for such variation are identical to those relating to Benoît Potier's variable remuneration (see §1.2.2. above - Pierre Dufour's variable remuneration also decreased by -24% between 2015 and 2016).

As an annualized average (annual basis for 2017), Pierre Dufour's variable remuneration increased by +6.8% over 3 years and +4.8% over 5 years.

The variable remuneration due for the 2017 fiscal year for the office of the Senior Executive Vice President (pro rata the amount of time worked in the fiscal year) will be paid in 2018, after approval of the financial statements by the Annual Shareholders' Meeting it being noted that its payment is conditional on approval by an Annual Shareholders' Meeting of the elements of the Senior Executive Vice President's remuneration for 2017, under the conditions provided by article L. 225-100 of the French Commercial Code.

1.4. Other elements of annual remuneration for 2017

The benefits in kind paid for the benefit of the Executive Officers in 2017 include, for each of the two Executive Officers, the use of a company car, as well as, for Benoît Potier, 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 and defined benefit pension plans, to the collective life insurance plan and the collective death and disability benefits plan, and for Pierre Dufour, the contributions in respect of the savings contract entered into by the German subsidiary (pro rata the amount of time worked). The amount of these contributions is stated in the footnotes to Table 2 (page 165).

Other elements of remuneration: Pierre Dufour, who was in charge of the management of the Frankfurt hub, also received 134,921 euros paid by the German subsidiary, which includes, in particular, as to approximately one-half, an amount corresponding to the benefits in kind (housing) which he previously benefitted from under his employment contract in France (paid in accordance with the amount of time worked in 2017). In Germany, Pierre Dufour received an amount of 60,667 euros corresponding to the balance of the paid leave which he had not yet taken on the expiry of his service agreement entered into with the German subsidiary ALGMS.

1.5. In total

For Benoît Potier, the total fixed and variable remuneration for 2017 is 32.6% higher as compared to 2016. The variation of the total remuneration can mainly be explained by a substantial increase in the variable remuneration for 2017 as compared to the level in 2016, which was below the objectives set (see explanation §1.2.2 above). In that respect, while the total target remuneration increased by approximately +8% between 2016 and 2017, the decrease in the variable remuneration for 2016 as compared to the variable remuneration for 2015 (-24%) results in an important mechanical (but not significant) increase in the total fixed and variable remuneration between 2016 and 2017.

As an annualized average, the fixed and variable remuneration of Benoît Potier increased by +4.4% over 3 years, by +3.2% over 5 years and by +2.8% over 10 years.

With regard to Pierre Dufour, whose remuneration depends on the time worked in 2017, the remuneration on an annual basis increased by +28.7% as compared to 2016 (see explanations § 1.2.2 above). This corresponds, in terms of annualized average, to an increase of +4.3% over 3 years and +3.3% over 5 years.

2. STOCK OPTIONS AND PERFORMANCE SHARES

2.1. 2017 stock option and performance share plans

2.1.1. Principles of grant for 2017

Within the scope of the performance share and stock option plans implemented in 2017, the Board decided to continue with the policy initiated in 2015 aimed at giving preference to performance shares rather than stock options in terms of the volumes granted. Thus, for employees who up until now had received a mixed grant, the weight of performance shares has increased significantly as compared to that of stock options and, for many of them, performance shares have completely replaced stock options.

The 2017 grant falls within the scope of the new remuneration policy approved by the shareholders at the Annual Shareholders' Meeting on May 3, 2017, as stated on page 164.

In such circumstances, it had been agreed that the grant of stock options/performance shares to Benoît Potier in 2017 would represent an IFRS value of approximately 2.1 million euros, an increase of 10.83% as compared to 2016.

2.1.2. Performance conditions of the plans implemented in 2017

All the stock options and performance shares granted to any beneficiary are subject to performance conditions which apply to both the stock option and performance share plans and 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 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 stock options that vest/performance shares definitively awarded are also published at the end of this Board meeting.

The performance conditions applicable to the stock option and performance share plans implemented in 2017 were adopted by the Board of Directors on February 14, 2017.

Accordingly the number of stock options which can be exercised out of the total number of options which will be allocated, together with the number of performance shares definitively awarded pursuant to the 2017 Plans will depend:

(i) for 65% of the stock options/performance shares granted, on the rate of achievement of an objective, set by the Board, consisting of the average annual rates of growth in the Group's undiluted net earnings per share, excluding foreign exchange impact and excluding significant exceptional items **("Recurring EPS")** for the fiscal years 2017, 2018 and 2019.

At the objective set, the grant is 100%, and then decreases on a straight-line basis to **zero, if there is no growth in the EPS.** In order to take account of the Airgas acquisition made in May 2016 and its financing, the following principle was adopted:

- to calculate the increase in the Recurring EPS for 2017 on the basis of the estimated financial statements for 2016, incorporating Airgas as at January 1, excluding activities held for sale and making it possible to take comparable data into account,
- **to maintain an exacting objective of average annual rates of growth over this period.** This objective has been set, as for the 2016 Plans, at a level of growth included within the bracket of +6% to +10% per year. The exact objective will be communicated ex post;

(ii) for 35% of the stock options/performance shares granted,

- for 50% of the stock options/performance shares referred to in sub-paragraph (ii): on an objective of return for the shareholder set by the Board, defined as the average annualised growth rate of an investment in Air Liquide shares, reinvested dividends, for fiscal years 2017, 2018 and 2019 **("AL TSR").** The absolute TSR objective is set in accordance with the 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 stock options/performance shares referred to in sub-paragraph (ii): on the rate of 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 fiscal years 2017, 2018 and 2019.

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 more than 2% higher than the average of the CAC 40 TSR on the basis of a straight-line change. This objective of 2%, which is slightly lower than that for 2016, can be explained by the greater sensitivity of the performance conditions, which are now based on the sole criterion of TSR (as compared to two criteria previously: TSR Peers and TSR CAC 40). 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 2019 fiscal year. The result achieved and the percentage of performance shares awarded/stock options which can be exercised will also be communicated.

DIAGRAM SHOWING THE PERFORMANCE CONDITIONS APPLICABLE TO ALL THE STOCK OPTIONS AND PERFORMANCE SHARES IN 2017

65% **Average annual EPS growth**	**35%** **TSR over three years**	
	50% **AL TSR**	**50%** **B TSR** **(AL TSR/CAC 40 TSR)**

2.1.3. Rules specific to the Executive Officers

The grant to the Executive Officers is reviewed by the Remuneration Committee at the same time as the grant 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 performance shares.

The grant of stock options and performance shares 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 stock options and performance shares, 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 2017, all the Company's employees and 96% of the employees in the Group's French entities are covered by an incentive plan or a special or voluntary profit-sharing plan.

Limits on grants to the Executive Officers

Within the scope of the sub-limits authorised for 38 months by the Annual Shareholders' Meeting [a], 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.

Taking account of the reduction in the number of Executive Officers, the Board of Directors decided to adopt the following limits:

(i) the total number of performance shares granted to the sole Executive Officer in 2017 cannot give rise to a number of shares exceeding 0.012% (compared to 0.017% previously) (it being understood that an allocation sub-limit of 0.15% of the share capital for 38 months was set by the Annual Shareholders' Meeting on May 12, 2016);

(ii) the total number of stock options granted to the sole Executive Officer in 2017 cannot give rise to a number of shares exceeding 0.035% of the share capital (compared to 0.05% previously) (it being understood that an allocation sub-limit of 0.3% of the share capital for 38 months was set by the Annual Shareholders' Meeting on May 12, 2016);

(iii) the maximum aggregate IFRS value of the stock options and performance shares granted to the Executive Officer cannot exceed (all 2017 stock option and performance share plans combined) approximately 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 for 2017, the grant of the 2017 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, 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.

  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.

(a) Last authorised by the Combined Shareholders' Meeting on May 12, 2016 (18th and 19th resolutions).

This rule is regularly reviewed by the Board at the time of each grant. In 2017, 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.

It was reported to the Board of Directors on February 14, 2018 that this rule was applied with regard to the exercise of options pursuant to the 2009 stock option plan.

- 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 gross 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. The Board noted that the valuation of the shares held as at January 1 and July 1, 2017 by the Executive Officers, and as at January 1, 2018 by the Chairman and Chief Executive Officer was much greater than the amounts required and concluded that the shareholding obligation was complied with by each of the Executive Officers.

  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.

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, as defined by the Company. These abstention periods open 30 days before the date of publication of the annual and half-yearly consolidated results and 15 days before the date of publication of the financial information relating to the first and third quarters. 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.

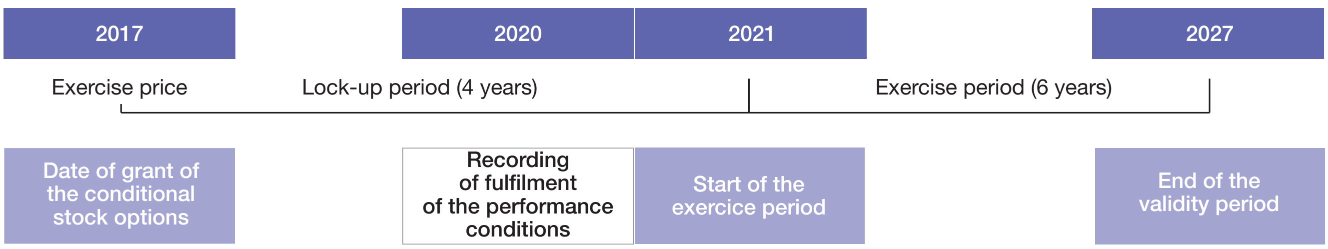
2.2. Grants to the Executive Officer within the scope of the September 20, 2017 plans

2.2.1. Options granted to the Executive Officer on September 20, 2017

Plan Regulations

The September 20, 2017 Plan regulations, and in particular the performance conditions, are the same for all the beneficiaries of stock options within the Group, it being specified that the Executive Officer is subject to additional conditions as described above. The term of the plan is 10 years and includes a lock-up period of four years during which the stock options cannot be exercised. Furthermore, a requirement of continued presence at the Group at the time of exercise of the options is also defined.

Stock option mechanism



Volume

Table 4 below shows the number and value of the share subscription options granted to the Executive Officer by the Board of Directors on September 20, 2017.

TABLE 4 – SHARE SUBSCRIPTION OPTIONS GRANTED DURING THE 2017 FISCAL YEAR TO THE EXECUTIVE OFFICER

	Plan grant date	Option type	Number of options granted	Option value (pursuant to IFRS 2)[(a)]	Exercise price *(in euros)*	Exercise period	Performance conditions
Benoît Potier	09/20/2017	Share subscription options	23,100	424,809	104	09/20/2021 to 09/20/2027	Two performance conditions calculated over three years: ■ Recurring EPS ■ Total Shareholder Return, including an element of relative comparison

(a) *As at September 20, 2017. See page 212.*

The stock options granted to the Executive Officer in 2017 represent 0.006% of the number of shares making up the share capital at the date of the grant. This grant is made by the Company to the exclusion of any other Group company.

Options exercised during the 2017 fiscal year and remaining to be exercised as at December 31, 2017

TABLE 5 – SHARE SUBSCRIPTION OPTIONS EXERCISED DURING THE 2017 FISCAL YEAR BY EACH EXECUTIVE OFFICER

	Plan grant date	Number of options exercised during the fiscal year	Exercise price* *(in euros)*
Benoît Potier	06/15/2009	117,420	48.72
Pierre Dufour	06/28/2010	62,440	66.47
Pierre Dufour	10/14/2011	67,400	63.18
Pierre Dufour	09/27/2012	56,513	77.36
Pierre Dufour	09/26/2013	67,553	81.68

* *Exercise price on the day of exercise of stock options.*

Total adjusted stock options remaining to be exercised by the Executive Officer as at December 31, 2017

	Total number of outstanding adjusted options	Average price *(in euros)*
Benoît Potier	723,092	76.88

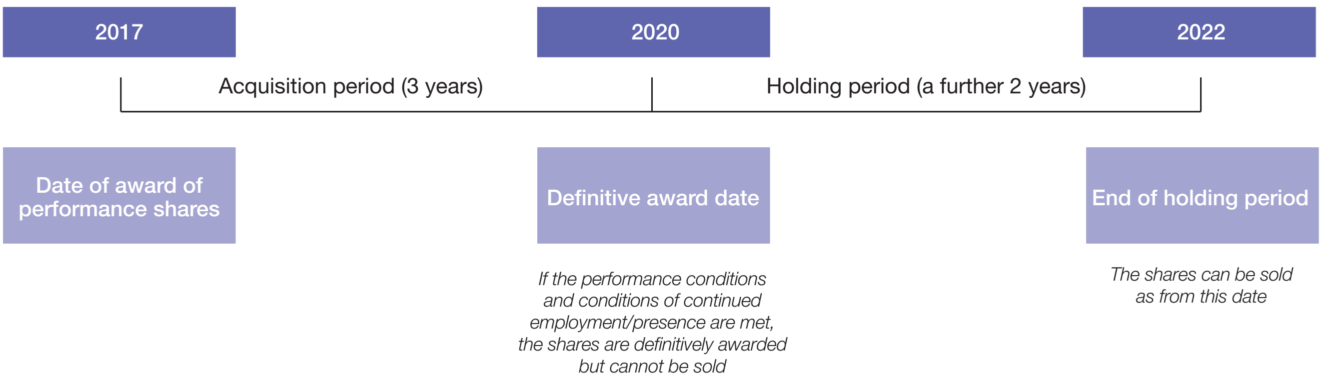
2.2.2. Performance shares awarded to the Executive Officer on September 20, 2017

Plan Regulations

The grant to the Executive Officer is governed by the September 20, 2017 "France" performance share plan which applies to all the beneficiaries in France. This Plan comprises:

- 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 20, 2017.

TABLE 6 – PERFORMANCE SHARES AWARDED DURING THE 2017 FISCAL YEAR TO THE EXECUTIVE OFFICER

	Plan grant date	Number of performance shares awarded	Value of the performance shares (pursuant to IFRS 2)[a] *(in euros)*	Definitive award date	Availability date	Performance conditions
Benoît Potier	09/20/2017	17,980	1,675,017	09/20/2020	09/20/2022	Two performance conditions calculated over three years: ■ Recurring EPS ■ Total Shareholder Return, including an element of relative comparison

(a) *As at September 20, 2017. See page 215.*

The performance shares awarded to Benoît Potier on September 20, 2017 represent 0.0046% of the number of shares making up the share capital at the date of the grant. This award is made by the Company to the exclusion of any other Group company.

Performance shares that became available in 2017

TABLE 7 – PERFORMANCE SHARES THAT BECAME AVAILABLE DURING THE 2017 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.

2.2.3. On a combined basis (September 20, 2017 stock option and performance share plans)

On a combined basis, the grants decided by the Board on September 20, 2017 to Benoît Potier are as follows:

	Volume	Value pursuant to IFRS 2[(a)] *(in euros)*	% of share capital
Benoît Potier	23,100 stock options	424,809	0.006
	17,980 performance shares	1,675,017	0.0046
TOTAL		**2,099,826**	**N/A**

(a) *As at September 20, 2017. See pages 212 and 215.*

2.3. Recording of the achievement of the performance conditions under the 2015 stock option and performance share plan

The Board of Directors of L'Air Liquide, at its meeting on September 28, 2015, decided all the performance share and stock option plans for 2015. For the first time, performance shares were awarded to the Executive Officers, as a replacement for (and not in addition to) stock options. Furthermore, the performance conditions for the performance shares were aligned with those for the stock options.

On the basis of the financial statements adopted for the 2017 fiscal year submitted for the approval of the Annual Shareholders' Meeting on May 16, 2018, the Board of Directors recorded, at its meeting on February 14, 2018, the rate of achievement of the **performance conditions** which apply to all the stock options and performance shares awarded to any beneficiary as defined at the time of implementation of the **September 28, 2015 stock option and performance share plans.**

The 2015 plans provided that the number of stock options which could effectively be exercised in respect of the total number of stock options granted, together with the number of performance shares definitively awarded, within the scope of the 2015 plans, 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 Recurring EPS for the fiscal years 2015, 2016 and 2017 set at +5% (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.

The Board of Directors recorded that the average annual growth of the recurring EPS over the aforementioned period amounted to + 5.67%, i.e. an objective achieved as to 100%;

(ii) for 35% of the stock options/performance shares granted, an objective of shareholder return:

- for 50% of the stock options/performance shares referred to in sub-paragraph (ii): an objective defined as the average annualised growth rate of an investment in Air Liquide shares for the fiscal years 2015, 2016 and 2017 ("AL TSR"), set at 8% (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 4%.

  The Board of Directors recorded that this growth, over the aforementioned period, amounted to 10.58% per annum, i.e. an objective achieved as to 100%,
- for 50% of the stock options/performance shares referred to in sub-paragraph (ii): the rate of shareholder return from an investment in Air Liquide shares, reinvested dividends – sourced from Bloomberg ("B TSR"), as compared to a reference index made up:
  - as to half by the CAC 40 index, reinvested dividends (sourced from Bloomberg), and
  - as to half by the return for the shareholder from companies in the industrial gas sector - Peers (average of Air Liquide, Linde, Praxair and Air Products), reinvested dividends (sourced from Bloomberg),
  - in respect of the fiscal years 2015, 2016 and 2017.

  The rate of achievement was 0% if the rate of return for Air Liquide was 3% less than the median objective, and 100% if the rate of return for Air Liquide was more than 3% higher than the objective.

  The rate of return for Air Liquide over the aforementioned period is 7.3%. That of the CAC 40 index over the same period is 11.1% and that of the companies in the business sector amounts to 9.5%. Consequently, the difference between the rate of return for Air Liquide and the average rate of return for the CAC 40 and Peers indices amounts to -3.001%. Thus, the proportion of stock options/shares that can be exercised/awarded pursuant to this relative criterion is 0%.

Accordingly, the Board of Directors recorded that the rate of achievement of performance conditions amounts to 82.50%. The number of stock options and performance shares has been adjusted for the 2016 capital increase and the 2017 free share attribution and amounted, after adjustment, to 79,263 stock options and 11,324 performance shares for Benoît Potier and to 45,181 stock options and 6,455 performance shares for Pierre Dufour. The definitive number of stock options and performance shares after taking into account the rate of achievement of performance conditions is: 65,391 stock options and 9,342 performance shares for Benoît Potier and 37,274 stock options and 5,325 performance shares for Pierre Dufour.

2.4. Recording of the achievement of the performance condition under the Asset/Pension 2015 performance share plan

As no Executive Officer was among the beneficiaries of the relevant plan, the recording of the achievement of the performance condition for this plan is described in detail in the section entitled "Description of the stock option and performance share plans" at page 215 below.

2018: Total annual remuneration (fixed remuneration, variable remuneration, LTI) of the Chairman and Chief Executive Officer

1. REMUNERATION POLICY APPLICABLE TO THE CHAIRMAN AND CHIEF EXECUTIVE OFFICER

1.1. Context

In 2017, the Board of Directors, on the recommendation of the Remuneration Committee, had decided to progressively change the remuneration policy applicable to Benoît Potier so that it is adapted to the Group's new context following the acquisition of Airgas in May 2016, so that it 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.

The acquisition of Airgas is indeed a transforming acquisition for the Group: the geographical presence of Air Liquide in the USA, the largest international market for industrial gases, was significantly increased, the USA now representing the Group's first country in terms of revenue and workforce. Following the acquisition, revenue increased by +30% and reaches more than 20 billion euros at the end of 2017. The workforce has increased by more than 15,000 persons, reaching 65,000 employees at the end of 2017. The number of customers doubled following the acquisition (increasing from one to two million). On the Paris Stock Exchange, this change has led to an increase of +15.2% in stock market capitalisation which has risen from 35,672 billion euros on December 31, 2015 to 41,085 billion euros on December 31, 2016; it reached over 45 billion euros at the end of 2017.

For Benoît Potier, who is tasked with the Group's leadership, this leads to a higher level of responsibility both to ensure the good integration of Airgas and the generation of the anticipated synergies and to conduct the long-term development and strategy of the new combined group.

To determine an objective for 2018/2019, the Board based itself on external market surveys and, in particular, on a study of the practices of the "large industrial groups" in the CAC 40 (which excludes groups in the services, consumer goods, banking and insurance sectors). It had noted that the positioning even in the top part of this reference panel for a good performance would lead to a level of remuneration that is still much lower than the remuneration received by the executive officers of the competing international groups.

The Board had, moreover, decided that the change would be made by stages until 2018/2019, so that any increase in each remuneration component from one year to the next is kept under good control. This change was understood to be subject to a good performance, the successful integration of Airgas and subject to generating synergies from Airgas.

In order to take account of the remarks made by certain shareholders and as a supplement to the information relating to the remuneration structure, the Board had wished to provide a certain visibility concerning the remuneration objectives by providing details of the planned change and timetable. The new remuneration policy was approved by the shareholders at the Annual Shareholders' Meeting held on May 3, 2017.

1.2. 2018

The Board of Directors, at its meeting on February 14, 2018, recorded that the conditions on which the implementation of a change to the remuneration policy for the Chairman and Chief Executive Officer were dependent for 2018-19 are satisfied.

In terms of performance, 2017 was marked by an acceleration in comparable sales growth during the second half and an improvement in operating performance which was reflected in an increase in operating margin and return on capital employed.

The integration of operations of Airgas is completely finalised and the implementation of functional processes is well advanced.

Airgas synergies represent 215 million US dollars cumulatively since the acquisition of Airgas in May 2016, and 170 million US dollars in 2017 alone – 40 million more than initial objectives.

It can be seen from these elements that the conditions determined in 2017 for the repositioning of Benoît Potier's remuneration are satisfied. The Board of Directors, at its meeting on February 14, 2018 took care, however, to take account of the remarks made by certain shareholders and, on the recommendation of the Remuneration Committee, decided to mitigate this repositioning by limiting the increase in the fixed remuneration.

Accordingly, in 2018, the total target annual remuneration grows by +5.2% as compared to 2017 (instead of +8%, as initially planned). With such evolution, the repositioning started in fiscal year 2017 is thus complete in fiscal year 2018.

In keeping with the remuneration policy defined in 2017, the remuneration structure for 2018 is as follows:

- maintaining a proportionate balance between the three remuneration components (fixed, variable and elements of long-term incentives) so that, in accordance with recurring practice at Air Liquide:
  - the weight of the **variable remuneration and the elements of long-term incentives (or "LTI") combined continues to represent approximately 75%** of the total annual remuneration; and that
  - in the balance between the aforementioned three components, a slightly greater weight continues to be given to the LTI. Accordingly, **the fixed remuneration represents approximately 25%, the variable remuneration 35% and the LTI 40%** of the total remuneration;
- maintaining unaltered the structure of the annual variable remuneration, while making certain improvements to take account of the remarks made by certain shareholders. Thus:
  - (i) the variable remuneration continues to be expressed as a **target variable remuneration (as a % of the fixed remuneration) and as 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%,
  - (ii) the quantifiable criteria remain unchanged as compared to 2017 (Recurring EPS, ROCE and revenue, the last of these criteria having been added in 2017 and forming, like the ROCE, part of the strategic objectives of the NEOS Plan),
  - (iii) 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 evaluation of the individual performance,
  - (iv) in the weighting of the various criteria adopted (see the table below):
    - a **greater relative weight is still given to the quantifiable criteria** as compared to the qualitative criteria,
    - a **weighting is now given to each of the qualitative criteria, in order to meet the expectations of certain shareholders,**
    - as before, each quantifiable criterion is given a target weighting (expressed as a % 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 % of the fixed remuneration),
    - the target weighting and the maximum weighting are communicated 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 as a % of the fixed remuneration and, hence, as a % of the target variable remuneration for this criterion, will be communicated ex post.

Finally, following the remarks made by certain shareholders, the Board meeting in February 2018 decided, for the **LTI** , to introduce for any Executive Officer, in the event of his departure (other than resignation or removal from office for serious cause which are events of loss of the LTI) between the initial allocation and the expiry of the period of assessment of the performance conditions, the **principle of a proration on the basis of his actual presence.** This rule, which makes it possible to justify with precision the percentage of LTI granted in respect of the period of presence, replaces the previous practice of not allocating any LTI in the year prior to retirement. As before, no allocation is granted in the year of departure. Accordingly, the total rate of allocation (after applying the performance conditions) is reduced on a prorated basis to the number of months during which the Executive Officer was effectively present at the Group during the period of assessment of the performance criteria. The Executive Officer remains subject to all the provisions of the plans, including in particular those relating to the vesting periods, the lock-up and the holding of the shares and stock options granted.

2. IMPLEMENTATION FOR THE 2018 REMUNERATION

Applying the principles and objectives noted above, the Board of Directors, at its meeting on February 14, 2018 adopted the components of Benoît Potier's remuneration for 2018 as follows:

2.1. Fixed remuneration

The fixed remuneration is set at 1,325,000 euros, an increase of +3.9% as compared to 2017. **The average annual increase in the fixed remuneration over the last five years is +3.79%.**

2.2. Variable remuneration

The Board of Directors, on the recommendation of the Remuneration Committee, decided that the criteria for the variable remuneration for 2018 would be as follows:

- **Three quantifiable financial criteria identical to those for 2017:**
  - the increase in **net earnings per share** (Recurring EPS) (excluding foreign exchange impact and significant exceptional items),
  - the **return on capital employed**, after tax (ROCE),
  - the comparable growth in consolidated **revenue** (excluding significant scope impact, excluding foreign exchange impact and energy).

  The increase in EPS criterion makes it possible to take into account all the income statement items. The ROCE criterion, which makes it possible to measure the return on capital employed, is relevant in **a highly capital-intensive industry.** These three criteria – revenue, EPS and ROCE – reflect the balance achieved each year between profitable growth and return on investment.

  The ROCE and growth in revenue are among the four objectives of the NEOS strategic plan.

  For each criterion, the Board of Directors has defined a target objective, which is **not made public for confidentiality reasons.**

  The target objectives are exacting. They are completely consistent with the **trajectory of the NEOS Company Program** which targets, for the period 2016-2020, an average annualised **growth in Group revenue of +6% to +8%** (including a scope impact linked to the consolidation of Airgas corresponding to +2% as an annualised average) and a **return on capital employed (ROCE) of more than 10% in 2021-2022.**

  For each financial criterion, a formula adopted by the Board makes it possible to calculate the amount of the variable remuneration due (within the limit of a maximum) 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 limit of the maximum set for each criterion. In the event of a performance that is below the lower limit set for each objective, the variable remuneration corresponding to this criterion is equal to zero.

- **Qualitative personal criteria, a weighting being allocated to each of them with effect from 2018** (see the summary table below). They relate:
  - for one-third, to RSE:
    - Safety and reliability – continue efforts to improve safety in terms of the lost time accident frequency rate and vigilance concerning the prevention of road traffic and business-related accidents,
    - Deployment of the Corporate Sustainability Program – Definition and communication of the CSR objectives for the Group, in line with the NEOS program.
  - for one-third, to Organization/Human Resources: continuation of the policy to develop talent, in particular for the advancement of young managers – Organization of future succession plans.
  - for one-third, to an 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 unfavourable environment which was not anticipated at the time the objectives were set, or disadvantageous if the environment ultimately turns out to be more favourable than anticipated.

A target and maximum weight is set for these qualitative criteria.

The summary table below provides details of the allocation key for the criteria for the variable remuneration, together with the target and maximum weight for each element.

SUMMARY TABLE

Variable remuneration for 2018 – Benoît Potier

Type of criterion	Indicator	Measure (see detailed description above)	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)	Net earnings per share (Recurring EPS) [b]	Increase in the Recurring EPS	40	26.7	47	28.1
	Return on capital employed, after tax (ROCE)	Value [d]	45	30	52	31.1
	Revenue [c]	Comparable growth in consolidated revenue	20	13.3	23	13.8
	SUB-TOTAL		**105**	**70**	**122**	**73**
Personal criteria (qualitative)	CSR	■ Safety and reliability: continue efforts to improve safety in terms of the lost time accident frequency rate and vigilance concerning the prevention of road traffic and business-related accidents ■ Deployment of the Corporate Sustainability Program – Definition and communication of the CSR objectives for the Group, in line with the NEOS program.	15	10	15	9
	Organization / Human Resources	Continuation of the policy to develop talent, in particular for the advancement of young managers – Organization of future succession plans	15	10	15	9
	Individual performance	Assessment by the Board of Directors, in light in particular of the external environment for the year	15	10	15	9
	SUB-TOTAL		**45**	**30**	**45**	**27**
TOTAL			**150**	**100**	**167**	**100**

(a) The target corresponds to 100% achievement of the performance criterion.
(b) Excluding the foreign exchange impact and significant exceptional items.
(c) Excluding significant scope impact, foreign exchange impact and energy.
(d) As at December 31, 2018.

The total amount of the variable remuneration due for the 2018 fiscal year in respect of the term of office will be paid in 2019, after approval of the financial statements by the Annual Shareholders' Meeting, it being noted that its payment is conditional on the approval by an Annual Shareholders' Meeting of the elements of Benoît Potier's remuneration for 2018, under the conditions provided by article L. 225-100 of the French Commercial Code.

2.3. Long-term remuneration components

Principles of grant

The performance share and stock option 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 14, 2018 for the allocation programed for the autumn of 2018:

- the Board decided to continue with the policy initiated in 2015 aimed at giving preference to performance shares rather than stock options in terms of the volumes granted. The Board confirmed that, according to the principle adopted in 2016, the award of performance shares and options to the Executive Officer and the changes therein over time will be assessed in terms of the IFRS value (and no longer in terms of the volumes granted), for all stock option and performance share plans combined.

  For 2018, the Board of Directors intends to grant to Benoît Potier LTI representing an IFRS value of approximately 2.25 million euros (compared with 2.1 million euros in 2016) representing 40.4% of the total target remuneration for 2018;

- all the stock options and performance shares granted are subject to **performance conditions that apply to both** the stock option and performance share plans and are calculated over a period of **three years.** As decided in 2017, the relative TSR criterion is simplified and consequently includes a comparison with a single published index: the CAC 40 TSR index, reinvested dividends. For the fraction of the performance condition which depends upon this relative TSR criterion, no grant of stock options or performance shares will be possible, if the average of the Air Liquide TSR (reinvested dividends) over the period is lower than the average of the CAC 40 TSR, reinvested dividends, over the same period.

  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 **exacting 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 stock options/performance shares definitively awarded are also published at the end of this Board Meeting.

Performance conditions

As a consequence of the above, the performance conditions which apply to all the beneficiaries of the stock option and performance share plans which will be allocated in 2018 have been determined by the Board of Directors on February 14, 2018. The number of stock options which can be exercised out of the total number of options which will be granted, together with the number of performance shares definitively allocated pursuant to the 2018 Plans will depend:

(i) for 65% of the stock options/performance shares granted, on the rate of achievement of an objective, set by the Board, consisting of the average annual rates of growth in the Group undiluted net earnings per share, excluding foreign exchange impact and excluding significant exceptional items ("Recurring EPS") for the fiscal years 2018, 2019 and 2020. At the objective set, the grant is 100%, and then decreases on a straight-line basis to **zero, if there is no growth in the EPS.**

This objective has been set, as for the 2017 Plans, at a level of growth included within the bracket of +6% to +10% per year. The objective will be communicated ex post;

(ii) for 35% of the stock options/performance shares granted,

- for 50% of the stock options/performance shares referred to in sub-paragraph (ii): on an objective of return for the shareholder set by the Board, defined as the average annualised growth rate of an investment in Air Liquide shares, reinvested dividends, for fiscal years 2018, 2019 and 2020 ("AL TSR"). The objective of an absolute TSR is set in accordance with the 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 stock options/performance shares referred to in sub-paragraph (ii): on the rate of 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).**

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 2020 fiscal year.

Rules specific to the Executive Officers

The grant to the Executive Officers is examined by the Remuneration Committee at the same time as the plan for the grant 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 performance shares. As part of the allocation which will be decided upon in the autumn, the Board will have to clarify and confirm the specific rules which apply to the Executive Officers, as follows:

- **Limits on the grants to Executive Officers**

  Within the scope of the sub-limits authorised for 38 months by the Annual Shareholders' Meeting [a], 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 2018 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 Benoît Potier, 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 gross annual fixed remuneration of the Executive Officer concerned.
  - **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.
  - Implementation, with effect from the 2018 stock option and performance share plans, of the **principle of proration on the basis of the actual presence of the Executive Officer,** in the event of a departure during the period of assessment of the performance conditions.

    This principle will apply (i) only to the Executive Officers, (ii) in all cases of a departure for a reason other than resignation or removal from office for serious cause.

    Accordingly, in practice, 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 in the year of his departure, in accordance with the AFEP/MEDEF Code.
  - **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, as defined by the Company. These abstention periods open 30 days before the date of publication of the annual and half-yearly consolidated results and 15 days before the date of publication of the financial information relating to the first and third quarters. 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.

(a) Last authorised by the Combined Shareholders' Meeting on May 12, 2016 (18th and 19th resolutions).

Long-term commitments

The long-term commitments set out below which Benoît Potier benefits from are taken into account for the determination of his total remuneration. Since Pierre Dufour claimed his pension entitlements in 2017, the long-term commitments which he benefitted from are described below.

1. COMPANY'S PENSION AND SIMILAR BENEFIT OBLIGATIONS

In addition to the mandatory basic and supplementary pension schemes (Agirc/Arrco) with which they are, or were affiliated, Benoît Potier and Pierre Dufour have been authorised to benefit from various supplementary social benefit schemes set up by L'Air Liquide S.A.

1.1. Benoît Potier

1.1.1. 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 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.

The Board authorised the application of this defined benefit pension plan to Benoît Potier, in his capacity as Chairman and Chief Executive Officer.

Benoît Potier's rights under this plan:

(i) may be applied for, if the beneficiary ends his professional career with the Company and decides to claim his mandatory basic and supplementary pension (Arrco and Agirc) entitlements, whether or not at the full rate.

In the event of 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 wilful misconduct) at the end of their careers.

Furthermore, in accordance with the position of the social security administration, the rules also provide for maintenance of the potential rights of the beneficiaries in the event of a disability of the 2nd or 3rd category;

- will be equal to **1% for each year of service** of the average of the three best years of the last five years of remuneration exceeding 24 annual social security ceiling (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 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 used for this calculation. 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;

(ii) 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 any other country, at 45% of the Reference Remuneration.** Should this ceiling be reached, the amount paid under the defined benefit plan would be reduced accordingly;

(iii) 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;

(iv) are estimated, as at December 31, 2017, at 530,154 euros gross per year, Benoît Potier having a total of 36 years' length of service in the Group;

(v) 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 had been authorised by decision of the Board of Directors on February 17, 2014, in accordance with the regulated agreements and commitments procedure, and approved by the Annual Shareholders' Meeting on May 7, 2014 in a specific resolution (10th resolution). It had previously been authorised by decision of the Board of Directors on February 12, 2010, in accordance with the regulated agreements and commitments procedure, and approved by the Annual Shareholders' Meeting on May 5, 2010 in a specific resolution (9th resolution).

Performance conditions applicable to the increase in Benoît Potier's conditional rights with effect from the renewal of his term of 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 dated August 6, 2015, known as the "Macron Law", with effect from the renewal of his term of office as Chairman and Chief Executive Officer, the increase, in respect of each fiscal year, in his pension rights under the defined benefit pension plan S which Benoît Potier benefits from must be subject to **conditions relating to Benoît Potier's performance assessed in light of the Company's performance.**

Consequently, the Board of Directors decided on February 14, 2018 that, with effect from the renewal of this office, 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, will depend, and the amount of that increase shall be adjusted in accordance with, the average of the 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 Shareholders' 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 proportion of the annual increase in the conditional rights 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 [(a)]	Proportion of increase
≥ 300	100%
250	66%
200	50%
100	25%
< 100	0%

(a) bps: basis points.

It is specified that the pension plan S of Air Liquide is more restrictive than the new article L. 225-42-1 paragraph 8 of the French Commercial Code. Pursuant to this article, the conditional rights cannot increase annually by an amount which is 3% higher than the annual remuneration used as a reference for the calculation of the annuity paid under this plan, whilst Air Liquide's S plan provides that the pension rights will be equal to 1% per year of service (see the description of the plan set forth above).

For the 2018 fiscal year, these performance conditions will only apply to the increase in pension rights which Benoît Potier will benefit from in respect of his new term of office as Chairman and Chief Executive Officer.

Compliance with the conditions set forth above will be verified on an annual basis, before the Ordinary Shareholders' 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.

This decision shall have no effect on the conditional rights granted to Benoît Potier up until the renewal of his term of office as Chairman and Chief Executive Officer at the close of the Annual Shareholders' Meeting convened to approve the financial statements for the 2017 fiscal year.

Pursuant to article L. 225-42-1 of the French Commercial Code, it was published on the Company's website on February 16, 2018. It will be voted on at the Annual Shareholders' Meeting on May 16, 2018, in accordance with the regulated agreements and commitments procedure (10th resolution).

1.1.2. 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 authorised 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:

  (i) may be applied for, at the earliest, when he has claimed his pension entitlements under the French general social security scheme;

  (ii) 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 A (portion of remuneration that is less than 1 PASS) at a rate of 2.32%, and on brackets B and C (portions of remuneration amounting, respectively, to between 1 PASS and 4 PASS and between 4 PASS and 8 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 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 5 PASS;

  (iii) are estimated, as at December 31, 2017, at 5,746 euros gross per year.

  The individual application of this plan to Benoît Potier was authorised 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 Annual Shareholders' Meeting on May 5, 2010 (9th resolution).

  During the 2017 fiscal year, the amount paid by the Company 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 165).

- 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, paragraphs 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:

  (i) may be applied for, at the earliest, when he has claimed his pension entitlements under the French general social security scheme;

  (ii) 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 8 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);

  (iii) are estimated, as at December 31, 2017, at 182,143 euros gross per year.

1.2. Pierre Dufour

As Pierre Dufour decided to claim his pension entitlements in 2017, he benefits, in addition to the mandatory basic and supplemental pension plans (Agirc/Arrco) with which he was affiliated, from pension annuities under the additional plans set up by L'Air Liquide S.A. and approved by the Annual Shareholders' Meeting, as follows:

- under the defined benefit plan "S" for the benefit of the senior managers and executives and Executive Officers: 81,147 euros gross per year. The application of the defined benefit pension plan to Pierre Dufour had last been authorised by decision of the Board of Directors on February 17, 2014, in accordance with the regulated agreements and commitments procedure, and approved by the Annual Shareholders' Meeting on May 7, 2014 in a specific resolution (11th resolution). It had previously been authorised by decision of the Board of Directors on February 12, 2010, in accordance with the regulated agreements and commitments procedure, and approved by the Annual Shareholders' Meeting on May 5, 2010 (10th resolution) (for a description of the plan, see §1.1.1 above);

- under the defined contribution plan:

  - applicable to all the employees: 1,771 euros gross per year,
  - for the senior managers and company officers: 100,742 euros gross per year.

  At the time of his retirement, Pierre Dufour no longer benefitted from these defined contribution plans, given his situation within the Group. The amounts received correspond to rights acquired earlier by Pierre Dufour, when he was still a beneficiary of these plans.

2. OTHER LIFE BENEFITS

2.1. Benoît Potier

2.1.1. 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 life 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:

(i) are estimated, as at December 31, 2017, at 40,103 euros gross per year;

(ii) 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 PASS.

The opening of this plan, for the third bracket (16 to 24 PASS) and then the second bracket (8 to 16 PASS), and finally its extension to the first bracket (0 to 8 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 authorised 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 Annual Shareholders' 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 authorised 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 Annual Shareholders' Meeting on May 6, 2015 in a specific resolution for Benoît Potier (7th resolution).

The amount paid by the Company in 2017 to the life insurance plan manager pursuant to the life insurance plan for the benefit of Benoît Potier is disclosed in the footnotes to Table 2 (see page 165).

2.1.2. 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 authorised to benefit from such plan, which provides in particular for:

(i) 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 439,354 euros, and
   - of a death benefit, the maximum amount of which is set at 120 PASS in the event of an accident.

   A life insurance contract was entered into with an insurer in this respect at the end of 2014 which specifies the limits of the incapacity/disability and death benefits for the same insured party;

(ii) the payment in full, by the Company, of the contributions that are set at 1.02% of the reference remuneration which is capped at:
   - 16 PASS for the incapacity and disability cover, and
   - 24 PASS for the death cover.

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 authorised by decision of the Board of Directors on November 20, 2014, in accordance with the regulated agreements and commitments procedure, and approved by the Annual Shareholders' Meeting on May 6, 2015 in a specific resolution (7th resolution).

The amount of the contribution paid in 2017 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 165).

2.2. Pierre Dufour

2.2.1. Life insurance

In France, Pierre Dufour was a beneficiary of the collective life insurance contract making it possible to create **savings which are available** at any time, as described above at §2.1.1. The execution of this collective contract, for the third bracket (remuneration of 16 to 24 PASS) and then the second bracket (remuneration of 8 to 16 PASS), had been authorised by decisions made 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 Annual Shareholders' Meeting on May 7, 2013 in a specific resolution for Pierre Dufour (8th resolution).

Given his situation at the Group, **Pierre Dufour no longer benefitted from this plan at the time of his retirement in 2017.** Following this retirement, he became eligible to claim his previously acquired rights at any time under the life insurance policy entered into by L'Air Liquide S.A. and approved by the Annual Shareholders' Meeting.

At the time of his retirement in 2017, Pierre Dufour received a capital sum of 327,942 euros from the manager of the insurance contract under this plan (no annuity will be paid to him).

2.2.2. Savings contract in Germany for the benefit of Pierre Dufour

A savings contract was entered into in Germany, by the German subsidiary, with a financial institution for the benefit of Pierre Dufour. It made it possible to create savings which are available at the end of the contract, in an amount that is at least equivalent to the contributions paid by the subsidiary. The amount of the contribution corresponded to the amount of the contributions previously paid into the French plans from which Pierre Dufour no longer benefitted.

At the time of his retirement, Pierre Dufour became eligible to receive:

- a capital sum corresponding to the amount of the payments made to the financial institution, namely 1,123,562 euros (updated on his departure date).

  This amount was 740,000 euros as at December 31, 2016. The payments by the German subsidiary to the financial institution were made in arrears and included, in 2017, the amounts due in respect of the 2016 fiscal year (250,000 euros) and in respect of the 2017 fiscal year (pro rata the amount of time he worked, i.e. 133,562 euros, updated on his departure date). These amounts are also shown in Table 2 (see page 165);
- interest under the plan vested in respect of the period 2014 to 2017. The amount of interest on the date of departure is 66,007 euros.

Commitments relating to termination of duties

1. TERMINATION INDEMNITIES

1.1. Benoît Potier

In accordance with the "TEPA" law and the AFEP/MEDEF Code of corporate governance, the Board of Directors, at its meeting on February 17, 2014, had set the terms of the agreement applicable to Benoît Potier, along the following main lines:

(i) only the cases of forced departure of Benoît Potier from his offices as Chairman and Chief Executive Officer, whatever the form of that departure (removal from office, non-renewal, 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 24 months of the change of control) may give rise to an indemnity;

(ii) the amount of the indemnity in any of these cases is set at 24 months of gross fixed and variable remuneration;

(iii) 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 of 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;

(iv) 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 (for details of the performance conditions and their amendment by the Board of Directors on February 14, 2018, see below).

The decision made by the Board of Directors on February 17, 2014, in accordance with the regulated agreements and commitments procedure provided for by the "TEPA" law had been approved by the Annual Shareholders' Meeting on May 7, 2014 in a specific resolution for Benoît Potier (10th resolution).

