

Positions reinforced

#GEOGRAPHIES #MARKETS #DIGITAL

2017
ANNUAL REPORT

 **Air Liquide**
creative oxygen

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The 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 revenue 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.



Discover the Group at airliquide.com
and on social media: Twitter, Facebook
and LinkedIn



Benoît Potier, Chairman and CEO

**“In 2017 Air Liquide took
a new step in its development
and has acquired a new scale
with the successful integration
of Airgas.”**

— Positions reinforced

In 2017 Air Liquide took a new step in its development and has acquired a new scale with the successful integration of Airgas and the consolidation of Airgas sales for the full year. This strengthened the Group's positions in terms of geographical presence, especially in the United States, the world's largest market for industrial gases. The Group has also strengthened its market positions by developing new product offerings for its customers, by signing new contracts and by continuing its development in promising new markets. 2017 was also marked by significant progress in customer experience, customer satisfaction and digital transformation. The bottom line is that Air Liquide is reaping the benefits of its major strategic move to acquire Airgas in the U.S. in 2016, and is beginning 2018 stronger and with confidence.

— Improved performance

In 2017 Air Liquide has acquired a new scale, with annual sales surpassing 20 billion euros and net profit of over 2 billion euros. In a more favorable global economic environment, the Group has recorded a good level of organic sales growth. All Gas & Services activities grew in 2017, notably Industrial Merchant, which accounts for nearly half of the revenue. On a geographic level, growth was mainly driven by developing economies, China in particular, the solid level of activity in the Americas and Europe during the second half, as well as Large Industries projects in the Middle East. The Group's operating performance has improved with significant efficiency

gains globally. Synergies related to Airgas were also ahead of our forecast, and contributed to the increase in the operating margin and to higher net profit. The high level of cash flow made an important contribution to lowering net debt by nearly 2 billion euros during the year. The balance sheet of the Group is therefore strong, enabling us to pursue selective investments. New investment decisions for 2.6 billion euros have been made in 2017, and the industrial investment backlog reached 2.1 billion euros at the end of 2017. These investments will contribute to the future growth of the Group.

More globally, Air Liquide remains committed to reaching a high level of performance each year and, in the long-term, to creating value to ensure the longevity of our business. This long-term vision is also inherent to the Group's ambition of contributing more broadly to the environment and the society. In 2017, we started to roll out a Corporate Sustainability Program structured around two priorities: 1) the global warming prevention and the improvement of air quality, and 2) the strengthening of our dialogue with the Group's stakeholders. So value creation exists alongside the clarity of purpose, not only for our teams, but also for all our stakeholders, thanks to the initiatives we are implementing in response to social and environmental challenges.

— Strategic plan implementation

Regarding our NEOS Company Program, all the initiatives identified have now been launched and some made significant progress during 2017. I would

“Air Liquide remains committed to reaching a high level of performance each year and, in the long-term, to creating value to ensure the longevity of our business.”

like to mention a few of them which are likely to provide new growth opportunities in the areas of energy transition, healthcare and electronics.

In hydrogen energy, major progress has been made thanks to the Hydrogen Council founded in early 2017. It is currently composed of more than 30 companies from various sectors, and has successfully raised collective awareness in the interest of including this molecule in the future energy mix. This is supported by a roadmap - established by the Council members, outlining the potential of this sector - as well as by a growing number of concrete projects in Europe, Asia and the United States.

In Healthcare, we have launched innovative solutions to improve the quality of care for chronic disease patients at home and to strengthen links with healthcare professionals. For example, we have developed a connected monitoring program for patients with chronic heart failure in France, which is designed to improve patient health at the same time as helping to limit healthcare expenditure by reducing the need for hospitalization.

Finally, in Electronics, we have launched a new line of advanced materials for semiconductor etching.

This offer has been very successful, in particular due to its etching precision and its very significant environmental benefits. This sector is currently driven by the surge in Big Data, the development of artificial intelligence, virtual and augmented reality, the new generation of flat panel displays, and the connected car. These new needs generate increased demand for carrier gases and high value-added molecules.

— Customer experience is central to these advances

We put customer experience and satisfaction at the heart of our transformation. More than 3.5 million customers and patients now place their trust in us every day. Their satisfaction is crucial to the success of the Group, and our efforts are guided by a process of continuous improvement. For example, we have launched a Voice of Customer digital platform to provide real-time gathering and analysis of feedback from our customers. Having direct access to customer opinions is transforming the way we do business, take decisions and set our priorities. Our starting point is the needs of those who use our products and services. To a certain extent, we are turning the pyramid upside down. The fundamentals of a customer relationship remain in place, as does our focus on safety and reliability.