1.1.1. Termination indemnity in force with effect from the renewal of the terms of office of Benoît Potier in 2018

In order to **take account of the expectations of certain shareholders, the Board of Directors, at its meeting on February 14, 2018 and upon the recommendation of the Remuneration Committee, decided to amend the terms of the agreement** applicable to Benoît Potier with effect from the renewal of his office as Chairman and Chief Executive Officer in May 2018 as follows:

(i) the Board of Directors decided to **remove the non-renewal of office from the list of events of forced departure** which grant an entitlement to the indemnity;

(ii) if 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) the **performance conditions** have been reviewed, as detailed below, and the thresholds for increases have been made more exacting than before.

The other terms of the commitment set forth above have been renewed in identical form. Thus, the amount of the termination indemnity, in particular, decreases gradually as he approaches the age limit provided for in the articles of association (for a description of the agreement, see above).

1.1.2. Performance conditions applicable to the termination indemnity

The Board of Directors decided that the payment of the termination indemnity concerning Benoît Potier, mentioned above, 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 Shareholders' 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 ROCE and WACC will be measured with regard to each fiscal year, and will be calculated the average of the three annual gaps for the last three fiscal years prior to the fiscal year during which such departure takes place.

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.**

Within the scope of the review of the commitment, the Board of Directors decided, on February 14, 2018, on the recommendation of the Remuneration Committee, that an average gap between ROCE and WACC of 300 basis points over three years continues to be **exacting for future years as a result of the impact of the acquisition of Airgas on the ROCE.**

However, the Board of Directors decided to **consolidate the intermediate thresholds.** Thus, in particular, **the average ROCE - WACC gap should be at least equal to 200 basis points (instead of 150 basis points previously) in order for half the indemnity to be due.** Moreover, for a minimum gap of 100 basis points, the proportion of the indemnity due was decreased and is now 25% (rather than 33% previously).

Consequently, 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.

Average over three years of the average annual (ROCE – WACC) gaps in bps [(a)]	Proportion of the indemnity due
≥ 300	100%
250	66%
200	50%
100	25%
< 100	0%

(a) bps: basis points.

The amendments thus made by the Board of Directors on February 14, 2018 to Benoît Potier's termination indemnity will take effect from the close of the Annual Shareholders' Meeting approving the accounts for the 2017 fiscal year, subject to the condition precedent of the renewal of Benoît Potier's office as Director and as Chairman and Chief Executive Officer of the Company, for the period of his office as Chairman and Chief Executive Officer. Pursuant to article L.225-42-1 of the French Commercial Code, the corresponding decision was published on the Company's website on February 16,2018. It will be voted on at the Annual Shareholders' Meeting on May 16, 2018, in accordance with the regulated agreements and commitments procedure (9th resolution).

1.2. Pierre Dufour

Since Pierre Dufour has decided to claim his pension entitlements, no indemnity was paid to him at the time of his departure in 2017.

The corresponding commitment which is now obsolete had been the subject of a decision made by the Board of Directors on February 17, 2014, in accordance with the regulated agreements and commitments procedure provided for by the "TEPA" law and approved by the Annual Shareholders' Meeting on May 7, 2014 in a specific resolution for Pierre Dufour (11th resolution).

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 Annual Shareholders' Meeting on May 9, 2007, in accordance with the regulated agreements procedure (7th resolution).

The Board of Directors confirmed, at its meeting in May 2014, that Benoît Potier continues to benefit from this unemployment insurance within the scope of the latest renewal of his duties.

TABLE 8 (SEE PAGE 211), TABLE 9 (SEE PAGE 212) AND TABLE 10 (PAGE 214)

TABLE 11

The table shown below presents a summary of the commitments relating to the termination of the duties of the Executive Officers, as set out above.

Executive officers	**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: 2014 Date of end of term of office: 2018	NO	Defined benefit pension plan for senior managers and executives and Executive Officers: YES Defined contribution pension plan for all the employees and Executive Officers: YES Defined contribution pension plan for senior managers and executives: NO	YES Termination indemnity: ■ case: forced departure related to a change of strategy or control; ■ maximum amount: 24 months' 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
Pierre Dufour Senior Executive Vice President Start date of term of office: 2007 Date of renewal of term of office: 2014 Date of end of term of office as Senior Executive Vice President: 2017 (retirement)	NO	Defined benefit pension plan for senior managers and executives and Executive Officers: YES Between January 1, 2014 and his retirement in 2017: savings contract governed by German law	NO Termination indemnity: this commitment no longer applies, Pierre Dufour having claimed his pension entitlements in 2017.	NO Non-competition clause waived by the German subsidiary ALGMS. No non-competition indemnity paid.

Remuneration of the non-Executive Directors – Directors' fees

1. DIRECTORS' FEES PAID IN 2016, 2017 AND 2018

TABLE 3 – DIRECTORS' FEES AND OTHER REMUNERATION RECEIVED BY THE GROUP'S NON-EXECUTIVE AND NON-EMPLOYEE DIRECTORS

(in thousands of euros, rounded off to the nearest whole figure)	Amounts paid in 2016 in respect of 2015	Amounts paid in 2017 in respect of 2016	Amounts paid in 2018 in respect of 2017
Thierry Desmarest [(a)] [(b)]	103	105	47
Gérard de La Martinière [(c)] [(d)]	26	N/A	N/A
Cornelis van Lede [(e)] [(d)]	39	N/A	N/A
Thierry Peugeot	82	69	68
Paul Skinner [(f)]	85	N/A	N/A
Karen Katen	72	71	65
Jean-Paul Agon [(g)]	65	85	101
Siân Herbert-Jones [(c)]	96	89	88
Sin Leng Low	103	102	96
Annette Winkler	64	76	80
Geneviève Berger [(h)]	46	63	67
Brian Gilvary [(i)]	N/A	47	74
Xavier Huillard [(j)]	N/A	N/A	45
Pierre Dufour [(k)]	N/A	N/A	58
TOTAL	**781**	**707**	**789**

(a) *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 (prorata in 2017).*
(b) *Term of office ended on May 3, 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 ended on May 6, 2015.*
(e) *The disclosed amounts include additional remuneration of 20,000 euros for acting as Chair of the Remuneration Committee (on a prorata temporis basis).*
(f) *Term of office ended on December 31, 2015.*
(g) *The disclosed amounts include additional remuneration of 10,000 euros for acting as Chair of the Remuneration Committee and, as from 2017, as Chair of the Appointments and Governance Committee. For 2017, the amount also include an additional remuneration of 20,000 euros (prorata temporis) for acting as Lead Director.*
(h) *Term of office begun on May 6, 2015.*
(i) *Term of office begun on May 12, 2016.*
(j) *Term of office begun on May 3, 2017.*
(k) *Pierre Dufour receives directors' fees since July 14, 2017, 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 Executive Officers do not receive any directors' fees in respect of their office as Directors so long as they perform executive duties within 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 directors' fees.

2. CRITERIA

The maximum amount of directors' fees to be allocated in total to the members of the Board of Directors was set by the Annual Shareholders' Meeting on May 7, 2014, in its 14th resolution, at 1 million euros per fiscal year. The Board of Directors, on the proposal of the Remuneration Committee, decided to submit to the Annual Shareholders' Meeting on May 16, 2018 a draft resolution to increase this maximum amount to 1.15 million euros per fiscal year. The proposed increase takes into account the creation of a fourth Committee in 2017 (the Environment and Society Committee), the increasing number of meetings and the extension of the work handled by the Board and its Committees, together with the desire to promote a diversity of skills and nationalities on the Board at the time of future recruitments (see the draft resolution, page 332).

The allocation formula adopted by the Board of Directors 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.

In 2017, on the recommendation of the Remuneration Committee and after a review of local market practices, the Board of Directors decided upon the amount of directors' fees for the members of the Environment and Society Committee, which was created in 2017. Accordingly, for 2017, the amounts adopted can be broken down as follows:

2.1. Fixed remuneration (for an entire fiscal year)

- Each member receives fixed annual remuneration of 20,000 euros for the 2017 fiscal year.
- 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.

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 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.

The variable remuneration relating to participation at Board and Committee meetings prevails over the fixed remuneration.

The distribution policy for directors' fees is regularly reviewed and readjusted, if necessary, to ensure that the remuneration is competitive from an international standpoint, in order to benefit from the best and most suitable skills in the business sector and geographical area, and to ensure that the values which have led to the Group's long-term success are maintained.

Elements of the 2017 remuneration of the Executive Officers on which the Annual Shareholders' Meeting of May 16, 2018 is invited to vote

(Pursuant to article L. 225-100-II of the French Commercial Code)

ELEMENTS OF THE TOTAL REMUNERATION AND BENEFITS OF ANY KIND PAID OR AWARDED TO BENOÎT POTIER IN RESPECT OF THE 2017 FISCAL YEAR AND ON WHICH THE ANNUAL SHAREHOLDERS' MEETING ON MAY 16, 2018 IS INVITED TO VOTE

ELEMENTS OF THE REMUNERATION PAID OR AWARDED TO BENOÎT POTIER IN RESPECT OF THE 2017 FISCAL YEAR

	Amounts	Comments
Fixed remuneration	€1,275,000	The new remuneration policy applicable to the Chairman and Chief Executive Officer was adopted by the Board of Directors on February 14, 2017 and approved by the Annual Shareholders' Meeting on May 3, 2017 following the acquisition of Airgas, which was a major, transforming event for the Group. It reflects the increased level of responsibility of the Group's Executive Officer and is adapted to the Group's new 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. In this context, the fixed remuneration is determined by taking into account the level of responsibility, the experience in the executive management function and market practices. It represents approximately 25% of the total annual remuneration. In such circumstances, it had been decided to reposition the amount of the fixed remuneration for 2017, which is + 8.5% higher than for 2016. Over the last five years, Benoît Potier's fixed remuneration has seen an annual average increase of + 3%.
Annual variable remuneration	€1,950,750	**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 2017: ■ **for 105%** of the fixed remuneration (with a maximum of 122% of the fixed remuneration), to three **financial criteria (quantifiable)** which are based on: (i) for 40% (a max. of 47% of the fixed remuneration), an objective of increase in **recurring EPS** (excluding foreign exchange impact and significant exceptional items); (ii) for 45% (a max. of 52% of the fixed remuneration), an objective of **ROCE** and (iii) for 20% (a max. of 23% of the fixed remuneration), an objective of comparable growth in the consolidated **revenue** (excluding significant scope impact, excluding foreign exchange impact and excluding energy). For the increase in recurring EPS and revenue, the calculation is made on the basis of the consolidated financial statements of the Group for 2017 compared to the estimated financial statements for 2016 including Airgas as of January 1 and excluding the businesses available for sale. The increase in EPS criterion makes it possible to take into account all the income statement items. The ROCE criterion, which makes it possible to measure the return on capital employed, is relevant in a **highly capital-intensive industry.** These criteria reflect the balance achieved each year between profitable growth and return on investment. The criteria of ROCE and of growth in revenue are among the four objectives of the NEOS strategic Plan. For each financial 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 the limit of a maximum) 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 the objectives for the variable remuneration as a % of the fixed remuneration and, hence as a % of the target variable remuneration for this criterion is communicated below;

Amounts	Comments

- **for 45%** of the fixed remuneration (target variable and maximum remuneration), to **personal (qualitative) criteria** linked: (i) for two-thirds, to the following three fields: integration of Airgas (finalisation of the integration of Airgas and achievement of the amount of synergies announced for 2017), CSR (safety and reliability – continue to deploy the Corporate Sustainability Program) and (ii) for one-third to an 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 unfavourable environment which was not anticipated at the time the objectives were set, or disadvantageous if the environment ultimately turns out to be more favourable than anticipated).

Assessment for 2017

With regard to the **financial criteria (quantifiable criteria)**, the results in 2017 were above the target set for the criterion of recurring EPS and close to the target set for the ROCE and the consolidated revenue criteria. The amount of the variable remuneration in respect of these criteria is as follows:

- Recurring EPS: 47% of the fixed remuneration, representing 117.5% of the target remuneration for this criterion,
- ROCE: 43.7% of the fixed remuneration, representing 97% of the target remuneration for this criterion,
- Revenue: 19.6 % of the fixed remuneration, representing 98% of the target remuneration for this criterion.

The performance, with regard to the **personal criteria (qualitative criteria)**, was considered to be **excellent**. **The amount of the variable remuneration for these criteria is as follows:**

- Integration of Airgas, CSR, Organization/Human resources: 27.8% of the fixed remuneration, representing 92.5% of the target remuneration for this criterion,
- Individual performance: 15% of the fixed remuneration, representing 100% of the target remuneration for this criterion.

In total, the variable remuneration with regard to the personal objectives amounts to 42.75% of the fixed remuneration, representing 95% of the target remuneration for the personal objectives.

When assessing performance with regard to personal criteria, the Board of Directors noted the following:

- **Integration of Airgas and synergies:** the integration of operations is completely finalised and a shared organization, supported by integrated systems, is now in place. The Air Liquide processes are also gradually implemented at Airgas (in particular safety, human resources policy and Research and Development).

  Airgas synergies represent 215 million US dollars cumulatively since the acquisition of Airgas in May 2016 and 170 million US dollars in 2017 alone - 40 million more than initial objectives.

- **CSR:** in 2017, with regard to safety, lost-time accidents were reduced in terms of their frequency (drop from 1.76 in 2016 to 1.61 in 2017) and in terms of their number (drop from 229 in 2016 to 198 in 2017). A significant drop in the number of accidents has been noted at Airgas, together with a drop in the number of business-related and process-related incidents.

  Moreover, the Environment and Society Committee is now in place and has already met on two occasions during the second half of 2017. It is responsible for the deployment of the Corporate Sustainability Program, and tackles those issues which are a priority for Air Liquide: energy transition and development of chronic diseases. Quantitative objectives linked to the climate are in the process of being drawn up, a task force having been set up for this purpose. Moreover, Benoît Potier is Co-Chair of the Hydrogen Council created in January 2017. First global initiative of its kind, the Hydrogen Council is determined to position hydrogen among the key solutions of the energy transition; it was represented at the COP23 and the One Planet Summit. An investor day of the Hydrogen Council was organized in September in New York.

- **Organization/Human Resources :**
  - Implementation of organizational changes in the management teams: following the recent retirements of Pierre Dufour, Senior Executive Vice President, and Jean-Pierre Duprieu, Executive Vice President, three Executive Vice Presidents and two new Company Directors were appointed on July 1, 2017. The method of operational management was also changed in mid-2017 in order to promote interaction and to allow for more agility in decision-making; it proved to be successful right from the 2nd part of the year. In line with these changes, succession plans have been determined.
  - A program dedicated to young managers who show potential is in place and ensures their advancement within the organization. For the last few years, more employees have been involved with the Company's long-term objectives through the performance share program.

	Amounts	Comments
		■ **Individual performance:** the year 2017, which saw an improvement in the macro-economic climate, was also marked by continued geopolitical uncertainty (which affected the Group's activities, particularly in Eastern Europe and the Middle East) and an unfavourable foreign exchange impact for the year (which affected the Group, in particular as a result of the consolidation of activities in the USA). Against this background, the individual performance of Benoît Potier was considered to be excellent. Moreover, was emphasised the strong commitment of Benoît Potier to long-term investments (development of the Hydrogen Energy business, Group innovation in particular through the renewal of the research centers). In total, the amount of the variable remuneration represents 153% of the fixed remuneration (compared to a target of 150% and a maximum of 167%), which is 55.1% higher than the variable remuneration for 2016. This variation can be explained by the fact that, although the variable remuneration for 2017 is on target in light of the 2017 results, on the contrary in 2016, the results obtained were lower than the objectives and the amount of the variable remuneration decreased by -24% as compared to the amount of the variable remuneration for 2015, which lead to a mechanical (but non-significant) increase of the variable remuneration between 2016 and 2017. As an annualized average, Benoît Potier's variable remuneration increased by +4% over 3 years, by +3.4% over 5 years and by +3.2 % over 10 years. The total amount of the variable remuneration due for the 2017 fiscal year in respect of the term of office will be paid in 2018, after approval of the financial statements by the Annual Shareholders' Meeting it being noted that its payment is conditional on approval by an Annual Shareholders' Meeting of the elements of Benoît Potier's remuneration for 2017, under the conditions provided by article L. 225-100 of the French Commercial Code (pursuant to Law No. 2016-1691 dated December 9, 2016).
There is no deferred annual variable remuneration mechanism, multi-annual variable remuneration mechanism or exceptional remuneration.		
Stock options, performance shares or any other long-term element of remuneration	23,100 stock options Accounting valuation of the options (according to IFRS 2 norm): €424,809 17,980 performance shares Accounting valuation of the performance shares (according to IFRS 2 norm): €1,675,017	**September 20, 2017 plans (stock options and performance shares)** **Principles of grant for 2017** The grant for 2017 forms part of the new remuneration policy approved by the shareholders during the Annual Shareholders' Meeting on May 3, 2017. In such circumstances, it had been agreed that the allocation of stock options/performance shares to Benoît Potier in 2017 would represent an IFRS value of approximately 2,1 million euros, an increase of 10.83% as compared to 2016. The IFRS value for the stock options and the performance shares awarded pursuant to the September 20, 2017 Plans amounts to 2,099,826 euros. **Limits on the grants to Executive Officers** Within the scope of the sub-limits authorised by the Annual Shareholders' Meeting for 38 months [a], the Board of Directors sets lower annual limits for the grants to the Executive Officers, expressed (i) as a percentage of the capital and (ii) as a multiple of their remuneration, in accordance with the recommendations of the AFEP/MEDEF Code. Taking into account the reduction in the number of Executive Officers, the Board of Directors decided to adopt the following limits: (i) the total number of performance shares granted in 2017 to the sole Executive Officer cannot grant entitlement to a number of shares exceeding 0.012% (instead of 0.017% previously) (it being understood that a sub-limit on any grants of 0.15% of the capital for 38 months was set by the Annual Shareholders' Meeting on May 12, 2016); (ii) the total number of stock options granted in 2017 to the sole Executive Officer cannot grant entitlement to a number of shares exceeding 0.035% of the capital (instead of 0.05% previously) (it being understood that a sub-limit on any grants of 0.3% of the capital for 38 months was set by the Annual Shareholders' Meeting on May 12, 2016); (iii) the maximum aggregate IFRS value of the stock options and performance shares granted to the Executive Officer cannot exceed (all 2017 stock option and performance share Plans combined) approximately 1.5 times the amount of the maximum gross annual remuneration of the Executive Officer, it being noted, moreover, that in accordance with the 2017 remuneration policy, the allocation of LTI for 2017 represents approximately 40% of the Executive Officer's total annual remuneration.

(a) Most recently at the Combined Shareholders' Meeting on May 12, 2016 (18th and 19th resolutions).

	Amounts	Comments
		Performance conditions The stock options and performance shares awarded are all accompanied by **performance conditions** which are common to both tools and are calculated over three years. They are based in 2017 on: **(i) as to 65%:** the rate of achievement of an objective consisting of the average of the annual rates of growth in Group undiluted net earnings per share, excluding foreign exchange impact and excluding exceptional items **("Recurring EPS")** for the 2017, 2018 and 2019 fiscal years. At the objective set, the grant is 100% and then decreases on a straight-line basis to **zero if there is no growth in EPS.** In order to take into account the acquisition of Airgas in May 2016 and its financing, the following principle was adopted: - of calculating the increase in Recurring EPS for the year 2017 on the basis of estimated financial statements for 2016, incorporating Airgas as at January 1 and excluding activities held for sale and making it possible to take comparable data into account, - **of maintaining an exacting objective of average annual growth over this period.** This objective was set, as for the 2016 Plans, at a level of growth included within a range of +6% to +10% per annum. The precise objective will be communicated ex post; **(ii) as to 35%:** - for 50% of the stock options/performance shares referred to in sub-paragraph (ii): an objective of return for the shareholder set by the Board, defined as the average annual growth rate of an investment in Air Liquide shares for the 2017, 2018 and 2019 fiscal years **("AL TSR").** The absolute TSR objective is set in accordance with past performances. At the objective set, the allocation is 100% and then decreases on a straight-line basis to a lower limit, - for 50% of the stock options/performance shares referred to in sub-paragraph (ii): of the rate of return for the shareholder 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 2017, 2018 and 2019 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 more than 2% higher than the average CAC 40 TSR on the basis of a straight-line change. This objective of 2%, which is slightly less than that for 2016, can be explained by the strong sensitivity of the performance conditions, which are now based on a single TSR criterion (as compared to two previously: TSR Peers and CAC 40 TSR). Any grant for a performance lower than the average CAC 40 TSR is impossible. **Other conditions/shareholding obligation** **The shareholding obligation** defined pursuant to the French Commercial Code applies both to shares resulting from the exercise of stock options and performance shares that have vested. It 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 stock option plan consists of a term of ten years and a condition of continued presence. 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 aligned with that for the stock option plan.
Other elements	N/A	No allocation.
Directors' fees	N/A	Benoît Potier does not receive any directors' fees in respect of his term of office as Director.
Other benefits	€10,338	The benefits in kind (accounting valuation) include the use of a company car and the payment of contributions to a third-party in respect of the unemployment insurance for company managers and corporate officers.

ELEMENTS OF THE REMUNERATION DUE OR AWARDED TO BENOÎT POTIER IN RESPECT OF THE FISCAL YEAR 2017 WHICH ARE OR WERE SUBMITTED FOR A VOTE BY THE ANNUAL SHAREHOLDERS' MEETING IN ACCORDANCE WITH THE REGULATED AGREEMENTS AND COMMITMENTS PROCEDURE

	Amounts	Comments
Termination indemnity	€0 received	The terms of the agreement applicable to Benoît Potier in 2017 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) entitlement to the indemnity is subject to performance conditions which were raised in 2014: the amount of the indemnity paid is based on the average of the annual gap between Return On Capital Employed (ROCE) after tax and the Weighted Average Cost of Capital (WACC) (net equity method) over the last three fiscal years prior to the departure. This gap, in a highly capital-intensive business, makes it possible to measure the regular value creation. An average ROCE-WACC gap over three years of 300 basis points is required to be able to benefit from the total indemnity. The declining formula was also made more exacting in 2014 and is as follows: **Average (ROCE – WACC) gap** — **Proportion of the indemnity due** ≥ 300 bp [(a)] — 100% ≥ 200 bp and < 300 bp — 66% ≥ 150 bp and < 200 bp — 50% ≥ 100 bp and < 150 bp — 33% < 100 bp — 0% *(a) bp: basis points.* The decision of the Board of Directors at its meeting on February 17, 2014 taken in accordance with the regulated agreements and commitments procedure of the "TEPA" Law was approved by the Annual Shareholders' Meeting on May 7, 2014 in a specific resolution (10th resolution). It is re-examined and submitted for the approval of the Annual Shareholders' Meeting on each renewal of Benoît Potier's term of office.
Non-competition indemnity: there is no commitment with regard to a non-competition indemnity.		
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 supplementary 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), the 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 was last authorised by the Board of Directors on February 17, 2014 and approved by the Annual Shareholders' Meeting on May 7, 2014 (10th resolution). **Pension commitment pursuant to a defined contribution 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 8 PASS. The application of this plan to Benoît Potier was authorised by the Board of Directors on February 12, 2010 and approved by the Annual Shareholders' Meeting on May 5, 2010 (9th resolution). The amount of the contributions paid in 2017 in respect of the supplementary defined contribution pension plan for the benefit of Benoît Potier is 9,379 euros.

	Amounts	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 PASS) and then the second bracket (8 to 16 PASS), and finally its extension to the first bracket (0 to 8 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 authorised 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 Annual Shareholders' Meeting on May 7, 2013 in a specific resolution for Benoît Potier (7th resolution). The extension of the plan to the first bracket was authorised by decision of the Board of Directors on November 20, 2014, in accordance with the regulated agreements and commitments procedure, and approved by the Annual Shareholders' Meeting on May 6, 2015 in a specific resolution for Benoît Potier (7th resolution). The amount of the contributions paid in 2017 pursuant to the life insurance plan for the benefit of Benoît Potier is 208,526 euros.
Collective death and disability benefits plan	€0 received	Benoît Potier benefits from the supplementary death and disability benefit plan, unified with effect from January 1, 2015, covering all the personnel and the Executive Officers duly authorised to benefit from such plan, 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 is 1.02%, subject to the subsequent changes that may take place pursuant to the contractual provisions. 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 authorised by decision of the Board of Directors on November 20, 2014, in accordance with the regulated agreements and commitments procedure, and approved by the Annual Shareholders' Meeting on May 6, 2015 in a specific resolution for Benoît Potier (7th resolution). The amount of the contribution paid in 2017 pursuant to the death and disability plan for the benefit of Benoît Potier is 8,850 euros.

ELEMENTS OF THE TOTAL REMUNERATION AND BENEFITS OF ANY KIND PAID OR AWARDED TO PIERRE DUFOUR IN RESPECT OF THE 2017 FISCAL YEAR AND ON WHICH THE ANNUAL SHAREHOLDERS' MEETING OF MAY 16, 2018 IS INVITED TO VOTE (a)

Since Pierre Dufour had decided to claim his pension entitlements, his term of office as Senior Executive Vice President of L'Air Liquide S.A. came to an end at the close of the Annual Shareholders' Meeting on May 3, 2017. His term of office as managing director of the German subsidiary ALGMS came to an end on July 14, 2017. The fixed and variable remuneration and the other elements of his remuneration are calculated pro rata the amount of time he worked in 2017.

ELEMENTS OF THE REMUNERATION DUE OR AWARDED TO PIERRE DUFOUR IN RESPECT OF THE 2017 FISCAL YEAR

	Amounts	Comments
Fixed remuneration	€320,663 calculated pro rata the amount of time he worked	The fixed remuneration is determined by taking into account the level of responsibility, the experience in the executive management function and market practices. On an annual basis, the amount of Pierre Dufour's fixed remuneration is 675,000 euros, i.e. an amount that is unchanged when compared to 2016.
Annual variable remuneration	€436,981 calculated pro rata the amount of time he worked	**The variable remuneration is limited to 140% of the fixed remuneration.** The variable remuneration, expressed as a percentage of the fixed remuneration, is linked in 2017 (the year in which Pierre Dufour decided to claim his pension entitlements): ■ **for 85%** of the fixed remuneration, to two **financial criteria (quantifiable) which are identical to those for 2016:** (i) for 50%, increase in the **recurring net earnings per share** (recurring EPS) (excluding foreign exchange impact and significant exceptional items). For 2017, the calculation is made on the basis of the consolidated financial statements of the Group for 2017 compared to the estimated financial statements for 2016 including Airgas as of January 1 and excluding the businesses available for sale; (ii) for 35%, the level of the **return on capital employed** (ROCE) after tax. For each criterion, the Board of Directors had defined an **exacting objective. This objective is not made public for confidentiality reasons.** A formula makes it possible to calculate the amount of the variable remuneration due (within the limit of a maximum) taking into account the value achieved for the criterion as compared to the target objective set; ■ **for 55%** of the fixed remuneration, to **personal objectives (qualitative),** linked: (i) for two-thirds, to the following three fields: integration of Airgas (finalisation of the integration of Airgas and achievement of the amount of synergies announced for 2017), CSR (safety and reliability – continued to deploy the Corporate Sustainability Program) and (ii) for one-third, to an 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 unfavourable environment which was not anticipated at the time the objectives were set, or disadvantageous if the environment ultimately turns out to be more favourable than anticipated). **Assessment for 2017** With regard to the **financial criteria (quantifiable criteria)**, the results in 2017 were above the objective set for the criterion of recurring EPS and almost met the objective set for the ROCE. The amount of the variable remuneration of Pierre Dufour in respect of these criteria is as follows: (i) Recurring EPS: 50% of the fixed remuneration, (ii) ROCE: 34% of the fixed remuneration. The performance, with regard to the **personal criteria (qualitative criteria)**, was considered to be **excellent**. The amount of the variable remuneration for these criteria represents 52.3% of Pierre Dufour's fixed remuneration. When assessing performance with regard to personal criteria, the Board of Directors noted the following: ■ **Integration of Airgas and synergies:** the integration of operations is completely finalised and a shared organization, supported by integrated systems, is now in place. The Air Liquide processes are also gradually implemented at Airgas (in particular safety, human resources policy and Research and Development). Airgas synergies represent 215 million US dollars cumulatively since the acquisition of Airgas in May 2016 and 170 million US dollars in 2017 alone - 40 million more than initial objectives. ■ **CSR:** in 2017, with regard to safety, lost-time accidents were reduced in terms of their frequency (drop from 1.76 in 2016 to 1.61 in 2017) and in terms of their number (drop from 229 in 2016 to 198 in 2017). A significant drop in the number of accidents has been noted at Airgas, together with a drop in the number of business-related and process-related incidents. Moreover, the Environment and Society Committee is now in place and has met on two occasions during the second half of 2017. It is responsible for the deployment of the Corporate Sustainability Program, and tackles those issues which are a priority for Air Liquide: energy transition and development of chronic diseases. Quantitative objectives linked to the climate are in the process of being drawn up, a task force having been set up for this purpose.

(a) For the purposes of transparency and in order to ensure the provision of complete information, any reference to Pierre Dufour's remuneration in the following tables takes into account his remuneration in respect of his offices in France and in Germany.

	Amounts	Comments
		■ Organization/Human Resources : - Implementation of organizational changes in the management teams: three Executive Vice Presidents and two new Company Directors were appointed on July 1, 2017. The method of operational management was also changed in mid-2017 in order to promote interaction and to allow for more agility in decision-making; it proved to be successful right from the 2nd part of the year. In line with these changes, succession plans have been determined. - A program dedicated to young managers who show potential is in place and ensures their advancement within the organization. For the last few years, more employees have been involved with the Company's long-term objectives through the performance share program. ■ **Individual performance:** the year 2017, which saw an improvement in the macro-economic climate, was also marked by continued geopolitical uncertainty (which affected the Group's activities, particularly in Eastern Europe and the Middle East) and an unfavourable foreign exchange impact for the year (which affected the Group, in particular as a result of the consolidation of activities in the USA). Against this background, the individual performance of Pierre Dufour was considered to be excellent. In total, the amount of the variable remuneration represents 136.25% of the fixed remuneration (compared to a maximum of 140%), which is 63.1% higher than the variable remuneration for 2016 (on an annual basis for 2017). This variation can be explained by the fact that, although the variable remuneration for 2017 meets the objectives set in light of the 2017 results, on the contrary in 2016, the results obtained were lower than the objectives and the amount of the variable remuneration decreased by -24% as compared to the amount of the variable remuneration for 2015, which lead to a mechanical (but non-significant) increase of the variable remuneration between 2016 and 2017. As an annualized average, Pierre Dufour's variable remuneration increased by +6.8% over 3 years and by +4.8% over 5 years. The variable remuneration due for the 2017 fiscal year in respect of the term of office as Senior Executive Vice President (pro rata the amount of time he worked in the fiscal year) will be paid in 2018, after approval of the accounts by the Annual Shareholders' Meeting, it being noted that its payment is conditional on approval by an Ordinary General Meeting of the elements of remuneration of the Senior Executive Vice President for 2017, under the conditions provided by article L. 225-100 of the French Commercial Code (pursuant to Law No. 2016-1691 dated December 9, 2016).
There is no deferred annual variable remuneration mechanism, multi-annual variable remuneration mechanism or exceptional remuneration.		
Stock options, performance shares or any other long-term element of remuneration	0 stock option 0 performance share awarded in 2017	Since Pierre Dufour's term of office came to an end in 2017, he was not granted any stock options or performance shares under the 2017 plans.
Directors' fees	N/A	Pursuant to the Group's internal practice, Pierre Dufour did not receive any directors' fees up until the end of his executive duties in the Group on July 14, 2017.
Other benefits	€5,444 €195,588	The benefits in kind (accounting valuation) include the use of a company car during the time he worked in 2017. Pierre Dufour, who was responsible for the management of the Frankfurt hub, also received an annual amount paid by the German subsidiary which included, in particular, for approximately half, an amount corresponding to the benefits in kind (housing) (paid pro rata the amount of time he worked in 2017) which he previously benefitted from under his employment contract in France. The amount stated opposite also includes 60,667 euros, which corresponds to the balance of paid leave which had not yet been used by Pierre Dufour on the expiry of the service agreement entered into with the German subsidiary ALGMS.

ELEMENTS OF THE REMUNERATION DUE OR AWARDED TO PIERRE DUFOUR IN RESPECT OF THE 2017 FISCAL YEAR WHICH WERE SUBMITTED FOR A VOTE BY THE ANNUAL SHAREHOLDERS' MEETING IN ACCORDANCE WITH THE REGULATED AGREEMENTS AND COMMITMENTS PROCEDURE (a)

	Amounts	Comments
Termination indemnity	€0 received	Following Pierre Dufour's decision to claim his pension entitlements, the termination indemnity commitment which he benefitted from became inapplicable and he was not paid any termination indemnity.
Non-competition indemnity	€0 received	In Germany, following Pierre Dufour's decision to claim his pension entitlements, the German subsidiary decided, as authorised by the initial service agreement, to waive the post-contractual non-competition undertaking which was provided for in this agreement. Consequently, no non-competition indemnity has been or will be paid to Pierre Dufour after his departure.
Supplementary pension plans	€0 received from the Company	**Defined benefit pension plan for the benefit of senior managers and executives and Executive Officers** For that portion of the remuneration which exceeds 24 times the annual social security ceiling (PASS), pursuant to a defined benefit pension plan, Pierre Dufour potentially benefitted from a supplementary pension annuity equal to 1% for each year of service of the reference remuneration paid by the Company or any subsidiary. 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), the 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. Pierre Dufour joined the Group in 1997. 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 had been last authorised by the Board of Directors on February 17, 2014 and approved by the Annual Shareholders' Meeting on May 7, 2014 (11th resolution). (For information, since his retirement, Pierre Dufour benefits from a pension annuity under this plan in an amount of 81,147 euros gross per annum). **Defined contribution pension plans** At the time of his retirement, given his situation in the Group, Pierre Dufour no longer benefitted from the defined contribution pension plan applicable to all the employees and from the defined contribution pension plan for the senior managers and executives. (For information, since his retirement, Pierre Dufour receives the following amounts which correspond to rights which were previously acquired when he was still a beneficiary of these plans: (i) the plan applicable to all the employees: 1,771 euros gross per annum, (ii) the plan for the senior managers and executives: 100,742 euros gross per annum). **Savings contract in Germany** In Germany, a savings contract was entered into by the German subsidiary with a financial institution for the benefit of Pierre Dufour. It made it possible to create savings which were available at the end of the contract, in an amount that was at least equivalent to the contributions paid by the subsidiary. The amount of the contribution corresponded to the amount of the contributions previously paid into the French plans which Pierre Dufour no longer benefitted from. In 2017, the payments by the German subsidiary to the financial institution, which were made in arrears, included the amounts due in respect of the 2016 fiscal year (250,000 euros) and in respect of the 2017 fiscal year (pro rata the amount of time which he worked, i.e. 133,562 euros, which was updated on the date of his departure). (For information, at the time of his retirement, Pierre Dufour became eligible to receive from the financial institution (i) a capital sum corresponding to the amount of the payments made to the financial institution, namely 1,123,562 euros (updated on the date of his departure) and (ii) the interest vested in the plan over the period 2014 to 2017 (66,007 euros - updated on the date of his departure))
Collective life insurance plan	€0 received from the Company	In France, Pierre Dufour was a beneficiary of the collective life insurance plan which made it possible to create **savings which were available** at any time. The signature of this contract, for the third bracket (remuneration between 16 and 24 PASS) and then the second bracket (remuneration between 8 and 16 PASS), had been authorised 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 Annual Shareholders' Meeting on May 7, 2013 in a specific resolution for Pierre Dufour (8th resolution). Given his situation within the Group, Pierre Dufour no longer benefitted from this plan at the time of his retirement in 2017. Following his retirement, he became eligible to claim at any time his previously acquired rights under this collective life insurance plan taken out by L'Air Liquide S.A. and approved by the Annual Shareholders' Meeting. (For information, at the time of his retirement in 2017, Pierre Dufour received from the managing company a capital sum of 327,942 euros pursuant to this plan. He will not be paid any annuity.)
Collective death and disability benefits plan	€0 received	Pierre Dufour had no longer benefitted from this plan since January 1, 2014.

(a) For the purposes of providing complete information, the German agreements are included, even though they do not form part of the regulated agreements and commitments procedure.

Principles and criteria for the determination, allocation and distribution of the fixed, variable and exceptional elements which make up the total remuneration and the benefits of any kind which may be granted to the Executive Officers

(submitted for the approval of the Annual Shareholders' Meeting pursuant to article L. 225-37-2 of the French Commercial Code)

This Executive Officer remuneration policy describes the principles and criteria for the determination, allocation and distribution of the fixed, variable and exceptional elements which make up the total remuneration and the benefits of any kind which are granted to the Executive Officers in respect of their corporate office.

The policy which applies in 2017, adopted by the Board of Directors on February 14, 2017 upon the recommendation of the Remuneration Committee, was approved by the Annual Shareholders' Meeting on May 3, 2017. The Board of Directors decided on February 14, 2018, upon the recommendation of the Remuneration Committee, to continue the policy commenced in 2017. In order to take account of comments made by certain shareholders at the 2017 Annual Shareholders' Meeting, the Board of Directors decided to specify certain elements, notably the weighting which applies to each of the qualitative criteria for the variable remuneration.

In accordance with article L. 225-37-2 of the French Commercial Code, the principles and criteria set out in this section are submitted for the approval of the Annual Shareholders' Meeting on May 16, 2018, in the 13th resolution entitled "Approval of the remuneration policy applicable to the Executive Officers".

1. GENERAL PRINCIPLES AND STRUCTURE OF THE TOTAL ANNUAL REMUNERATION

1.1. General principles

Traditionally, the remuneration policy adopted 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 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 favour, in particular, of innovation, employee training, safety and security and energy efficiency. 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** through the grant of share subscription options and 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 defined benefit **pension plan** which applies to eligible senior managers and executives and Executive Officers,
  - 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 comprehensiveness, balance, comparability, consistency, understandability and proportionality as recommended by the AFEP/MEDEF Code of corporate governance.

The new remuneration policy, approved by the Annual Shareholders' Meeting on May 3, 2017, was adopted following the acquisition of Airgas, which was a major, transforming event for the Group. It reflects the increased level of responsibility of the Group's Executive Officers and is adapted to the Group's new 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 is the Chairman and Chief Executive Officer or, should circumstances so require, the Chief Executive Officer of the Company. In such circumstances, a Chairman not holding the duties of Chief Executive Officer would receive fixed remuneration to the exclusion of any variable remuneration.

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.

1.2. Structure of the total annual remuneration

In keeping with the remuneration policy defined in 2017, the structure of the total annual remuneration is as follows:

- to maintain a proportionate balance between the three components of remuneration (fixed and variable remuneration and elements of long-term incentive) so that, in accordance with recurring practice at Air Liquide:
  - the weight of the **variable remuneration and the combined elements of long-term incentive (or "LTI") continues to represent approximately 75%** of the total annual remuneration, and that
  - in the balance between the three above-mentioned elements, a slightly greater weight continues to be given to the LTI. Accordingly, the **fixed remuneration represents approximately 25%, the variable remuneration 35% and the LTI 40%** of the total remuneration;
- to maintain unchanged the structure of the annual variable part of remuneration, while making certain improvements to take account of the remarks made by certain shareholders. Accordingly:

  (i) the variable remuneration continues to be expressed as a **target variable remuneration (150% of the fixed remuneration) and also as a maximum (167% of the fixed remuneration);**

  (ii) there are three quantifiable criteria (recurring EPS, ROCE and revenue, the last criterion having been added in 2017 and included, like the ROCE, in the strategic objectives for the NEOS Plan),

  (iii) 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 individual performance,

  (iv) in the weighting for the various criteria used:

  - a **greater relative weight is always given to the quantifiable criteria** as compared to the qualitative criteria,
  - a **weight is now allocated to each of the qualitative criteria, in order to satisfy the expectations of certain shareholders,**
  - as previously, each quantifiable criterion is assigned a target weighting (expressed as a % of the fixed remuneration) corresponding to 100% achievement of the target objective set at the beginning of the year, and a maximum weighting (expressed as a % of the fixed remuneration),
  - the target weighting and the maximum weighting are communicated 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 % of the fixed remuneration and, hence as a % of the target variable remuneration for this criterion, will be communicated ex post.

Finally, following the remarks made by certain shareholders, the Board meeting in February 2018 decided, for the **LTI** , to introduce for any Executive Officer, in the event of his departure (other than resignation or removal from office for serious cause which are events of loss of the LTI) between the initial allocation and the expiry of the period of assessment of the performance conditions, the **principle of a proration on the basis of his actual presence.** This rule, which makes it possible to justify with precision the percentage of LTI granted in respect of the period of presence, replaces the previous practice of not allocating any LTI in the year prior to retirement. As before, no allocation is granted in the year of departure. Accordingly, the total rate of allocation (after applying the performance conditions) is reduced on a prorated basis to the number of months during which the Executive Officer was effectively present at the Group during the period of assessment of the performance criteria.

2. IMPLEMENTATION FOR THE DETERMINATION OF THE 2018 REMUNERATION

By applying the principles defined above, the criteria for the determination, allocation and distribution of the elements which make up the Executive Officer's total remuneration for 2018 are as follows:

2.1. Fixed remuneration

The fixed remuneration is determined on the basis of the level of responsibility and experience in the executive management function and market practices.

The fixed remuneration will represent approximately 24% of the total target annual remuneration.

2.2. Variable remuneration

The variable remuneration will be based on:

- **three financial criteria (quantifiable criteria):**
  - the increase in net earnings per share (recurring EPS) (excluding foreign exchange impact and significant exceptional items),
  - return on capital employed, after tax (ROCE),
  - comparable growth in consolidated revenue (excluding significant scope impact, excluding foreign exchange impact and energy).

  For each criterion, the Board of Directors has defined a target objective, which is not made public for confidentiality reasons. Nonetheless, the rates of achievement of the objectives for the variable remuneration as a % of the fixed remuneration and, hence, as a % of the target remuneration for this criterion, will be communicated 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 the limit of a maximum) 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 limit of the maximum set for each criterion. **In the event of a performance that is below the lower limit set for each objective, the variable remuneration corresponding to this criterion is equal to zero.**

- **personal criteria (qualitative criteria), a weighting being allocated to each of them with effect from 2018** related:
  - for one-third, to RSE: Safety and reliability / Deployment of the Corporate Sustainability Program,
  - for one-third, to Organization/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 unfavourable environment which was not anticipated at the time the objectives were set, or disadvantageous if the environment ultimately turns out to be more favourable than anticipated.

  A target and a maximum weight are set for these qualitative criteria.

The allocation key for the breakdown of the quantifiable/qualitative criteria and, in each category, the target (corresponding to 100% achievement of the target objective) and the maximum weighting for each component determined by applying the principles set out above, are as follows:

Criteria	Target		Maximum	
	As a % of the fixed remuneration	*As a % based on 100*	*As a % of the fixed remuneration*	*As a % based on 100*
Financial criteria (quantifiable)				
Recurring EPS	40	26.7	47	28.1
ROCE	45	30	52	31.1
Revenue	20	13.3	23	13.8
Sub-total	**105**	**70**	**122**	**73**
Personal criteria (qualitative)				
CSR (Safety and reliability / Deployment of the Corporate Sustainability Program)	15	10	15	9
Organization / Human Resources	15	10	15	9
Individual performance	15	10	15	9
Sub-total	**45**	**30**	**45**	**27**
TOTAL	**150**	**100**	**167**	**100**

The total amount of the variable remuneration due for the 2018 fiscal year in respect of the term of office will be paid in 2019, after approval of the financial statements by the Annual Shareholders' Meeting, it being noted that its payment is conditional on approval by an Annual Shareholders' Meeting of the elements of the Executive Officer's remuneration for 2018, under the conditions provided for in article L. 225-100 of the French Commercial Code.

2.3. Other components of annual remuneration

The benefits in kind paid include the use of a company car as well as contributions to the unemployment insurance for company managers and corporate officers.

In accordance with the Group's internal practice, the Chairman of the Board of Directors, like any other company officer, does not receive any Directors' fees, if he holds executive duties at L'Air Liquide S.A.

2.4. Long-term remuneration components

2.4.1. Principles of grant

- The Board continues with the policy initiated in 2015 aimed at giving preference to performance shares rather than stock options in the volumes granted. The award of performance shares and options to the Executive Officers and the changes therein over time will be assessed in terms of the IFRS value (and no longer in terms of the volumes granted), for all stock option and performance share plans combined.
- All the stock options and performance shares granted are subject to performance conditions that apply to both the stock option and performance share plans and are calculated over a period of three years. For the fraction of the performance conditions that are based on the relative TSR criterion, no grant of stock options or performance shares will be possible, if the average of Air Liquide TSR (reinvested dividends) over the period is lower than the average of CAC 40 TSR, reinvested dividends, over the same period.
- 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 have a reference period of three full years.

  The 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 stock options that vest/performance shares definitively awarded are also published at the end of this Board meeting.

2.4.2. Performance conditions

As a result of the foregoing, the performance conditions applicable to all the beneficiaries of the stock option and performance share plans which will be granted in 2018 were adopted by the Board of Directors on February 14, 2018. The number of stock options that may be exercised out of the total number of stock options that will be granted and the number of performance shares that will be definitively awarded within the scope of the 2018 Plans will depend:

(i) for 65% of the stock options/performance shares granted, on the rate of achievement of an objective, set by the Board, consisting of the average of the annual rates of growth in Group undiluted net earnings per share excluding foreign exchange impact and excluding significant exceptional items ("Recurring EPS") for the fiscal years 2018, 2019 and 2020. At the objective set, the grant is 100%, then decreases on a straight-line basis to **zero, if there is no growth in the EPS.** The objective will be communicated ex post;

(ii) for 35% of the stock options/performance shares granted,

- for 50% of the stock options/performance shares referred to in sub-paragraph (ii): on an objective of return for the shareholder set by the Board, defined as the average annual growth rate of an investment in Air Liquide shares for fiscal years 2018, 2019 and 2020 ("AL TSR"). At the objective set, the grant is 100%, then decreases on a straight-line basis, to a lower limit,
- for 50% of the stock options/performance shares referred to in sub-paragraph (ii): on the rate of shareholder return from an investment in Air Liquide shares, reinvested dividends – sourced from Bloomberg ("B TSR"), compared to the CAC 40 TSR index, reinvested dividends (sourced from Bloomberg).

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 CAC 40 TSR is impossible.

The rate of achievement of the performance conditions will be recorded by the Board at the time of adoption of the financial statements for the 2020 fiscal year.

2.4.3. Rules specific to the Executive Officers

The grant to the Executive Officers is examined by the Remuneration Committee at the same time as the plan for the grant 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 performance shares.

- **Limits on the grants to Executive Officers**

  Within the scope of the sub-limits authorised for 38 months by the Annual Shareholders' Meeting [(a)], 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 2018 remuneration policy referred to above, the grant of LTI represents approximately 40% of the Executive Officer's total annual remuneration.

(a) Last authorised by the Combined Shareholders' Meeting on May 12, 2016 (18th and 19th resolutions).

- **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 gross annual fixed remuneration of the Executive Officer concerned.
  - **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 double 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 dismissal or removal from office for serious cause.
  - Implementation, with effect from the 2018 stock option and performance share plans, of the **principle of proration on the basis of the actual presence of the Executive Officer** in the event of a departure during the period of assessment of the performance conditions.

    This principle will apply (i) only to the Executive Officers, (ii) in all cases of a departure for a reason other than resignation or removal from office for serious cause.

    Accordingly, in practice, 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.

    The Executive Officer will remain subject to all the provisions of the plans and, in particular, to those relating to the duration of the periods of award, freezing and holding of the shares and options which are granted.

    In addition, no grant will be made to an Executive Officer in the year of his departure, in accordance with the AFEP/MEDEF Code.
  - **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, as defined by the Company. These abstention periods open 30 days before the date of publication of the annual and half-yearly consolidated results and 15 days before the date of publication of the financial information relating to the first and third quarters. 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.

2.5. Other remuneration components

The Board of Directors takes into account, in the overall assessment and determination of the Executive Officers' remuneration, the other elements of remuneration submitted for the approval of the Annual Shareholders' Meeting within the scope of the regulated agreements and commitments procedure.

For the record, in the case of Benoît Potier, these elements are as follows:

2.5.1. Long-term commitments

At the Company, the long-term commitments relating to the Executive Officers are usually as follows:

- a defined benefit **pension plan** which applies to eligible senior managers and executives and Executive Officers;
- 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:

The Company's pension obligations

Benoît Potier has been authorised to benefit from various supplementary social protection schemes set up by L'Air Liquide S.A., as follows:

- **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 supplementary 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), the 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. Where applicable, an annuity equal to 60% of the aforementioned benefits will be paid to the surviving spouse, under certain conditions, notably with regard to age. Benoît Potier joined the Group in 1981.

  Total pension benefits, under all pension plans combined, are capped at 45% of the reference remuneration. Should this ceiling be reached, the amount paid under the defined benefit plan would be reduced accordingly.

  The application of this plan to Benoît Potier was authorised by a decision of the Board of Directors on February 17, 2014 in accordance with the regulated agreements and commitments procedure, and approved by the Annual Shareholders' Meeting on May 7, 2014 in a specific resolution for the Executive Officer (10th resolution).

  Pursuant to article L. 225-42-1 of the French Commercial Code, as amended by Law No. 2015-990 dated August 6, 2015, known as the "Macron Law", **with effect from the renewal of his term of office as Chairman and Chief Executive Officer,** the increase, in respect of each fiscal year, in the pension benefits under the **defined benefit pension plan S, which Benoît Potier benefits from, shall be subject to conditions linked to the performance of Benoît Potier, assessed in light of the Company's performance.**

  Consequently, the Board of Directors decided on February 14, 2018 that, with effect from the renewal of this office, 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, will depend, and the amount of that increase shall be adjusted in accordance with, the average of the 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 Shareholders' 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.

  The proportion of the annual increase in the conditional rights 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 (a)	Proportion of increase
≥ 300	100%
250	66%
200	50%
100	25%
< 100	0%

  (a) bps: basis points.

  For the 2018 fiscal year, these performance conditions will only apply to the increase in pension rights which Benoît Potier will benefit from in respect of his new term of office as Chairman and Chief Executive Officer.

- **Defined contribution pension plan**

  Benoît Potier benefits from the defined contribution pension plan which applies to all the employees and Executive Officers, the contribution to which is paid in equal shares by the employer and the beneficiary on that remuneration which does not exceed 8 PASS.

  The individual application of this plan to Benoît Potier was authorised by decision of the Board of Directors on February 12, 2010 in accordance with the regulated agreements and commitments procedure, and approved by the Shareholders' 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 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 PASS.

The opening of this plan, for the third bracket (16 to 24 PASS) and then the second bracket (8 to 16 PASS), and finally its extension to the first bracket (0 to 8 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.

For Benoît Potier, the signature of this contract, for the third and then the second bracket, was authorised 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 Annual Shareholders' 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 authorised by decision of the Board of Directors on November 20, 2014, in accordance with the regulated agreements and commitments procedure, and approved by the Shareholders' 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 authorised to benefit from such plan 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 is 1.02%, subject to any future changes that may be made pursuant to the contractual provisions.

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 authorised by decision of the Board of Directors on November 20, 2014, in accordance with the regulated agreements and commitments procedure, and approved by the Annual Shareholders' Meeting on May 6, 2015 in a specific resolution for Benoît Potier (7th resolution).

2.5.2. Commitments relating to the termination of duties

Termination indemnities

Pursuant to the "TEPA" law and the AFEP/MEDEF Code of corporate governance, the Board of Directors, at its meeting on February 17, 2014, had decided upon the terms of the agreement applicable to Benoît Potier, in accordance with the following principal points: (i) only the cases of forced departure (removal from office, non-renewal, request for resignation) related to a change of strategy a or change in control can 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 right to payment of the indemnity is subject to the achievement of performance conditions, the proportion of the indemnity due decreasing depending on the rate of achievement of those conditions.

The decision of the Board of Directors on February 17, 2014, in accordance with the regulated agreements and commitments procedure provided for by the "TEPA" law, had been approved by the Annual Shareholders' Meeting on May 7, 2014 in a specific resolution for Benoît Potier (10th resolution).

In order to **take account of the expectations of certain shareholders, the Board of Directors, at its meeting on February 14, 2018 and upon the recommendation of the Remuneration Committee, decided to amend the terms of the agreement** applicable to Benoît Potier with effect from the renewal of his office as Chairman and Chief Executive Officer in May 2018 as follows:

(i) the Board of Directors decided to **remove the non-renewal of office from the list of events of forced departure** which grant an entitlement to the indemnity;

(ii) if 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) the **performance conditions** have been amended and are now drawn up as follows.

The amount of the indemnity paid still depends on 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), for the last three fiscal years prior to the current fiscal year in which the departure occurs. The Board of Directors decided **to consolidate the intermediate thresholds** as shown in the table below. Consequently, 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.

Average over three years of the average annual (ROCE – WACC) gaps in bps[a]	Proportion of the indemnity due
≥ 300	100%
250	66%
200	50%
100	25%
< 100	0%

(a) bps: basis points.

The amendments thus made by the Board of Directors on February 14, 2018 to Benoît Potier's termination indemnity will take effect from the close of the Annual Shareholders' Meeting approving the accounts for the 2017 fiscal year, subject to the condition precedent of the renewal of Benoît Potier's office as Director and as Chairman and Chief Executive Officer of the Company, for the period of his office as Chairman and Chief Executive Officer. The corresponding decision of the Board of Directors is subject to the approval of the Annual Shareholders' Meeting on May 16, 2018, in accordance with the regulated agreements and commitments procedure (9th resolution).

Unemployment insurance for 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.

This decision had been approved by the Annual Shareholders' Meeting on May 9, 2007, in accordance with the regulated agreements procedure (7th resolution).

The Board of Directors confirmed at its meeting in May 2014 that Benoît Potier will continue to benefit from this unemployment insurance within the scope of the most recent renewal of his office.

DESCRIPTION OF THE STOCK OPTION AND PERFORMANCE SHARE PLANS

Allotment policy

The Company implements, each year in principle:

- a plan for the grant of stock options to its Executive Officers and its employees; and
- performance share plans for its employees since 2008, and which have been open to the Executive Officers since 2015.

These grants are decided upon by the Board of Directors pursuant to the authorisations granted by the Annual Shareholders' Meeting, and most recently by the Combined Annual Shareholders' Meeting on May 12, 2016 for a period of 38 months.

The introduction of performance share plans has enabled the Company since 2008 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.

The allotment policy pursued in 2017 seeks to give priority to the performance shares rather than the stock options in terms of the volumes granted.

The system for the stock options and performance share plans is aimed at three sets of beneficiaries:

- the Company's Executive Officer, who receives stock options and performance shares and for whom the Board has decided that the grant of performance shares and stock options and changes in that grant over time would continue to be assessed in light of the IFRS value (and no longer in terms of the volumes granted), taking account of all stock options and performance share plans combined;
- the members of the Executive Committee and the Group's managers who hold positions with a high level of responsibilities or who make special contributions to the Group, who benefitted up until today from a mixed allocation of stock options and performance shares will now exclusively receive an allocation in the form of performance shares (a few of the Group's managers still benefit from a mixed allocation of stock options and performance shares, the performance shares remain to be preponderant);
- 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, who benefit solely from performance shares.

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, 29.2% of the beneficiaries of the Plans dated September 20, 2017 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 20, 2017

Total number of performance shares/ equivalent in performance shares	441,092
% of the share capital	0.11%
Number of beneficiaries	1,832
% of employees	2.73%

Performance conditions apply to all the stock options and performance shares which are awarded to all the beneficiaries. They are described on pages 171 and 172.

The aggregate total as at December 31, 2017 of the outstanding performance shares whose definitive allocation 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 1.25% of the share capital on that same date.

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 Annual Shareholders' 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.

These options are granted for a price that may not be lower than the average of the opening trading prices over the 20 trading days prior to the date they are granted. The maximum exercise period is eight years for options granted until June 28, 2010 inclusive, and 10 years as from the October 14, 2011 stock option plan.

The 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 up period, if there is a public bid for the Company's shares or a merger or takeover of the Company.

The outstanding options thus awarded by the Board of Directors in the context of the authorisations voted by the Shareholders' Meetings and which have not yet been exercised amounted, after adjustment, to 3,787,066 options (at an average price of 79.04 euros) as at December 31, 2017, i.e. 0.88% of the shares which make up the capital, including 723,092 options (at an average price of 76.88 euros) awarded, during his term of office, to the Executive Officer present as at December 31, 2017.

Out of the total stock options whose issue was authorised by the Annual Shareholders' Meeting on May 12, 2016, there remained a potential allocation of 8,351,171 options as at December 31, 2017.

TABLE 8 – SUMMARY OF THE ONGOING STOCK OPTION PLANS IN 2017

	2009	2010	2011	2012	2012	2013	2014	2015	2016	2017	Total
Date of authorization by the EGM	05/09/07	05/05/10	05/05/10	05/05/10	05/05/10	05/07/13	05/07/13	05/07/13	05/12/16	05/12/16	
Date of Board meeting	06/15/09	06/28/10	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	
Total number of share subscription options granted (d)	484,292	532,760	675,680	6,000	704,791	768,866	868,385	467,194	143,240	73,540	
Of which the Executive Officers	*128,000*	*138,000*	*138,000*	*-*	*138,000*	*157,000*	*157,000*	*109,900*	*60,000*	*23,100*	
Benoît POTIER (a)	88,000	88,000	88,000	-	88,000	100,000	100,000	70,000	60,000	23,100	
Pierre DUFOUR (a)	40,000	50,000	50,000	-	50,000	57,000	57,000	39,900	-		
Of which the top ten employee beneficiaries (excluding Executive Officers) receiving the highest number of options	124,180	165,000	172,000	-	183,000	208,000	212,000	92,090	23,160	7,160	
Number of beneficiaries	*308*	*305*	*578*	*1*	*672*	*727*	*863*	*399*	*243*	*204*	
% of share capital represented by each grant	0.18%	0.19%	0.24%	NS	0.23%	0.25%	0.25%	0.14%	0.04%	0.02%	
Rate of achievement of performance conditions (f)	100%	100%	98%	100%	90.50%	94.90%	83.38%	82.50%	To be recorded in February 2019	To be recorded in February 2020	
Option exercise period start date	06/15/13	06/28/14	10/14/15	05/11/16	09/27/16	09/26/17	09/22/18	09/28/19	11/29/20	09/20/21	
Expiration date	06/14/17	06/27/18	10/13/21	05/10/22	09/26/22	09/25/23	09/21/24	09/27/25	11/28/26	09/19/27	
Subscription price in euros	65.00	83.00	87.00	97.00	96.61	102.00	97.00	105.00	93.00	104.00	
Subscription price in euros (b) as of 12/31/2017	48.72	60.28	63.18	70.44	77.36	81.68	85.66	92.73	84.34	94.32	
Total adjusted number of stock options at 12/31/2017 (b)	627,227	694,675	891,257	8,265	861,330	927,743	963,779	526,896	157,862		
Number of shares subscribed at 12/31/2017 (d)	614,145	329,164	280,812	-	141,419	118,082	5,405	2,671	-		
Number of stock options cancelled at 12/31/2017 (b) (c)	13,082	19,771	75,531	-	91,677	57,990	183,375	18,148	1,880		
NUMBER OF STOCK OPTIONS REMAINING AS OF 12/31/2017 (b)	**0**	**345,740**	**534,914**	**8,265**	**628,234**	**751,671**	**774,999**	**506,077**	**155,982**	**81,184**	**3,787,066**
									As of % of the share capital		0.88%
											428,397,550

(a) *Stock options granted during corporate office (historical data).*
(b) *Adjusted to take into account share capital increases through free share issues (2017, 2014, 2012, 2010) 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 2015 plan, the objectives set are described on page 176. For the 2017 plan, the terms of the performance conditions are described; on pages 171 and 172;*
- *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.*

1. STOCK OPTIONS GRANTED IN 2017 (SEPTEMBER 20, 2017 PLAN)

Pursuant to the authorisation of the Combined Shareholders' Meeting on May 12, 2016, the Board of Directors granted, in its meeting on September 20, 2017, 73,540 stock options, representing 0.019% of the share capital in terms of the number of shares, at a unit price of 104 euros, without discount, i.e. a price which is equal to 100% of the average of the opening trading prices for the Air Liquide share during the 20 trading days prior to their allocation to 204 beneficiaries, i.e. 0.30% of the employees.

The IFRS individual fair value for the stock options granted to the Group's employees and Executive Officer pursuant to the September 20, 2017 Plan amounts to 18.39 euros (see details of this IFRS value, in Note 22 "Equity capital" in the consolidated financial statements).

The stock options awarded pursuant to the September 20, 2017 Plan are subject to the performance conditions calculated over three years and described at pages 171-172.

For the 2017 allocation, the rate of achievement of the performance condition will be recorded by the Board of Directors at the meeting to approve the financial statements for the 2019 fiscal year.

A condition of presence at the Group at the time of exercise of the options is also provided for.

The special conditions which also apply to the Executive Officer in connection with the allocation of stock options awarded in 2017 are detailed at pages 172 and 173.

Distribution between the various categories of beneficiaries

In 2017	Number of beneficiaries	Number of options
Executive officers of L' Air Liquide S.A.	1	23,100
Senior managers (who are not corporate officers of L' Air Liquide S.A.) and other beneficiaries of a mixed allocation	203	50,440

Table 9

TABLE 9.1 – OPTIONS GRANTED TO THE 10 EMPLOYEES (EXCLUDING EXECUTIVE OFFICERS) WHO WERE GRANTED THE HIGHEST NUMBER OF STOCK OPTIONS

In 2017	Number of stock options	Average price *(in euros)*
For L' Air Liquide S.A.	0	N/A
For L' Air Liquide S.A. and its subsidiaries	7,160	104

2. STOCK OPTIONS EXERCISED IN 2017

Part of the stock options granted in 2009 to 2015 by the Board of Directors were exercised during the 2017 fiscal year as to a total of 807,436 shares at an average price of 64.25 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)*
06/15/2009	51,248	48.72
06/28/2010	45,786	61.68
10/14/2011	20,166	65.27
09/27/2012	19,702	80.38
09/26/2013	21,961	83.60
09/22/2014	4,424	94.45
09/28/2015	2,671	102.24
TOTAL	**165,958**	**64.76**

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)*
06/15/2009	49,804	48.72
06/28/2010	12,032	61.48
10/14/2011	6,074	67.67
09/27/2012	6,157	80.58
09/26/2013	2,518	90.06
09/22/2014	1,918	94.45
09/28/2015	1,541	102.24
TOTAL	**80,044**	**57.95**

Rate of achievement of the performance conditions for the 2015 stock options plan dated September 28, 2015

Based on the financial statements approved for the 2017 fiscal year, subject to the approval of the next Annual Shareholders' Meeting, the Board of Directors on February 14, 2018 recorded the rate of achievement of the performance conditions defined at the time of the allocation of the stock options plan dated September 28, 2015. Consequently, the total proportion of the options which can be exercised amounts to 82.50% (for further details, see page 176).

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)

1. DESCRIPTION

In order to retain and more dynamically motivate talented employees and compensate their medium-term performance, an additional compensation system was set up in 2008 involving performance share awards.

The Annual Shareholders' Meeting authorised the Board to grant performance shares to the Group's employees, within an upper allocation limit equal to 0.5% of the share capital over 38 months; pursuant to this upper limit, it sets the limit on the number of shares which can be awarded to the Executive Officers over the same period, which amounts to 0.15% of the share capital since 2013.

For each allocation, the Board determines two different plan regulations (the "France" Plan and the "World" Plan) which govern the award of performance shares to the beneficiaries determined by the Board of Directors. The "France" and "World" Plans essentially differ in terms of the condition of presence which is required – paragraph a) below and the corresponding absence of an obligation to hold shares for the "World" Plan – paragraph c) below.

The performance shares are accompanied by:

a) a condition of presence during the acquisition period: the shares granted to a beneficiary will only be definitively acquired, if he continues to be an employee or Executive Officer of a Group company during an acquisition period, which is calculated from the award date, of three years for the beneficiaries of the "France" Plan and four years for the beneficiaries of the "World" Plan. In the event of a retirement, the beneficiary shall retain his rights and the condition of presence will no longer be required;
b) performance conditions which relate, since the first allocation in 2008, to the whole of the performance shares awarded to any beneficiary; see the performance conditions in the summary table of the awards of performance shares below;
c) a holding requirement: with effect from the definitive allocation 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 are treasury shares issued as part of the Company's buyback program (see pages 322 and 323).

The outstanding performance shares awarded by the Board of Directors pursuant to the authorisations voted by the Shareholders' Meetings, whose definitive allocation date has not yet occurred amounted, after adjustment, to 1,413,818 shares as at December 31, 2017, i.e. 0.33% of the shares which make up the share capital.

Out of the total performance shares whose allocation has been authorised by the Annual Shareholders' Meeting on May 12, 2016 for 38 months, 1,179,782 performance shares remained potentially available for allocation as at December 31, 2017.

TABLE 10 – SUMMARY OF THE ONGOING PERFORMANCE SHARE PLANS IN 2017

	Performance shares 2013	Performance shares 2014	Performance shares 2015	PPR Plan Performance shares 2015	"Airgas" Plan performance shares 2016	Performance shares 2016	Performance shares 2017	Total
Date of authorization by the EGM	05/07/2013	05/07/2013	05/06/2015	05/06/2015	05/12/2016	05/12/2016	05/12/2016	
Date of award by the Board meeting	09/26/2013	09/22/2014	09/28/2015	09/28/2015	07/29/2016	11/29/2016	09/20/2017	
Total number of performance shares awarded	122,595	140,472	287,172	1,132	75,230	426,346	416,579	
of which Executive Officers			*15,700*		*30,000*	*17,800*	*17,980*	
Benoît POTIER			10,000		20,000	17,800	17,980	
Pierre DUFOUR			5,700		10,000			
of which the top ten employee beneficiaries (excluding Executive Officers) receiving the highest number of shares	*2,500*	*2,500*	*36,166*	*1,132*	*22,425*	*63,046*	*71,363*	
Share capital represented by each award	0.04%	0.04%	0.08%	0.00%	0.02%	0.11%	0.11%	
Number of beneficiaries	1,077	1,248	1,744	5	89	1,955	1,832	
Performance conditions ("France" and "World" Plans), over a period of three years after the 2013 plan	Objective of growth in recurring EPS for FY 2015 as compared to 2012	Objective of growth in recurring EPS for FY 2016 as compared to 2013	Two performance conditions calculated over three years (2015-2017): ■ EPS ■ TSR, including an element of relative comparison	Objective over three years (2015-2017): Annual gap between Capital Employed (ROCE) and weighted average cost of capital (WACC)	Two performance conditions calculated over three years (2016-2017): ■ Recurring EPS ■ TSR, including an element of relative comparison	Two performance conditions calculated over three years (2016-2018): ■ Recurring EPS ■ TSR, including an element of relative comparison	Two performance conditions calculated over three years (2017-2019): ■ Recurring EPS ■ TSR, including an element of relative comparison	
% award			From 0 to 100%	From 0 to 100%	From 0 to 100%	From 0 to 100%	From 0 to 100%	
Number of performance shares cancelled before definitive award	13,645	18,525	10,387		602	10,732		
Rate of achievement of the performance condition (a)	92.10%	97.12%	82.50%	100%	To be recorded in 2019	To be recorded in 2019	To be recorded in 2020	
France Plan								
Definitive award date	09/26/2016	09/22/2017	09/28/2018	09/28/2018	07/29/2019	11/29/2019	09/20/2020	
End of holding period	09/26/2018	09/22/2019	09/28/2020	09/28/2020	07/29/2021	11/29/2021	09/20/2022	
Definitive award	34,954	39,962	662	154	-	733		
Adjusted definitive award (b)	39,936	39,962	681	159	-	733		
Adjusted total number of performance shares not definitively awarded			**127,589**	**1,111**	**61,041**	**191,670**	**182,721**	
"World" Plan								
Definitive award date (no additional holding period)	09/26/2017	09/22/2018	09/28/2019	-	07/29/2020	11/29/2020	09/20/2021	
Definitive award	70,674	460	367	-	-	-		
Adjusted definitive award (b)	74,667	469	377	-	-	-		
Adjusted total number of performance shares not definitively awarded		**97,568**	**183,446**		**23,584**	**267,179**	**277,909**	
ADJUSTED TOTAL NUMBER OF PERFORMANCE SHARES DEFINITIVELY AWARDED ("FRANCE" AND "WORLD")	**114,603**	**40,431**	**1,058**	**159**	**-**	**733**		
ADJUSTED TOTAL NUMBER OF PERFORMANCE SHARES NOT DEFINITIVELY AWARDED ("FRANCE" AND "WORLD")	**0**	**97,568**	**311,035**	**1,111**	**84,625**	**458,849**	**460,630**	**1,413,818**

(a) *The objectives set are made public ex post. For the 2015 plans, the objectives set are described on page 176.*
(b) *Adjusted for free share issues.*

2. PERFORMANCE SHARE PLANS DATED SEPTEMBER 20, 2017

Pursuant to the authorisation of the Combined Shareholders' Meeting on May 12, 2016, in connection with the "France" and "World" Plans dated September 20, 2017, the Board of Directors made a conditional allocation of a total of 416,579 shares representing 0.11% of the share capital in terms of the number of shares to 1,832 beneficiaries (165,306 shares allocated to the beneficiaries of the "France" Plan and 251, 273 shares allocated to the beneficiaries of the "World" Plan).

The IFRS individual fair value for these performance shares amounts to 93.16 euros for the "France" Plan and to 89.38 euros for the "World" Plan (see details of this IFRS value in Note 22 "Equity capital" in the consolidated financial statements).

Subject to the satisfaction of the conditions of presence and the performance conditions, these shares will definitively be vested in the beneficiaries on September 20, 2020 for the "France" Plan (but cannot be sold prior to September 20, 2022) and on September 20, 2021 for the "World" Plan.

For both these Plans, the Board adopted performance conditions to be calculated over three fiscal years, which are **identical to those set for the stock options** (for a full description, see pages 171 and 172).

The rate of achievement for the performance conditions will be recorded by the Board of Directors at its meeting to approve the financial statements for the 2019 fiscal year.

3. DISTRIBUTION BETWEEN THE VARIOUS CATEGORIES OF BENEFICIARIES (2017 PERFORMANCE SHARES PLANS)

PERFORMANCE SHARE PLANS DATED SEPTEMBER 20, 2017

September 20, 2017	Number of beneficiaries	Number of shares
Executive officers of L'Air Liquide S.A.	1	17,980
Senior managers (who are not Executive Officers of L'Air Liquide S.A.), managers and special contributors	203	67,179
Other employees, new beneficiaries	1,628	331,420

4. SHARES ALLOCATED TO THE 10 EMPLOYEES (EXCLUDING EXECUTIVE OFFICERS OF L'AIR LIQUIDE S.A.), WHO HAVE BEEN AWARDED THE HIGHEST NUMBER OF SHARES

PERFORMANCE SHARE PLAN DATED SEPTEMBER 20, 2017

September 20, 2017	Number of shares
For L'Air Liquide S.A.	41,362
For L'Air Liquide S.A. and its subsidiaries	71,363

5. RATE OF ACHIEVEMENT OF THE PERFORMANCE CONDITIONS FOR THE PERFORMANCE SHARE PLANS FOR 2015

Based on the financial statements approved for the 2017 fiscal year and subject to the approval of the next Annual Shareholders' Meeting, the Board of Directors on February 14, 2018 recorded the rate of achievement of the performance conditions defined at the time of allocation of the performance share plans dated September 28, 2015. Consequently, the total proportion of the shares which are subject to conditions which have definitively awarded to the beneficiaries is 82.50% (for more details, see page 176).

The Assets/Pension Plan (of which the Executive Officers are not beneficiaries) provided that the number of shares acquired would depend upon the rate of achievement of the objective of the annual spread between the ROCE and the WACC calculated in respect of the 2015, 2016 and 2017 fiscal years. The Board of Directors recorded that the proportion of the shares subject to conditions which have definitively awarded to the beneficiaries is 100%.

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.

Profit-sharing

Profit-sharing and incentive schemes have been organized for many years in Group companies in France and paid almost 42.2 million euros for 2016 performance. This year these schemes cover over 95% 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 2017, L'Air Liquide S.A. paid 5.03 million euros to 1,234 beneficiaries in respect of profit-sharing and incentives. Company contributions to the Company Savings Plan are negotiated every year and amounted to nearly 1.08 million euros in 2017. These payments correspond to an average amount of 4771 euros per employee excluding employer contribution.

In 2017, L'Air Liquide S.A. employees invested 83% of their profit-sharing and incentives in savings plans, respectively in bond-weighted assets (51%) and equity-weighted assets (49%).

A total of 23% of employee savings was invested in corporate mutual fund holding only Air Liquide shares.

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 March 2016, resulted in the subscription of 999,143 shares by 16,984 Group employees, representing 32.2% of the eligible employees in 74 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 2017, the share of capital held by Group employees and former employees was estimated at 2.2%, of which 1.5% 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 more than 36% 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 2017, the following transactions involving Company shares were performed by Executive Officers in accordance with article L. 621-18-2 of the French Monetary and Financial Code:

	Nature of the transactions	Date of transaction	Average price *(in euros)*
Benoît Potier	Exercise of 117,420 options of L' Air Liquide S.A.	February 27, 2017	48.72
Benoît Potier	Sale of 69,313 shares of L' Air Liquide S.A.	March 1, 2017	103.04
Pierre Dufour	Exercise of 57,440 options of L' Air Liquide S.A.	April 27, 2017	66.47
Pierre Dufour	Sale of 57,440 shares of L' Air Liquide S.A.	April 27, 2017	111.06
Pierre Dufour	Exercise of 5,000 options of L'Air Liquide S.A.	May 8, 2017	66.47
Xavier Huillard	Purchase of 2,500 shares of L'Air Liquide S.A.	May 29, 2017	111.57
Pierre Dufour	Exercise of 67,400 options of L'Air Liquide S.A.	October 2, 2017	63.18
Pierre Dufour	Sale of 67,400 shares of L'Air Liquide S.A.	October 2, 2017	102.75
Pierre Dufour	Exercise of 56,513 options of L'Air Liquide S.A.	October 26, 2017	77.36
Pierre Dufour	Sale of 56,513 shares of L'Air Liquide S.A.	October 26, 2017	108.00
Pierre Dufour	Exercise of 67,553 options of L'Air Liquide S.A.	December 27, 2017	81.68
Pierre Dufour	Sale of 67,553 shares of L'Air Liquide S.A.	December 27, 2017	106.91
Pierre Dufour	Sale of 10,000 shares of L'Air Liquide S.A.	December 27, 2017	107.00

FACTORS THAT MAY HAVE AN IMPACT IN THE EVENT OF A TAKEOVER BID

Pursuant to article L. 225-37-5 of the French Commercial Code, the factors that may have an impact in the event of a takeover bid are set forth below.

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 Shareholders' Meeting of May 12, 2016 to increase the share capital through capitalization of additional paid-in capital, reserves, profits or any other amounts and the delegation which would replace it subject to the approval of the Shareholders' Meeting of May 16, 2018;
- the delegation of authority granted to the Board of Directors by the Shareholders' Meeting of May 12, 2016 to issue compound marketable securities, without preferential subscription rights, by way of a public offering;
- the delegation of authority granted to the Board of Directors by the Shareholders' Meeting of May 12, 2016 to issue compound marketable securities, without preferential subscription rights, by way of private placement;
- the delegation of authority granted to the Board of Directors (subject to the approval of the Shareholders' Meeting of May 3, 2017) 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 210 of this Reference Document.

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 111.1 million euros equivalent [a]);
- bond issued in June 2010 maturing in June 2020 (500 million euros);
- bond issued in October 2010 maturing in October 2018 (456.75 million euros);
- private placement issued in December 2011 maturing in December 2019 (15.5 billion yen, or 114.8 million euros equivalent [a]);
- private placement issued in January 2012 maturing in March 2019 (200 million US dollars, or 166.8 million euros equivalent [a]);
- bond issued in October 2012 maturing in October 2021 (500 million euros);
- bond issued in March 2013 maturing in September 2023 (300 million euros);
- bond issued in June 2013 maturing in June 2019 (250 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);

(a) Converted at closing rate as of December 31, 2017, with 1 EUR = 135.01 JPY, 1 EUR = 1.199 USD, 1 EUR = 7.804 CNY and 1 EUR = 1.170 CHF.

- private placement issued in September 2014 maturing in September 2022 (130 million swiss francs, or 111.1 million euros equivalent [a]);
- bond issued in January 2015 maturing in January 2022 (500 million renminbis, or 64.1 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 2018 (500 million euros), 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).

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:

- bond issued in September 2011 maturing in September 2018 (850 million renminbis, or 108.9 million euros equivalent [a]);
- US Private Placements issued in September 2012, maturing in September 2022 (400 million US dollars, or 333.5 million euros equivalent [a]), September 2024 (200 million US dollars, or 166.8 million euros equivalent [a]) and September 2027 (100 million US dollars, or 83.4 million euros equivalent [a]);
- US public bond (144a format) issued in September 2016, maturing in September 2019 (750 million US dollars, or 625.4 million euros equivalent [a]), maturing in September 2021 (1,000 million US dollars, or 833.8 million euros equivalent [a]), maturing in September 2023 (750 million US dollars, or 625.4 million euros equivalent [a]), maturing in September 2026 (1,250 million US dollars, or 1042.3 million euros equivalent [a]) and maturing in September 2046 (750 million US dollars, or 625.4 million euros equivalent [a]).

Four 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 February 2013 maturing in February 2018 (325 million dollars, or 271.0 million euros equivalent [a]);
- bond issued in February 2013 maturing in February 2020 (275 million dollars, or 229.3 million euros equivalent [a]);
- bond issued in November 2012 maturing in November 2022 (250 million dollars, or 208.5 million euros equivalent [a]);
- bond issued in July 2014 maturing in July 2024 (300 million dollars, or 250.1 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.

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 187 et seq. of this Reference Document.

(a) Converted at closing rate as of December 31, 2017, with 1 EUR = 135.01 JPY, 1 EUR = 1.199 USD, 1 EUR = 7.804 CNY and 1 EUR = 1.170 CHF.

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FINANCIAL STATEMENTS

CONSOLIDATED FINANCIAL STATEMENTS

Consolidated income statement

For the year ended December 31

(in millions of euros)	Notes	2016	2017
Revenue	(5)	18,134.8	20,349.3
Other income	(6)	173.9	221.5
Purchases	(6)	(6,692.8)	(7,720.8)
Personnel expenses	(6)	(3,659.4)	(4,138.3)
Other expenses	(6)	(3,345.3)	(3,570.0)
Operating income recurring before depreciation and amortization		**4,611.2**	**5,141.7**
Depreciation and amortization expense	(6)	(1,587.3)	(1,777.9)
Operating income recurring		**3,023.9**	**3,363.8**
Other non-recurring operating income	(7)	451.0	219.8
Other non-recurring operating expenses	(7)	(415.4)	(563.3)
Operating income		**3,059.5**	**3,020.3**
Net finance costs	(8)	(389.1)	(421.9)
Other financial income	(8)	17.6	32.5
Other financial expenses	(8)	(31.6)	(100.0)
Income taxes	(9)	(747.4)	(207.3)
Share of profit of associates	(16)	6.6	5.2
NET PROFIT FROM CONTINUING OPERATIONS		**1,915.6**	**2,328.8**
NET PROFIT FROM DISCONTINUED OPERATIONS	**(3)**	**11.1**	**(37.2)**
PROFIT FOR THE PERIOD		**1,926.7**	**2,291.6**
■ Minority interests		82.7	92.0
■ Net profit (Group share)		1,844.0	2,199.6
Basic earnings per share *(in euros)*	**(10)**	**4.64**	**5.16**
Diluted earnings per share *(in euros)*	**(10)**	**4.62**	**5.14**
Basic earnings per share from continuing operations *(in euros)*		**4.61**	**5.25**
Diluted earnings per share from continuing operations *(in euros)*		**4.60**	**5.22**
Basic earnings per share from discontinued operations *(in euros)*	**(3)**	**0.03**	**(0.09)**
Diluted earnings per share from discontinued operations *(in euros)*	**(3)**	**0.02**	**(0.08)**

Accounting principles and notes to the financial statements begin on page 229.

Statement of net income and gains and losses recognized directly in equity

For the year ended December 31

(in millions of euros)	**2016**	**2017**
Profit for the period	**1,926.7**	**2,291.6**
Items recognized in equity		
Change in fair value of financial instruments	(186.8)	(71.4)
Change in foreign currency translation reserve	391.7	(1,379.5)
Items that may be subsequently reclassified to profit	**204.9**	**(1,450.9)**
Actuarial gains/ (losses)	(129.9)	(89.0)
Items that may not be subsequently reclassified to profit	**(129.9)**	**(89.0)**
Items recognized in equity, net of taxes	**75.0**	**(1,539.9)**
Net income and gains and losses recognized directly in equity	**2,001.7**	**751.7**
■ Attributable to minority interests	89.3	62.8
■ Attributable to equity holders of the parent	1,912.4	688.9

Consolidated balance sheet

For the year ended December 31

ASSETS *(in millions of euros)*	Notes	December 31, 2016	December 31, 2017
Goodwill	(12)	13,889.5	12,840.4
Other intangible assets	(13)	1,887.4	1,611.1
Property, plant and equipment	(14)	20,115.7	18,525.9
Non-current assets		35,892.6	32,977.4
Non-current financial assets	(15)	584.0	541.6
Investments in associates	(16)	134.2	128.2
Deferred tax assets	(17)	181.9	258.4
Fair value of non-current derivatives (assets)	(27)	60.1	130.5
Other non-current assets		960.2	1,058.7
TOTAL NON-CURRENT ASSETS		**36,852.8**	**34,036.1**
Inventories and work-in-progress	(18)	1,323.1	1,333.7
Trade receivables	(19)	3,115.0	2,900.0
Other current assets	(21)	697.5	863.5
Current tax assets		277.4	199.5
Fair value of current derivatives (assets)	(27)	53.2	38.4
Cash and cash equivalents	(22)	1,523.0	1,656.1
TOTAL CURRENT ASSETS		**6,989.2**	**6,991.2**
ASSETS HELD FOR SALE	**(3)**	**275.8**	**-**
TOTAL ASSETS		**44,117.8**	**41,027.3**

EQUITY AND LIABILITIES *(in millions of euros)*	Notes	December 31, 2016	December 31, 2017
Share capital		2,138.8	2,356.2
Additional paid-in capital		3,103.3	2,821.3
Retained earnings		9,767.4	9,077.3
Treasury shares		(111.7)	(136.5)
Net profit (Group share)		1,844.0	2,199.6
Shareholders' equity		16,741.8	16,317.9
Minority interests		**383.2**	**400.5**
TOTAL EQUITY (a)	**(23)**	**17,125.0**	**16,718.4**
Provisions, pensions and other employee benefits	(24, 25)	2,592.4	2,593.3
Deferred tax liabilities	(17)	2,378.2	1,807.7
Non-current borrowings	(26)	14,890.1	12,522.4
Other non-current liabilities	(28)	270.6	238.5
Fair value of non-current derivatives (liabilities)	(27)	233.7	2.3
TOTAL NON-CURRENT LIABILITIES		**20,365.0**	**17,164.2**
Provisions, pensions and other employee benefits	(24, 25)	279.5	332.7
Trade payables	(29)	2,485.9	2,446.4
Other current liabilities	(28)	1,473.3	1,623.9
Current tax payables		144.3	194.2
Current borrowings	(26)	2,001.0	2,504.6
Fair value of current derivatives (liabilities)	(27)	63.0	42.9
TOTAL CURRENT LIABILITIES		**6,447.0**	**7,144.7**
LIABILITIES HELD FOR SALE	**(3)**	**180.8**	**-**
TOTAL EQUITY AND LIABILITIES		**44,117.8**	**41,027.3**

(a) A breakdown of changes in shareholders' equity and minority interests is presented on pages 227 and 228.

Consolidated cash flow statement

For the year ended December 31

(in millions of euros)	Notes	2016	2017
Operating activities			
Net profit (Group share)		**1,844.0**	**2,199.6**
Minority interests		**82.7**	**92.0**
Adjustments:			
■ Depreciation and amortization		1,599.5	1,782.9
■ Changes in deferred taxes [a]		105.2	(350.4)
■ Changes in provisions		90.3	298.9
■ Share of profit of associates	(16)	0.8	(0.2)
■ Profit/loss on disposal of assets		(290.4)	4.5
■ Net finance costs related to the acquisition of Airgas		91.1	105.7
Cash flows from operating activities before changes in working capital		**3,523.2**	**4,133.0**
Changes in working capital	(20)	331.0	188.3
Others		(157.7)	(67.3)
Net cash flows from operating activities		**3,696.5**	**4,254.0**
Investing activities			
Purchase of property, plant and equipment and intangible assets	(13, 14)	(2,258.6)	(2,182.5)
Acquisition of consolidated companies and financial assets [c]		(12,165.3)	(140.4)
Proceeds from sale of property, plant and equipment and intangible assets		828.3	472.9
Proceeds from sale of financial assets		1.3	4.3
Net cash flows used in investing activities		**(13,594.3)**	**(1,845.7)**
Financing activities			
Dividends paid [b]			
■ L'Air Liquide S.A.		(947.4)	(1,031.2)
■ Minority interests		(71.6)	(67.6)
Proceeds from issues of share capital [b] [c]		3,361.1	70.0
Purchase of treasury shares [b]		3.8	(158.4)
Increase (decrease) in borrowings [c]		8,152.0	(1,085.4)
Transactions with minority shareholders		(14.4)	(4.4)
Net cash flows from (used in) financing activities		**10,483.5**	**(2,277.0)**
Effect of exchange rate changes and change in scope of consolidation		(30.6)	(46.1)
Net increase (decrease) in net cash and cash equivalents		**555.1**	**85.2**
NET CASH AND CASH EQUIVALENTS AT THE BEGINNING OF THE PERIOD		875.4	1,430.5
NET CASH AND CASH EQUIVALENTS AT THE END OF THE PERIOD		**1,430.5**	**1,515.7**

(a) Changes in deferred taxes shown in the consolidated cash flow statement do not include changes in deferred taxes relating to disposals of assets.
(b) A breakdown of dividends paid, share capital increases and treasury share purchases is provided on pages 227 and 228.
(c) Including in 2016 the transaction flows related to Airgas.

The analysis of net cash and cash equivalents at the end of the period is as follows:

(in millions of euros)	Notes	December 31, 2016	December 31, 2017
Cash and cash equivalents	(22)	1,523.0	1,656.1
Bank overdrafts (included in current borrowings)		(92.5)	(140.4)
NET CASH AND CASH EQUIVALENTS		**1,430.5**	**1,515.7**

Consolidated statement of changes in equity

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY FROM JANUARY 1, 2017 TO DECEMBER 31, 2017

(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, 2017		2,138.8	3,103.3	11,515.5	(126.4)	222.3	(111.7)	16,741.8	383.2	17,125.0
Profit for the period				2,199.6				2,199.6	92.0	2,291.6
Items recognized directly in equity				(88.9)	(71.4)	(1,350.4)		(1,510.7)	(29.2)	(1,539.9)
Net income and gains and losses recognized directly in equity [(a)]				2,110.7	(71.4)	(1,350.4)		688.9	62.8	751.7
Increase (decrease) in share capital		4.5	46.2					50.7	18.9	69.6
Free share attribution		219.0	(219.0)							
Distribution	(11)			(1,031.3)				(1,031.3)	(67.6)	(1,098.9)
Cancelation of treasury shares [(d)]		(6.1)	(109.2)				115.3			
Purchase/Disposal of treasury shares [(d)]							(158.1)	(158.1)		(158.1)
Share-based payments				25.0			9.4	34.4		34.4
Transactions with minority shareholders recognized directly in equity				(10.1)				(10.1)	3.3	(6.8)
Others				(7.0)			8.6	1.6	(0.1)	1.5
EQUITY AND MINORITY INTERESTS AS OF DECEMBER 31, 2017		**2,356.2 [(b)]**	**2,821.3 [(c)]**	**12,602.8**	**(197.8)**	**(1,128.1)**	**(136.5) [(d)]**	**16,317.9**	**400.5**	**16,718.4**

(a) The statement of net income and gains and losses recognized directly in equity is presented on page 224.

(b) Share capital as of December 31, 2017 was made up of 428,397,550 shares at a par value of 5.50 euros. During the fiscal year, movements affecting share capital were as follows:

- *on October 4, 2017, share capital increase by capitalizing share premiums, and attribution of 39,814,353 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, 2014 to September 29, 2017 inclusive;*
- *creation of 462,734 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 344,702 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 1,100,000 shares, bought under the approval of the Combined Shareholders' Meeting of May 3, 2017 before the attribution of free shares.*

(c) During the fiscal year, movements affecting "Additional paid-in capital" were as follows:

- *decrease related to the cancelation of treasury shares for -219.0 million euros*
- *decrease related to capital decrease for -109.2 million euros;*
- *increase related to capital increases for 46.2 million euros.*

(d) The number of treasury shares as of December 31, 2017 totaled 1,665,698 (including 1,445,182 held by L'Air Liquide S.A.). During the fiscal year, movements affecting treasury shares were mainly as follows:

- *acquisitions, net of disposals, of 1,504,750 shares before the attribution of free shares;*
- *acquisitions, net of disposals, of 1,936 shares after the attribution of free shares;*
- *creation of 153,488 shares related to the attribution of free shares;*
- *allocation of 116,884 shares as part of performance shares;*
- *cancelation of 1,100,000 shares by capital decrease.*

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY FROM JANUARY 1, 2016 TO DECEMBER 31, 2016

(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, 2016	**1,892.9**	**15.6**	**10,720.1**	**60.4**	**(162.3)**	**(121.0)**	**12,405.7**	**365.1**	**12,770.8**
Profit for the period			**1,844.0**				**1,844.0**	**82.7**	**1,926.7**
Items recognized directly in equity			(129.4)	(186.8)	384.6		68.4	6.6	75.0
Net income and gains and losses recognized directly in equity [(a)]			**1,714.6**	**(186.8)**	**384.6**		**1,912.4**	**89.3**	**2,001.7**
Increase (decrease) in share capital	245.9	3,087.2					3,333.1	7.0	3,340.1
Distribution			(947.9)				(947.9)	(71.6)	(1,019.5)
Cancelation of treasury shares		0.5	(0.5)						
Purchase / Disposal of treasury shares						3.5	3.5		3.5
Share-based payments			26.5			5.8	32.3		32.3
Transactions with minority shareholders recognized directly in equity			(19.6)				(19.6)	(7.3)	(26.9)
Others			22.3				22.3	0.7	23.0
EQUITY AND MINORITY INTERESTS AS OF DECEMBER 31, 2016	**2,138.8**	**3,103.3**	**11,515.5**	**(126.4)**	**222.3**	**(111.7)**	**16,741.8**	**383.2**	**17,125.0**

(a) The statement of net income and gains and losses recognized directly in equity is presented on page 224.

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, 2017 have been prepared in accordance with IFRS (International Financial Reporting Standards), as endorsed by the European Union as of December 31, 2017, 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

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, 2017.

The financial statements are presented in millions of euros. They were approved by the Board of Directors on February 14, 2018. They will be submitted for approval to the Shareholders' Meeting on May 16, 2018.

NEW IFRS AND INTERPRETATIONS

1. Standards, interpretations and amendments endorsed by the European Union whose application is mandatory as of January 1, 2017

The following texts will not have any impact on the Group financial statements:

- amendments to IAS 12 "Recognition of Deferred Tax Assets for Unrealized Losses", issued on January 19, 2016;
- amendments to IAS 7 "Disclosure Initiative", issued on January 29, 2016.

2. Standards, interpretations and amendments endorsed by the European Union whose application is optional in 2017

The Group financial statements for the year ended December 31, 2017 do not include any potential impacts from the standards, interpretations and amendments endorsed by the European Union as of December 31, 2017 for which adoption is only mandatory as of fiscal years beginning after January 1, 2017. These texts are as follows:

- IFRS 15 "Revenue from contracts with customers", issued on May 28, 2014, including the amendment to IFRS 15 "Effective Date of IFRS 15", issued on September 11, 2015, and clarifications to IFRS 15, issued on April 12, 2016, for which adoption is only mandatory as of January 1, 2018.

The analysis was finalized during 2017 and the Group has identified no significant impact to be noted in relation to the transition to IFRS 15. This analysis is based on the Group's activities, as follows.

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 IFRS 16 "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 IFRS 16 "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 tank, cylinders). Customers have no right of control on the identified assets under the meaning of IFRS 16 "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.

Engineering & Construction

Air Liquide enters into contracts to design and build production units worldwide 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.

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 this market will keep on being done on a case-by-case basis;
- 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.

- IFRS 9 "Financial Instruments", issued on July 24, 2014 for which adoption is only mandatory as of January 1, 2018:

  This standard replaces IAS 39 which is applicable until December 31, 2017. The main changes introduced by this new standard are as follows:

  - the impairment model for assets which must comply with a unique model named 'expected credit losses' instead the model named 'incurred credit losses';
  - the hedge accounting requirements, better aligned with the Group' strategy of risk management.

  The Group does not expect any material impact arising from the application of this new standard.

- IFRS 16 "Leases", issued on January 13, 2016 for which adoption is only mandatory as of January 1, 2019:

  The Group has not identified any impacts relating to lease contracts when analyzing the application of IFRS 15 "Revenue from contracts with customers", as described above. The impacts of the application of IFRS 16 relating to the contracts concluded by the Group as a lessee are being analyzed.

Additionally, the following text is not applicable to the Group:

- amendments to IFRS 4 "Applying IFRS 9 Financial Instruments with IFRS 4 Insurance Contracts", issued on September 12, 2016.

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, 2017 and not yet endorsed by the European Union are currently being analyzed. These texts are as follows:

- amendments to IFRS 2 "Classification and measurement of share-based payment transactions", issued on June 20, 2016;
- annual improvements to IFRSs 2014-2016 Cycle, issued on December 8, 2016;
- IFRIC 22 "Foreign Currency Transactions and Advance Consideration", issued on December 8, 2016;
- IFRIC 23 "Uncertainty over Income Tax Treatments", issued on June 7, 2017;
- amendments to IFRS 9 "Prepayment Features with Negative Compensation", issued on October 12, 2017;
- amendments to IAS 28 "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.

Additionally, the following texts are not applicable to the Group:

- amendments to IAS 40 "Transfers of Investment Property", issued on December 8, 2016;
- IFRS 17 "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, the notes related to these assets and liabilities, the profit and expense items in the income statement and 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 25.3;
- the estimates and assumptions concerning assets' impairment tests, as described in section 5.f. of the accounting policies and in note 12.2;
- 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.

ACCOUNTING POLICIES

The consolidated financial statements were prepared under the historical cost convention, except for available-for-sale financial assets and financial assets and liabilities measured at fair value through profit or loss in accordance with IAS 32/39. 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;
- equity method for joint ventures and associates;
- assets, liabilities, expenses and revenue of joint operations are recognized in relation to the Group's interest in these entities.

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 a 20% 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.

3. REVENUE RECOGNITION

a. Revenue from the sales of goods and services

Revenue from the sales of goods is recognized when the significant risks and rewards of ownership have been transferred to the buyer, net of sales taxes, rebates and discounts and after eliminating sales within the Group.

Revenue associated with service delivery is recognized in reference to the stage of completion of the transaction when it can be reliably measured.

b. Engineering & construction contracts

Contract revenue and costs associated with construction contracts are recognized as revenue and expenses respectively, based on the stage of completion of the contracts at the balance sheet date.

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 an expense.

The stage of completion is assessed by using the ratio of contract costs incurred at the balance sheet date versus total estimated contract costs.

4. TAXES

a. Income tax expense

The tax rate was 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 IAS 12), 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 IFRS 3 revised and IAS 27 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 IFRS 3 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.

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 IFRS 3 and IAS 27. These standards had already adopted the acquisition method in the version published by the IASB in March 2004. The main provisions which differ 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 IFRS 1, the Group decided not to apply IFRS 3 "Business combinations" retrospectively for acquisitions that took place prior to January 1, 2004.

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.

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 IAS 38, 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 IAS 38 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 IFRS 3 "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

Finance leases

Leases of property, plant and equipment that transfer virtually all the risks and rewards of ownership to the Group are classified as finance leases. Items of property, plant and equipment acquired under finance leases are depreciated over the shorter of the asset's useful life or the lease term.

The sum of the present value of minimum lease payments for leased assets is recorded in the balance sheet under "Property, plant and equipment". The debt corresponding to the lessor appears on the balance sheet as a financial liability.

Operating leases

Leases where the lessor retains substantially all the risks and rewards incidental to ownership are classified as operating leases. Payments made under operating leases (net of any incentives received from the lessor) are charged to the income statement on a straight-line basis over the lease term.

IFRIC 4 "Determining Whether an Arrangement Contains a Lease" has no impact on the Group consolidated financial statements. In fact, the risks and rewards arising from the use of assets potentially affected by this interpretation are not transferred to the Group's customers. Consequently, the gas supply contracts related to these assets are not classified as finance leases.

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 available for sale assets.

They are initially recorded at their fair value plus directly attributable transaction costs. Generally, the securities are recognized at cost, net of any depreciation. For this purpose, the recoverable amount is based on the Group's share of net assets, expected future profitability and the business plan of the entity representing the investment.

Changes in fair value are recognized in "gains and losses recognized directly in equity" until the investment is effectively sold. However, unrealized capital losses are immediately recognized in the income statement when the impairment loss is considered permanent or significant.

Unrealized gains or losses previously recognized in "gains and losses recognized directly in equity" are recorded in profit or loss on sale of the investments.

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 carried at fair value upon initial recognition and then at amortized cost less any impairment losses.

Impairment losses are recognized when it becomes probable that the amount due will not be collected and the loss can be reasonably estimated. Impairment losses are estimated by taking into account historical losses, age and a detailed risk estimate.

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 and almost all the risks and benefits relating to the receivable to the assignee.

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 borrowings arising from finance leases and 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 mainly 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 (other comprehensive income), 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 the Group is engaged in a sale process involving the loss of control of the subsidiary, 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 that is 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 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 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 thus 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 IAS 32, 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 as follows:

- for options granted prior to January 1, 2010, in goodwill;
- for options granted after January 1, 2010, 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 increases, employee turnover, retirement date, life expectancy, inflation and appropriate discount rates 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, the United States, the United Kingdom and 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 and 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 profit. 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 IFRS 3 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: that 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: that 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.

In 2016, the Group decided to divest the "Other activities" segment. As a result, the segment income statement for these activities was restated and is presented in note 4.

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 INDEBTEDNESS

Net indebtedness includes:

- current and non-current borrowings minus the fair value of hedging derivative assets to cover borrowings;

reduced by:

- cash and cash equivalents, as defined in section 6.c., minus the fair value of hedging derivative instruments recorded in liabilities to cover loans.

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 political risks or significant litigations.

7. NET EARNINGS PER SHARE

a. Basic earnings per share

Basic earnings per share is 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 IFRS 2, is lower than the Air Liquide annual average share price;
- the performance requirements meet the criteria set out in IAS 33 § 52.

Notes to the consolidated financial statements for the year ended December 31, 2017

Note 1 Significant events

Refund of the additional 3% contribution

The Amended Finance Act enacted in August 2012 introduced an additional 3% contribution on cash dividends. L'Air Liquide S.A. was subject to this tax for the dividends paid between 2013 and 2017. Since the initial payment in 2013, the Group considered the additional 3% contribution as a dividend distribution cost and, as a result, had decided to recognize this contribution cost as a deduction of shareholders' equity.

L'Air Liquide S.A had filed claims for the reimbursement of the amounts paid for the 2013 to 2017 fiscal years (133.9 million euros, before interests), including 30.9 million euros for the year 2017.

Following the favorable decision of the European Court of Justice on May 17, 2017 and the French Constitutional Council on October 6, 2017 leading to this cancelation of this additional contribution, a receivable was recognized. This receivable was collected in December 2017, along with interests of 15.2 million euros.

The Constitutional Council's decision marked a discontinuity in the legal framework of the additional contribution. Consequently, the Group has considered that the legal nature of the reimbursement was different to that of the initial additional contribution. Considering the nature of the refund, the principal was recognized in "Other non-recurring operating income" and interests in "Other financial income".

US tax reform

In December 2017, the US Congress adopted the US Tax Cuts & Jobs Act of 2017 tax reform, which was signed on December 22 by the President of the United States for final adoption. The federal corporate income tax rate was reduced from 35% to 21% for fiscal years beginning on January 1, 2018. Moreover, the accumulated undistributed retained earnings of foreign subsidiaries of US holding companies will be subject to a flat tax of 15.5% (cash reserves) or 8% (other reserves).

Consequently, the Group recognized a net deferred tax income of 508.1 million euros in "tax expense", corresponding to a 20.1% decrease in the effective tax rate. This notably includes estimates of -140 million euros for tax on accumulated undistributed retained earnings of foreign subsidiaries of US holding companies. These estimates will be confirmed based on actual information received in 2018.

Note 2 Airgas Acquisition

2.1 FINAL GOODWILL

(in millions of euros)	As of May 23, 2016
Intangible assets	1,038.9
Property, plant and equipment	3,466.4
Other non-current assets	27.4
Inventories and work-in progress	375.2
Trade receivables	603.4
Prepaid expenses and other current assets	219.6
Assets held for sale	100.6
Assets measured at fair value on the acquisition date	**5,831.5**
Provisions and contingencies	442.0
Deferred tax liabilities	911.1
Non-current borrowings	1,757.7
Other non-current liabilities	14.6
Trade payables	226.0
Other current liabilities	175.0
Current borrowings	517.1
Liabilities held for sale	35.6
Liabilities assumed at fair value on the acquisition date	**4,079.1**
Net assets of Airgas measured at fair value on the acquisition date	1,752.4
Equity in net assets of Airgas acquired (100%)	100%
Cash consideration for the 100% acquired	9,526.1
Final goodwill	**7,773.7**

Goodwill as set out is final. It is mainly attributable to the valuation of the assembled workforce, the synergies, and the distribution network. Goodwill is not deductible for tax purposes.

2.2 DIVESTITURE OF ASSETS

On September 8, 2016, Air Liquide completed the divestiture of certain U.S. assets to Matheson Tri-Gas, Inc. ("Matheson"), announced on June 24, 2016 and cleared by the U.S. Federal Trade Commission ("FTC") in a decision published on September 1, 2016. This divestiture represented the majority of the assets sales required by the FTC in connection with Air Liquide's acquisition of Airgas.

Under the terms of the purchase agreement, this transaction included the sale of:

- eighteen air separation units in sixteen locations;
- two nitrous oxide production facilities;
- four liquid carbon dioxide production facilities in four states, including two dry ice production facilities;
- three Airgas retail packaged welding gas stores in Alaska.

Furthermore, Air Liquide had also signed a sale agreement of two of its facilities in Iowa that produce both liquid carbon dioxide and dry ice which are the remaining assets ordered by the FTC to be divested in connection with Air Liquide's acquisition of Airgas. The assets were sold on December 30, 2016.

These operations were recorded in "Other non-recurring operating income" and are presented in note 7. Proceeds from the sale of the assets of 423.8 million euros net of tax were recorded under "Proceeds from sale of property, plant and equipment and intangible assets" in the consolidated cash flow statement.

Note 3 Discontinued operations

Air Liquide is focused on its Gas & Services activities following the Group's acquisition of Airgas, as well as on the implementation of its company program NEOS for the 2016-2020 period. In this context, at the end of 2016 the Group decided to divest its "Other activities" sector, including the Diving and Welding World Business Lines. After having sold its full stake in Aqua Lung on December 30, 2016, Air Liquide announced on March 2, 2017 that it had entered into exclusive negotiations with Lincoln Electric Holdings, Inc. for the sale of its subsidiary Air Liquide Welding, specialized in the manufacturing of welding and cutting technologies. At the end of July 2017, Air Liquide completed this disposal.

Aggregated consolidated income statement

(in millions of euros)	**2016**	**2017**
Revenue	525.1	199.3
Profit before tax	**11.9**	**(3.1)**
Income taxes	(2.3)	(0.4)
Gain on disposal / impairment related to fair value measurement of discontinued activities, after tax	1.5	(33.7)
NET PROFIT FROM DISCONTINUED OPERATIONS	**11.1**	**(37.2)**
■ Minority interests	0.7	-
■ Net Profit (Group share)	10.4	(37.2)

Statement of net income and gains and losses recognized directly in equity

The statement of net income and gains and losses recognized directly in equity has not been restated following the application of IFRS 5 since the impact of discontinued operations in that statement is immaterial.

Cash flow

The proceeds net of tax from the sale of Air Liquide Welding of 62.6 million euros were recorded under "Proceeds from sale of property, plant and equipment and intangible assets". The other cash flows from discontinued operations are immaterial.

Simplified balance sheet

Assets and liabilities of Air Liquide Welding have been classified into "assets held for sale" and "liabilities held for sale" as of December 31,2016. This reclassification is included in column "other variations" of balance sheet variation tabs.

As of December 31,2016, assets and liabilities held for sale were as follows:

(in millions of euros)	December 31,2016
Non-current assets	83.6
Current assets	187.3
Cash and cash equivalents	4.9
ASSETS HELD FOR SALE	**275.8**

(in millions of euros)	December 31,2016
Non-current liabilities (excluding borrowings)	68.0
Current liabilities (excluding borrowings)	112.0
Current borrowings	0.8
LIABILITIES HELD FOR SALE	**180.8**

Note 4 Segment information

4.1 INCOME STATEMENT FOR THE YEAR ENDED DECEMBER 31, 2017

	Gas & Services									
(in millions of euros)	Europe	Americas	Asia Pacific	Middle East and Africa	Sub-total	Engineering & Construction	Global Markets & Technologies	Other activities	Reconciliation	Total
Revenue	6,775.5	8,149.8	4,081.7	634.9	19,641.9	335.1	372.3			20,349.3
Inter-segment revenue						*214.2*	*332.6*		*(546.8)*	-
Operating income recurring	**1,309.3**	**1,365.2**	**803.8**	**109.0**	**3,587.3**	**(23.4)**	**42.2**		**(242.3)**	**3,363.8**
incl. depreciation and amortization	*(593.5)*	*(690.6)*	*(361.3)*	*(54.2)*	*(1,699.6)*	*(18.3)*	*(30.2)*		*(29.8)*	*(1,777.9)*
Other non-recurring operating income										219.8
Other non-recurring operating expenses										(563.3)
Net finance costs										(421.9)
Other financial income										32.5
Other financial expenses										(100.0)
Income taxes										(207.3)
Share of profit of associates										5.2
Net profit from continued operations										2,328.8
Net profit from discontinued operations										(37.2)
Profit for the period										2,291.6
Purchase of intangible assets and property, plant and equipment	(577.3)	(690.4)	(508.8)	(154.3)	(1,930.8)	(74.9)	(120.4)	(4.4)	(52.0)	(2,182.5)

4.2 INCOME STATEMENT FOR THE YEAR ENDED DECEMBER 31, 2016

(in millions of euros)	Gas & Services					Engineering & Construction	Global Markets & Technologies	Other activities	Reconciliation	Total
	Europe	Americas	Asia Pacific	Middle East and Africa	Sub-total					
Revenue	6,593.1	6,229.7	3,936.2	572.0	17,331.0	473.8	330.0			18,134.8
Inter-segment revenue						*438.8*	*331.9*		*(770.7)*	
Operating income recurring	1,318.7	1,076.4	729.6	114.1	3,238.8	5.1	33.9		(253.9)	3,023.9
incl. depreciation and amortization	*(588.1)*	*(519.2)*	*(355.7)*	*(53.2)*	*(1,516.2)*	*(18.7)*	*(27.6)*		*(24.8)*	*(1,587.3)*
Other non-recurring operating income										451.0
Other non-recurring operating expenses										(415.4)
Net finance costs										(389.1)
Other financial income										17.6
Other financial expenses										(31.6)
Income taxes										(747.4)
Share of profit of associates										6.6
Net profit from continued operations										1,915.6
Net profit from discontinued operations										11.1
Profit for the period										1,926.7
Purchase of intangible assets and property, plant and equipment	(566.4)	(737.2)	(598.6)	(154.6)	(2,056.8)	(15.4)	(104.6)	(13.7)	(68.1)	(2,258.6)

4.3 BALANCE SHEET AS OF DECEMBER 31, 2017

(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	9,900.9	18,290.8	6,657.1	1,563.7	36,412.5	799.0	1,033.1	371.6	38,616.2
Goodwill	3,038.1	8,125.7	1,242.9	98.7	12,505.4	219.7	115.3	-	12,840.4
Intangible assets and property, plant and equipment, net	5,237.4	8,489.7	4,329.9	1,143.9	19,200.9	207.6	475.3	253.2	20,137.0
Other segment assets	1,625.4	1,675.4	1,084.3	321.1	4,706.2	371.7	442.5	118.4	5,638.8
Non-segment assets									2,411.1
Total assets									**41,027.3**
Segment liabilities	2,422.6	1,559.4	916.8	237.7	5,136.5	767.9	303.1	1,027.3	7,234.8
Non-segment liabilities									17,074.1
Equity including minority interests									16,718.4
Total equity and liabilities									**41,027.3**

4.4 BALANCE SHEET AS OF DECEMBER 31, 2016

(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	**10,006.0**	**20,970.7**	**6,969.8**	**1,563.9**	**39,510.4**	**897.8**	**881.2**	**322.8**	**41,612.2**
Goodwill	3,037.7	9,075.9	1,312.4	90.4	13,516.4	252.2	120.9	-	13,889.5
Intangible assets and property, plant and equipment, net	5,412.7	9,949.9	4,631.2	1,149.7	21,143.5	232.0	418.3	209.3	22,003.1
Other segment assets	1,555.6	1,944.9	1,026.2	323.8	4,850.5	413.6	342.0	113.5	5,719.6
Non-segment assets									2,229.8
Assets held for sale									275.8
Total assets									**44,117.8**
Segment liabilities	**2,377.6**	**1,542.5**	**858.1**	**165.4**	**4,943.6**	**807.9**	**267.6**	**1,082.6**	**7,101.7**
Non-segment liabilities									19,710.3
Equity including minority interests									17,125.0
Liabilities held for sale									180.8
Total equity and liabilities									**44,117.8**

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.

4.5 OTHER INFORMATION ON GEOGRAPHICAL AREAS

2017 *(in millions of euros)*	France	Europe excl. France	United States	Americas excl. United States	Asia Pacific	Middle East and Africa	Total
Revenue	2,588.5	4,644.2	7,003.3	1,280.9	4,197.4	635.0	20,349.3
Non-current assets [(a)]	2,315.1	6,856.0	15,193.4	1,730.3	5,688.7	1,322.1	33,105.6
incl. Investments in associates	*18.1*	*10.2*	*8.1*	*0.2*	*12.0*	*79.6*	*128.2*

(a) Excluding non-current financial assets, deferred taxes and non-current derivative assets.

2016 *(in millions of euros)*	France	Europe excl. France	United States	Americas excl. United States	Asia Pacific	Middle East and Africa	Total
Revenue	2,506.7	4,523.9	5,337.2	1,150.2	4,044.1	572.7	18,134.8
Non-current assets [(a)]	1,870.2	7,404.5	17,462.5	1,882.5	6,074.5	1,332.6	36,026.8
incl. Investments in associates	*7.5*	*10.5*	*7.6*	*0.1*	*16.0*	*92.5*	*134.2*

(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 2% of Air Liquide’s revenue.

Note 5 Revenue

In 2017, consolidated revenue amounted to 20,349.3 million euros, up 12.2% compared to 2016. Revenue was up + 13.9% after adjusting for the cumulative impact of foreign exchange fluctuations. The foreign exchange fluctuations essentially stemmed from the depreciation of the US dollar, the Chinese renminbi and the yen against the euro.

Note 6 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.

6.1 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.

6.2 PERSONNEL EXPENSES

(in millions of euros)	**2016**	**2017**
Wages and social security charges	(3,559.5)	(3,998.1)
Defined contribution pension plans	(71.1)	(69.7)
Defined benefit pension plans [(a)]	(2.1)	(36.1)
Share-based payments	(26.7)	(34.4)
TOTAL	**(3,659.4)**	**(4,138.3)**

(a) In 2017, the expense relating to defined benefit plans included a positive effect of settlements, plan amendments and past service cost amounting to +6.3 million euros compared to +35.0 million euros in 2016 (see note 25.2 on employee benefit obligations on page 266).

Fully consolidated companies employed 65,200 individuals as of December 31, 2017 (66,700 individuals as of December 31, 2016), including a decrease of -1,625 individuals relating to changes in the scope of consolidation. In 2016, the headcount includes individuals from discontinued and not disposed operations as of December 31, 2016.

6.3 OTHER OPERATING EXPENSES

Other operating expenses primarily include transport and distribution costs, sub-contracting costs, operating leases and insurance premiums.

6.4 RESEARCH AND DEVELOPMENT EXPENDITURES

In 2017, innovation costs amounted to 292.0 million euros (288.0 million euros in 2016) including Research and Development costs of 184.0 million (202.0 million euros in 2016).

6.5 DEPRECIATION AND AMORTIZATION EXPENSE

(in millions of euros)	**2016**	**2017**
Intangible assets	(149.2)	(173.9)
Property, plant and equipment (PP&E) [(a)]	(1,438.1)	(1,604.0)
TOTAL	**(1,587.3)**	**(1,777.9)**

(a) Including the depreciation expense after deduction of investment grants released to profit.

Note 7 Other non-recurring operating income and expenses

(in millions of euros)	2016	2017
Expenses		
Reorganization, restructuring and realignment programs costs	(60.7)	(73.2)
Acquisition and integration costs related to the acquisition of Airgas	(218.5)	(86.6)
Other acquisition costs	(6.0)	(3.6)
Political risks and legal procedures	-	(68.3)
Impairment of assets	-	(234.1)
Others	(130.2)	(97.5)
TOTAL OTHER NON-RECURRING OPERATING EXPENSES	**(415.4)**	**(563.3)**
Income		
Net gain on the disposals of activities or group of assets	489.0	116.6
Gain on refund of 3% contribution paid	-	103.0
Others	(38.0)	0.2
TOTAL OTHER NON-RECURRING OPERATING INCOME	**451.0**	**219.8**
TOTAL	**35.6**	**(343.5)**

In 2017, the Group recognized:

- a gain related to the refund of the additional 3% contribution on cash dividends for 103.0 million euros described in note 1;
- following a strategic review of its activities and its portfolio of assets in connection with NEOS plan:
  - capital gains on disposals calculated in accordance with IFRS 10 paragraph 25 amounting to 116.6 million euros, including in particular the disposal of Airgas Refrigerants Inc. (United States) on October 10, 2017 and the disposal of the companies Air Liquide Dalian Co., Ltd., Air Liquide Lifen Co., Ltd. et Air Liquide Yichun Co., Ltd. (China) on December 22, 2017,
  - impairment of assets amounting to -234.1 million euros.

In 2016, the Group recognized:

- capital gains on disposals calculated in accordance with IFRS 10 paragraph 25 amounting to 489 million euros, including proceeds of divested assets described in note 2.2.

Note 8 Net finance costs and other financial income and expenses

8.1 NET FINANCE COSTS

(in millions of euros)	2016	2017
Finance costs	(396.5)	(429.0)
Financial income from short-term investments and loans	7.4	7.1
TOTAL	**(389.1)**	**(421.9)**

The average net finance costs stood at 3.2% in 2017 (2.9% in 2016) and is broken down in note 26.5.

Capitalized finance costs amounted to 66.5 million euros in 2017 (52.3 million euros in 2016).

8.2 OTHER FINANCIAL INCOME AND EXPENSES

(in millions of euros)	2016	2017
Other financial income [(a)]	17.6	32.5
TOTAL OTHER FINANCIAL INCOME	**17.6**	**32.5**
Other financial expenses	(6.1)	(76.6)
Interest expense on the net defined benefit liability	(25.5)	(23.4)
TOTAL OTHER FINANCIAL EXPENSES	**(31.6)**	**(100.0)**

(a) In 2017, other financial income include interests on arrears related to the gain following the refund of 3% contribution paid for +15.2 million euros.

Note 9 Income taxes

9.1 INCOME TAX EXPENSE

(in millions of euros)	2016	2017
Current tax		
Income tax expense payable	(697.5)	(541.1)
TOTAL CURRENT TAX	**(697.5)**	**(541.1)**
Deferred tax		
Temporary differences [(a)]	(56.1)	(338.4)
Impact of tax rate changes [(b)]	6.2	672.2
TOTAL DEFERRED TAX	**(49.9)**	**333.8**
TOTAL	**(747.4)**	**(207.3)**

(a) Including in particular, in 2017, the estimates of -140 million euros for tax on accumulated undistributed retained earnings of foreign subsidiaries of US holding companies described in note 1.
(b) Including, in 2017, the gross income related to the US tax reform corresponding to a tax rate change impact of 648.1 million euros as described in note 1.

9.2 RECONCILIATION BETWEEN THE STANDARD TAX RATE AND THE GROUP EFFECTIVE TAX RATE

(in %)	2016	2017
Standard tax rate	**30.6**	**31.2**
Impact of transactions taxed at reduced rates	(2.9)	(2.3)
Impact of tax rate changes [(a)]	(0.2)	(26.6)
Impact of tax exemptions and others [(b)]	0.7	5.9
Group effective tax rate	**28.2**	**8.2**

(a) Including, in 2017, the gross income related to the US tax reform corresponding to a tax rate change impact of 648.1 million euros as described in note 1.
(b) Including in particular, in 2017, the estimates of -140 million euros for tax on accumulated undistributed retained earnings of foreign subsidiaries of US holding companies described in note 1.

The Group effective tax rate is significantly lower than in 2016, mainly due to the US tax reform described in note 1.

In 2017, the recurring effective tax rate (excluding non-recurring events, mainly those described in note 1) would amount to 29.4%.

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 10 Net earnings per share

10.1 BASIC EARNINGS PER SHARE

	2016	2017
Net profit (Group share) attributable to ordinary shareholders of the parent *(in millions of euros)*	1,844.0	2,199.6
Weighted average number of ordinary shares outstanding	397,747,479	426,409,142
Basic earnings per share *(in euros)*	**4.64**	**5.16**

The average number of outstanding ordinary shares and net earnings per share for 2016 include the impact of the free share attribution performed by L'Air Liquide S.A on October 4, 2017.

10.2 DILUTED EARNINGS PER SHARE

	2016	2017
Net profit used to calculate diluted earnings per share *(in millions of euros)*	**1,844.0**	**2,199.6**
Weighted average number of ordinary shares outstanding	397,747,479	426,409,142
Adjustment for dilutive impact of share subscription options	649,339	1,025,656
Adjustment for dilutive impact of performance shares	442,462	710,644
Adjusted weighted average number of shares outstanding used to calculate diluted earnings per share	**398,839,280**	**428,145,442**
Diluted earnings per share *(in euros)*	**4.62**	**5.14**

Diluted earnings per share for the 2016 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 4, 2017.

Instruments that could dilute net profit – Group share, and were not included in the calculation of diluted earnings per share because they are antidilutive over the year, are as follows:

- in 2017, the 2017 share subscription option plans;
- in 2016, the 2016, 2015 and 2014 share subscription option plans.

The Group has not issued any other financial instruments that may result in further dilution of net earnings per share.

Note 11 Dividend per share

The 2016 dividend declared and paid on May 17, 2017 was 1,031.3 million euros (including fidelity premium), corresponding to an ordinary dividend (excluding tax) of 2.60 euros and a fidelity premium of 0.26 euros per share.

A dividend payment of 2.65 euros per ordinary share and a fidelity premium of 0.26 euros per share amouting to 1.162 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, 2017.

Note 12 Goodwill

12.1 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
2016	5,730.2	7,768.1	(63.6)	546.6	(91.8)	13,889.5
2017	**13,889.5**	**197.5**	**(21.6)**	**(1,230.3)**	**5.3**	**12,840.4**

12.2 SIGNIFICANT GOODWILL

	2016	2017		
(in millions of euros)	Net carrying amount	Gross carrying amount	Impairment losses	Net carrying amount
Gas & Services	13,516.4	12,505.5	(0.1)	12,505.4
Europe	*3,037.7*	*3,038.2*	*(0.1)*	*3,038.1*
Americas [(a)]	*9,075.9*	*8,125.7*	-	*8,125.7*
Asia-Pacific	*1,312.4*	*1,242.9*	-	*1,242.9*
Middle East and Africa	*90.4*	*98.7*	-	*98.7*
Engineering & Construction	252.2	219.7	-	219.7
Global Markets & Technologies	120.9	116.7	(1.4)	115.3
TOTAL GOODWILL	**13,889.5**	**12,841.8**	**(1.5)**	**12,840.4**

(a) Goodwill within Gas & Services Americas mainly comes from the United States contributing up to 7,788.7 million euros as of December 31, 2017.

At the beginning of 2017 the Group organization has moved into a network organization. Hubs representing the Group in the main geographies share with the Group's executive committee the responsibility to define the operating strategy of the Group, investment decisions and monitoring of performance for the geographies attached to each hub. Consequently, goodwill of the Gas & Services activity is followed and piloted by geography as detailed in note 1 "segment information" of chapter "Basis for presentation of financial information". The Group has not identified any indications of goodwill impairment loss to record before their aggregation resulting from the implementation of the new organization.

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 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 2% and 3% in mature markets, and up to 5% in emerging markets.

The market multiples used were determined using the Air Liquide Group market value as of December 31, 2017. Multiples obtained do not materially differ from those of companies whose activity is similar to that of the Group.

The weighted average cost of capital used was 4.9% as of December 31, 2017 (5.2% as of December 31, 2016).

The weighted average cost of capital and market multiples are adjusted for the activity and the geographical location of the cash-generating units being tested.

As of December 31, 2017 and December 31, 2016, 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 13 Other intangible assets

13.1 GROSS CARRYING AMOUNTS

2017 *(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	565.7	35.1	(4.0)	(17.3)	-	6.0	585.5
Other intangible assets	2,380.1	45.5	(5.8)	(164.8)	-	10.3	2,265.3
TOTAL GROSS INTANGIBLE ASSETS	**2,945.8**	**80.6**	**(9.8)**	**(182.1)**	**-**	**16.3**	**2,850.8**

(a) Other movements primarily include account reclassifications and changes in the scope of consolidation.

2016 *(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	436.2	67.5	(29.9)	7.2	78.7	6.0	565.7
Other intangible assets	1,394.6	47.2	(18.3)	63.3	970.2	(76.9)	2,380.1
TOTAL GROSS INTANGIBLE ASSETS	**1,830.8**	**114.7**	**(48.2)**	**70.5**	**1,048.9**	**(70.9)**	**2,945.8**

(a) Other movements primarily include account reclassifications and changes in the scope of consolidation.

13.2 AMORTIZATION AND IMPAIRMENT LOSSES

2017 *(in millions of euros)*	As of January 1	Charge for the period	Impairment losses [(b)]	Disposals	Foreign exchange differences	Acquisitions related to business combinations	Other movements [(a)]	As of December 31
Internally generated intangible assets	(285.9)	(39.4)	(38.7)	4.0	3.4	-	(1.6)	(358.2)
Other intangible assets	(772.5)	(134.5)	(20.5)	10.9	27.0	-	8.1	(881.5)
TOTAL INTANGIBLE ASSET AMORTIZATION	**(1,058.4)**	**(173.9)**	**(59.2)**	**14.9**	**30.4**	**-**	**6.5**	**(1,239.7)**
TOTAL NET INTANGIBLE ASSETS [(c)]	**1,887.4**	**(93.3)**	**(59.2)**	**5.1**	**(151.7)**	**-**	**22.8**	**1,611.1**

(a) Other movements primarily include account reclassifications and changes in the scope of consolidation.
(b) Following a strategic review of its activities and its portfolio of assets in connection with NEOS plan, the Group has recorded impairment of assets as described in note 7.
(c) Other net intangible assets mainly include the Airgas trademark for 468.2 million euros as of December 31, 2017.

2016 *(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	(258.7)	(35.3)	-	5.7	(0.4)	-	2.8	(285.9)
Other intangible assets	(723.0)	(113.9)	(0.1)	10.5	(0.5)	-	54.5	(772.5)
TOTAL INTANGIBLE ASSET AMORTIZATION	**(981.7)**	**(149.2)**	**(0.1)**	**16.2**	**(0.9)**	**-**	**57.3**	**(1,058.4)**
TOTAL NET INTANGIBLE ASSETS [(b)]	**849.1**	**(34.5)**	**(0.1)**	**(32.0)**	**69.6**	**1,048.9**	**(13.6)**	**1,887.4**

(a) *Other movements primarily include account reclassifications and changes in the scope of consolidation.*
(b) *Other net intangible assets mainly include the Airgas trademark for 561,4 million euros as of December 31, 2016.*

As of December 31, 2017, 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 14 Property, plant and equipment

14.1 GROSS CARRYING AMOUNTS

2017 *(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	482.9	3.4	(16.9)	(41.5)	4.2	11.7	443.8
Buildings	1,938.8	39.5	(18.1)	(137.4)	0.9	72.9	1,896.6
Equipment, cylinders, installations	33,856.6	541.2	(239.3)	(2,165.6)	(99.1)	1,611.9	33,505.7
TOTAL PROPERTY, PLANT AND EQUIPMENT IN SERVICE	**36,278.3**	**584.1**	**(274.3)**	**(2,344.5)**	**(94.0)**	**1,696.5**	**35,846.1**
Construction in progress	2,785.1	1,532.5	-	(191.0)	1.6	(2,070.8)	2,057.4
TOTAL PROPERTY, PLANT AND EQUIPMENT	**39,063.4**	**2,116.6**	**(274.3)**	**(2,535.5)**	**(92.4)**	**(374.3)**	**37,903.5**

(a) *Other movements primarily include account reclassifications and changes in the scope of consolidation.*

2016 *(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	307.0	2.4	(15.6)	20.4	186.5	(17.8)	482.9
Buildings	1,512.0	32.7	(31.8)	42.4	443.9	(60.4)	1,938.8
Equipment, cylinders, installations	29,476.2	452.2	(488.2)	691.4	2,892.9	832.1	33,856.6
TOTAL PROPERTY, PLANT AND EQUIPMENT IN SERVICE	**31,295.2**	**487.3**	**(535.6)**	**754.2**	**3,523.3**	**753.9**	**36,278.3**
Construction in progress	2,455.9	1,663.6	-	25.2	114.6	(1,474.2)	2,785.1
TOTAL PROPERTY, PLANT AND EQUIPMENT	**33,751.1**	**2,150.9**	**(535.6)**	**779.4**	**3,637.9**	**(720.3)**	**39,063.4**

(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 in the fiscal year.

14.2 DEPRECIATION AND IMPAIRMENT LOSSES

2017 *(in millions of euros)*	As of January 1	Charge for the period	Impairment losses [b]	Disposals	Foreign exchange differences	Acquisitions related to business combinations	Other movements [a]	As of December 31
Buildings	(877.9)	(83.2)	-	7.3	47.8	-	(7.4)	(913.4)
Equipment, cylinders, installations	(18,069.8)	(1,532.1)	(82.2)	115.3	1,013.8	-	90.8	(18,464.2)
TOTAL PROPERTY, PLANT AND EQUIPMENT DEPRECIATION	**(18,947.7)**	**(1,615.3)**	**(82.2)**	**122.6**	**1,061.6**	**-**	**83.4**	**(19,377.6)**
TOTAL PROPERTY, PLANT AND EQUIPMENT, NET	**20,115.7**	**501.3**	**(82.2)**	**(151.7)**	**(1,473.9)**	**(92.4)**	**(290.9)**	**18,525.9**

(a) *Other movements primarily include account reclassifications and changes in the scope of consolidation.*
(b) *Following a strategic review of its activities and its portfolio of assets in connection with NEOS plan, the Group recorded impairment losses on assets as described in note 7.*

2016 *(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	(888.8)	(69.2)	-	26.3	(13.4)	-	67.2	(877.9)
Equipment, cylinders, installations	(17,156.0)	(1,379.5)	(0.9)	395.4	(330.7)	(0.1)	402.0	(18,069.8)
TOTAL PROPERTY, PLANT AND EQUIPMENT DEPRECIATION	**(18,044.8)**	**(1,448.7)**	**(0.9)**	**421.7**	**(344.1)**	**(0.1)**	**469.2**	**(18,947.7)**
TOTAL PROPERTY, PLANT AND EQUIPMENT, NET	**15,706.3**	**702.2**	**(0.9)**	**(113.9)**	**435.3**	**3,637.8**	**(251.1)**	**20,115.7**

(a) *Other movements primarily include 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.

14.3 FINANCE LEASES

These agreements mainly relate to office or industrial buildings, vehicle trailers and other industrial equipment as well as information technology hardware.

The present value of minimum lease payments for leased assets is recorded in the balance sheet under “Property, plant and equipment”. The breakdown is as follows:

	2016		**2017**	
(in millions of euros)	Minimum lease payments	Present value of minimum lease payments	Minimum lease payments	Present value of minimum lease payments
Less than 1 year	8	8	7	7
1 to 5 years	12	10	10	8
More than 5 years	1	1	1	1
Total minimum lease payments	**21**	**19**	**18**	**16**
Less impact of discounting (financial expenses)	(2)		(2)	
Present value of minimum lease payments	**19**		**16**	

Note 15 Non-current financial assets

(in millions of euros)	2016	2017
Available-for-sale financial assets	157.3	146.1
Loans	74.6	51.3
Other long-term receivables	347.8	340.4
Employee benefits – prepaid expenses	4.3	3.8
NON-CURRENT FINANCIAL ASSETS	**584.0**	**541.6**

As of December 31, 2017, 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 68.6 million euros (compared to 66.6 million euros as of December 31, 2016). 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.

Financial covenants were associated to a long-term loan used by Air Liquide Yenakievo (Ukraine) with an outstanding amount of 81 million euros as of December 31, 2016. In order to cope with the consequences of the political environment in the Dombass area (Ukraine) for Air Liquide Yenakievo, and after signing a first amendment in 2014, Air Liquide entered into negotiations with the lending institution and issued a Notification of Political Risk Event. The parent company was consequently discharged from its obligations as guarantor.

The DNR – self-proclaimed Donetsk People's Republic – exercizes effective control over certain areas of the Dombass Region, including the city of Yenakievo. Due to the ongoing armed conflict and the blockade of railway connections with these areas controlled by DNR, the main customer of Air Liquide Yenakievo, JSCEMZ, a subsidiary of the Metinvest Group, stopped its production activities on February 20, 2017. This event led to full stop of ALY's production unit that is located on the territory of JSCEMZ and produces exclusively for this customer.

On March 2, 2017, the DNR announced having placed JSCEMZ and ALY, amongst others, under temporary administration. On March 3, 2017, Air Liquide officially announced that the Group was no longer able to continue its remaining activities in that region.

Consequently, Air Liquide has lost control over its subsidiary and ALY is no longer consolidated. The Group's residual investment, net of the impairment loss recorded, is reported in non-current financial assets as of December 31, 2017. The Group factored in all contractual features available to determine the impairment loss.

Note 16 Investments in associates

16.1 FINANCIAL INFORMATION RELATED TO JOINT VENTURES AND ASSOCIATES

Group share of associates and joint ventures as of December 31, 2017 *(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	6.8	92.9	4.8
Associates	(1.6)	35.3	13.8
TOTAL	**5.2**	**128.2**	**18.6**

(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, 2016 *(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	97.9	15.0
Associates	(2.5)	36.3	16.2
TOTAL	**6.6**	**134.2**	**31.2**

(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.

16.2 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
2016	115.9	6.6	(6.6)	3.6	14.7	134.2
2017	**134.2**	**5.2**	**(4.7)**	**(12.6)**	**6.1**	**128.2**

None of the consolidated companies using the equity method of accounting is individually material.

Note 17 Deferred taxes

In 2016 and 2017, the main bases for deferred taxes are as follows:

- non-current assets;
- provisions, pensions and other employee benefits;
- other provisions;
- tax loss carryforwards.

Movements in deferred tax assets and liabilities during the period are as follows:

17.1 DEFERRED TAX ASSETS

(in millions of euros)	2016	2017
AS OF JANUARY 1	**235.2**	**181.9**
Income (charge) to the income statement	(26.9)	(3.2)
Income (charge) to equity for the period [a]	(15.5)	9.3
Changes related to business combinations	5.9	1.6
Foreign exchange differences	(15.3)	89.7
Others [b]	(1.5)	(20.9)
AS OF DECEMBER 31	**181.9**	**258.4**

(a) Relates to deferred taxes recognized in other items in the statement of net income and gains and losses recognized directly in equity: 7.2 million euros relate to changes in the fair value of derivatives and 2.1 million euros relate to actuarial gains and losses. In 2016, the respective effects amounted to -2.1 million euros relating to changes in the fair value of derivatives and -13.4 million euros relating to actuarial gains and losses.

(b) Other movements primarily include account reclassifications between accounts and changes in the scope of consolidation.

17.2 DEFERRED TAX LIABILITIES

(in millions of euros)	2016	2017
AS OF JANUARY 1	**1,321.8**	**2,378.2**
Charge (income) to the income statement [c]	23.0	(335.6)
Charge (income) to equity for the period [a]	(44.0)	27.1
Changes related to business combinations	986.2	(77.3)
Foreign exchange differences	97.7	(209.1)
Others [b]	(6.5)	24.4
AS OF DECEMBER 31	**2,378.2**	**1,807.7**

(a) Relates to deferred taxes recognized in other items in the statement of net income and gains and losses recognized directly in equity: -19.5 million euros relate to changes in the fair value of derivatives and 46.6 million euros relate to actuarial gains and losses. In 2016 the respective effects amounted to -4.7 million euros relating to changes in the fair value of derivatives and -39.3 million euros relating to actuarial gains and losses.

(b) Other movements primarily result from changes in scope of consolidation (disposals).

(c) Mainly related to the US tax reform described in Note 1.

As of December 31, 2017, unrecognized deferred tax assets amounted to 77.8 million euros (59 million euros as of December 31, 2016).

Note 18 Inventories and work-in-progress

(in millions of euros)	2016	2017
Raw materials and supplies	268.6	300.3
Finished and semi-finished goods	986.0	953.9
Work-in-progress	68.5	79.5
NET INVENTORIES	**1,323.1**	**1,333.7**

(in millions of euros)	2016	2017
Write-down of inventories	(23.8)	(39.8)
Reversals of write-down	9.2	22.8
NET WRITE-DOWN RECOGNIZED IN THE INCOME STATEMENT	**(14.6)**	**(17.0)**

Note 19 Trade receivables

(in millions of euros)	2016	2017
Trade and other operating receivables	3,280.6	3,082.0
Allowance for doubtful receivables	(165.6)	(182.0)
TRADE RECEIVABLES	**3,115.0**	**2,900.0**

Trade and other operating receivables include gross amounts relating to Engineering & Construction contracts for 191.7 million euros (218.7 million euros as of December 31, 2016).

As of December 31, 2017, 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 to 1,857.6 million euros and 1,789.7 million euros respectively.

As of December 31, 2016, 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 to 2,490.8 million euros and 2,373.1 million euros respectively.

19.1 BREAKDOWN OF TRADE AND OTHER OPERATING RECEIVABLES

(in millions of euros)	Gross carrying amount	Not yet due	Impaired and overdue	Not impaired and overdue
2016	3,280.6	2,336.2	162.3	782.1
2017	**3,082.0**	**2,190.5**	**166.6**	**724.9**

Trade receivables overdue and not impaired at the year-end mainly included receivables due within three months (72.8% in 2017, 75.9% in 2016). The decision for not impairing overdue receivable balances arises from a detailed analysis of the associated risks.

Trade receivables overdue by more than three months and not impaired mainly relate to public sector customers in the Healthcare segment whose credit risk is deemed to be low.

Non-recourse factoring of receivables is described in note 26.

19.2 ALLOWANCE FOR DOUBTFUL RECEIVABLES

(in millions of euros)	As of January 1	Charges	Reversals	Foreign exchange differences	Other movements	As of December 31
2016	(156.9)	(70.0)	45.7	(0.3)	15.9	(165.6)
2017	**(165.6)**	**(60.9)**	**39.2**	**7.8**	**(2.5)**	**(182.0)**

Note 20 Working capital requirement

The decrease in the working capital requirement for 188.3 million euros, presented in the consolidated cash flow statement, mainly comes from:

- movements in current tax payables and receivables contributing to the decrease for 156.0 million euros;
- the decrease of 60.1 and 45.2 million euros in the working capital requirement of the Gas & Services and Engineering & Construction activities respectively;
- offset by the decrease in the working capital of Global Markets & Technologies activity of 56.8 million euros.

Note 21 Other current assets

(in millions of euros)	2016	2017
Advances and down-payments made	170.1	199.1
Prepaid expenses	129.7	119.9
Other sundry current assets	397.7	544.5
OTHER CURRENT ASSETS	**697.5**	**863.5**

Note 22 Cash and cash equivalents

(in millions of euros)	2016	2017
Short-term loans	59.0	34.2
Short-term marketable securities	397.0	196.8
Cash in bank	1,067.0	1,425.1
CASH AND CASH EQUIVALENTS	**1,523.0**	**1,656.1**

As of December 31, 2017, cash and cash equivalents comprised 108 million euros subject to restrictions (100 million euros as of December 31, 2016), mainly in three countries: in China (in particular contractual restrictions as part of a loan to our partner in a joint venture), in Luxembourg (regulatory restrictions relating to the Group's captive reinsurance company) and in Egypt (because of effective currency restrictions).

Furthermore, 17 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 35 million euros as of December 31, 2016.

Note 23 Shareholders' equity

23.1 SHARES

Number of shares

	2016	2017
NUMBER OF SHARES AS OF JANUARY 1	**344,163,001**	**388,875,761**
Free share attribution		39,814,353
Capital increase with preferential subscription rights	43,202,209	
Capital increase reserved for employees	999,143	
Options exercised during the period	511,408	807,436
Cancelation of treasury shares		(1,100,000)
NUMBER OF SHARES AS OF DECEMBER 31	**388,875,761**	**428,397,550**

Shares have a par value of 5.50 euros each and are all issued and fully paid-up.

In 2017, a total of 1,506,686 shares were repurchased (net of disposals), of which 1,504,750 before the attribution of free shares and 1,936 shares after the attribution of free shares.

23.2 FREE SHARE ATTRIBUTION

Benoît Potier as Chief Executive Officer and under the authority conferred to him by the Board of Directors of July 27,2017, decided, on October 4, 2017, to create 38,823,849 new shares at a par value of 5.50 euros and ranking for dividends as of January 1, 2017. 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, 990,504 new shares were created at a par value of 5.50 euros and ranking for dividends as of January 1, 2017. These shares were granted as free shares to shareholders at the parity of one share for one hundred existing shares on October 4, 2017 by capitalization of premiums. The shares subject to this additional free share attribution are the shares held in registered form continuously from December 31, 2014 to September 29, 2017 inclusive.

23.3 CAPITAL DECREASE

Under the authority of the 12th resolution adopted by the Annual General Meeting held on May 3, 2017, the Board of Directors of May 3, 2017, carried out the capital decrease of 6,050,000 euros to bring the capital back from 2,138,941,915 euros to 2,132,891,915 euros by canceling 1,100,000 shares.

23.4 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, 2017, the Group held 1,665,698 treasury shares (1,222,408 as of December 31, 2016), including 8,000 treasury shares under a liquidity contract (750 as of December 31, 2016). Changes in the number of treasury shares are explained on pages 227 and 228 (in the consolidated statement of changes in equity).

23.5 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 closing market price over the 20 trading days preceding the grant date. Options granted between March 21, 2005 and June 28, 2010 inclusive must be exercised within eight years and options granted since October 14, 2011 must be exercised within 10 years.

A four-year vesting period applies to stock options granted.

On September 20, 2017, the Board of Directors consented to grant 73,540 stock options (204 beneficiaries) exercisable between September 20, 2021 and September 19, 2027, at a purchase price of 104.00 euros.

As of December 31, 2017, the number of outstanding share options granted by the Board of Directors under the plans approved by Annual General Meetings amounted to 3,787,066 options after adjustment (average price of 79.04 euros), or 0.9% of share capital, of which 723,092 options (average price of 76.88 euros) were granted to corporate officers present as of December 31, 2017.

Out of the total number of options issued pursuant to the approval by the Annual General Meeting on May 12, 2016, 8,351,171 options were retained for possible grant by the Board of Directors as of December 31, 2017.

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 19th resolution adopted by the Extraordinary Annual General Meeting held on May 12, 2016 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 0.15% 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 20, 2017 ("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 (see pages 322 and 346 for the minutes of the 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 20, 2017, the Board of Directors decided to grant 416,579 performance shares to employees (1,832 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. They are described in the attribution of performance shares to employees summary table on page 214;

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 2017, 7,160 options were granted to the ten employees of the Company and its subsidiaries (excluding corporate officers), who were attributed the highest number of options.

Options exercised in 2017 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)]
2009	51,248	48.72
2010	45,786	61.68
2011	20,166	65.27
2012	19,702	80.38
2013	21,961	83.60
2014	4,424	94.45
2015	2,671	102.24
TOTAL	**165,958**	**64.76**

(a) Historical data.

Options exercised in 2016 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)]
2008	40,666	64.66
2009	41,799	49.88
2010	10,597	68.09
2011	48,733	71.54
TOTAL	**141,795**	**62.92**

(a) Historical data.

Number of share subscription options and weighted average strike price

	2016		2017	
	Options [(a)]	Weighted average strike price *(in euros)*	Options [(a)]	Weighted average strike price *(in euros)*
Total number of options outstanding as of January 1 *(adjusted number and price)*	**5,155,786**	**74.92**	**4,691,455**	**76.31**
Options granted during the period *(adjusted number and price)*	157,862	84.34	81,184	94.32
Options exercized during the period *(adjusted number and price)*	526,316	63.80	807,436	64.25
Options canceled during the period *(adjusted number and price)*	95,877	83.39	178,137	93.96
Total number of options as of December 31 *(adjusted number and price)*	**4,691,455**	**76.31**	**3,787,066**	**79.04**
Of which total number of options eligible for exercize	***2,202,303***	***65.55***	***2,268,824***	***72.82***

(a) The total number of outstanding options at the beginning of the period was adjusted following the capital increase in cash.

Information on the fair value of share subscription options and attribution of performance shares

Share subscription options

	2016	2017
	Plan 1 [b]	Plan 1 [b]
	11/29/2016	09/20/2017
Duration of the option	10 years	10 years
Fair value of the option *(in euros)*	10.32 [a]	18.39 [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.

Attribution of performance shares

The achievement of the Group's performance requirement is not considered as an underlying assumption and was deemed to have been fully achieved at the valuation date.

	2016		2016		2017	
	Plan 1 [c]		Plan 2 [c]		Plan 1 [c]	
	07/29/2016		11/29/2016		09/20/2017	
Duration of performance shares	5 years	4 years	5 years	4 years	5 years	4 years
Fair value of performance shares *(in euros)*	74.74 [a]	70.84 [b]	71.65 [a]	67.97 [b]	93.16 [a]	89.38 [b]

(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) 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 34.4 million euros (excluding taxes) relating to share subscription options and the attribution of performance shares was recognized in the income statement in 2017 compared to 26.7 million euros in 2016. The corresponding entry is recorded in equity.

Note 24 Provisions, pensions and other employee benefits

2017 *(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	1,771.8	59.4	(111.1)		41.2	(25.9)	4.4	(0.3)	1,739.5
Restructuring plans	18.6	29.8	(14.1)	(0.2)		(0.2)		9.3	43.2
Guarantees and other provisions related to engineering contracts	58.6	40.7	(21.0)	(16.2)		(1.0)		(0.9)	60.2
Dismantling	235.0		(4.9)	(4.4)	7.3	(9.3)	(14.1)	12.5	222.1
Provisions and contingent liabilities as part of a business combination	303.1		(39.0)	(4.0)	0.9	(37.8)	56.6		279.8
Other provisions	484.8	303.3	(123.9)	(45.8)		(20.5)	3.6	(20.3)	581.2
TOTAL PROVISIONS	**2,871.9**	**433.2**	**(314.0)**	**(70.6)**	**49.4**	**(94.7)**	**50.5**	**0.3**	**2,926.0**

(a) Other movements correspond to account reclassifications, disposals and provisions for dismantling, with no impact on the consolidated cash flow statement.

2016 *(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	1,749.9	2.7	(119.7)		175.8	9.3	16.9	(63.1)	1,771.8
Restructuring plans	31.1	11.9	(10.9)	(1.0)		0.1		(12.6)	18.6
Guarantees and other provisions related to engineering contracts	94.1	57.8	(75.1)	(19.4)		(0.4)		1.6	58.6
Dismantling	221.9		(1.7)	(5.7)	7.5	4.6	20.3	(11.9)	235.0
Provisions and contingent liabilities as part of a business combination			(10.9)			15.4	298.6		303.1
Other provisions	287.4	213.8	(53.2)	(34.1)		10.9	63.5	(3.5)	484.8
TOTAL PROVISIONS	**2,384.4**	**286.2**	**(271.5)**	**(60.2)**	**183.3**	**39.9**	**399.3**	**(89.5)**	**2,871.9**

(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 176.4 million euros as of December 31, 2017 (145 million euros as of December 31, 2016) and are presented in "Other provisions". They include provisions for industrial disputes and for tax risks respectively for 109.5 and 66.9 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 25 Employee benefit obligations

25.1 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.

IAS 19 "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 10 million dollars.

25.2 OBLIGATIONS

Group obligations related to pension plans and similar benefits as of December 31, 2017 are shown below:

2017 *(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	(1,541.3)	(160.2)	(22.4)	(43.6)	(1,767.5)
(Acquisition) divestiture / transfer	(3.2)	1.0	(5.5)		(7.7)
(Expense) income recognized	(49.3)	(10.7)	1.8	(1.3)	(59.5)
Employer contributions	107.2	6.0	1.8	2.8	117.8
Gains (losses) for the period	(42.8)	(2.7)		1.1	(44.4)
Exchange rate movements	24.2	0.6	0.1	0.8	25.7
Net liabilities at the end of the period	**(1,505.2)**	**(166.0)**	**(24.2)**	**(40.2)**	**(1,735.6)**
B. Expense recorded in 2017					
Service cost	31.5	9.0	1.9	0.5	42.9
Interest expense on the net defined benefit liability	20.1	2.1	0.3	0.9	23.4
Past service cost	(0.2)	(0.3)	(3.5)		(4.0) [(a)]
Actuarial (gains) losses			(0.5)		(0.5)
Curtailment / settlement	(2.1)	(0.1)		(0.1)	(2.3) [(a)]
Expense (income) recognized	**49.3**	**10.7**	**(1.8)**	**1.3**	**59.5**
C. Change in present value of obligations in 2017					
DBO at the beginning of the period	2,744.0	160.6	22.5	43.7	2,970.8
Acquisition (divestiture) / transfer	3.5	(1.0)	5.5		8.0
Service cost	31.5	9.0	1.9	0.5	42.9
Interest cost	46.5	2.0	0.4	0.8	49.7
Employee contributions	2.3				2.3
Plan amendments	(0.1)	(0.2)	(3.5)	(0.1)	(3.9) [(a)]
Curtailment / settlement	(25.8)	(0.1)		(0.1)	(26.0) [(a)]
Benefit payments	(163.0)	(6.0)	(1.9)	(2.6)	(173.5)
Actuarial (gains) losses	120.0	2.7	(0.5)	(1.1)	121.1
Exchange rate movements	(134.9)	(0.7)	(0.1)	(0.8)	(136.5)
Obligations at the end of the period	**2,624.0**	**166.3**	**24.3**	**40.3**	**2,854.9**
D. Change in plan assets in 2017					
Fair value of assets at the beginning of the period	1,202.7	0.4	0.1	0.1	1,203.3
Acquisition (divestiture) / transfer	0.3				0.3
Actual return on plan assets	113.8				113.8
Employer contributions	89.1	5.9	1.9	2.8	99.7
Employee contributions	2.3				2.3
Benefit payments	(144.7)	(5.9)	(1.9)	(2.8)	(155.3)
Settlement	(23.7)				(23.7)
Exchange rate movements	(110.7)	(0.1)			(110.8)
Fair value of assets at the end of the period	**1,129.1**	**0.3**	**0.1**	**0.1**	**1,129.6**
E. Funded status at the end of 2017					
Present value of obligations	(2,624.0)	(166.3)	(24.3)	(40.3)	(2,854.9)
Fair value of plan assets	1,129.1	0.3	0.1	0.1	1,129.6
Surplus management reserve	(10.3)				(10.3)
Net liabilities	**(1,505.2)**	**(166.0)**	**(24.2)**	**(40.2)**	**(1,735.6)**
F. Actuarial (gains) and losses recognized directly in equity					
Gains) and losses at the beginning of the period	1,246.6	34.6		6.7	1,287.9
Acquisition (divestiture) / transfer	(56.3)				(56.3)
(Gains) and losses on obligations	120.0	2.7		(1.1)	121.6
(Gains) and losses on plan assets	(87.5)				(87.5)
Change in surplus management reserve	10.3				10.3
Exchange rate movements	(58.3)	(0.6)		0.6	(58.3)
(Gains) and losses at the end of the period [(b)]	**1,174.8**	**36.7**		**6.2**	**1,217.7**

(a) Past service costs and plan amendments mainly relate to pension plans and medical costs in the US and in Switzerland.
(b) Losses (gains), net of tax, recognized in equity, amounted to 890,1 million euros as of December 31, 2017

Group obligations related to pension plans and similar benefits as of December 31, 2016 are shown below:

2016 *(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	(1,502.8)	(171.4)	(22.9)	(46.4)	(1,743.5)
(Acquisition) divestiture / transfer	33.5	10.2	0.7	0.1	44.5
(Expense) income recognized	(15.0)	(10.8)	(1.8)		(27.6)
Employer contributions	110.7	6.4	1.6	2.9	121.6
Gains (losses) for the period	(158.2)	4.5		0.9	(152.8)
Exchange rate movements	(9.5)	0.9		(1.1)	(9.7)
Net liabilities at the end of the period	**(1,541.3)**	**(160.2)**	**(22.4)**	**(43.6)**	**(1,767.5)**
B. Expense recorded in 2016					
Service cost	26.4	8.4	1.6	0.8	37.2
Interest expense on the net defined benefit liability	21.6	2.4	0.3	1.2	25.5
Past service cost	(4.2)			(2.0)	(6.2) [(a)]
Actuarial (gains) losses			(0.1)		(0.1)
Curtailment / settlement	(28.8)				(28.8) [(a)]
Expense (income) recognized	**15.0**	**10.8**	**1.8**		**27.6**
C. Change in present value of obligations in 2016					
DBO at the beginning of the period	2,698.8	173.5	23.0	46.5	2,941.8
Acquisition (divestiture) / transfer	(64.2)	(11.4)	(0.7)	(0.1)	(76.4)
Service cost	26.4	8.4	1.6	0.8	37.2
Interest cost	49.7	2.4	0.3	1.2	53.6
Employee contributions	2.5				2.5
Plan amendments	(4.2)			(2.0)	(6.2) [(a)]
Curtailment / settlement	(28.8)				(28.8) [(a)]
Benefit payments	(167.9)	(6.5)	(1.6)	(2.9)	(178.9)
Actuarial (gains) losses	199.8	(4.8)	(0.1)	(0.9)	194.0
Exchange rate movements	31.9	(1.0)		1.1	32.0
Obligations at the end of the period	**2,744.0**	**160.6**	**22.5**	**43.7**	**2,970.8**
D. Change in plan assets in 2016					
Fair value of assets at the beginning of the period	1,196.0	2.1	0.1	0.1	1,198.3
Acquisition (divestiture) / transfer	(30.7)	(1.2)			(31.9)
Actual return on plan assets	69.7	(0.3)			69.4
Employer contributions	93.6	6.3	1.5	2.9	104.3
Employee contributions	2.5				2.5
Benefit payments	(150.8)	(6.4)	(1.5)	(2.9)	(161.6)
Exchange rate movements	22.4	(0.1)			22.3
Fair value of assets at the end of the period	**1,202.7**	**0.4**	**0.1**	**0.1**	**1,203.3**
E. Funded status at the end of 2016					
Present value of obligations	(2,744.0)	(160.6)	(22.5)	(43.7)	(2,970.8)
Fair value of plan assets	1,202.7	0.4	0.1	0.1	1,203.3
Net liabilities	**(1,541.3)**	**(160.2)**	**(22.4)**	**(43.6)**	**(1,767.5)**
F. Actuarial (gains) and losses recognized directly in equity					
(Gains) and losses at the beginning of the period	1,032.7	39.3		7.2	1,079.2
Acquisition (divestiture) / transfer	33.9				33.9
(Gains) and losses on obligations	203.0	(4.0)		(0.9)	198.1
(Gains) and losses on plan assets	(41.6)	0.3			(41.3)
Exchange rate movements	18.6	(1.0)		0.4	18.0
(Gains) and losses at the end of the period [(b)]	**1,246.6**	**34.6**		**6.7**	**1,287.9**

(a) Past service costs and plan amendments mainly relate to pension plans and medical costs in the US.
(b) Losses (gains), net of tax, recognized in equity, amounted to 859 million euros as of December 31, 2016.

The amounts mentioned above can be broken down as follows by geographical area as of December 31, 2017:

2017 *(in millions of euros)*	Obligations	Plan assets	Provisions in the balance sheet	Surplus management reserve
Europe / Africa	(1,875)	359	(1,526)	10
Americas	(902)	712	(190)	-
Asia-Pacific	(78)	58	(20)	-
TOTAL	**(2,855)**	**1,129**	**(1,736)**	**10**

The amounts mentioned above can be broken down as follows by geographical area as of December 31, 2016:

2016 *(in millions of euros)*	Obligations	Plan assets	Provisions in the balance sheet
Europe / Africa	(1,922)	373	(1,549)
Americas	(958)	767	(191)
Asia-Pacific	(91)	63	(28)
TOTAL	**(2,971)**	**1,203**	**(1,768)**

25.3 MAIN ASSUMPTIONS

The main discount rates used are as follows:

	2016	2017
Euro zone	1.6%	1.6%
Canada	3.8%	3.5%
Japan	0.4%	0.4%
Switzerland	0.7%	0.6%
United States	4.1%	3.6%
United Kingdom	2.6%	2.5%

Differences between expected returns on plan assets and the main discount rates are as follows:

2017	Expected return on assets (a)	Discount rate 2016	Impact *(in bp)*
Euro zone	3.0%	1.6%	(140)
Canada	4.8%	3.8%	(100)
Japan	3.0%	0.4%	(265)
Switzerland	3.5%	0.7%	(285)
United States	6.0%	4.1%	(190)
United Kingdom	5.4%	2.6%	(285)

(a) The expected return on long-term assets was determined by taking into account, in each country, the asset allocation in the portfolio.

2016	Expected return on assets (a)	Discount rate 2015	Impact *(in bp)*
Euro zone	3.0%	2.0%	(100)
Canada	4.9%	4.0%	(85)
Japan	3.0%	0.8%	(215)
Switzerland	3.5%	0.8%	(270)
United States	6.2%	4.3%	(195)
United Kingdom	5.4%	3.7%	(170)

(a) The expected return on long-term assets was determined by taking into account, in each country, the asset allocation in the portfolio.

25.4 BREAKDOWN OF GAINS AND LOSSES FOR THE PERIOD

(in millions of euros)	2016	2017
Experience gains and losses on present value of the obligation	8	(6)
Gains and losses on present value of the defined obligation related to changes in assumptions	(206)	(115)
Experience gains and losses on fair value of assets	41	88

Breakdown of experience gains and losses on financial assets

2017 *(in millions of euros)*	Interest income on financial assets	Actual return on assets	Gains and losses on assets
Europe / Africa	4.1	29.6	25.5
Americas	21.8	79.3	57.5
Asia-Pacific	0.4	4.9	4.5
TOTAL	**26.3**	**113.8**	**87.5**

2016 *(in millions of euros)*	Interest income on financial assets	Actual return on assets	Gains and losses on assets
Europe / Africa	5.0	21.2	16.2
Americas	22.4	50.3	27.9
Asia-Pacific	0.7	(2.1)	(2.8)
TOTAL	**28.1**	**69.4**	**41.3**

25.5 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, 2017 *(in millions of euros)*	% of total obligations as of December 31, 2017
Europe / Africa	65	3.5%
Americas	30	3.3%
Asia-Pacific	1	1.7%
TOTAL	**96**	**3.4%**

	Impact on obligations as of December 31, 2016 *(in millions of euros)*	% of total obligations as of December 31, 2016
Europe / Africa	65	3.3%
Americas	33	3.5%
Asia-Pacific	2	2.2%
TOTAL	**100**	**3.4%**

Impact of a +0.25% increase in discount rates

	Impact on obligations as of December 31, 2017 *(in millions of euros)*	% of total obligations as of December 31, 2017
Europe / Africa	(62)	-3.3%
Americas	(29)	-3.2%
Asia-Pacific	(1)	-1.6%
TOTAL	**(92)**	**-3.2%**

	Impact on obligations as of December 31, 2016 *(in millions of euros)*	% of total obligations as of December 31, 2016
Europe / Africa	(63)	-3.2%
Americas	(32)	-3.4%
Asia-Pacific	(2)	-2.1%
TOTAL	**(97)**	**-3.3%**

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.

	Shares		Bonds		Real estate		Cash		Others		Total	
2017	Amounts	%	Amounts	%	Amounts	%	Amounts	%	Amounts	%	Amounts	%
Europe / Africa	109	30.3%	147	41.0%	72	20.1%	8	2.2%	23	6.4%	359	100.0%
Americas	214	30.1%	413	58.0%	27	3.8%	3	0.4%	55	7.7%	712	100.0%
Asia-Pacific	23	39.7%	30	51.7%	1	1.7%	1	1.7%	3	5.2%	58	100.0%
TOTAL	**346**		**590**		**100**		**12**		**81**		**1,129**	

	Shares		Bonds		Real estate		Cash		Others		Total	
2016	Amounts	%	Amounts	%	Amounts	%	Amounts	%	Amounts	%	Amounts	%
Europe / Africa	137	36.6%	128	34.5%	80	21.4%	10	2.7%	18	4.8%	373	100.0%
Americas	235	30.7%	440	57.3%	27	3.5%	3	0.4%	62	8.1%	767	100.0%
Asia-Pacific	22	34.9%	36	57.1%					5	8.0%	63	100.0%
TOTAL	**394**		**604**		**107**		**13**		**85**		**1,203**	

Note 26 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 27.

Net indebtedness calculation

(in millions of euros)	December 31, 2016	December 31, 2017
Non-current borrowings	(14,890.1)	(12,522.4)
Current borrowings	(2,001.0)	(2,504.6)
TOTAL GROSS INDEBTEDNESS	**(16,891.1)**	**(15,027.0)**
Cash and cash equivalents	**1,523.0**	**1,656.1**
TOTAL NET INDEBTEDNESS AT THE END OF THE PERIOD	**(15,368.1)**	**(13,370.9)**

Statement of changes in net indebtedness

(in millions of euros)	2016	2017
Net indebtedness at the beginning of the period	**(7,238.7)**	**(15,368.1)**
Net cash flows from operating activities	3,696.5	4,254.0
Net cash flows used in investing activities	(13,594.3)	(1,845.7)
Net cash flows from (used in) financing activities excluding changes in borrowings	2,331.5	(1,191.6)
Total net cash flows	**(7,566.3)**	**1,216.7**
Effect of exchange rate changes, opening net indebtedness of newly acquired companies and others	(563.1)	780.5
Change in net indebtedness	**(8,129.4)**	**1,997.2**
TOTAL NET INDEBTEDNESS AT THE END OF THE PERIOD	**(15,368.1)**	**(13,370.9)**

The Air Liquide Group net indebtedness breaks down as follows:

	2016			2017		
	Carrying amount			Carrying amount		
(in millions of euros)	Non-current	Current	Total	Non-current	Current	Total
Bonds and private placements	13,750.2	845.7	14,595.9	11,712.2	1,617.0	13,329.2
Commercial paper programs		638.0	638.0		185.8	185.8
Bank debt and other financial debt	1,054.0	507.4	1,561.4	714.6	695.2	1,409.8
Finance leases [(a)]	10.9	7.8	18.7	9.3	6.6	15.9
Put options granted to minority shareholders	75.0	2.1	77.1	86.3		86.3
TOTAL BORROWINGS (A)	**14,890.1**	**2,001.0**	**16,891.1**	**12,522.4**	**2,504.6**	**15,027.0**
Short-term loans		59.0	59.0		34.2	34.2
Short-term marketable securities		397.0	397.0		196.8	196.8
Cash in bank		1,067.0	1,067.0		1,425.1	1,425.1
TOTAL CASH AND CASH EQUIVALENTS (B)		**1,523.0**	**1,523.0**		**1,656.1**	**1,656.1**
NET INDEBTEDNESS (A) - (B)	**14,890.1**	**478.0**	**15,368.1**	**12,522.4**	**848.5**	**13,370.9**

(a) See note 14.3 Finance leases.

In accordance with the Group's policy to diversify funding sources, different types of instruments are used to meet the Group's funding requirements (capital markets and bank credit facilities). Long-term bonds and private placements are the primary sources of funding and represent 89% of gross debt as of December 31, 2017. At the end of 2017, outstanding notes under this program amounted to 13.3 billion euros, of which 600 million euros (nominal amount) was issued in 2017 to finance the Group's funding requirements.

The carrying amount of commercial paper amounted to 0.2 billion euros as of December 31, 2017 versus 0.6 billion euros as of December 31, 2016.

Gross indebtedness decreases by 1.9 billion euros following a bond issued being lower than repayments, a lesser use of commercial paper outstanding and a positive conversion impact, particularly due to the US dollar.

The 2017 bond issue had the following characteristics:

- a public bond issue of 600 million euros maturing on March 8, 2027 at a fixed rate of 1.0%.

The interest rate for this issue had been hedged up to 500 million euros. The issue, in euros, was carried out as part of the EMTN program by Air Liquide Finance, and guaranteed by L'Air Liquide S.A.

In consideration thereof:

- the private placement of 250 million euros by Air Liquide Finance, issued on June 26, 2015 at 3-month Euribor variable rates +0.21%, was repaid on June 26, 2017;
- the public bond issue of 500 million euros by Air Liquide Finance, issued on July 18, 2007 at a fixed rate of 5.25%, was repaid on July 18, 2017;
- the Airgas bond issue for 400 million US dollars, issued on August 11, 2015 at a fixed rate of 3.092%, maturing on August 1, 2020 was early repaid on December 21, 2017.

The carrying amount of borrowings in the balance sheet is as follows:

	2016	2017		
(in millions of euros)	**Carrying amount**	**Amount issued [(a)]**	**Amortized cost adjustments [(b)]**	**Carrying amount [(a)+(b)]**
Bonds in the EMTN program	6,865.1	6,970.7	(12.6)	6,958.1
Bonds not in the EMTN program	5,823.5	4,899.7	(51.3)	4,848.4
Private placements in the EMTN program	1,237.9	923.8	10.5	934.3
Private placements not in the EMTN program	669.4	583.7	4.7	588.4
TOTAL BONDS AND PRIVATE PLACEMENTS	**14,595.9**	**13,377.9**	**(48.7)**	**13,329.2**
Commercial paper programs	638.0	185.8		185.8
Bank debt and other financial debt	1,561.4	1,406.0	3.8	1,409.8
Finance leases [(c)]	18.7	15.9		15.9
Put options granted to minority shareholders	77.1	86.3		86.3
LONG-TERM BORROWINGS	**16,891.1**	**15,071.9**	**(44.9)**	**15,027.0**

(a) Nominal amount.
(b) Amortized cost including accrued interest.
(c) See note 14.3 Finance leases.

26.1 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.

	2016		2017	
(in millions of euros)	**Carrying amount**	**Fair value**	**Carrying amount**	**Fair value**
FINANCIAL LIABILITIES				
Non-current borrowings	14,890.1	14,898.8	12,522.4	12,444.1

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.

26.2 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.

2017 *(in millions of euros)*	**Nominal amount**	**Carrying amount**	**Maturity**									
			On demand	**< 1 year**	**≥ 1 year and ≤ 5 years**				**> 5 years**			
					2019	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**> 2025**
Bonds	11,870.4	11,806.5		1,430.2	878.6	1,225.0	1,335.2	1,075.5	928.0	1,239.0	493.6	3,201.4
Private placements	1,507.5	1,522.7		186.8	281.5			443.6		166.8		444.0
Commercial paper programs	185.8	185.8		185.8								
Bank debt and other financial debt	1,406.0	1,409.8		695.2	163.0	128.8	96.0	84.7	85.2	73.0	60.8	23.1
Finance leases [(a)]	15.9	15.9		6.6	3.6	2.6	1.3	0.6	0.5	0.5	0.2	
Put options granted to minority shareholders	86.3	86.3	86.3									
TOTAL BORROWINGS	**15,071.9**	**15,027.0**	**86.3**	**2,504.6**	**1,326.7**	**1,356.4**	**1,432.5**	**1,604.4**	**1,013.7**	**1,479.3**	**554.6**	**3,668.5**

(a) *See note 14.3 Finance leases.*

2016 *(in millions of euros)*	**Nominal amount**	**Carrying amount**	**Maturity**									
			On demand	**< 1 year**	**≥ 1 year et ≤ 5 years**				**> 5 years**			
					2018	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**> 2024**
Bonds	12,735.6	12,688.6		577.2	1,414.1	959.2	1,628.9	1,441.5	1,101.0	1,006.0	1,265.3	3,295.4
Private placements	1,892.1	1,907.3		268.5	169.9	315.2			498.7		189.4	465.6
Commercial paper programs	639.1	638.0		638.0								
Bank debt and other financial debt	1,551.7	1,561.4		507.4	465.8	134.6	93.4	95.5	78.3	82.6	82.0	21.8
Finance leases [(a)]	18.7	18.7		7.8	4.9	2.3	1.6	0.8	0.5	0.8		
Put options granted to minority shareholders	77.1	77.1	75.0	2.1								
TOTAL BORROWINGS	**16,914.3**	**16,891.1**	**75.0**	**2,001.0**	**2,054.7**	**1,411.3**	**1,723.9**	**1,537.8**	**1,678.5**	**1,089.4**	**1,536.7**	**3,782.8**

(a) *See note 14.3 Finance leases.*

26.3 NET INDEBTEDNESS BY CURRENCY

The Group provides 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 in foreign currency. Debt in other currencies is mainly denominated in Brazilian real, British pound sterling, Singaporean dollar, South African rand, Taiwanese dollar and Saudi Arabian riyal currencies.

As part of intra-group multi-currency financing, the Central Treasury Department converts the debt raised in financial markets into various currencies to refinance 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 (2,541.5 million euros) to other currencies to refinance foreign subsidiaries. Out of the Group's US dollar total debt amounting to 7,042.5 million euros, 5,815.0 million was raised directly in US dollars and 1,227.5 million euros was raised in euros and converted to US dollars using currency swap contracts. This preponderance of debt in US dollars is the result of the issue of 4.5 billion US dollars, which contributed to a portion of the financing of the Airgas acquisition, and of the integration of Airgas' debts.

2017 *(in millions of euros)*	Gross debt – original issue	Cash and cash equivalents	Rate and currency swaps	Ajusted net indebtedness
EUR	7,837.6	(1,073.7)	(2,541.5)	4,222.4
USD	5,815.0	(145.7)	1,227.5	6,896.8
JPY	226.7	(18.5)	161.3	369.5
CNY	375.8	(186.0)	418.6	608.4
Other currencies	771.9	(232.2)	734.1	1,273.8
TOTAL	**15,027.0**	**(1,656.1)**		**13,370.9**

2016 *(in millions of euros)*	Gross debt – original issue	Cash and cash equivalents	Rate and currency swaps	Ajusted net indebtedness
EUR	8,437.6	(1,075.9)	(3,487.1)	3,874.6
USD	7,215.2	(121.3)	1,935.5	9,029.4
JPY	248.1	(3.6)	342.6	587.1
CNY	429.9	(92.9)	476.4	813.4
Other currencies	560.3	(229.3)	732.6	1,063.6
TOTAL	**16,891.1**	**(1,523.0)**		**15,368.1**

26.4 FIXED-RATE PORTION OF GROSS DEBT

(as % of total debt)		2016	2017
EUR debt	Portion of fixed-rate gross debt	75%	80%
USD debt	Portion of fixed-rate gross debt	90%	97%
JPY debt	Portion of fixed-rate gross debt	97%	100%
Total debt	Portion of fixed-rate gross debt	84%	87%

As of December 31, 2017, fixed-rate debt represented 87% of the total debt. At this date, there were no option hedges.

The fixed rate euro-denominated portion of gross debt increased as a result of the 600 million euro fixed rate bond issue to replace total issues of 750 million euros, including 250 million at a variable rate.

The fixed rate US dollar-denominated portion of gross debt increased following the higher decrease in variable rate debt compared to the decrease of the total debt.

The fixed rate Japanese yen-denominated portion of gross debt increased due to the maturity of short term currency swaps not replaced.

26.5 BREAKDOWN OF AVERAGE NET FINANCE COSTS

(in millions of euros)	2016 Average outstanding debt	2016 Net interests	2016 Average net finance costs	2017 Average outstanding debt	2017 Net interests	2017 Average net finance costs
EUR	3,248.0	69.2	2.1%	4,303.5	85.8	2.0%
USD	9,393.4	229.6	2.4%	8,221.5	233.9	2.8%
JPY	695.0	13.4	1.9%	505.1	9.0	1.8%
CNY	851.9	45.3	5.3%	884.9	49.4	5.6%
Other currencies	1,214.1	83.9	6.9%	1,587.2	113.3	7.1%
Capitalized interests [a]		(52.3)			(70.4)	
TOTAL	**15,402.4**	**389.1**	**2.9%**	**15,502.2**	**421.0**	**3.2%**

(a) Excluded from the net finance costs per currency.

The average net finance costs, excluding currency impact, increased to 3.2% in 2017. This increase is mainly the result of higher financing costs on new developing economies' funding operations, particularly in Brazil, South Africa, Saudi Arabia and China, where interest rates are significantly higher than on major currencies, and the full year impact of Airgas long term refinancing operations in euro and US dollar.

26.6 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 74.3 million US dollars (equivalent to 62.0 million euros) as of December 31, 2017. Financial covenants were all met as of December 31, 2017;
- a long-term loan used by Air Liquide Arabia (Saudi Arabia) with an outstanding amount of 547.4 million Saudi riyals (equivalent to 121.6 million euros) as of December 31, 2017. Financial covenants were all met as of December 31, 2017.

The amount of bank credit facilities subject to financial covenants are stable in amount and represent a level of 4.2% of the Group's gross debt as of December 31, 2017.

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, 2017, include a change of control clause, with the exception of the 170 million euro bond issued by Air Liquide Finance, maturing in June 2018.

In addition, as of December 31, 2017, a portion of borrowings was guaranteed by assets valued at 5.5 million euros (93.9 million euros as of December 31, 2016).

Information relating to non-recourse assignments of trade receivables

Non-recourse factoring, carried out in Europe, in Asia and in America, represented 458.7 million euros compared to 335.6 million euros at the end of 2016. These transactions constitute neither a risk nor a financial commitment for the Group.

As of today, the program, set up in December 2015, covers an amount of 350 million euros and was renewed until February 2019. The assigned receivables, in the amount of 342.1 million euros, were derecognized as of December 31, 2017 (263.1 million euros as of December 31, 2016), as virtually all the risks and rewards were transferred to the assignee.

Note 27 Financial risk policy and management

27.1 FINANCIAL RISK MANAGEMENT

Risk management is a priority for the Group. Consequently, the Finance Department defined its governance with regards to the financial decision-making process at two levels:

- **a Strategic Finance Committee,** composed of Executive Management members as well as members of the Finance Department, whose purpose is to oversee the correct application of the Group's financial policy, approve proposals and suggestions submitted to it and review on a regular basis the rules governing the Group's financial policy. This Committee meets at least three times a year and upon request if necessary, under the authority of the Chairman and Chief Executive Officer. It includes the Chief Financial Officer, the Group Corporate Finance and Treasury Director, and the Corporate Finance Director;
- **an Operational Finance Committee,** internal to the Finance Department. The purpose of this 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. The Committee meets every four to six weeks. It is composed of the Chief Financial Officer, the Group Corporate Finance and Treasury

Director, and the Corporate Finance Director, assisted by two Committee Secretaries.

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, enabled the Group to ensure sustainable funding sources in 2017. To minimize the refinancing risk related to debt maturity schedules, the Group diversifies financing sources and spreads maturities over several years. In 2017, the average debt maturity was 6.2 years. As of December 31, 2017, the long-term debt ratio (gross debt maturing in more than one year / total gross debt) represented 83% of the overall Group debt, compared to 88% as of December 31, 2016.

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.

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 patent royalties, brands, technical support, 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 patent royalties, brands, technical support, 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 than18 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, as is the case 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. In effect, 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 in 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	73.1	0.36%	11.9	0.35%	8.6	0.39%	73.7	0.45%
CNY	16.2	0.08%	3.3	0.10%	1.3	0.06%	15.7	0.10%
JPY	10.4	0.05%	1.9	0.06%	1.0	0.05%	6.5	0.04%
CAD	6.2	0.03%	1.4	0.04%	0.6	0.03%	4.1	0.03%

The foreign currency risk sensitivity analysis shows that a 1% increase in the four major currencies as of December 31, 2017 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, 2017, 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 items 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, 2017. 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 underlying hedged items	0.0	1.9	0.0	(1.9)

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 91% of the Group's total net indebtedness as of December 31, 2017. 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 2017 year-end, 87% of the total debt was fixed-rate debt. As of December 31, 2017, there were no longer any option hedges. 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 indebtedness exposed to interest rate fluctuations amounted to around 219 million equivalent euros as of December 31, 2017, for an average outstanding amount of 1.1 billion equivalent euros (total debt adjusted for interest rate hedging instruments and short-term securities) decreasing sharply compared to December 31, 2016 (1.2 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 ±2 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, 2017.

	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 underlying hedged items	0.0	60.6	0.0	(62.7)

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.

To protect the Group against a potential increase in euro rates until the refinancing of a euro bond issue, maturing in October 2018, two firm hedges for 50 million euros each were set up. In the same way, to protect the Group against an increase in dollar rates at date of refinancing of a US dollar bond issue under US Public Rule 144A, maturing in September 2019, a firm hedge for 200 million US dollars was set up.

c) Counterparty risk

Counterparty risks for Air Liquide potentially include customers and bank counterparties.

The Group's subsidiaries serve a very significant number of customers (over two million worldwide) located in extremely various markets: chemicals, steel, refining, food, pharmaceuticals, metals, automotive, manufacturing, healthcare, research laboratories, photovoltaic, etc. In 2017, the Group's main customer represents around 2% of revenue, the Group's 10 main customers represent around 10% of sales, and the Group's 50 main customers represent 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 vast 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.

IFRS 13 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 26.6 do not affect the Group's access to liquidity.

The carrying amount of short-term financing in the form of commercial paper amounted to 186 million euros as of December 31, 2017, a decrease of 452 million euros compared to the end of 2016. The average amount of commercial paper amounted to 542 million euros in 2017, compared to 1,280 million euros in 2016. The Group policy requires that commercial paper in issue be backed by confirmed long-term credit lines. In 2017, this requirement was met, with an amount of confirmed credit lines of 3,105 million euros largely exceeding outstanding commercial paper.

The table below presents the maturities of the bilateral and syndicated credit lines:

(in millions of euros)	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**Total**
Bilateral and syndicated credit lines	400.0	380.0	1,400.0	700.0	125.0	100.0	3,105.0

On March 17, 2017, a credit facility maturing in 2018, for a total of 125 million euros was renewed for a 5-year term.

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, 2016 and 2017. 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.

2017 *(in millions of euros)*	Book value as of December 31, 2017	Cash Flow < 1 year		Cash flow ≥ 1 year and ≤ 5 years		Cash Flow > 5 years	
		Interest	Capital refund	Interest	Capital refund	Interest	Capital refund
Derivative instruments							
Assets							
Fair value of derivatives (assets)	168.9	72.5	568.1	188.8	3,236.2	49.3	1,581.7
Liabilities							
Fair value of derivatives (liabilities)	(45.2)	(191.9)	(567.5)	(515.0)	(3,234.4)	(147.1)	(1,581.7)
SUB-TOTAL DERIVATIVE INSTRUMENTS		**(119.4)**	**0.6**	**(326.2)**	**1.8**	**(97.8)**	
Assets							
Loans and other non-current receivables	391.7				391.7		
Trade receivables	2,900.0		2,863.2		36.8		
Cash and cash equivalents	1,656.1	3.2	1,652.9				
SUB-TOTAL ASSETS		**3.2**	**4,516.1**		**428.5**		
Liabilities							
Non-current borrowings	(12,522.4)	(211.1)		(908.9)	(5,777.3)	(1,009.2)	(6,810.9)
Other non-current liabilities	(238.5)				(238.5)		
Trade payables	(2,446.4)		(2,433.3)		(13.1)		
Current borrowings	(2,504.6)	(107.3)	(2,397.3)				
SUB-TOTAL LIABILITIES		**(318.4)**	**(4,830.6)**	**(908.9)**	**(6,028.9)**	**(1,009.2)**	**(6,810.9)**

2016 *(in millions of euros)*	Book value as of December 31, 2016	Cash Flow < 1 year		Cash flow ≥ 1 year and ≤ 5 years		Cash Flow > 5 years	
		Interest	Capital refund	Interest	Capital refund	Interest	Capital refund
Derivative instruments							
Assets							
Fair value of derivatives (assets)	113.3	44.3	476.7	97.5	1,047.8	51.1	1,556.5
Liabilities							
Fair value of derivatives (liabilities)	(296.7)	(108.4)	(477.4)	(297.3)	(1,050.0)	(190.8)	(1,556.5)
SUB-TOTAL DERIVATIVE INSTRUMENTS		**(64.1)**	**(0.7)**	**(199.8)**	**(2.2)**	**(139.7)**	
Assets							
Loans and other non-current receivables	422.4				422.4		
Trade receivables	3,115.0		3,082.8		32.2		
Cash and cash equivalents	1,523.0	(32.7)	1,555.7				
SUB-TOTAL ASSETS		**(32.7)**	**4,638.5**		**454.6**		
Liabilities							
Non-current borrowings	(14,890.1)	(248.8)		(984.9)	(6,969.7)	(1,152.9)	(7,970.7)
Other non-current liabilities	(270.6)				(270.6)		
Trade payables	(2,485.9)		(2,432.6)		(53.3)		
Current borrowings	(2,001.0)	(12.3)	(1,896.7)				
SUB-TOTAL LIABILITIES		**(261.1)**	**(4,329.3)**	**(984.9)**	**(7,293.6)**	**(1,152.9)**	**(7,970.7)**

Cash and cash equivalents increased at the end of 2017. The carrying amount of non-current borrowings has decreased, following the reclassification to current borrowing of the maturities of the next twelve months, and the early repayment of a 400 million US dollar bond, initially maturing in August 2020, partially offset by the 600 million euros bond issue maturing in 10 years. The carrying amount of current borrowings has increased, following the reclassification of the maturities of the next twelve months, greater than the maturities for 2017, and despite the decrease in outstanding commercial paper.

The following tables represent the future cash flows maturing in less than one year relating to the main balance sheet items and derivative financial instruments. Interest and repayment flows relating to current borrowings maturing in less than three months correspond to bank overdrafts and a portion of short-term borrowings recorded at the 2017 year-end. Interest and repayment flows relating to current borrowings maturing in more than three months and less than one year include short-term debt and the portion of the Group's long-term debt maturing in less than one year.

2017 *(in millions of euros)*	Cash flow < 1 year			
	< 3 months		≥ 3 months and < 1 year	
	Interest	Capital refund	Interest	Capital refund
Derivative instruments				
Assets				
Fair value of derivatives (assets)	1.4	83.7	71.1	484.4
Liabilities				
Fair value of derivatives (liabilities)	(7.6)	(81.2)	(184.3)	(486.3)
SUB-TOTAL DERIVATIVE INSTRUMENTS	**(6.2)**	**2.5**	**(113.2)**	**(1.9)**
Liabilities				
Non-current borrowings	(28.7)		(182.4)	
Trade payables				
Current borrowings	(2.4)	(327.5)	(104.9)	(2,069.8)
SUB-TOTAL LIABILITIES	**(31.1)**	**(327.5)**	**(287.3)**	**(2,069.8)**

2016 *(in millions of euros)*	Cash flow < 1 year			
	< 3 months		≥ 3 months and < 1 year	
	Interest	Capital refund	Interest	Capital refund
Derivative instruments				
Assets				
Fair value of derivatives (assets)	0.4	26.4	43.9	450.3
Liabilities				
Fair value of derivatives (liabilities)	(4.1)	(38.7)	(104.3)	(438.7)
SUB-TOTAL DERIVATIVE INSTRUMENTS	**(3.7)**	**(12.3)**	**(60.4)**	**11.6**
Liabilities				
Non-current borrowings	(31.2)		(217.6)	
Trade payables		(2,216.1)		(216.5)
Current borrowings	(6.2)	(861.8)	(6.1)	(1,034.9)
SUB-TOTAL LIABILITIES	**(37.4)**	**(3,077.9)**	**(223.7)**	**(1,251.4)**

e) Hierarchy of financial instruments fair value

(in millions of euros)	**2016**	**2017**
Level 1	**28.1**	**27.0**
Available-for-sale financial assets (listed shares)	28.1	27.0
Level 2	**(183.4)**	**123.7**
Derivative instruments	(183.4)	123.7
Level 3	**77.1**	**86.3**
Put options granted to minority shareholders	77.1	86.3

f) Commodity risk (energy contracts)

Most of Air Liquide's energy supplies are obtained through forward purchase contracts at a fixed or indexed price.

IAS 39 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, IAS 39 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. Moreover, in 2017, a few forward purchase contracts were concluded to cover the commodity risk, and they were treated, accordingly, as derivative instruments. These contracts have an issue during 2018 and they are not significant throughout the Group.

The fair value recognition of these derivative instruments had no material impact on Group equity or profits as of December 31, 2017.

27.2 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:

		Assets					Equity and liabilities						
				Fair value of derivatives							Fair value of derivatives		
2017 *(in millions of euros)*	IFRS classification	Deferred tax assets	Trade receivables	Assets – non current	Assets – current	Total	Net income recognized in equity	Profit for the period	Borrowings	Trade payables	Liabilities – non current	Liabilities – current	Total
Foreign exchange risk													
Currency forwards hedging future cash flows	CFH [(a)]	(0.2)			16.8	16.6	2.2	(1.8)				16.2	16.6
Currency forwards hedging transactions recorded in the accounts and Cross Currency Swaps	FVH [(b)]	0.2	1.1	64.5	20.0	85.8		(0.9)	54.5	3.9	2.7	25.6	85.8
Other derivatives [(c)]								0.1				(0.1)	
Currency embedded derivatives and Cross Currency Swaps	NIH [(d)]	(0.3)			1.3	1.0	1.0						1.0
Interest rate risk													
Interest rate swaps	FVH [(b)]	(0.2)				(0.2)		0.4			(0.6)		(0.2)
Swaps, options and Cross Currency Swaps	CFH [(a)] and NIH [(d)]	(23.1)		66.0	0.3	43.2	43.8				0.2	(0.8)	43.2
Commodity risk (Energy)													
Forwards hedging future cash flows	CFH [(a)]	0.6				0.6	(1.0)	(0.4)				2.0	0.6
TOTAL		**(23.0)**	**1.1**	**130.5**	**38.4**	**147.0**	**46.0**	**(2.6)**	**54.5**	**3.9**	**2.3**	**42.9**	**147.0**

(a) CFH: Cash Flow Hedge.
(b) FVH: Fair Value Hedge.
(c) Derivative instruments not benefiting from hedge accounting.
(d) NIH: Net Investment Hedge.

		Assets					Equity and liabilities						
				Fair value of derivatives							Fair value of derivatives		
2016 *(in millions of euros)*	**IFRS classification**	**Deferred tax assets**	**Trade receivables**	**Assets – non current**	**Assets – current**	**Total**	**Net income recognized in equity**	**Profit for the period**	**Borrowings**	**Trade payables**	**Liabilities – non current**	**Liabilities – current**	**Total**
Foreign exchange risk													
Currency forwards hedging future cash flows	CFH [a]	2.5			23.5	26.0	(4.0)	(2.0)				32.0	26.0
Currency forwards hedging transactions recorded in the accounts and Cross Currency Swaps	FVH [b]	0.5	1.6	14.6	24.7	41.4		(0.7)	(235.4)	1.1	255.3	21.1	41.4
Other derivatives [c]		0.1			2.1	2.2		(0.2)	2,1 [e]			0.3	2.2
Currency embedded derivatives and Cross Currency Swaps	NIH [d]	14.6		0.5	0.7	15.8	(27.3)				43.1		15.8
Interest rate risk													
Interest rate swaps	FVH [b]	(0.3)				(0.3)		0.5			(0.8)		(0.3)
Swaps, options and Cross Currency Swaps	CFH [a] and NIH [d]	(35.5)		45.0	2.2	11.7	67.7				(63.9)	7.9	11.7
Commodity risk (Energy)													
Forwards hedging future cash flows	CFH [a]	0.6				0.6	(1.1)					1.7	0.6
TOTAL		**(17.5)**	**1.6**	**60.1**	**53.2**	**97.4**	**35.3**	**(2.4)**	**(233.3)**	**1.1**	**233.7**	**63.0**	**97.4**

(a) CFH: Cash Flow Hedge.
(b) FVH: Fair Value Hedge.
(c) Derivative instruments not benefiting from hedge accounting.
(d) NIH: Net Investment Hedge.
(e) Financial instrument not recognized as a hedging instrument under IAS 39.

Maturity schedule for fixed-rate debt, taking into account interest rate hedging

				Interest rates repricing dates		
2017 *(in millions of euros)*	**Currency of issue**	**Carrying amount**	**Nominal amount outstanding**	**< 1 year**	**≥ 1 and ≤ 5 years**	**> 5 years**
Original issue – left at fixed rate	EUR	4,214.8	4,214.8	468.8	1,096.2	2,649.8
Original issue – left at fixed rate	USD	6,780.3	6,780.3	396.1	2,872.5	3,511.7
Interest rate swaps hedges	USD		54.8	5.5		49.3
Original issue – left at fixed rate	JPY	517.8	517.8	18.5	388.2	111.1

				Interest rates repricing dates		
2016 *(in millions of euros)*	**Currency of issue**	**Carrying amount**	**Nominal amount outstanding**	**< 1 year**	**≥ 1 and ≤ 5 years**	**> 5 years**
Original issue – left at fixed rate	EUR	3,678.2	3,678.2	260.5	950.2	2,467.5
Original issue – left at fixed rate	USD	8,189.4	8,189.4		3,613.3	4,576.1
Interest rate swaps hedges	USD		74.1		12.4	61.7
Original issue – left at fixed rate	JPY	570.5	570.5	162.1	166.1	242.3

Note 28 Other liabilities (non-current/current)

28.1 OTHER NON-CURRENT LIABILITIES

(in millions of euros)	**2016**	**2017**
Investment grants	73.4	69.3
Advances and deposits received from customers	55.9	42.1
Other non-current liabilities	141.3	127.1
TOTAL OTHER NON-CURRENT LIABILITIES	**270.6**	**238.5**

28.2 OTHER CURRENT LIABILITIES

(in millions of euros)	**2016**	**2017**
Advances received	241.8	316.6
Advances and deposits received from customers	106.1	99.1
Other payables	867.7	979.5
Accruals and deferred income	257.7	228.7
TOTAL OTHER CURRENT LIABILITIES	**1,473.3**	**1,623.9**

Amounts payable to customers under Engineering & Construction contracts and amounting to 123.8 million euros are included in other current liabilities as of December 31, 2017 (101.0 million euros in 2016).

Note 29 Trade payables

(in millions of euros)	**2016**	**2017**
Operating suppliers	2,241.4	2,155.0
Property, plant and equipment and intangible assets suppliers	244.5	291.4
TOTAL TRADE PAYABLES	**2,485.9**	**2,446.4**

Note 30 Related party disclosures

30.1 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 288 to 290. 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 16.

30.2 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)	2016	2017
Short-term benefits	15,889	14,156
Post-employment benefits	2,589	2,857
Termination benefits	962	-
Share-based payments	6,052	7,303
TOTAL	**25,492**	**24,316**

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 for members of Executive Management and of the Executive Committee. Retirement commitments for executives and former executives, members of the Board of Directors amounted to 25,699 thousand euros in 2017 and 27,417 thousand euros in 2016.

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 2016 (a)	Strike price (b) *(in euros)*	Number 2017 (b)
2009 (June 15)	06/14/2017	48.72	166,564	48.72	-
2010	06/27/2018	66.47	300,123	60.28	225,016
2011 (October 14)	10/13/2021	69.66	321,117	63.18	266,962
2012 (September 27)	09/26/2022	85.30	284,562	77.36	236,221
2013 (September 26)	09/25/2023	90.06	347,077	81.68	291,986
2014 (September 22)	09/21/2024	94.45	341,000	85.66	253,267
2015 (September 28)	-	-	52,461	-	50,127
2015 (September 28)	09/27/2025	102.24	193,400	92.73	165,326
2016 (July 29)	-	-	47,200	-	42,126
2016 (November 29)	11/28/2026	93.00	70,260	84.34	73,307
2016 (November 29)	-	-	80,846	-	84,688
2017 (September 20)	09/29/2027	-	-	94.32	25,471
2017 (September 20)	-	-	-	-	98,510

(a) Adjusted for share capital increases by attributions of free shares (2014, 2012, 2010) and for the share capital increase in cash of October 11, 2016.
(b) 2016 and 2017 data adjusted for the share capital increase by attribution of free shares in 2017.

The fair value of stock options and performance shares granted in 2017 is disclosed in note 23 (page 263).

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 19,194 thousand euros as of December 31, 2017 (18,042 thousand euros as of December 31, 2016).

The 2017 plan stock options and 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 31 Commitments

Commitments are given in the normal course of the Group's business.

(in millions of euros)	2016	2017
Firm purchase orders for fixed assets	947.2	727.3
Lease commitments which cannot be terminated	1,348.0	1,178.0
Other commitments related to operating activities	228.1	253.6
Commitments relating to operating activities	**2,523.3**	**2,158.9**
Commitments relating to financing operations and consolidation scope	**145.9**	**228.8**
TOTAL	**2,669.2**	**2,387.7**

Air Liquide owns a 13.7% stake in Exeltium S.A.S. amounting to 23.8 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 1,545.7 million euros as of December 31, 2017 (2,085.6 million euros as of December 31, 2016). 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.

Confirmed credit lines and the amount of loans guaranteed by assets are shown in note 26.6.

Commitments related to associates amounted to 56.1 million euros as of December 31, 2017.

Operating leases

Assets used for industrial activities are leased under an operating lease when the acquisition of such assets does not present any economic benefits. The primary assets included are utility vehicles, transport equipment and property.

Future minimum lease payments under non-cancelable operating leases payable as of December 31, 2017 are as follows:

(in millions of euros)	2016	2017
Due within 1 year	292	271
Due in 1 to 5 years	626	574
Due after 5 years	430	333
TOTAL	**1,348**	**1,178**

Note 32 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 150.8 million Brazilian reals as of December 31, 2017 (equivalent to 50.4 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 33 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, 2017, the amounts recognized in assets and liabilities are immaterial.

Note 34 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	2016	2017
USD	0.90	0.89
CNY	0.14	0.13
CAD	0.68	0.68
Yen (1,000)	8.33	7.91

Closing rates

Euros for 1 currency	2016	2017
USD	0.95	0.83
CNY	0.14	0.13
CAD	0.70	0.66
Yen (1,000)	8.10	7.41

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%
AL 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%
Grupo Gasmedi S.L.U.	ESP		100.00%
Air Liquide Finland Oy.	FIN		100.00%
Air Liquide Eastern Europe S.A.	FRA		100.00%
Air Liquide Electronics Materials 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		98.65%
Air Liquide Ukraine S.A.	FRA		100.00%
Cryo-Express S.A.	FRA		96.27%
Lavéra Energies S.N.C.	FRA	JO	50.00%
LVL Médical Groupe S.A.	FRA		100.00%
Pharma Dom S.A.	FRA		100.00%
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 Limited	GBR		95.49%
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 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%
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 from 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		72.50%
Air Liquide Chile S.A.	CHL		100.00%
Air Liquide Colombia S.A.S	COL		100.00%
Oxymaster S.A.	COL		70.00%
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		87.89%
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%
Airgas Priority Nitrogen	USA		100.00%
Airgas Carbonic (LE)	USA		100.00%
Red-D-Arc, inc	USA		100.00%
Airgas Safety (LE)	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 Liquid 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		100.00%
Air Liquide El Soukhna for Industrial Gases S.A.E.	EGY		99.93%
Air Liquide Misr S.A.E.	EGY		100.00%
Air Liquide Middle East S.A.	FRA		100.00%
Air Liquide Gabon S.A.	GAB		98.57%

Main consolidated companies	Country	Integration	% interest
Air Liquide Ghana Ltd	GHA		100.00%
Air Liquide India Holding Pvt. Ltd	IND		100.00%
Shuaiba Oxygen Company K.S.C.C. 1	KWT		49.81%
Air Liquide Maroc S.A.	MAR		74.80%
Air Liquide Madagascar S.A.	MDG		74.10%
Air Liquide Mali S.A.	MLI		99.97%
Air Liquide Namibia Proprietary Ltd	NAM		100.00%
Air Liquide Nigeria Plc	NGA		61.11%
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	E	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 Industriel 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 Asia Pacific Co. Ltd	JPN		100.00%
Air Liquide Japan Ltd	JPN		100.00%
Toshiba Nano Analysis K.K.	JPN		51.00%
Sohgo Industry Co., Ltd	JPN		90.23%
Vital Air Japan K.K.	JPN		100.00%

Main consolidated companies	Country	Integration	% interest
Air Liquide Korea Co., Ltd	KOR		100.00%
VitalAire Korea Inc.	KOR		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%
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%
Lurgi, Inc.	USA		100.00%
Air Liquide Engineering Southern Africa Ltd	ZAF	E	100.00%

Main consolidated companies	Country	Integration	% interest
GLOBAL MARKETS & TECHNOLOGIES			
Air Liquide Advanced Technologies US LLC	USA		100.00%
Air Liquide Services 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%
Oilfield Hine 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		99.96%
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 http://www.airliquide.com/consolidation-scope

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 Emmanuelle Mossé
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
Olivier Lotz 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)	2017							
	ERNST & YOUNG et Autres		PricewaterhouseCoopers Audit		Others		Total	
Audit, certification, review of individual and consolidated financial statements	7,420	88.6%	4,963	87.6%	429	70.4%	12,812	87.5%
■ Issuer	612		623		-		1,235	
■ Fully consolidated subsidiaries	6,808		4,340		429		11,577	
■ *of which Airgas*	*1,584*		*143*		-		*1,727*	
Services required by law	283	3.4%	154	2.7%	89	14.6%	526	3.6%
Total of certification missions and services required by law	**7,703**	**92.0%**	**5,117**	**90.3%**	**518**	**85.0%**	**13,338**	**91.1%**
Services relating to Corporate Social Responsibility (CSR)	211	2.5%	7	0.1%	1	0.2%	219	1.5%
Due-diligence services (sell-side and buy-side)	-	0.0%	-	0.0%	26	4.3%	26	0.2%
Other services	456	5.5%	541	9.6%	64	10.5%	1,061	7.2%
Total of non-audit services	**667**	**8.0%**	**548**	**9.7%**	**91**	**15.0%**	**1,306**	**8.9%**
TOTAL	**8,370**	**100%**	**5,665**	**100%**	**609**	**100%**	**14,644**	**100%**

(in thousands of euros)	2016							
	ERNST & YOUNG et Autres		PricewaterhouseCoopers Audit		Others		Total	
Audit, certification, review of individual and consolidated financial statements	8,651	84.1%	4,558	84.2%	585	56.2%	13,794	82.4%
■ Issuer	620		617		-		1,237	
■ Fully consolidated subsidiaries	8,031		3,941		585		12,557	
■ *of which Airgas*	*3,073*		*125*		-		*3,198*	
Services required by law	510	5.0%	204	3.8%	68	6.5%	782	4.7%
■ *of which services related to the financing of Airgas acquisition*	*159*		*162*		-		*321*	
Total of certification missions and services required by law	**9,161**	**89.1%**	**4,762**	**88.0%**	**653**	**62.7%**	**14,576**	**87.1%**
Services relating to Corporate Social Responsibility (CSR)	189	1.8%	6	0.1%	6	0.6%	201	1.2%
Due-diligence services (sell-side and buy-side)	16	0.2%	73	1.3%	27	2.6%	116	0.7%
Other services	919	8.9%	571	10.6%	355	34.1%	1,845	11.0%
Total of non-audit services	**1,124**	**10.9%**	**650**	**12.0%**	**388**	**37.3%**	**2,162**	**12.9%**
TOTAL	**10,285**	**100%**	**5,412**	**100%**	**1,041**	**100%**	**16,738**	**100%**

Statutory Auditors' Report on the consolidated financial statements

This is a free 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.

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, 2017.

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, 2017 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, 2017 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 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 the note 2. New IFRS and Interpretations - Accounting principles 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, the Group considers that those assets are not specific to customers as defined in IFRIC 4 "determine whether an arrangement contains a lease".

When assets used for the long term supply agreements are dedicated to a customer, the Group considers, as described in the note "accounting principles 5.g" 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 finance leases. These industrial investments remain the ownership of 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 assessments 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 the Group to confirm the compliance of the contracts with standard terms and conditions on which the Group IFRIC 4 analysis is based;
- For the significant new contracts in the current year, assessing the compliance of the contracts to standard terms and conditions and the impact of potential deviations on the accounting treatment;
- Verifying the appropriateness of the disclosures included in the accounting principles note "new IFRS standards and interpretations" to the consolidated financial statements, in particular the confirmation that IFRS 16 "Leases", mandatory from January 1, 2019, will not impact the current accounting treatment of the contracts.

Large Industries activity: useful lives of production units and measurement of their recoverable amount

Risk identified

As at December 31, 2017, the net book value of property, plant and equipment amounts to 18,526 million euros (45% of the Group total balance sheet). 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 the note "accounting principles 5.f." to the consolidated financial statements, the Group 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 the Group 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.

Following a strategic review of the Group activities and assets portfolio, triggering events were identified and impairment tests carried out as at December 31, 2017. As a result, an impairment charge was recorded and is included in the total amount of assets impairment (234 million euros) disclosed in note 7 to the consolidated financial statements.

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 assets as a key audit matter.

Our response

Our procedures consisted in:

- Assessing the procedures performed by the Group to assess and update the depreciation period of the equipment and the consistency of their useful lives with contractual terms and available technical studies;
- Assessing the Group process to identify impairment indicators;
- Corroborating, in particular through management inquiries, the reasonableness of the key underlying data and assumptions used for these estimates;
- Comparing the recoverable value of assets available for sale to their fair value less costs of disposal;
- 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, assets are mostly allocated on a geographical basis. For Engineering & Construction and Global Markets & Technologies activities, goodwill is monitored at the business unit level. As at December 31, 2017, goodwill amounts to a net book value of 12,840 million euros (31% of the Group total balance sheet).

As disclosed in the note 12.2 to the consolidated financial statements, following the changes in the Group organization, the level at which investments and related goodwill are monitored has been modified during the year.

The Group performs annually, an impairment test, mostly by reference to its market value and, if required, by discounted cash-flows as described in the accounting principle note 5.f 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 judgement 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 identify the groups of cash generating units;
- principles and methods used to determine the market value and their measurement based on multiples of market capitalization;
- in particular for the 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 WACCs applied and performed sensitivity tests;
- the information included in the note 12 to the consolidated financial statements.

US tax reform

Risk identified

As disclosed in the note 1 to the consolidated financial statements, a major tax reform having significant consequences on the Groups' income tax calculation as at December 31, 2017, was enacted in the United States in December 2017.

The Group has determined the impact of the tax reform on the deferred taxes and performed an estimate of the repatriation tax. Regarding the repatriation tax, given the difficulty to obtain detailed information by entity over several years and the absence of hindsight as to possible interpretations of the law due to its recent enactment, we have considered its impacts as a key audit matter.

Our response

Our procedures consisted in assessing, in particular with the support of our US tax experts:

- the accounting consequences of the reform;
- the documentation, the measurement and the estimates of the Group;
- the information included in the note 1 to the consolidated financial statements.

VERIFICATION OF THE INFORMATION PERTAINING TO THE GROUP PRESENTED IN THE MANAGEMENT REPORT

As required by law we have also verified in accordance with professional standards applicable in France the information pertaining to the Group presented in the Management Report of the Board of Directors.

We have no matters to report as to its fair presentation and its consistency with the consolidated financial statements.

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 ERNST & YOUNG et Autres.

As at December 31, 2017, PricewaterhouseCoopers Audit was in its second year of uninterrupted engagement and ERNST & YOUNG et Autres in its eighth 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 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) N° 537/2014, confirming our independence within the meaning of the rules applicable in France such as they are set in particular by articles L. 822-10 to L. 822-14 of the French Commercial Code (Code de commerce) and in the French Code of Ethics (Code de déontologie) for Statutory Auditors. Where appropriate, we discuss with the Audit 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, March 2, 2018

The Statutory Auditors

French original signed by

PricewaterhouseCoopers Audit		ERNST & YOUNG et Autres	
Olivier Lotz	Séverine Scheer	Jeanne Boillet	Emmanuelle Mossé

STATUTORY ACCOUNTS OF THE PARENT COMPANY

Income statement

For the year ended December 31

(in millions of euros)	Notes	2016	2017
Revenue	(2)	154.5	139.3
Royalties and other operating income	(3)	598.4	522.0
Total operating income (I)		**752.9**	**661.3**
Purchases		(65.0)	(59.1)
Duties and taxes other than corporate income tax		(21.8)	(20.1)
Personnel expenses		(218.9)	(221.6)
Depreciation, amortization and provision expenses	(5)	(21.4)	(29.1)
Other operating expenses	(4)	(338.7)	(272.6)
Total operating expenses (II)		**(665.8)**	**(602.5)**
Net operating profit (loss) (I + II)		**87.1**	**58.8**
Financial income from equity affiliates	(6)	264.9	988.5
Interests, similar income and expenses	(6)	(57.9)	(10.8)
Other financial income and expenses	(6)	(6.5)	(45.5)
Financial income and expenses (III)		**200.5**	**932.2**
Net profit / (loss) from ordinary activities before tax (I + II + III)		**287.6**	**991.0**
Exceptional income and expenses	**(7)**	**251.2**	**98.3**
Statutory employee profit-sharing		(2.6)	(2.6)
Corporate income tax – Reimbursement of the 3% additional contribution	(1)	-	133.9
Corporate income tax	(8)	(53.8)	(70.8)
NET PROFIT FOR THE YEAR		**482.4**	**1,149.8**

Balance sheet

For the year ended December 31

(in millions of euros)	Notes	December 31, 2016 Net	December 31, 2017 Gross carrying amounts	December 31, 2017 Amortization, depreciation and provisions	December 31, 2017 Net
ASSETS					
Intangible assets	(9) & (11)	52.5	275.7	(232.4)	43.3
Tangible assets	(9) & (11)	50.1	142.0	(79.1)	62.9
Financial assets	(10) & (11)	14,644.4	14,727.2	(94.0)	14,633.2
TOTAL NON-CURRENT ASSETS		**14,747.0**	**15,144.9**	**(405.5)**	**14,739.4**
Inventories and work-in-progress	(11)	9.6	2.4	(1.3)	1.1
Operating receivables	(11) & (14)	335.6	412.7	(17.8)	394.9
Current account loans with subsidiaries	(11) & (14)	434.5	257.6	-	257.6
Short-term financial investments	(12)	46.5	107.2	-	107.2
Cash		2.0	8.6	-	8.6
Prepaid expenses		4.1	4.7	-	4.7
TOTAL CURRENT ASSETS		**832.3**	**793.2**	**(19.1)**	**774.1**
Loan issue premiums	(15)	13.0	11.2	-	11.2
Bond redemption premiums	(15)	10.1	4.5	-	4.5
Unrealized foreign exchange losses		2.1	2.8	-	2.8
TOTAL ASSETS		**15,604.5**	**15,956.6**	**(424.6)**	**15,532.0**
EQUITY AND LIABILITIES					
Share capital		2,138.8			2,356.2
Additional paid-in capital		3,103.3			2,821.3
Revaluation reserve		23.9			23.9
Legal reserve		189.6			213.7
Other reserves		388.5			388.5
Retained earnings		6,813.6			6,240.3
Net profit for the year		482.4			1,149.8
Tax-driven provisions		5.1			2.5
TOTAL SHAREHOLDERS' EQUITY	**(13)**	**13,145.2**			**13,196.2**
PROVISIONS	**(11)**	**32.5**			**44.9**
Other bonds	(14)	762.0			762.0
Bank borrowings	(14)	2.6			0.3
Other borrowings	(14)	252.0			252.4
Operating payables	(14)	377.4			494.7
Current account borrowings with subsidiaries	(14)	1,030.1			779.5
Deferred income		0.1			0.7
		2,424.2			**2,289.6**
Unrealized foreign exchange gains		2.6			1.3
TOTAL EQUITY AND LIABILITIES		**15,604.5**			**15,532.0**

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.

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 (cf. paragraphs 5 and 7).

As the company has previously applied hedge accounting, the adoption of the new accounting policy related to foreign currency transactions and financial instruments has no significant impact.

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: 20 to 30 years;
- other equipment: 5 to 15 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;
- 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

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

The Amended Finance Act enacted in August 2012 introduced an additional 3% contribution on cash dividends. L'Air Liquide S.A. was subject to this tax for the dividends paid between 2013 and 2017.

L'Air Liquide S.A. had filed claims for the reimbursement of the amounts paid for the 2013 to 2017 fiscal years (133.9 million euros, before interests on arrears).

Following the favorable decision of the European Court of Justice on May 17, 2017 and the French Constitutional Council on October 6, 2017 leading to the cancelation of the additional contribution, a receivable was recognized. This receivable was collected in December 2017, along with interests on arrears of 15.2 million euros.

This payment is booked on line "Corporate income tax – Reimbursement of the 3% additional contribution" for the principal and on line "Exceptional income and expenses" for the interests on arrears.

2. Revenue breakdown by geographical area

(in millions of euros)	**2016**	**2017**
France	93.9	94.0
Abroad	60.6	45.3
REVENUE	**154.5**	**139.3**

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 17.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)	2016	2017
Depreciation and amortization expenses	(16.9)	(16.1)
Provision expenses	(4.5)	(13.0)
DEPRECIATION, AMORTIZATION AND PROVISION EXPENSES	**(21.4)**	**(29.1)**

6. Financial income and expenses

Financial income from equity affiliates amounts to 988.5 million euros (264.9 million euros in 2016). In 2017, Air Liquide International made a dividend payment amounting 600.8 million euros.

Interests, similar income and expenses break down as follows:

(in millions of euros)	2016	2017
Revenues from other marketable securities and long-term loans	11.8	15.5
Other interest and similar income	(69.7)	(26.3)
INTERESTS, SIMILAR INCOME AND EXPENSES	**(57.9)**	**(10.8)**

Other financial income and expenses break down as follows:

(in millions of euros)	2016	2017
Other financial expenses, impairment and provisions net of reversals	(5.5)	(44.3)
Foreign exchange gains / losses (net)	(1.0)	(1.2)
OTHER FINANCIAL INCOME AND EXPENSES	**(6.5)**	**(45.5)**

7. Exceptional income and expenses

As part of the tax consolidation of L'Air Liquide S.A. and its consolidated French subsidiaries, exceptional income in the amount of 83.1 million euros was booked in 2017 (87.1 million euros in 2016). 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 2.5 million euros in 2017 and 30.6 million euros in 2016.

In 2017, exceptional income and expenses also include interests linked to the reimbursement of the additional contribution in the amount of 15.2 million euros (see note 1).

In 2016, L'Air Liquide S.A. recognized a capital gain on the disposal of its investment in Aqua Lung International, amounting to 186.3 million euros.

In 2016, -50.7 million euros related to the acquisition of Airgas have been booked as exceptional expenses.

8. Corporate income tax

The total tax charge amounts to 70.8 million euros, compared to 53.8 million euros in 2016.

After allocation of add-backs, deductions and tax credits relating to profits, it breaks down as follows:

(in millions of euros)	2016	2017
Net profit from ordinary activities before tax	(24.5)	(22.5)
Additional contributions on earnings [a]	(1.7)	(1.7)
Exceptional contributions [b]	-	(15.7)
Additional contribution on cash dividend [c]	(27.6)	(30.9)
TOTAL	**(53.8)**	**(70.8)**

(a) 3.3% social security contribution on earnings.
(b) In 2017, introduction of an exceptional contribution of 15% on profits, plus an additional exceptional contribution of 15%.
(c) Corresponds to a 3% contribution on the amount of the dividend paid in cash. In December 2017, this tax was reimbursed (see note 1).

9. Intangible and tangible assets

Changes in gross value break down as follows:

(in millions of euros)	Gross value as of January 1, 2017	Additions	Disposals	Gross value as of December 31, 2017
Concessions, patents, licenses	100.9	2.8	-	103.7
Other intangible assets	168.5	6.3	(2.8)	172.0
INTANGIBLE ASSETS	**269.4**	**9.1**	**(2.8)**	**275.7**
Land and buildings	44.1	1.9	(0.1)	45.9
Plant, machinery and equipment	36.3	1.0	(0.5)	36.8
Other tangible assets	16.7	0.9	-	17.6
Tangible assets under construction and payments on account – tangible assets	22.6	20.0	(0.9)	41.7
TANGIBLE ASSETS	**119.7**	**23.8**	**(1.5)**	**142.0**
TOTAL	**389.1**	**32.9**	**(4.3)**	**417.7**

Changes in amortization, depreciation and impairment losses break down as follows:

(in millions of euros)	Amortization, depreciation, and impairment losses as of January 1, 2017	Amortization and depreciation	Decreases, disposals, scrappings	Amortization, depreciation and impairment losses as of December 31, 2017
Intangible assets	(216.9)	(15.6)	0.1	(232.4)
Tangible assets	(69.6)	(10.0)	0.5	(79.1)
TOTAL	**(286.5)**	**(25.6)**	**0.6**	**(311.5)**

10. Financial assets

Changes in gross value break down as follows:

(in millions of euros)	Gross value as of January 1, 2017	Increases	Decreases	Gross value as of December 31, 2017
Equity investments	12,390.4	65.8 [a]	(2.9) [b]	12,453.3
Other long-term investment securities [c]	105.0	263.4	(317.1)	51.3 [d]
Long-term loans	2,153.7	0.9	(1.3)	2,153.3
Other long-term financial assets	67.2	2.1	-	69.3 [e]
FINANCIAL ASSETS	**14,716.3**	**332.2**	**(321.3)**	**14,727.2**

(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 45.4 and 20.0 million euros respectively.

(b) The decrease in equity investments results from the disposal of the investment in Air Liquide Europe Centrale et Orientale.

(c) The change in other long-term investment securities mainly corresponds to:

- *the acquisition and sale of Company treasury shares under the liquidity contract for 106.1 million euros and -105.3 million euros respectively;*
- *the acquisition of 1,500,000 Company treasury shares for 157.3 million euros;*
- *the cancellation of 1,100,000 Company treasury shares in the amount of -115.3 million euros;*
- *the transfer to the "Short-term financial investments-Company treasury shares" caption of 831,162 treasury shares in the amount of -96.5 million euros. This operation follows the decision taken by the Board of Directors to affect them to the implementation objective of any long-term incentive plans.*

At the 2017 year-end:

(d) the "Other long-term investment securities" caption includes a total of 448,000 treasury shares valued at an average price of 95.52 euros, i.e. a total amount of 42.8 million euros, of which 440,000 shares allocated for the purpose of cancellation and 8,000 shares held under the liquidity contract;

(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 27.2 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)		2016	Charges	Reversals / Decrease	2017
Tangible assets		-	(4.4)	-	(4.4)
Equity investments		(52.9)	(34.4)	1.6	(85.7)
Other long-term investment securities		(19.0)	(0.2)	10.9	(8.3)
Other long-term investments		-	-	-	-
Inventories and work-in-progress		(2.6)	(0.2)	1.5	(1.3)
Operating receivables		(17.8)	-	-	(17.8)
IMPAIRMENT AND ALLOWANCES		**(92.3)**	**(39.2)**	**14.0**	**(117.5)**
Whose charges and reversals:	*operating items*		*(0.3)*	*1.5*	
	financial items		*(34.6)*	*-*	
	exceptional items		*(4.3)*	*1.6*	

Charges mainly relate to impairment of equity investments of subsidiaries.

The decreases correspond mainly to the transfer to "Short-term financial investments - Company treasury shares" of the depreciation related to the 831,162 treasury shares held for an amount of -10.9 million euros. This follows on from the decision of the Board of Directors to allocate them in the objective of implementing any long-term incentive plan.

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 (22.4 million euros in 2017 and 21.9 million euros in 2016).

(in millions of euros)		2016	Charges / increases	Reversals	2017
Provisions for contingencies		8.9	4.6	(2.1)	11.4
Provisions for losses		23.6	12.0	(2.1)	33.5
PROVISIONS		**32.5**	**16.6**	**(4.2)**	**44.9**
Whose charges and reversals:	*operating items*		*12.7*	*(2.0)*	
	financial items		*2.8*	*(1.6)*	
	exceptional items		*1.1*	*(0.6)*	

Charges mainly relate to provisions for jubilee awards and vested rights with regard to retirement termination payments for 2.2 million euros, foreign exchange provision for 2.8 million euros and provisions to cover the future charge of the remittance of current shares for 9.9 million euros.

Reversals primarily stem from the cancellation of foreign exchange provisions for -1.6 million euros and from the utilization of provisions for jubilee awards and vested rights with regard to retirement benefits for -1.6 million euros.

12. Short-term financial investments

The item breaks down as follows:

(in millions of euros)	Gross value as of December 31, 2016	Gross value as of December 31, 2017
Company treasury shares	15.8	92.0
Other short-term financial investments	30.7	15.2
SHORT-TERM FINANCIAL INVESTMENTS	**46.5**	**107.2**

At the 2017 year-end, the "Company treasury shares" caption consisted of 1,005,182 shares (198,772 shares in 2016) allocated for the implementation of any performance shares plans to employees.

13. Shareholders' equity

As of December 31, 2017, the share capital comprised 428,397,550 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, 2016 (before appropriation of earnings)	Appropriation of 2016 net profit	Capital increases	Capital decreases	Other changes	As of December 31, 2017 (before appropriation of earnings)
Share capital [b]	2,138.8	-	223.5	(6.1)	-	2,356.2
Additional paid-in capital [b]	3,103.3	-	(172.8)	(109.2)	-	2,821.3
Revaluation reserve	23.9	-	-	-	-	23.9
Reserves:						
■ Legal reserve	189.6	24.1	-	-	-	213.7
■ Tax-driven reserves	307.8	-	-	-	-	307.8
■ Translation reserve	7.7	-	-	-	-	7.7
■ Other reserves	73.0	-	-	-	-	73.0
Retained earnings [c]	6,813.6	(579.4)	-	-	6.1	6,240.3
Net profit for the year	482.4	(482.4)	-	-	1,149.8	1,149.8
Accelerated depreciation [d]	5.1	-	-	-	(2.6)	2.5
SHAREHOLDERS' EQUITY	**13,145.2**	**(1,037.7)** [a]	**50.7**	**(115.3)**	**1,153.3**	**13,196.2**

(a) Following the decision of the Combined Annual Shareholders' Meeting of May 3, 2017.

(b) The change in the "Share capital" and "Additional paid-in capital" captions results from the following transactions:

- *Capital decrease in the amount of -6.1 million euros by canceling 1,100,000 treasury shares, as decided by the Board of Directors on May 3, 2017. The "Additional paid-in capital" caption was reduced by the amount of premiums related to these shares, i.e. respectively -109.2 million euros;*
- *Capital increase of 219.0 million euros, noted by the Chairman and Chief Executive Officer, as delegated by the Board of Directors on July 22, 2017, resulting from the granting of one free share for 10 existing shares (creation of 38,823,849 new shares) and one free share for 100 existing shares as part of a 10% bonus allotment (creation of 990,504 new shares) by deducting -219.0 million euros from "Additional paid-in-capital";*
- *Capital increases of 4.5 million euros resulting from the exercise of 462,734 subscription options before the free share attribution and 344,702 subscription options after the free share attribution. The "Additional paid-in capital" caption was increased by the premiums related to these share capital increases, i.e. 47.4 million euros.*

The "Additional paid-in capital" caption was reduced by the capital increase costs, i.e. -1.2 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" caption results from the reversal of accelerated depreciation in accordance with asset depreciation and amortization policies.

14. Debt maturity analysis

	December 31, 2017		
(in millions of euros)	Gross	≤ 1 year	> 1 year
Long-term loans	2,153.3	2.7	2,150.6
Other long-term investments	69.3	0.7	68.6
Operating receivables	412.7	397.0	15.7
Current account loans with subsidiaries [a]	257.6	257.6	-
ASSETS	**2,892.9**	**658.0**	**2,234.9**

(a) Current amount loans agreements are concluded for an indefinite period.

	December 31, 2017			
(in millions of euros)	Gross	≤ 1 year	> 1 to ≤ 5 years	> 5 years
Other bonds [a]	762.0	462.0	-	300.0
Bank borrowings	0.3	0.3	-	-
Other borrowings	252.4	1.8	0.6	250.0
Operating payables	494.7	479.0	15.7	-
Current account borrowings with subsidiaries [b]	779.5	779.5	-	-
DEBTS	**2,288.9**	**1,722.6**	**16.3**	**550.0**

(a) All new bond issues carried out by L'Air Liquide S.A., and constituting the outstanding bonds as of December 31, 2017, include a change of control clause.

(b) Current amount borrowings agreements are concluded for an indefinite period.

15. Loan issue and bond redemption premiums

The change in the item breaks down as follows:

(in millions of euros)	Net value as of January 1, 2017	Increases	Charges	Net value as of December 31, 2017
Loan issue premiums	13.0	-	(1.8)	11.2
Bond redemption premiums	10.1	-	(5.6)	4.5
TOTAL	**23.1**	**-**	**(7.4)**	**15.7**

The charges in bond redemption premiums mainly correspond to the amortization of a 43.8 million euro premium related to the 2010 bond exchange over the term of the new bond, i.e. until October 2018.

16. Financial instruments

Unsettled derivatives as of December 31, 2017 break down as follows:

	December 31, 2017	
(in millions of euros)	Carrying value	Fair value difference
Currency forwards		
■ Buy	48.4	(0.8)
■ Sell	154.2	1.5
FOREIGN EXCHANGE RISK		**0.7**

The fair value difference represents the difference between the derivative's 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.

17. Retirement and similar plans

A. Group retirement benefit guarantee agreement

In France, Air Liquide grants additional benefits to retirees (3,990 retirees as of December 31, 2017) and to employees over 45, or with more than 20 years of service as of January 1, 1996 (10 employees as of December 31, 2017). 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. 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.

The contributions amounted to 12.1 million euros in 2017 (12.3 million euros in 2016) 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, 2017 amounts to 666.9 million euros (638.9 million euros for retirees and 28.0 million euros for active employees).

Based on the assumptions used for the valuation of the retirement obligations, an estimated 478.8 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 (921 employees as of December 31, 2017) 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 2017, employer contributions (net of reinvoicing to subsidiaries) amounted to 6.5 million euros (6.1 million euros in 2016).

C. Retirement termination payments and jubilees

The corresponding obligations are provided for in the amount of 21.5 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, 2017, the amounts stand at 12.2 million euros (10.9 million euros in 2016).

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 (1.55% as of December 31, 2017).

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, 2017	**658.9**	**42.9**	**1.0**	**702.8**
Service cost	0.9	2.4	-	3.3
Interest cost	7.3	0.5	-	7.8
Transfert	-	(0.5)	-	(0.5)
Benefit payments	(45.3)	(1.9)	-	(47.2)
Actuarial (gains) / losses [(a)]	45.1	1.7	(0.1)	46.7
OBLIGATIONS AS OF DECEMBER 31, 2017 [(b)]	**666.9**	**45.1**	**0.9**	**712.9**

(a) The amounts recognized in "Actuarial (gains) / losses" mainly arise from the updating of the mortality table.
(b) Commitments as of December 31, 2017 are covered by assets amounting to 9.8 million euros.

18. Accrued income and accrued expenses

(in millions of euros)	December 31, 2017
Accrued income	
Other long-term financial assets	69.6
Operating receivables	69.3
ACCRUED INCOME	**138.9**
Accrued expenses	
Other bonds	5.2
Other borrowings	1.9
Operating payables	164.2
ACCRUED EXPENSES	**171.3**

19. 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, 2017 are estimated as follows:

(in millions of euros)	December 31, 2016	December 31, 2017
Deferred tax assets (decrease in future tax expense)	4.2	3.8
Deferred tax liabilities (increase in future tax expense)	3.7	1.8

The deferred taxes were calculated taking into account the 3.3% social security contribution on earnings i.e. a general rate of 34.43%.

OTHER INFORMATIONS

1. 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, 2017	
(in millions of euros)	Gross	Including related undertakings
Balance sheet		
Long-term loans	2,153.3	2,151.6
Other long-term financial assets	69.3	-
Operating receivables	412.7	356.1
Current account loans with subsidiaries	257.6	257.6
Other borrowings	252.4	251.9
Operating payables	494.7	105.9
Current account borrowings with subsidiaries	779.5	779.5
Income statement		
Financial income from equity affiliates	988.5	988.5
Interests, similar income and expenses	(10.8)	11.4
Other financial income and expenses	(45.5)	(33.5)

2. Off-balance sheet commitments

Off-balance sheet commitments break down as follows:

(in millions of euros)	December 31, 2016	December 31, 2017
Commitments given		
Endorsements, securities and guarantees given [(a)]	2,210.6	1,257.2
To Air Liquide Finance and Air Liquide US LLC on transactions performed [(b)]	13,240.6	12,016.9
Firm purchase orders for fixed assets	22.6	7.0
COMMITMENTS GIVEN	**15,473.8**	**13,281.1**

(a) *The caption "Endorsements, securities and guarantees given" consists mainly of the guarantees given in favor of holders of the Senior Notes issued by Airgas. These guarantees amount to 1,150 million US dollars (compared to 1,550 as of December 31, 2016). This caption also includes the joint and several liability guarantee of the subsidiary Air Liquide France Industrie in connection with the energy purchases and a guarantee covering the obligations of the Air Liquide Global E&C Solutions France subsidiary under the Middle Eastern projects.*

(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.*

3. 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)	2017
Remuneration of the Board of Directors	0.8
Remuneration of Executive Management	2.8
TOTAL	**3.6**

During 2017, the Company paid to third parties the total amount of 226,755 euros.

For Benoît Potier: with respect to supplementary defined contribution pension plans: 9,379 euros, with respect to the collective life insurance contract: 208,526 euros and with respect to the collective death and disability benefits plan: 8,850 euros.

The Company paid nothing to third party for Pierre Dufour.

4. Average number of employees

The average number of employees is:

	2016	2017
Engineers and executives	829	809
Supervisory staff	252	224
Employees	5	5
Laborers	21	19
TOTAL	**1,107**	**1,057**

5. Subsidiaries and affiliates information

(in thousands of euros)	Share capital as of December 31, 2017	Other equity as of December 31, 2017	% share holding	Carrying amount of shares held after the revaluations of 1976, 1978 and 1979 Gross	Net	including revaluation difference	Loans and advances granted by the Company and not repaid	Guarantees and endorsements given by the Company	2016 net revenue [(a)]	Net profit (or loss) for 2016 [(a)]	Dividends collected by the Company during 2017
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	3,379,873	99.99%	9,333,923	9,333,923	21,186	268	-	399	359,489	600,806
Air Liquide France Industrie – 6, rue Cognacq-Jay – 75007 Paris	72,268	505,179	99.99%	285,126	285,126	-	-	-	975,106	121,772	150,076
Air Liquide Finance – 6, rue Cognacq-Jay – 75007 Paris	72,000	8,109	99.99%	72,901	72,901	-	2,190,925	11,931,052	-	97,080	97,080
Air Liquide Santé (International) – 75, quai d'Orsay – 75007 Paris	38,477	266,499	99.99%	331,728	331,728	6,301	1,693	-	-	76,660	49,130
Chemoxal [(b)] – 75, quai d'Orsay – 75007 Paris	30,036	3,309	99.99%	30,326	30,326	-	-	-	-	38,208	38,288
Air Liquide Investissements d'Avenir et de Démonstration – 6, rue Cognacq-Jay – 75007 Paris	75,050	894	99.99%	75,050	62,595	-	-	-	57	(5,081)	-
Air Liquide Advanced Business – 6, rue Cognacq-Jay – 75007 Paris	106,450	(27,203)	99.99%	106,450	85,388	-	265	-	6,850	(12,035)	-
b) Companies operating outside of France											
Air Liquide Industriegase GmbH & Co. KG – Hans-Günther-Sohl-Strasse 5 – 40235 Düsseldorf – Germany	10	2,922,335	100.00%	2,106,474	2,106,474	-	-	-	50,133	120,951	35,000
B. GENERAL INFORMATION ON OTHER SUBSIDIARIES AND AFFILIATES											
a) French companies (together)				106,029	54,585	16,068	7,694	2,770			6,734
b) Foreign companies (together)				3,973	3,216	-	-	-			11,410

(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 free 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, 2017.

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, 2017 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, 2017 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 attention to the note 1. General Principles to the financial statements relating to the first application of the new accounting standard, effective January 1, 2017, on financial and hedging instruments (Regulation ANC 2015-05).

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 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 investements measurement

Identified risk

As at December 31, 2017, the net book value of the equity investments amounts to € 12,368 million and represents 80% 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 the 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 flow 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 judgement.

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 the notes "§2.D. Accounting policies – Equity investments", "10. Financial assets" and '11. Impairment, allowances and provisions" to the statutory financial statements.

VERIFICATION OF THE MANAGEMENT REPORT AND OF THE OTHER DOCUMENTS PROVIDED TO THE SHAREHOLDERS

We have also performed, in accordance with professional standards applicable in France, the specific verifications required by French law.

Information given in the Management Report and in other documents provided to the Shareholders with respect to the financial position and the financial statements

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 provided to the Shareholders with respect to the financial position and the financial statements.

Report on corporate governance

We confirm 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 received by the directors and any other commitments made in their favour, 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 controlling and controlled companies. Based on our work, we confirm 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 offering (exchange or share purchase), provided pursuant to article L. 225-37-5 of the French Commercial Code, we have verified its compliance with the source documents communicated to us. Based on our work, we have no matter to report regarding this information.

Other information

In accordance with French law, we have verified that the required information concerning the purchase of investments and controlling interests and 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, 2017, PricewaterhouseCoopers Audit was in its second year of uninterrupted engagement and ERNST & YOUNG et Autres in its eighth year of uninterrupted engagement. Previously, ERNST & YOUNG Audit, member of 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 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 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) N° 537/2014, confirming our independence within the meaning of the rules applicable in France such as they are set in particular by articles L. 822-10 to L. 822-14 of the French Commercial Code (Code de commerce) and in the French Code of Ethics (Code de déontologie) for Statutory Auditors. Where appropriate, we discuss with the Audit Committee the risks that may reasonably be thought to bear on our independence, and the related safeguards.

Neuilly-sur-Seine and Paris-La Défense, March 2, 2018

The Statutory Auditors

French original signed by

PricewaterhouseCoopers Audit		ERNST & YOUNG et Autres	
Olivier Lotz	Séverine Scheer	Jeanne Boillet	Emmanuelle Mossé

Five-year summary of Company results

(Articles R. 225-83 and R. 225-102 of the French Commercial Code)

	2013	2014	2015	2016	2017
I - Share capital at the end of the year					
a) Share capital *(in euros)* [(a) (b) (c)]	1,720,574,218	1,896,800,857	1,892,896,506	2,138,816,686	2,356,186,525
b) Number of outstanding ordinary shares	312,831,676	344,872,883	344,163,001	388,875,761	428,397,550
c) Number of shares with loyalty dividend entitlement [(d)]	92,705,933	102,644,011	102,889,311	102,292,196	117,152,854
d) Convertible bonds					
II - Operations and results of the year *(in millions of euros)*					
a) Revenue	232.0	166.6	176.3	154.5	139.3
b) Net profit before tax, employee profit-sharing, depreciation, amortization and provisions	1,149.2	5,160.5	2,455.5	577.9	1,276.8
c) Corporate income tax	52.9	53.1	59.0	53.8	70.8
d) Employee profit-sharing for the year	3.3	2.7	2.2	2.6	2.6
e) Net profit after tax, employee profit-sharing, depreciation, amortization and provisions	1,017.9	5,060.8	2,317.2	482.4	1,149.8
f) Distributed profit	820.9	905.1	921.6	1,037.7	1,165.7
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	3.49	14.80	6.96	1.34	2.88
■ over the adjusted number of shares [(e)]	2.82	13.14	6.17	1.31	2.89
b) Net profit after tax, employee profit-sharing, depreciation, amortization and provisions					
■ over the number of ordinary shares outstanding	3.25	14.67	6.73	1.24	2.68
■ over the adjusted number of shares [(e)]	2.62	13.02	5.97	1.21	2.70
c) Dividend allocated to each share					
■ over the number of ordinary shares outstanding	2.55	2.55	2.60	2.60	2.65
■ over the adjusted number of shares [(f)]	2.04	2.25	2.30	2.36	2.65
d) Loyalty dividend					
■ over the number of ordinary shares outstanding	0.25	0.25	0.26	0.26	0.26
■ over the adjusted number of shares [(f)]	0.20	0.23	0.23	0.24	0.26
IV - Employees working in France					
a) Average number of employees during the year	1,264	1,097	1,108	1,107	1,057
b) Total payroll for the year *(in millions of euros)*	159.1	145.1	147.0	149.9	151.9
c) Amounts paid with respect to employee benefits during the year (social security, staff benefits, etc.) *(in millions of euros)*	69.6	67.6	70.0	68.9	69.8

(a) Using the authorization granted by the 10th resolution of Combined Annual Shareholders' Meeting of May 7, 2013, the 15th resolution of the Combined Annual Shareholders' Meeting of May 7, 2014 and 12th resolution of the Combined Annual Shareholders' Meeting of May 5, 2017, the Board of Directors made the following decisions:

- *in its meeting of May 7, 2013, capital decrease by cancellation of 1,000,000 treasury shares;*
- *in its meeting of May 7, 2014, capital decrease by cancellation of 1,000,000 treasury shares;*
- *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.*

(b) Using the authorization granted by the 16th resolution of the Combined Annual Shareholders' Meeting of May 7, 2014, the Board of Directors decided in its meeting of May 7, 2014, the granting of one free share for ten existing shares (ranking for dividends as of January 1, 2014), and the granting of a 10% bonus for shares held in registered form from December 31, 2011 to June 1, 2014 (ranking for dividends as of January 1, 2014).

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).

(c) Using the authorizations granted by the resolutions of Combined Annual Shareholders' Meetings of May 9, 2007, May 5, 2010 and May 7,2013,

- *the Board of Directors noted in its meeting of February 14, 2017 the issuance of 22,769 shares (ranking for dividends as of January 1, 2017) arising from:*
  - *the exercise of 15,366 options subscribed at the price of 48.72 euros;*
  - *the exercise of 1,503 options subscribed at the price of 66.47 euros;*
  - *the exercise of 3,053 options subscribed at the price of 69.66 euros;*
  - *the exercise of 2,847 options subscribed at the price of 85.30 euros.*
- *pursuant to the delegation granted by the Board of Directors in its meeting of July 27, 2017, the Chairman and CEO noted on September 26, 2017 the issuance of 439,965 shares (ranking for dividends as of January 1, 2017) arising from:*
  - *the exercise of 263,046 options subscribed at the price of 48.72 euros;*
  - *the exercise of 94,514 options subscribed at the price of 66.47 euros;*
  - *the exercise of 35,032 options subscribed at the price of 69.66 euros;*
  - *the exercise of 33,324 options subscribed at the price of 85.30 euros;*
  - *the exercise of 5,155 options subscribed at the price of 90.06 euros;*
  - *the exercise of 5,323 options subscribed at the price of 94.45 euros;*
  - *the exercise of 900 options subscribed at the price of 70.47 euros;*
  - *the exercise of 2,671 options subscribed at the price of 102.24 euros.*
- *the Board of Directors noted in its meeting of February 14, 2018 the issuance of 344,702 shares (ranking for dividends as of January 1, 2017) arising from:*
  - *the exercise of 53,106 options subscribed at the price of 60.28 euros;*
  - *the exercise of 96,027 options subscribed at the price of 63.18 euros;*
  - *the exercise of 82,560 options subscribed at the price of 77.36 euros;*
  - *the exercise of 112,927 options subscribed at the price of 81.68 euros;*
  - *the exercise of 82 options subscribed at the price of 85.66 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 (1 bonus share for 4 shares subscribed with a maximum of 3 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.

(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

ANNUAL GENERAL MEETING 2018

BOARD OF DIRECTORS' REPORT ON THE RESOLUTIONS PRESENTED TO THE COMBINED SHAREHOLDERS' MEETING – MAY 16, 2018

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 299 and 300.

Revenue for the fiscal year ended December 31, 2017 amounted to 139.3 million euros, compared to 154.5 million euros in 2016, down by -9.8%.

The income from French and foreign equity securities amounted to 988.5 million euros, compared to 264.9 million euros in 2016.

Net profit for the fiscal year ended December 31, 2017 amounted to 1,149.8 million euros, compared to 482.4 million euros in 2016.

In 2016 and 2017, L'Air Liquide S.A. net profit is impacted by exceptional items.

Consolidated revenue in 2017 amounted to 20,349.3 million euros, compared to 18,134.8 euros in 2016, up +12.2%. After adjusting for the cumulative impact of foreign exchange fluctuations, revenue was up +13.9%. The latter essentially stemmed from the depreciation of the US dollar, the Yen and the Chinese renminbi against the euro.

Consolidated net profit, after deduction of minority interests, amounted to 2,199.6 million euros, compared to 1,844.0 million euros in 2016, up +19.3% (up + 21.9% 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 Reference Document – page 346.

CROSSING OF SHARE CAPITAL AND VOTING RIGHTS THRESHOLDS IN 2017

Please refer to the chapter "Additional Information" of this Reference Document – page 345.

Investments and acquisition of controlling interests

In accordance with the provisions of article L. 233-6 of the French Commercial Code, the transactions performed by L'Air Liquide S.A. in 2017 is the acquisition of 20% of the share capital of the company TPC.

Resolutions within the authority of the Ordinary Shareholders' Meeting

We ask you, after having reviewed:

- the Report of the Board of Directors on the operation and management of the Company and its Group during the 2017 fiscal year;
- 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, 2017 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 2.65 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 428,397,550 shares making up the share capital as of December 31, 2017, 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 proposed dividend amounts to 2.65 euros per share, an increase of 12.4% in shareholders' return, taking into account the free share attribution of one for 10 in 2017.

The ex-dividend date has been set for May 28, 2018. The dividend payment date will be set for May 30, 2018.

In accordance with the provisions of article 243 bis of the French Tax Code, it is specified that this dividend is eligible in its entirety for the 40% allowance referred to in section 2° of paragraph 3 of article 158 of the French Tax Code.

In addition, shareholders who have held their shares in registered form for at least two years as of December 31, 2017 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 117,152,854 shares at December 31, 2017), to a loyalty dividend of 10% compared with the dividend paid to the other shares, i.e. an additional dividend of 0.26 euro per share. In accordance with the provisions of article 243 bis of the French Tax Code, it is specified that this dividend is also eligible in its entirety for the 40% allowance referred to in section 2° of paragraph 3 of article 158 of the French Tax Code.

The difference between the loyalty dividend calculated on the number of shares known to exist at December 31, 2017 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 year. Such amount includes profits for 2017 of 1,149,807,311 euros plus available retained earnings at December 31, 2017 of 6,240,307,970 euros, i.e. a total of 7,390,115,281 euros.

We propose to appropriate the distributable earnings for fiscal year 2017, i.e. 7,390,115,281 euros, as follows:

Legal reserve	21,819,319 euros
Retained earnings	6,202,582,712 euros
Dividend (including the loyalty dividend)	1,165,713,250 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** *(in euros)*
Fiscal year 2014			
Ordinary dividend	879,425,851	344,872,883	2.55
Loyalty dividend	25,661,003	102,644,011	0.25
Fiscal year 2015			
Ordinary dividend	894,823,802	344,163,001	2.60
Loyalty dividend	26,751,221	102,889,311	0.26
Fiscal year 2016			
Ordinary dividend	1,011,076,979	388,875,761	2.60
Loyalty dividend	26,595,971	102,292,196	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 2014 – ordinary dividend: 874,131,348 euros for 342,796,607 shares; loyalty dividend: 23,909,031 euros for 95,636,122 shares;
- fiscal year 2015 – ordinary dividend: 895,276,249 euros for 344,337,019 shares; loyalty dividend: 25,311,759 euros for 97,352,920 shares;
- 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.
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.

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 Shareholders' Meeting of May 3, 2017 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 attribution, 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 grant of shares 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 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 markets 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, 2016, namely 38,887,576 shares for a maximum total amount of 6,416,450,040 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, in private transactions, 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.

Pursuant to this authorization and the previous delegation authorized by the Combined Shareholders' Meeting of May 12, 2016:

- A liquidity contract was set up which led to the following movements during the 2017 fiscal year:
  - 997,612 shares were purchased for a total price of 106,118,056 euros, or an average purchase price of 106.37euros,
  - 990,362 shares were sold for a total price of 105,588,404 euros, or an average purchase price of 106.62 euros;
- On February 20, 2017, under the share buyback program, 1.5 million shares were bought back for a total amount of 157,278,900 euros, i.e. an average cost of 104.8526 euros per share, representing 0.39% of the share capital as of December 31, 2016.

No other shares were bought before the end of fiscal year 2017.

The total cost of the buybacks was thus limited to 263,396,956 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 delivery of treasury shares to beneficiaries of performance share plans as follows:
  - 39,882 shares granted under the 2014 Performance Shares Plan ("France Plan");
  - 74,378 shares granted under the 2013 Performance Shares Plan ("World Plan");
  - 88 shares granted under the 2014 Performance Shares Plan ("France Plan");
  - 198 shares granted under the 2011 Performance Shares World Plan under regularizations; and
  - 200 shares, 386 shares, 377 shares, 681 shares, 159 shares and 733 shares granted following three deaths under the 2013 ("World Plan"), 2014 ("World Plan"), 2015 ("World Plan"), 2015 ("France Plan"), 2015 ("PPR Plan") and 2016 ("France Plan") Performance Shares Plans.

As of December 31, 2017, the Company directly owned 1,445,182 shares at an average purchase price of 92.69 euros, i.e. a balance sheet value of 133,959,361 euros. These shares, each with a par value of 5.50 euros, represented 0.34% of the Company's share capital.

The shares are assigned to the objective of cancellation for 440,000 shares and to the objective of implementation of any performance share plans for 1,005,182 shares.

Under the liquidity contract, as of December 31, 2017 a total of 8,000 shares were on the balance sheet for a net value of 850,893 euros.

B. Draft resolution

As the authorization granted by the Ordinary Shareholders' Meeting of May 3, 2017 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 15th 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 attribution, 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 a free grant of these shares 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 of the Company or 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 markets authority (Autorité des marchés financiers).

The maximum purchase price will be set at 165 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, 2017, or 42,839,755 shares with a par value of 5.50 euros, for a maximum total amount of 7,068,559,575 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 as 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, in private transactions, 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 through private transactions, 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 Shareholders' Meeting. It supersedes the authorization granted by the Ordinary Shareholders' Meeting of May 12, 2016 in its 4th resolution with respect to its non-utilized portion.

RENEWAL OF THE TERMS OF OFFICE OF DIRECTORS

The **5th, 6th, 7th and 8th resolutions** concern the **renewal**, as members of the Company's Board of Directors, for a period of four years, of the respective **terms of office** of Mr Benoît Potier, Mr Jean-Paul Agon, Ms Sin Leng Low and Ms Annette Winkler that expire at the end of this Shareholders' Meeting.

The Board of Directors confirmed its intention to renew the term of office of Mr Benoît Potier as Chairman and CEO at the meeting scheduled to take place after this Shareholders' Meeting.

This organization of the governance of the Company allows in particular for **regular, personalized exchanges between shareholders and General Management through a single contact person,** with in-depth knowledge of the Group and its businesses. These exchanges ensure that the definition of the Group's strategy takes due account of the expectations and interests of shareholders over the long term. Over the past 11 years during which Mr Benoît Potier has been Chairman and Chief Executive Officer, the Group has enjoyed a steady performance (an average annual growth over the 2006-2017 period of +5.8% in revenue and of +7.4% in published net profit), driven by strong organic growth and transforming acquisitions, including the largest, that of Airgas in 2016.

The combination of the roles of Chairman and Chief Executive Officer are overseen by **balanced rules of governance** which have been further strengthened in 2017. The Board is thus composed of 8 independent Directors of a total of 12 members, and unites **a complementarity of experience and expertise**. Its **Directors are highly committed**, with an average attendance rate at Board and Committee meetings which exceeded 96% in 2017. Moreover, each Director was also a member of one of the four Committees. The balance of power is ensured by the presence, since 2014, of an **independent Lead Director** who has **specific powers**, including the power to request that the Chairman summon the Board of Directors on any specified agenda. Furthermore, since 2017, the Lead Director calls an **executive session** once a year of all Directors without the presence of the executive Directors (and past executives) and all persons internal to the Group. Directors may also request an individual meeting with the Lead Director as often as they judge necessary. In order to **further improve dialog with shareholders**, the Board will also now be informed of all regular contact between the Chairman and Chief Executive Officer and the major shareholders, with the latter also having the possibility to request, where necessary, a meeting with the Lead Director. These governance measures are described in detail on page 132-133 of the 2017 Reference Document.

Mr Jean-Paul Agon, Chairman and CEO of L'Oréal, who has been a Director since 2010 and Lead Director since 2017, will continue to provide the Board of Directors with his expertise in the senior management of a major international company and his specific knowledge of consumer product markets. The Board of Directors confirmed its intention to renew Mr Jean-Paul Agon' as Lead Director.

Ms Sin Leng Low, who has been a Director since 2014, will continue to bring to the Board her experience in the management of industrial activities and her knowledge of the Asian markets.

Ms Annette Winkler, Vice President of Daimler (at the head of smart), who has been a Director since 2014, will continue to bring to the Board her experience in senior management of a major German industrial group with an international reach, focused on the consumer goods market.

Furthermore and for information, the term of office of the employee Director will expire at the end of this Shareholders' Meeting. At a plenary meeting on December 6, 2017, the France Group Committee reappointed Mr Philippe Dubrulle as Director representing the employees for a term of four years expiring at the end of the Shareholders'Meeting held to approve the financial statements for the fiscal year ending December 31, 2021.

REGULATED AGREEMENTS AND COMMITMENTS

The **9th and 10th resolutions** concern two regulated commitments relating to Mr Benoît Potier which must, as provided by law, be subject to a vote by the Shareholders' Meeting at the time of the renewal of his term of office as Chairman and Chief Executive Officer.

- **Termination indemnity:** the Board of Directors has modified the termination indemnity to which Mr Benoît Potier may be entitled, taking into account the remarks of certain shareholders.
  - The termination indemnity will thus be due in the case of forced departure (removal from office, request for resignation) related to a change of strategy or a change in control. In the event of the latter, the termination indemnity will only be due if the departure takes place within six months, versus 24 months previously.
  - The termination indemnity, capped at 24 months of gross fixed and variable remuneration, is subject to performance conditions using a scale based on the average annual difference between Return On Capital Employed (ROCE) after tax and Weighted Average Cost of Capital (WACC) over three years, the thresholds for increases having been made more exacting than before. The amount of the termination indemnity decreases gradually during the two years prior to the age limit of Executive Officers defined in the Company's articles of association.
- **Defined benefit pension scheme:** in response to the requirements of the 2015 Macron law, the Board of Directors decided to subject the contingent rights allocated to Benoît Potier with effect as of the renewal of his term of office by this Shareholders' Meeting to performance conditions similar to those for the abovementioned termination indemnity.

These agreements are included in the Statutory Auditors' Special Report on regulated agreements and commitments (see 2017 Reference Document p. 335 et seq. and the Company's website).

APPROVAL OF THE REMUNERATION OF THE COMPANY'S EXECUTIVE OFFICERS FOR THE 2017 FISCAL YEAR

Pursuant to article L. 225-100 of the French Commercial Code introduced by the law relating to transparency, the fight against corruption and the modernization of economic activity (called the Sapin 2 law), shareholders are asked in the **11th and 12th resolutions** to approve the fixed, variable and exceptional components of the total remuneration and other benefits paid or allocated to Mr Benoît Potier in respect of the 2017 fiscal year and to Mr Pierre Dufour whose term of office as Senior Executive Vice President ended following the Shareholders' Meeting of May 3, 2017.

The components of remuneration are described in the Report on corporate governance included in the 2017 Reference Document and are summarized in the 2018 Invitation to Shareholders' Meeting. They were paid or awarded in line with the remuneration policy approved by the Shareholders' Meeting on May 3, 2017.

APPROVAL OF THE REMUNERATION POLICY APPLICABLE TO THE EXECUTIVE OFFICERS FOR THE 2018 FISCAL YEAR

Pursuant to article L. 225-37-2 of the French Commercial Code, shareholders are asked in the **13th resolution** to approve for the 2018 fiscal year, the principles and criteria for determining, distributing and allocating the fixed, variable and exceptional components of the total remuneration and other benefits allocated to Executive Officers, and applicable to Mr Benoît Potier in respect of his term of office as Chairman and Chief Executive Officer, as described in the Report on corporate governance included in the 2017 Reference Document and summarized in the 2018 Invitation to Shareholders' Meeting.

SETTING DIRECTORS' FEES

The **14th resolution** sets the authorized amount of Directors' fees per fiscal year. Since 2014, the amount has been 1 million euros. On the recommendation of the Remuneration Committee, the Board of Directors proposes to increase the amount of Directors' fees that may be allocated each year to the Directors to 1.15 million euros as of 2018.

The proposed increase takes into account, in particular, the creation of a fourth Committee in 2017 (the Environmental and Social Committee), the increasing number of meetings and the extension of the work handled by the Board and the Committees, as well as the desire to promote a variety of skills and nationalities within the Board for forthcoming recruitments.

The Directors' fees 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. 190-191 of the 2017 Reference Document.

Resolutions within the authority of the Extraordinary Shareholders' Meeting

AUTHORIZATION TO REDUCE THE SHARE CAPITAL BY CANCELLATION OF TREASURY SHARES

You are asked, in the **15th 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 Shareholders' Meeting in its 4th resolution and those shares bought back within the scope of the authorizations adopted by the Ordinary Shareholders' Meetings of May 12, 2016 and May 3, 2017, 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 Shareholders' Meeting of May 3, 2017 in its 12th 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 Shareholders' Meeting of May 12, 2016 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 2017 when the Company attributed 1 free share for every 10 existing shares following a share capital increase through capitalization of the sum of 218.98 million euros taken from "additional paid-in capital" thereby creating 39,814,353 new shares (amount including the loyalty bonus of 10%, i.e. 1 additional free share for every 100 existing shares).

As in 2016, in order to provide shareholders with the right to express an opinion on this share capital increase during periods of takeover bids, it is proposed that this delegation of authority be suspended during periods of takeover bids.

The purpose of the **16th resolution** is to renew this authorization for a maximum amount of 300 million euros.

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.

RESOLUTIONS PRESENTED FOR THE APPROVAL OF THE COMBINED SHAREHOLDERS' MEETING – MAY 16, 2018

Ordinary Shareholders' 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, 2017.

FIRST RESOLUTION

(Approval of the Company financial statements for the year ended December 31, 2017)

The shareholders, deliberating according to the quorum and majority required for Ordinary Shareholders' 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, 2017 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 1,149,807,331 euros.

SECOND RESOLUTION

(Approval of the consolidated financial statements for the year ended December 31, 2017)

The shareholders, deliberating according to the quorum and majority required for Ordinary Shareholders' 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, 2017 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 2.65 euros per share, which represents an increase of +12.4% in shareholders' return, taking into account the attribution of one free share for 10 existing shares in 2017.

A loyalty dividend of 10%, i.e. 0.26 euro per share, shall be granted to shares which have been held in registered form since December 31, 2015 and which remain held in this form continuously until May 30, 2018, the dividend payment date. As of December 31, 2017, 27.35% of the shares making up the share capital are likely to benefit from this loyalty dividend.

With an estimated pay-out ratio of 53% of the Group's net profit (57% of "recurring" 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 has been set for May 28, 2018. The dividend payment date will be set for May 30, 2018.

THIRD RESOLUTION

(Appropriation of 2017 earnings and setting of the dividend)

The shareholders, deliberating according to the quorum and majority required for Ordinary Shareholders' Meetings, having noted that, considering the fiscal year 2017 earnings of 1,149,807,311 euros and the retained earnings of 6,240,307,970 euros as of December 31, 2017, distributable earnings for the year amount to a total of 7,390,115,281 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	21,819,319 euros
Retained earnings	6,202,582,712 euros
Dividend (including the loyalty dividend)	1,165,713,250 euros

Hence, a dividend of 2.65 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 428,397,550 shares making up the share capital as of December 31, 2017, 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 30, 2018:

- for direct registered shares: directly by the Company, based on the means of payment indicated by the holders;
- 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 *(in euros)*
Fiscal year 2014			
Ordinary dividend	879,425,851	344,872,883	2.55
Loyalty dividend	25,661,003	102,644,011	0.25
Fiscal year 2015			
Ordinary dividend	894,823,802	344,163,001	2.60
Loyalty dividend	26,751,221	102,889,311	0.26
Fiscal year 2016			
Ordinary dividend	1,011,076,979	388,875,761	2.60
Loyalty dividend	26,595,971	102,292,196	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 2014 – ordinary dividend: 874,131,348 euros for 342,796,607 shares; loyalty dividend: 23,909,031 euros for 95,636,122 shares;
- fiscal year 2015 – ordinary dividend: 895,276,249 euros for 344,337,019 shares; loyalty dividend: 25,311,759 euros for 97,352,920 shares;
- 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.
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 share capital increase reserved for employees.

Pursuant to the provisions of the articles of association, a loyalty dividend of 10%, i.e. 0.26 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, 2015, and which remain held in this form continuously until May 30, 2018, the dividend payment date.

In accordance with the provisions of article 243 bis of the French Tax Code, it is specified that the ordinary and loyalty dividends are also in their entirety eligible for the 40% allowance referred to in section 2° of paragraph 3 of article 158 of the aforementioned code.

The total amount of the loyalty dividend for the 117,152,854 shares which have been held in registered form since December 31, 2015, and which remained held in this form continuously until December 31, 2017, amounts to 30,459,742 euros.

The total loyalty dividend corresponding to these 117,152,854 shares that cease to be held in registered form between January 1, 2018 and May 30, 2018, 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 2017, the buyback program resulted in the purchase of 1.5 million shares, representing 0.39% of the capital and the cancellation of 1.1 million shares.

Additionally, under the liquidity contract: 1 million shares were purchased and 1 million were sold. As of December 31, 2017, 8,000 shares were held under the liquidity contract.

As of December 31, 2017, the Company held approximately 1.4 million shares, assigned to the objective of cancellation for 440,000 shares and to the objective of implementation of any performance shares plan for 1,005,182 shares. **These shares represent 0.34% 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 the 4th resolution provides that the maximum purchase price is set at 165 euros (unchanged amount) 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, 2017, i.e. 42,839,755 shares for a maximum total amount of 7,068,559,575 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 in the 4th resolution and the program description is available on the Company's website, www.airliquide.com, prior to the Shareholders' 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 Shareholders' 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 fifteenth 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 attribution, 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 a free grant of these shares 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 of the Company or 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 markets authority (Autorité des marchés financiers).

The Shareholders' Meeting will set the maximum purchase price at 165 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 at 10% of the total number of shares making up the share capital as of December 31, 2017, or 42,839,755 shares with a par value of 5.50 euros, for a maximum total amount of 7,068,559,575 euros, subject to the legal limits.

These shares can 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, in private transactions, 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 through private transactions, 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 Shareholders' Meeting. It supersedes the authorization granted by the fourth resolution of the Ordinary Shareholders' Meeting of May 3, 2017 with respect to the non-utilized portion of such authorization.

The shareholders give full powers to the Board of Directors, with the possibility of 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 8 Renewal of terms of office of Directors

PURPOSE

The 5th, 6th, 7th and 8th resolutions concern the **renewal**, as members of the Company's Board of Directors, for a period of four years, of the respective **terms of office** of Mr Benoît Potier, Mr Jean-Paul Agon, Ms Sin Leng Low and Ms Annette Winkler that expire at the end of this Shareholders' Meeting.

The Board of Directors confirmed its intention to renew the term of office of Mr Benoît Potier as Chairman and Chief Executive Officer at the meeting to be held at the close of this Shareholders' Meeting.

This mode of management of the Company allows in particular for **regular, personalized exchanges between shareholders and General Management through a single contact person,** with in-depth knowledge of the Group and its businesses. These exchanges ensure that the definition of the Group's strategy takes due account of the expectations and interests of shareholders over the long term. Over the past 12 years during which Mr Benoît Potier has been Chairman and Chief Executive Officer, the Group has achieved a consistent performance (an average annual growth over the 2006-2017 period of +5.8% in revenue and of +7.4% in published net profit); driven by strong organic growth and transforming acquisitions, including the largest, that of Airgas in 2016.

The combination of the roles of Chairman and Chief Executive Officer are overseen by **balanced rules of governance** which have been further strengthened in 2017. The Board is thus composed of 8 independent Directors of a total of 12 members, and brings **a complementarity of experience and expertise**. Its **Directors are highly committed**, with an average attendance rate at Board and Committee meetings in excess of 96% in 2017. Moreover, each Director was also a member of one of the four Committees. The balance of power is ensured by the presence, since 2014, of an **independent Lead Director** who has **specific powers,** including the power to ask the Chairman to convene the Board of Directors on a given agenda. Furthermore, since 2017, the Lead Director calls an **executive session** once a year of all Directors without the presence of the executive Directors (and past executives) and all persons internal to the Group. Directors may also request an individual meeting with the Lead Director as often as they judge necessary. In order to **further improve dialog with shareholders**, the Board will also now be informed of all regular contact between the Chairman and Chief Executive Officer and the major shareholders, with the latter also having the possibility to request, where necessary, a meeting with the Lead Director. These governance measures are described in detail on pages 132-133 of the 2017 Reference Document.

Mr Jean-Paul Agon, Chairman and CEO of L'Oréal, who has been a Director since 2010 and Lead Director since 2017, will continue to provide the Board of Directors with his expertise in the senior management of a major international company and his specific knowledge of consumer product markets. The Board of Directors confirmed its intention to renew Mr Jean-Paul Agon as Lead Director.

Ms Sin Leng Low, who has been a Director since 2014, will continue to bring to the Board her experience in the management of industrial activities and her knowledge of the Asian markets.

Ms Annette Winkler, Vice President of Daimler (at the head of smart), who has been a Director since 2014, will continue to bring to the Board her experience in senior management of a major German industrial group with an international reach, focused on the consumer goods market.

Furthermore and for information, the term of office of the employee Director will expire at the end of this Shareholders' Meeting. At a plenary meeting on December 6, 2017, the France Group Committee reappointed Mr Philippe Dubrulle as Director representing the employees for a term of four years expiring at the end of the Shareholders'Meeting held to approve the financial statements for the fiscal year ending December 31, 2021.

FIFTH RESOLUTION

(Renewal of the term of office of Mr Benoît Potier as Director)

The shareholders, deliberating according to the quorum and majority required for Ordinary Shareholders' Meetings, after having reviewed the Report of the Board of Directors, decide to renew the term of office of Mr Benoît Potier as a Director for a term of four years, which will expire at the end of the 2022 Shareholders' Meeting, held to approve the financial statements for the fiscal year ending December 31, 2021.

SIXTH RESOLUTION

(Renewal of the term of office of Mr Jean-Paul Agon as Director)

The shareholders, deliberating according to the quorum and majority required for Ordinary Shareholders' Meetings, after having reviewed the Report of the Board of Directors, decide to renew the term of office of Mr Jean-Paul Agon as a Director for a term of four years, which will expire at the end of the 2022 Shareholders' Meeting, held to approve the financial statements for the fiscal year ending December 31, 2021.

SEVENTH RESOLUTION

(Renewal of the term of office of Ms Sin Leng Low as Director)

The shareholders, deliberating according to the quorum and majority required for Ordinary Shareholders' Meetings, after having reviewed the Report of the Board of Directors, decide to renew the term of office of Ms Sin Leng Low as a Director for a term of four years, which will expire at the end of the 2022 Shareholders' Meeting, held to approve the financial statements for the fiscal year ending December 31, 2021.

EIGHTH RESOLUTION

(Renewal of the term of office of Ms Annette Winkler as Director)

The shareholders, deliberating according to the quorum and majority required for Ordinary Shareholders' Meetings, after having reviewed the Report of the Board of Directors, decide to renew the term of office of Ms Annette Winkler as a Director for a term of four years, which will expire at the end of the 2022 Shareholders' Meeting, held to approve the financial statements for the fiscal year ending December 31, 2021.

Resolutions 9 and 10 Regulated agreements and commitments

PURPOSE

The 9th and 10th resolutions concern two regulated commitments relating to Mr Benoît Potier which must, as provided by law, be subject to a vote by the Shareholders' Meeting at the time of the renewal of his term of office as Chairman and Chief Executive Officer.

- **Termination indemnity:** the Board of Directors has modified the termination indemnity to which Mr Benoît Potier may be entitled, taking into account the remarks of certain shareholders.
  - The termination indemnity will thus be due in the case of forced departure (removal from office, request for resignation) related to a change of strategy or a change in control. In the event of the latter, the termination indemnity will only be due if the departure takes place within six months, versus 24 months previously.
  - The termination indemnity, capped at 24 months of gross fixed and variable remuneration, is subject to performance conditions using a scale based on the average annual difference between Return On Capital Employed (ROCE) after tax and Weighted Average Cost of Capital (WACC) over three years, the thresholds for increases having been made more exacting than before. The amount of the termination indemnity decreases gradually during the two years prior to the age limit of Executive Officer defined in the Company's articles of association.
- **Defined benefit pension plan:** in response to the requirements of the 2015 Macron law, the Board of Directors decided to subject the contingent rights allocated to Mr Benoît Potier with effect from the renewal of his term of office by this Shareholders' Meeting to performance conditions similar to those for the abovementioned termination indemnity.

These agreements are included in the Statutory Auditors' Special Report on regulated agreements and commitments (see 2017 Reference Document p. 335 et seq. and the Company's website).

NINTH RESOLUTION

(Approval of commitments referred to in article L. 225-42-1 of the French Commercial Code relating to the termination indemnity of Mr Benoît Potier)

The shareholders, deliberating according to the quorum and majority required for Ordinary Shareholders' Meetings, after having reviewed the Report of the Board of Directors and the Statutory Auditors' Special Report provided for by current legal and regulatory provisions, approve, on the condition precedent of renewal of his term of office as Chairman and Chief Executive Officer, the commitments relating to the termination indemnity of Mr Benoît Potier which are subject to the provisions of articles L. 225-38 and L. 225-42-1 of the French Commercial Code, under the conditions described in these reports.

TENTH RESOLUTION

(Approval of commitments referred to in article L. 225-42-1 of the French Commercial Code relating to defined benefit pension plan commitments for Mr Benoît Potier)

The shareholders, deliberating according to the quorum and majority required for Ordinary Shareholders' Meetings, after having reviewed the Report of the Board of Directors and the Statutory Auditors' Special Report provided for by current legal and regulatory provisions, approve, on the condition precedent of renewal of his term of office as Chairman and Chief Executive Officer, the increase in future conditional rights from which Mr Benoît Potier will benefit as of the renewal of his term of office, relating to defined benefit pension scheme commitments meeting the characteristics of the schemes set out in article L. 137-11 of the French Social Security Code and subject to the provisions of articles L. 225-38 and L. 225-42-1 of the French Commercial Code, under the conditions described in these reports.

Resolutions 11 and 12 Approval of the remuneration of Executive Officers for the 2017 fiscal year

PURPOSE

Pursuant to article L. 225-100 of the French Commercial Code introduced by the law relating to transparency, the fight against corruption and the modernization of economic activity (called the Sapin 2 law), shareholders are asked in the **11th** and **12th resolutions** to approve the fixed, variable and exceptional components of the total remuneration and other benefits paid or awarded to Mr Benoît Potier in respect of the 2017 fiscal year and to Mr Pierre Dufour whose term of office as Senior Executive Vice President ended following the Shareholders' Meeting of May 3, 2017. It is specified that no exceptional remuneration has been paid or awarded in 2017.

The components of remuneration are described in the Report on corporate governance included in the 2017 Reference Document and are summarized in the 2018 Invitation to Shareholders' Meeting. They were paid or awarded in line with the remuneration policy approved by the Shareholders' Meeting on May 3, 2017.

ELEVENTH RESOLUTION

(Approval of the elements of remuneration paid or awarded to Mr Benoît Potier for the year ended December 31, 2017)

The shareholders, deliberating according to the quorum and majority required for Ordinary Shareholders' Meetings, approve, pursuant to article L. 225-100 of the French Commercial Code, the fixed, variable and exceptional components of the total remuneration and other benefits paid or awarded to Mr Benoît Potier in respect of the 2017 fiscal year, as presented in Chapter 3 "Corporate Governance", paragraph "Elements of the total remuneration and benefits of any kind paid or awarded to Benoît Potier in respect of the 2017 fiscal year and on which the Shareholders' Meeting of May 16, 2018 is invited to vote", of the Company's 2017 Reference Document.

TWELFTH RESOLUTION

(Approval of the elements of remuneration paid or awarded to Mr Pierre Dufour for the year ended December 31, 2017)

The shareholders deliberating according to the quorum and majority required for Ordinary Shareholders' Meetings, approve, pursant to article L. 225-100 of the French Commercial Code, the fixed, variable and exceptional components of the total remuneration and other benefits paid or awarded to Mr Pierre Dufour, in respect of the 2017 fiscal year, as presented in Chapter 3 "Corporate Governance", paragraph "Elements of the total remuneration and benefits of any kind paid or awarded to Pierre Dufour in respect of the 2017 fiscal year and on which the Shareholders' Meeting of May 16, 2018 is invited to vote", of the Company's 2017 Reference Document.

Resolution 13 Approval of the remuneration policy applicable to the Executive Officers for the 2018 fiscal year

PURPOSE

Pursuant to article L. 225-37-2 of the French Commercial Code, shareholders are asked in the **13th resolution** to approve for the 2018 fiscal year, the principles and criteria for determining, distributing and allocating the fixed, variable and exceptional components of the total remuneration and other benefits allocated to Executive Officers, and applicable to Mr Benoît Potier in respect of his term of office as Chairman and Chief Executive Officer, as described in the Report on corporate governance included in the 2017 Reference Document and summarized in the 2018 Invitation to Shareholders' Meeting.

THIRTEENTH RESOLUTION

(Approval of the remuneration policy applicable to the Executive Officers)

The shareholders, deliberating according to the quorum and majority required for Ordinary Shareholders' Meetings, after having reviewed the Report of the Board of Directors mentioned in article L. 225-37-2 of the French Commercial Code, approve the principles and criteria for determining, distributing and allocating the fixed, variable and exceptional components of the total remuneration and other benefits allocated to Executive Officers as presented in Chapter 3 "Corporate Governance" of the 2017 Reference Document, in the section covering the principles and criteria for the determination, distribution and allocation of the fixed, variable and exceptional elements of the total remuneration and the benefits of all kinds that may be granted to Executive Officers.

Resolution 14 Setting Directors' fees

PURPOSE

The 14th resolution sets the authorized amount of Directors' fees per fiscal year. Since 2014, the amount has been 1 million euros. On the recommendation of the Remuneration Committee, the Board of Directors proposes to increase the amount of Directors' fees that may be allocated each year to the Directors to 1.15 million euros as of 2018.

The proposed increase takes into account, in particular, the creation of a fourth Committee in 2017 (the Environmental and Social Committee), the increasing number of meetings and the extension of the work handled by the Board and the Committees, as well as the desire to promote a variety of skills and nationalities within the Board for forthcoming recruitments.

The Directors' fees 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. 190-191 of the 2017 Reference Document.

FOURTEENTH RESOLUTION

(Setting the amount of the Directors' fees)

The shareholders, deliberating according to the quorum and majority required for Ordinary Shareholders' 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 2018, the overall amount of Directors' fees to be allocated to Directors at the amount of 1.15 million euros per year.

Extraordinary Shareholders' Meeting

Resolution 15 Authorization to reduce the share capital by cancellation of treasury shares

PURPOSE

As is the case each year, we ask you, in the 15th 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.

FIFTEENTH 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 Shareholders' 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 Shareholders' Meeting in its fourth resolution and of those shares bought back within the scope of the authorizations adopted by the Ordinary Shareholders' Meetings of May 12, 2016 and May 3, 2017 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 Shareholders' Meeting. It supersedes the authorization granted by the Extraordinary Shareholders' Meeting of May 3, 2017 in its twelfth 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 16 Share capital increase through capitalization of additional paid-in capital, reserves, profits or any other amounts

PURPOSE

The Combined Shareholders' Meeting of May 12, 2016 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 2017 when the Company attributed 1 free share for every 10 existing shares following a share capital increase through capitalization of the sum of 218.98 million euros taken from "additional paid-in capital" thereby creating 39,814,353 new shares (amount including the loyalty bonus of 10%, i.e. 1 additional free share for every 100 existing shares).

As in 2016, in order to provide shareholders with the right to express an opinion on this share capital increase during periods of takeover bids, it is proposed that this delegation of authority be suspended during periods of takeover bids.

The purpose of the 16th resolution is to renew this authorization for a maximum amount of 300 million euros.

SIXTEENTH 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 Shareholders' 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:

1. 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;
2. the delegation thereby granted to the Board of Directors is valid for a period of 26 months starting from the date of this Shareholders' 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;
3. decide that the total amount of share capital increases likely to be performed thereby may not exceed 300 million euros, this limit being separate from and independent from the limit provided for in paragraph 2 of the thirteenth resolution passed by the Shareholders' Meeting of May 3, 2017 (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 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 marketable securities or other rights conferring access to share capital);
4. 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;
5. take due note that this delegation supersedes any unused portion of the delegation granted to the Board of Directors in the seventeenth resolution voted by the Extraordinary Shareholders' Meeting of May 12, 2016;
6. 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, 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.

Ordinary Shareholders' Meeting

Resolution 17 Powers

PURPOSE

The 17th resolution is a standard resolution required for the completion of official publications and legal formalities.

SEVENTEENTH RESOLUTION

(Powers for formalities)

Full powers are granted to a holder of a copy or extract of the minutes of this Shareholders' 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 and commitments

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 auditing standards applicable in France.

To the Shareholders of L'Air Liquide,

In our capacity as Statutory Auditors of your Company, we hereby report on the agreements and commitments 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 and commitments 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 or commitments. 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 and commitments 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 and commitments 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 information provided to us is consistent with the documentation from which it has been extracted

AGREEMENTS AND COMMITMENTS SUBMITTED FOR APPROVAL OF THE ANNUAL SHAREHOLDERS' MEETING

Agreements and commitments approved during the year

We hereby inform you that we have not been advised of any agreements or commitments 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 and commitments approved after year-end

We have been notified of the following related party agreements and commitments which received prior authorization from your Board of Directors after year-end closing.

With Mr Benoît Potier, Chairman and Chief Executive Officer

a) Defined benefit pension scheme

Nature, purpose and conditions

The Board of Directors held on February 14, 2018 decided that, with effect from the renewal of Mr Benoît Potier's term of office as Chairman and Chief Executive Officer after Annual Shareholders' Meeting to be held on May 16, 2018 and for the duration of his term of office, subject to the renewal of his term of office and for the duration of his term, the annual increase in Mr Benoît Potier's right pursuant to the defined benefit pension plan "S" will be subject to performance conditions.

Mr Benoît Potier benefits from the defined benefit pension scheme "S" applicable to the senior managers and executives and corporate officers having a remuneration exceeding twenty-four times the annual social security ceiling and three year of seniority. Rights are equal to 1% per year of service of the average of the three best years over the last five years of annual fixed and variable remuneration, whether paid by the Company or any French or Foreign subsidiary, exceeding twenty-four times the PASS (annual social security ceiling) ("Reference remuneration").

Total pension rights, under all pension schemes, may not exceed 45% of the Reference remuneration. For the purpose of this calculation, the average of the variable portions of remuneration taken into account may not exceed 100% of the average of the fixed portions. Should this ceiling be reached, the amount paid under the defined benefit plan would be reduced accordingly. In addition, it is specified that the above-mentioned limit of 45% includes all pension schemes, of public or private origin, in France or a foreign country.

In the event of termination of the corporate office at the company's initiative, Mr Benoît Potier shall retain his rights, if he does not resume any professional activity until his retirement or in the event of a disability of second or third category.

The increase, in respect of each fiscal year, in the pension rights pursuant to the defined benefit pension plan "S" above, is subject to conditions linked to Mr Benoît Potier's performance assessed in light of your company's performance, as defined below:

- The increase, in respect of each fiscal year, in Mr Benoît Potier conditional right will depend and the amount of that increase shall be adjusted in accordance with the average of the annual gap between the Return On Capital Employed after tax (R.O.C.E) and the Weighted Average Cost of Capital (W.A.C.C), assessed on the accounting net equity, calculated on the average of the three annual gaps for the last three years prior to the said fiscal year.
- The proportion of the annual increase in the conditional rights will be determined with a rate of increase per linear segments between each of the threshold below.

Average of the annual gaps (R.O.C.E. / W.A.C.C.) over 3 years	Proportion of increase
≥ 300 bps*	100%
250 bps	66%
200 bps	50%
100 bps	25%
< 100 bps	0%

** bps : basis points*

Regarding the 2018 fiscal year, those performance conditions will apply only to the increase in the pension rights which Mr Benoît Potier will benefit in respect of his new term of office as Chairman and Chief Executive Officer.

The agreement related to the defined benefit pension scheme for the portion of his remuneration exceeding twenty-four times the annual social security ceiling "Regime S", modified in 2014, was approved by the Annual Shareholders' Meeting on May 7, 2014 upon the Statutory Auditors' Special Report of March 4, 2014. Its effects continued during the past fiscal year. The agreement submitted to your approval will have no effet on the conditional rights granted to Mr Benoît Potier until the renewal of his office as Chairman and Chief Executive Officer subsequent to the May 16, 2018 Annual Shareholders' Meeting.

Reasons justifying why the Company benefits from this agreement

Your board of directors gave the following reasons:

The experience of Mr Benoît Potier, totaling thirty-six years of experience in the Group, in a long-term business, represents a major benefit for the Group, notably in terms of knowledge of Group's stakes and businesses and consistency of its strategy. In addition, the existence of a competitive pension plan reflects the human resources policy of your company, for which long careers within the Group constitute a key element. Furthermore the Board of Directors' approval is given in the context of the renewal of the term of office of Mr Benoît Potier and is related to a preexisting commitment, modified to take into account changes in laws that have occurred since the renewal of the prior term of Mr Benoît Potier.

b) Termination indemnity

Nature, purpose and conditions

The Board of Directors held on February 14, 2018 decided, with effect from the Annual Shareholders' Meeting to be held on May 16, 2018 and subject to the renewal of the term of office of Mr Benoît Potier as Board Member and Chief Executive Officer, in the event of forced departure (removal from office, request for resignation of his corporate office as Chairman and Chief Executive Officer)

(a) related to a change of strategy, or

(b) that takes place within six months following the acquisition of control of your company (pursuant to article L. 233-3 of the French Commercial Code – Code de commerce) by a person acting alone or several persons acting in concert

and subject to the conditions and limitations set below, your Company undertakes to pay to Mr Benoît Potier a fixed aggregate indemnity in full discharge equal to twenty-four months of gross fixed and variable remuneration, the calculation being based on the average monthly amount of gross fixed and variable remuneration received by Mr Benoît Potier during the twenty-four months prior to departure. It is specified that in the case referred to in paragraph (b) above, the indemnity is due, whether or not the forced departure is related to a change of strategy but without Mr Benoît Potier being able to receive such indemnity in conjunction with that due pursuant to paragraph (a).

The payment of the indemnity due in respect of forced departure as described above is subject to compliance with conditions related to Mr Benoît Potier's performance assessed in light of the company's performance, defined as follows:

- The entitlement to the indemnity will depend on and the amount of the indemnity will be adjusted on the basis of, the average of the annual gap between the Returned On Capital Employed after tax (R.O.C.E.) and the Weighted Average Cost of Capital (W.A.C.C) (assessed on the accounting net equity), calculated on the average of the three annual gaps for the last three fiscal years prior to the fiscal year during which such departure takes place. These performance conditions will be re-examined by your Board of Directors and modified, where applicable, to take into account, in particular, any changes that have taken place in the company's environment at the time of each renewal of Mr Benoît Potier's term of office and, where applicable, during the course of his term of office.
- The proportion of the indemnity due will be established with an increase in the indemnity by straight-line segments between each of the thresholds below :

Average over 3 years of the annual (R.O.C.E. /W.A.C.C.) gaps	Proportion of the indemnity due
≥ 300 bps*	100%
250 bps	66%
200 bps	50%
100 bps	25%
< 100 bps	0%

** bps : basis points*

In the event that the forced departure takes place during the twenty-four months prior to the date to which the term of office of Mr Benoît Potier as Chairman and Chief Executive Officer terminates pursuant to the age limit provided by the articles of association, the amount of the indemnity will be capped to the number of month of gross compensation for the period between the date of the forced departure and the date on which the age limit will be reached. No indemnity will be paid if, at the date of the forced departure, the beneficiary claims his pension entitlements.

The commitment related to the termination indemnity, last modified in 2014, was approved by the Annual Shareholders' Meeting on May 7, 2014 upon the Statutory Auditors' Special Report of March 4, 2014. Its effects continued during the past fiscal year. The commitment submitted to your approval will cancel and supersede the one approved in 2014 from the renewal of the term of office of Mr Benoît Potier as board member and Chief Executive Officer subsequent to the May 16, 2018 Annual Shareholders' Meeting.

Reasons justifying why the Company benefits from this commitment

Your Board of Directors gave the following reasons:

The experience of Mr Benoît Potier, totaling thirty-six years of experience in the Group, in a long-term business, represents a major benefit for the Group, notably in terms of knowledge of Group's stakes and businesses and consistency of its strategy. Furthermore the Board of Directors' approval is given in the context of the renewal of the term of office of Mr Benoît Potier and is related to a preexisting commitment, modified to take into account comments made by certain shareholders.

AGREEMENTS AND COMMITMENTS ALREADY APPROVED BY THE ANNUAL SHAREHOLDERS' MEETING

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 and commitments 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

a) Defined contribution pension scheme

Nature, purpose and conditions

Mr Benoît Potier benefits from the defined contribution pension scheme applicable to all the employees for the portion of remuneration amounting to less than eight times the annual social security ceiling.

The amount of contributions paid by your Company in respect of the defined contribution scheme in 2017 totals 9,379 euros.

b) Life insurance contract

Nature, purpose and conditions

Executives directors no longer benefiting 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 2017 totals 208,526 euros for Mr Benoît Potier.

c) Unemployment insurance

Nature, purpose and conditions

As an Executive Officer, Mr Benoît Potier benefits from the unemployment insurance for company managers and corporate officers taken out by your Company.

The amount of the contributions paid in this respect by your Company in 2017 totals 7,633 euros.

d) Death and disability benefit plan

Nature, purpose and conditions

Mr Benoît Potier benefits, from January 1, 2015, from unified supplementary death and disability benefits plan, covering all the employees and the executive officers duly authorized to benefit from the plan, in which the remuneration taken into account for the calculation of the contributions is capped at (i) sixteen times the annual social security ceiling for the incapacity and disability cover; (ii) twenty-four times the annual social security ceiling for the death cover.

This scheme guarantees the payment of a pension in the event of incapacity and of a lump-sum payment in the event of death.

Pursuant to its decision on November 20, 2014, the Board of Directors authorized Mr Benoît Potier to benefit, as from January 1, 2015, from this unified death and disability benefits plan. This agreement was approved by the Annual Shareholders' Meeting on May 6, 2015.

The amount of the contributions paid in this respect by your Company in 2017 totals 8,850 euros.

Neuilly-sur-Seine and Paris-La Défense, March 2, 2018

The Statutory Auditors

French original signed by

PricewaterhouseCoopers Audit		ERNST & YOUNG et Autres	
Olivier Lotz	Séverine Scheer	Jeanne Boillet	Emmanuelle Mossé

Statutory auditors' report on the share capital reduction

(Combined Shareholders' Meeting of May 16, 2018 – 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 auditing standards applicable in France.

To the Annual General Meeting of L'Air Liquide,

In our capacity as Statutory Auditors of L'Air Liquide S.A. 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.

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 as regards the reasons for or terms and conditions of the proposed capital decrease.

Neuilly-sur-Seine and Paris-La Défense, March 2, 2018

The Statutory Auditors

French original signed by

PricewaterhouseCoopers Audit		ERNST & YOUNG et Autres	
Olivier Lotz	Séverine Scheer	Jeanne Boillet	Emmanuelle Mossé

Notes

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ADDITIONAL INFORMATION

SHARE CAPITAL

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 16, 2015	Exercise of share subscription options	540,370	344,979,452	2,972,035.00	31,369,884.50	1,897,386,986.00
May 6, 2015	Exercise of share subscription options	415,163	345,394,615	2,283,396.50	24,286,495.14	1,899,670,382.50
May 6, 2015	Cancelation of shares	(1,500,000)	343,894,615	(8,250,000.00)	(144,733,042.60)	1,891,420,382.50
February 15, 2016	Exercise of share subscription options	327,988	344,222,603	1,803,934.00	19,187,472.00	1,893,224,316.50
May 10, 2016	Share capital increase reserved for employees	999,143	345,221,746	5,495,286.50	71,942,681.50	1,898,719,603.00
July 29, 2016	Exercise of share subscription options	354,628	345,576,374	1,950,454.00	19,875,625.41	1,900,670,057.00
September 12, 2016	Exercise of share subscription options	41,303	345,617,677	227,166.50	2,361,106.80	1,900,897,223.50
October 11, 2016	Increase in share capital	43,202,209	388,819,886	237,612,149.50	3,045,755,734.50	2,138,509,373.00
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 loyalty bonus (1 for 100)	990,504	428,052,848	5,447,772.00	(5,447,772.00)	2,354,290,664.00

Note: Between September 26 and December 31, 2017, 344,702 options were exercised, giving rise to an outstanding capital as at December 31, 2017 of 2,356,186,525.00 euros divided up into 428,397,550 shares.

Changes in share capital ownership over the last three years

	2015	2016	2017
Individual shareholders	36%	33%	32%
French institutional investors	18%	20%	19%
Foreign institutional investors	46%	47%	49%
Treasury shares	> 0%	> 0%	> 0%

THRESHOLD NOTIFICATIONS

During the fiscal year ended December 31, 2017 the following legal threshold notifications were declared:

Date	Company	% Share capital		% voting rights
05/19/2017	BlackRock	5.00%	↗	5.00%
05/22/2017	BlackRock	4.96%	↘	4.96%
05/30/2017	BlackRock	5.04%	↗	5.04%
05/31/2017	BlackRock	4.83%	↘	4.83%
06/01/2017	BlackRock	5.01%	↗	5.01%
06/02/2017	BlackRock	4.89%	↘	4.89%
06/07/2017	BlackRock	5.03%	↗	5.03%
06/08/2017	BlackRock	4.96%	↘	4.96%
06/13/2017	BlackRock	5.01%	↗	5.01%
06/22/2017	BlackRock	4.99%	↘	4.99%
06/28/2017	BlackRock	5.00%	↗	5.00%
06/29/2017	BlackRock	4.9996%	↘	4.9996%
07/19/2017	BlackRock	5.00%	↗	5.00%
08/18/2017	BlackRock	4.99%	↘	4.99%
08/22/2017	BlackRock	5.00%	↗	5.00%
08/24/2017	BlackRock	4.999%	↘	4.999%
09/06/2017	BlackRock	5.00%	↗	5.00%
09/26/2017	BlackRock	4.99%	↘	4.99%
10/05/2017	BlackRock	5.04%	↗	5.04%

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.

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)
2015	344,163,001	344,163,001	342,945,838
2016	388,875,761	388,875,761	387,749,196
2017	**428,397,550**	**428,397,550**	**426,838,237**

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.

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 2017, the share of capital held by employees and former employees of the Group is estimated at 2.2%, of which 1.5% (within the meaning of article L. 225-102 of the French Commercial Code), that is 6.311.818 shares, corresponds to shares subscribed by employees during employee reserved capital increase operations or held through mutual funds.

Delegations of authority granted at the Shareholders' Meeting

Nature of the delegation	Validity of the delegation	Authorized amount	Utilization in 2017
Share buyback	Granted by: SM of May 3, 2017 (4th)* For a period of: **18 months** Maximum price: 165 euros	10% of share capital, representing 38,887,576 shares, for a maximum amount of 6,416,450,040 euros	**Treasury shares** As of December 31, 2017, the Company owned 1,445,182 shares at an average purchase price of 92.69 euros, i.e. a balance sheet value of 133,959,361 euros. **Liquidity contract changes:** Under the liquidity contract, as of December 31, 2017 a total of 8,000 shares were on the balance sheet for a net value of 850,893 euros. **Company's share buyback program** On February 20, 2017, 1.5 million shares were purchased for a total amount of 157,278,900 euros. For more details, see pages 322-323 in the present Reference Document.
Cancelation of shares	Granted by: SM of May 3, 2017 (12th)* For a period of: **24 months**	10% of share capital	1,1 million of shares canceled in May 2017 for a total carrying amount of 115,337,860 euros (or an average price of 104.85 euros). (See Information on the completion of the Company's share buyback program on page 322)

** Renewal to be proposed to the Combined Shareholders' Meeting on May 16, 2018.*

Nature of the delegation	Validity of the delegation	Authorized amount	Utilization in 2017
Increase in share capital via the issuance of shares or marketable securities, with retention of shareholders' preferential subscription rights	Granted by: SM of May 3, 2017 (13th)* For a period of: **26 months**	530 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 (14th resolution SM of May 3, 2017)	None
Capital increase via capitalization of reserves	Granted by: SM of May 12, 2016 (17th) For a period of: **26 months**	For a maximum nominal amount of 250 million euros	In 2017, capitalization of the sum of 219 million euros taken from the "Additional paid-in capital" and "retained earnings" accounts, by means of the creation of 38,823,849 new shares freely attributed to shareholders at 1 new share for every 10 existing shares and 990,504 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 3, 2017 (15th)* For a period of: **26 months** Granted by: SM of May 3, 2017 (16th)* For a period of: **18 months**	30.25 million euros nominal value and 5.5 million shares. To be deducted from the aforementioned overall limit of 530 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, 2017, outstanding bond issues of 762 million euros for L'Air Liquide S.A., 13.3 billion euros for the Air Liquide Group.
Stock options	Granted by: SM of May 12, 2016 (18th) For a period of: **38 months**	2% of the capital on the day the options were granted 0.3% of the capital on the date the options were granted to the Executive Officers	73,540 stock options granted by the Board on September 20, 2017.
Performance shares	Granted by: SM of May 12, 2016 (19th) For a period of: **38 months**	0.5% of the capital on the day the shares were granted 0.15% of the capital on the date the shares were granted to the Executive Officers	416,579 performance shares were granted by the Board on September 20, 2017.
Issuance of marketable securities without preferential subscription rights: ■ by public offering ■ by private placements	Granted by: SM of May 12, 2016 (23rd) For a period of: **26 months** Granted by: SM of May 12, 2016 (24th) For a period of: **26 months**	Deducted from the 530 million euro overall limit (13rd SM of May 3, 2017) Amounts may be increased by a maximum of 15%, in the event of oversubscription (25th SM of May 12, 2016)	None

** Renewal to be proposed to the Combined Shareholders' Meeting on May 16, 2018.*

GENERAL INFORMATION

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

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 and phone number of the head office

75, quai d'Orsay, 75007 Paris
+33 (0)1 40 62 55 55

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 2,356,439,277.50 euros divided into 428,443,505 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.

Dividends

Year	Paid	Ordinary dividend [(a)] Loyalty dividend [(b)]	Number of shares	Distribution *(in euros)*
2015 [(e)]	May 25, 2016	2.60 [(a)]	344,337,019	895,276,249
		0.26 [(b)]	97,352,920	25,311,759
				920,588,008
2016 [(e)]	May 17, 2017	2.60 [(a)]	386,747,297	1,005,542,972
		0.26 [(b)]	100,099,466	26,025,861
				1,031,568,833
2017 [(c)] [(d)]	May 30, 2018	2.65 [(a)]	428,397,550	1,135,253,508
		0.26 [(b)]	117,152,854	30,459,742
				1,165,713,250

(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 16, 2018.
(d) For 2017, amounts distributed are theoretical values calculated based on the number of shares as of December 31, 2017.
(e) For 2015 and 2016, amounts actually paid.

Management of the Company

Pursuant to the statements made to the Company by each corporate officer, the Company confirms that corporate officers do not have any family ties with another corporate officer and have not been convicted of fraud at least during the last five years.

No incrimination and/or official public sanction has been pronounced against them by statutory or regulatory authorities (including professional organizations) and they have not been prevented by a court from acting in their capacity as a member of an administration, management or supervisory body or interfering in the management or carrying out of business of an issuer during at least the last five years. They have no potential conflicts of interest with L'Air Liquide S.A. No arrangements or agreements have been made with the significant shareholders, customers, suppliers or others, pursuant to which the corporate officers of L'Air Liquide S.A. have been chosen as such. There exist no restrictions accepted by these persons as to the transfer, within a certain time period, of their interest in the capital of L'Air Liquide S.A. except for the rules on prevention of market abuse and the obligation set forth in the articles of association requiring the members of the Board of Directors appointed by the Annual Shareholders' Meeting to own at least 500 registered shares of the Company during the term of their office and the obligation to hold shares imposed on executive corporate officers. Corporate officers have not been associated with any bankruptcy, any receivership or liquidation during the last five years.

COMPLIANCE WITH CORPORATE GOVERNANCE

The Company complies with all aspects of the recommendations set forth in the AFEP/MEDEF Code of Corporate Governance (see Report on Corporate Governance, pages 129 et seq.), except for the points described in the Report on Corporate Governance and summarized in the table on page 148.

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 Sustainable Development Report – page 110.

Documents accessible to the public

Documents, or copies of the documents listed below may be consulted during the period of the Reference 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 Reference Document;
- historical financial information of the Group, for each of the two fiscal years preceding publication of this Reference Document.

Incorporation by reference

Pursuant to the article 28 of the EC Regulation No. 809/2004, the following information is included in this Reference Document:

- the consolidated and parent company financial statements for the year ended December 31, 2015, accompanied by the Statutory Auditors' Reports which appear on pages 272 and 273 and on pages 292 and 293, respectively, of the 2015 Reference Document filed on March 1, 2016 with the French financial markets authority (AMF) under number D.16-0091;
- the financial information shown on pages 10 to 64 of the 2015 Reference Document filed on March 1, 2016 with the French financial markets authority (AMF) under number D.16-0091;
- the consolidated and parent company financial statements for the year ended December 31, 2016, accompanied by the Statutory Auditors' Reports which appear on pages 311 and 312, and on pages 330 and 331, respectively, of the 2016 Reference Document filed on March 7, 2017 with the French financial markets authority (AMF) under number D.17-0130;
- the financial information shown on pages 10 to 64 of the 2016 Reference Document filed on March 7, 2017 with the French financial markets authority (AMF) under number D.16-0130.

The sections not included in these documents serve no useful purpose to investors or are already covered in this Reference 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, 2017 is as follows:

	Invoices received outstanding at the closing date of the financial year that has ended					
	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	1,273					3,005
Total amount of invoices concerned (all taxes included) *(in millions of euros)*	26.4	6.3	0.6	6.0	3.5	16.4
Percentage of total amount of purchases net of taxes for the financial year	7.7%	1.8%	0.2%	1.7%	1.0%	4.8%
B) Invoices excluded from (A) relating to disputed and unrecorded debts						
Number of invoices excluded	18					
Total amount of invoices excluded *(in millions of euros)*	1.1					
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					
	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	22					56
Total amount of invoices concerned (all taxes included) *(in millions of euros)*	2.2	2.5	0.4	0.1	3.5	6.5
Percentage of total amount of purchases net of taxes for the financial year	1.5%	1.8%	0.3%	0.1%	2.6%	4.7%
B) Invoices excluded from (A) relating to disputed and unrecorded receivables						
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 REFERENCE DOCUMENT

Person responsible for the Reference Document

Benoît POTIER, Chairman and CEO of L'Air Liquide S.A.

Certification by the person responsible for the Reference Document

I hereby attest, after having taken all reasonable measures for such purpose, that the information contained in this Reference 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 of the Annual Financial Report defined on the Cross-reference table available in chapter 6 of this Reference Document pages 365 and 366 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.

I have obtained a work completion letter from the Statutory Auditors indicating that they have, in accordance with French professional standards, verified the information on the financial position and the financial statements and have reviewed all of the information presented in the Reference Document.

Paris, March 5, 2018

Benoît Potier

Chairman and CEO

CROSS-REFERENCE TABLE FOR THE REFERENCE DOCUMENT

The cross-reference table identifies the main information required by Regulation No. 809/2004 of the European Commission dated April 29, 2004 (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 2016, filed on March 7, 2017 under the number D.17-0130 (the "DDR 2016"), and the pages of the Reference Document related to the year ended December 2015, filed on March 1, 2016 under the number D.16-0091 (the "DDR 2015"), which are incorporated by reference in this document.

N°	Items of the Annex I of the Regulation	Pages
6.5	Basis for statements made by the issuer regarding its competitive position	25
7.	Organizational Structure	
7.1	Brief description of the Group	1, 14 to 24
7.2	List of significant subsidiaries	288 to 290
8.	Property, Plant and Equipment	
8.1	Material tangible fixed assets	54 to 55, 254 to 255, 356
8.2	Environmental issues that may affect the utilization of the tangible fixed assets	78 to 79, 81 to 90, 110 to 115, 287
9.	Operating and Financial Review	
9.1	Financial condition	2 to 3, 6, 39 to 51, 56 to 57, 223 to 228, 372 to 373 2 to 3, 6, 34 to 46, 51 to 53, 237 to 243, 394 to 395 of DDR 2016 2 to 3, 6, 32 to 44, 49 to 52, 201 to 207, 372 to 373 of DDR 2015
9.2	Operating results	
9.2.1	Significant factors materially affecting the issuer's income from operations	39 to 49, 248 to 249
9.2.2	Disclosure of material changes in net sales or revenues	39 to 47, 248
9.2.3	Policies or factors that have materially affected, or could materially affect, directly or indirectly, the issuer's operations	40 to 42, 65 to 66
10.	Capital Resources	
10.1	Issuer's capital resources	56 to 57, 226, 259, 271 to 283, 372 to 373
10.2	Sources and amounts of the issuer's cash flows	50 to 51, 226
10.3	Information on the borrowing requirements and funding structure	56 to 57, 271 to 275
10.4	Restrictions on the use of capital resources	259
10.5	Anticipated sources of funds	50 to 51, 56 to 57
11.	Research and Development, Patents and Licenses	58 to 64
12.	Trend Information	
12.1	The most significant recent trends in production, sales and inventory, and costs and selling prices since the end of the last fiscal year	66
12.2	Known trends, uncertainties, demands, commitments or events that are reasonably likely to have a material effect on the issuer's prospects	66
13.	Profit Forecasts or Estimates	
13.1	Statement setting out the principal assumptions upon which the issuer has based its forecast or estimate	N/A
13.2	Report prepared by independent accountants or auditors	N/A
13.3	Preparation of the forecast or estimate	N/A
13.4	Statement on the correctness of a forecast included in the prospectus	N/A
14.	Administrative, Management and Supervisory Bodies and Senior Management	
14.1	Composition – statements	126 to 128, 150 to 161, 356
14.2	Conflicts of interests	129 to 134, 138, 172 to 173, 336 to 337
15.	Remuneration and Benefits	
15.1	Remuneration and benefits in kind	162 to 182, 192 to 200, 285, 311
15.2	Pension, retirement or similar benefits	183 to 189, 192 to 200, 203 to 208, 285, 311

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 Reference 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, L. 233-6 and L. 233-26 of the French Commercial Code	Key figures / p. 1, 2 to 8 Chapter 1 / p. 10 to 24, 39 to 64
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. 4, 8
Significant events occurring between the fiscal year closing date and the Management Report preparation date	L. 232-1 and L. 233-26 of the French Commercial Code	Chapter 4 / p. 287
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° of the French Commercial Code	Chapter 1 / p. 26 to 30
Internal control and risk management procedures implemented by the Company	L. 225-100-1, I-5° of the French Commercial Code	Chapter 1 / p. 31 to 38
Description and management of the environmental and climatic risks	L. 225-100-1, I-4° of the French Commercial Code	Chapter 1 / p. 29 to 30, 36
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 5 / p. 320
Company and Group foreseeable trends and outlook	L. 232-1 and L. 233-26 of the French Commercial Code	Chapter 1 / p. 65 to 66
Research and Development activities	L. 232-1 and L. 233-26 of the French Commercial Code	Chapter 1 / p. 58 to 64
Report on corporate governance		
List of all terms of office and functions held in any company by each Executive Officer during the fiscal year	L. 225-102-1 of the French Commercial Code	Chapter 3 / p. 126 to 128, 150 to 161
Composition, preparation and organization of the work of the Board of Directors	L. 225-37-4 of the French Commercial Code	Chapter 3 / p. 129 to 149
Limits brought by the Board of Directors on Chief Executive Officer's powers	L. 225-37-4 of the French Commercial Code	Chapter 3 / p. 135
Reference to a Code of corporate governance and application of the principle comply or explain	L. 225-37-4 of the French Commercial Code	Chapter 3 / p. 129, 148
Remuneration and benefits of all kinds paid during the fiscal year to each Executive Officer by the Company	L. 225-37-3 of the French Commercial Code	Chapter 3 / p. 162 to 200
Principles and criteria for determination, allocation and distribution of the fixed, variable and exceptional elements of the total remuneration and the benefits of all kinds that may be granted to the Executive Officers	L. 225-37-2 of the French Commercial Code	Chapter 3 / p. 201 to 208
Commitments of any kind made by the Company for the benefit of its Executive 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 of the French Commercial Code	Chapter 3 / p. 183 to 189
Agreements between an Executive Officer or a major shareholder and a subsidiary	L. 225-37-4 of the French Commercial Code	Chapter 3 / p. 170, 187
Specific conditions governing shareholders' attendance at the Annual General meeting	L. 225-37-4 of the French Commercial Code	Chapter 3 / p. 149 Chapter 6 / p. 349 to 350, 353 to 354
Summary table of delegations of authority currently in force granted by the Shareholders' Meeting relating to an increase in capital	L. 225-37-4 of the French Commercial Code	Chapter 6 / p. 346 to 347
Information that may have an impact in the event of a takeover bid	L. 225-37-5 of the French Commercial Code	Chapter 6 / p. 218 to 219

Required element	Reference text	Chapter / Pages
Share ownership and capital		
Structure, change in Company capital and threshold notifications	L. 233-13 of the French Commercial Code	Key figures / p. 7 Chapter 2 / p. 101 Chapter 6 / p. 344 to 346
Acquisition and disposal by the Company of treasury shares	L. 225-211 of the French Commercial Code	Chapter 5 / p. 322 to 323 Chapter 6 / p. 345
Employee share ownership	L. 225-102, paragraph 1 of the French Commercial Code	Chapter 3 / p. 209 to 216 Chapter 6 / p. 346
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. 210, 211, 214
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. 217
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. 171 to 177, 181 to 182, 204 to 205
Amount of dividends paid out in respect of the three previous fiscal years	243 bis of the French Tax Code	Chapter 5 / p. 321, 327 Chapter 6 / p. 355
Environmental, social and societal information		
Environmental information Specific information for companies operating at least one site classed Seveso "high threshold"	L. 225-102-1, paragraphs 5 and 6 and R. 225-105 of the French Commercial Code L. 225-102-2 of the French Commercial Code	Key figures / p. 8 Chapter 2 / p. 78 to 79, 81 to 90, 110 to 115
Social information	L. 225-102-1, paragraphs 5 and 6 and R. 225-105 of the French Commercial Code	Key figures / p. 4 Chapter 2 / p. 69 to 73, 94 to 100, 109, 117 to 118
Societal information	L. 225-102-1, paragraphs 5 and 6 and R. 225-105 of the French Commercial Code	Key figures / p. 4 Chapter 2 / p. 71, 73, 90 to 94, 104 to 108, 116
Vigilance plan	L. 225-102-4 of the French Commercial Code	Chapter 2 / p. 74 to 75
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 6 / p. 358
Table of Company results over the past five fiscal years	R. 225-102 of the French Commercial Code	Chapter 4 / p. 316

GLOSSARY

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 cost of debt after taxes) over 2016) / (average (shareholders' equity + minority interests + net indebtedness) at the end of the three last semesters (H2 2015, H1 2016 and H2 2016)).

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 buyback

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.

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

	2008	2009	2010
Key figures *(in millions of euros)*			
Consolidated income statement			
Revenue	13,103.1	11,976.1	13,488.0
thereof Gas & Services	*11,027.6*	*10,191.8*	*11,885.7*
Operating Income Recurring	1,949.0	1,949.0	2,252.2
Operating Income Recurring / Revenue	14.9%	16.3%	16.7%
Net profit (Group share)	1,220.0	1,230.0	1,403.6
Consolidated cash flow statement			
Cash flow from operating activities before changes in working capital	2,206.7	2,274.5	2,660.9
Purchase of property, plant and equipment and intangible assets	1,908.3	1,411.0	1,449.8
Purchase of property, plant and equipment and intangible assets / Revenue	14.6%	11.8%	10.7%
Acquisition of subsidiaries and financial assets	242.3	109.2	239.9
Total capital expenditures / Revenue [a]	16.4%	12.7%	13.2%
Dividends related to fiscal year and paid in the following year [b]	602.0	609.2	684.2
Consolidated balance sheet			
Shareholders' equity at the end of the period	6,757.4 [i]	7,583.7	8,903.5
Net indebtedness at the end of the period	5,484.4	4,890.8	5,039.3
Gearing	79.5%	63.1%	55.3%
Capital employed at the end of the period [c]	12,386.1 [i]	12,642.7	14,151.8
Share capital			
Number of shares issued and outstanding at the end of the period	260,922,348	264,254,354	284,095,093
Adjusted weighted average number of shares outstanding [d]	381,729,608	384,466,031	387,412,817
Key figures per share *(in euros)*			
Net profit per share [e]	3.20	3.20	3.62
Dividend per share	2.25	2.25	2.35
Dividend adjusted per share [f]	1.53	1.53	1.71
Ratios			
Return on equity (ROE) [g]	18.6% [i]	17.2%	17.0%
Return on capital employed after tax (ROCE) [h]	12.2% [i]	11.6%	12.1%

Loyalty dividend:

Since 1995, a 10% loyalty dividend is attributed to shareholders holding their shares in registered form for at least two years on the December 31 preceding the period of distribution, and owned until the date of the payment of the dividend.

The dividend proposed to the Annual General Meeting for fiscal year 2017 amounts to 2.65 euros per share, and the enhanced dividend to 0.26 euros per share representing a total distribution of 1,162 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 29.6 million euros in 2017, 26.6 million euros in 2016, 26.8 millions 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, 16.5 million euros in 2010, 14.7 million euros in 2009 and 15.0 million euros in 2008.

(c) Capital employed at the end of period: shareholders' equity + minority interests + net indebtedness.

(d) Adjusted to account for, on a basis of a weighted number of shares outstanding, increases of capital by capitalization of reserves and additional paid-in capital (2017, 2014, 2012 ,2010 ,2008), cash subscription of 2016 and treasury shares.

(e) Calculated on the adjusted weighted number of shares outstanding during the year excluding treasury shares.

2011	2012	2013	2014	2015 restated [m]	2016	2017
14,456.9	15,326.3	15,225.2	15,358.3	15,818.5	18,134.8	20,349.3
13,046.0 [j]	*13,912.0*	*13,837.0*	*13,800.1* [l]	*14,752.3*	*17,331.0*	*19,641.9*
2,408.7	2,553.0 [k]	2,580.6	2,633.8	2,856.2	3,023.9	3,363.8
16.7%	16.7% [k]	16.9%	17.1%	18.1%	16.7%	16.5%
1,534.9	1,591.1 [k]	1,640.3	1,665.0	1,756.4	1,844.0	2,199.6
2,728.1	2,885.9 [k]	2,948.5	2,942.7	3,149.5	3,523.2	4,133.0
1,755.0	2,007.9	2,156.1	1,901.7	2,027.7	2,258.6	2,182.5
12.1%	13.1%	14.2%	12.4%	12.8%	12.5%	10.7%
99.5	879.4	391.9	179.0	384.4	12,165.3	140.4
12.9%	18.9%	16.7%	13.5%	15.2%	79.5%	11.4%
729.1	803.4	820.9	905.1	921.6	1,032.0	1,162.0
9,758.6	10,190.4 [k]	10,625.1	11,536.5	12,405.7	16,741.8	16,317.9
5,248.1	6,102.5	6,061.9	6,306.3	7,238.7	15,368.1	13,370.9
52.5%	58.5%	55.7%	53.3%	56.7%	89.7%	80.0%
15,243.8	16,525.5	16,950.0	18,133.2	20,009.5	32,493.1	30,089.3
283,812,941	312,281,159	312,831,676	344,872,883	344,163,001	388,875,761	428,397,550
388,959,728	388,401,234	387,885,964	388,507,626	388,058,094	397,747,479	426,409,142
3.95	4.10	4.23	4.29	4.53	4.64	5.16
2.50	2.50	2.55	2.55	2.60	2.60	2.65
1.82	2.00	2.04	2.25	2.30	2.36	2.65
16.8%	16.1% [k]	16.0%	15.3%	14.7%	13.5%	13.5%
12.1%	11.6% [k]	11.1%	10.8%	10.3%	7.8%	8.2%

(f) Adjusted to account for share capital movements.

(g) Return on equity: (Net profit Group share)/(weighted average of shareholders' equity over the year).

(h) Return on capital employed after tax: (Net profit after tax before deduction of minority interests – net cost of debt after taxes for 2017)/weighted average for the year of (shareholders' equity + minority interests + net indebtedness) at the end of the three last semesters (H2 2016, H1 2017 et H2 2017)).

(i) Corresponds to the amounts as of December 31 restated for the impacts of the application of the option offered by the revised IAS19 "Employee Benefits", to immediately recognize all actuarial gains and losses and adjustments arising from the asset ceiling, net of deferred tax, in addition to the first-time adoption of IFRIC14.

(j) The specialty ingredients activities of Seppic and its subsidiaries were reclassified from "Other activities" to "Gas & Services".

(k) Corresponds to the amounts as of December 31, 2012 restated for the impacts of IAS19 revised "Employee Benefits".

(l) Restatement related to the new business line, Global Markets & Technologies.

(m) Restatement related to the new classification in accordance with IFRS5 "Non-current Assets Held for Sale and Discontinued Operations"

Cautionary note regarding forward-looking statements

This Reference 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 Reference 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 1 of this Reference document. This information is given solely as of the date of this Reference document. All forward-looking statements contained in this Reference document are qualified in their entirety by this cautionary note.

Notes

Notes

Realisation: SEQUOIA

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SHAREHOLDER SERVICES

0800 166 179
Calls are free from a French landline

or +33 (0)1 57 05 02 26
from outside France

WRITE TO US

directly through the website:
http://contact.shareholders.airliquide.com

SHAREHOLDERS LOUNGE

Open Monday-Friday
From 9:00 a.m. to 6:00 p.m. (GMT + 1)
75, quai d'Orsay – Paris 7th
France

INVESTOR RELATIONS

+33 (0)1 40 62 51 50

CONTACT US

directly:
IRteam@airliquide.com

Air Liquide - Company established for the study and application of processes developed by Georges Claude
with issued capital of 2,356,439,277.50 euros

Air Liquide
creative oxygen