But we are also committed to simplifying our interactions with customers, providing them with the solutions that allow them to compete more effectively through the use of digital tools or solutions that help them reduce their environmental footprint. In digital, the Group is capitalizing on the Airgas model, with its strong customer-centric culture and multi-channel expertise. As the initial positive feedback from customers and users of our Airgas-inspired mygas.com portal in Europe clearly shows, we made excellent progress in this respect in 2017.

— Innovating and transforming the Group

Innovation and digital are playing a key role in our transformation. In 2017, our innovation expenses reached 292 million euros. This is something that sets us apart in our industry. Digital transformation is a major factor for our future development. It impacts the way we manage our assets, the way we interact with our customers and our relationship with external ecosystems.

In terms of our operations, the best example is the implementation of remote operation and optimization centers for the management of our Large Industries production units. We started in France, followed by China, and the latest deployment is in Malaysia. The use of digital technologies and data analysis boosts our operational efficiency, and our customers are the first to express their satisfaction with this new development.

We are also focused on investment in our R&D centers. We opened a new research and technology center in

Shanghai during the year. The renovation of our Paris Saclay Center in France is coming to an end, and the center will be officially opened in the second half of 2018. We also laid the foundation stone for our future innovation center in Japan last September. In a few years, all our R&D centers will have been renovated. Lastly, we are also investing in start-ups. Over the last five years, we have taken minority stakes in 30 start-up companies at a cost of around 80 million euros. Open innovation is a major pillar of our strategy, and we are now working with more than 100 start-ups globally.

— Outlook for 2018

At the beginning of 2018, Air Liquide is strengthened and better positioned. Our priorities this year continue to focus on operational excellence and growth, with notably the start-up of major projects in Large Industries during the year. We will also pursue the transformation of our activities, leveraging on innovation and digital, as well as on the Airgas model and its strong customer-centric culture. In light of these elements, I am confident in the Group's medium-term growth outlook. ●

“Innovation and digital are playing a key role in our transformation.”



A BENOÎT POTIER
Chairman and CEO

B JEAN-PAUL AGON
Lead Director
Chairman of the Remuneration Committee
Chairman of the Appointments and Governance Committee

C PIERRE DUFOUR
Chairman of the Environment and Society Committee

D THIERRY PEUGEOT
Member of the Audit and Accounts Committee

E KAREN KATEN
Member of the Appointments and Governance Committee

F SIÂN HERBERT-JONES
Chairman of the Audit and Accounts Committee

G SIN-LENG LOW
Member of the Audit and Accounts Committee

H ANNETTE WINKLER
Member of the Remuneration Committee
Member of the Appointments and Governance Committee

I PHILIPPE DUBRILLE
Director representing the employees
Member of the Environment and Society Committee

J GENEVIÈVE BERGER
Member of the Environment and Society Committee

K BRIAN GILVARY
Member of the Audit and Accounts Committee

L XAVIER HULLARD
Member of the Remuneration Committee

Board of Directors

as of 12-31-2017

OVERVIEW OF 2017

On December 31, 2017, the Board of Directors had twelve members, eleven of whom are appointed by the Annual Shareholders' Meeting, while the twelfth member representing employees is appointed by the France Group Committee. Nearly half of the elected members are women. A total of six nationalities are represented,

from three continents where the Group operates: Europe, the Americas and Asia. Directors offer a wealth of competencies (financial, managerial, industrial, scientific, international development and other skills) in various sectors: cosmetics/ consumer goods, automotive, petroleum/chemicals, construction, health/research, pharmaceuticals and services.

SOME EXAMPLES OF THE BOARD'S WORK IN 2017

The Board of Directors determines the main lines of Air Liquide's business. In this capacity, it examines and approves the Group's major strategic developments. In 2017, the Board of Directors focused on:

- the progress reports relating to the integration of Airgas, and the cost and growth synergies;
- questions relating to strategy

and particularly the Group's objectives determined as part of the "NEOS" medium-term company-wide program including Airgas, developments in the use of hydrogen energy, review of the portfolio of businesses, examination of the mergers taking place in the industry;

- governance issues: the full range of governance measures, the change in composition

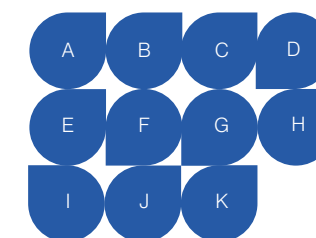
of the Board and its Committees and the review of the monitoring of risks;

- the questions relating to Corporate Social Responsibility within the scope of the Corporate Sustainability Program launched in 2016 and the 2017 creation of a new special Board Committee, in charge of examining the Group's environmental and societal issues.



Executive Committee

as of 01-01-2018



A **BENOÎT POTIER**
Chairman and Chief Executive Officer
Born in 1957 – French

B **MICHAEL J. GRAFF**
Executive Vice-President
Houston Hub Executive
Vice-President supervising Americas
Supervises Electronics Business Line, Safety and Industrial systems
Chairman of the Board of Airgas
Born in 1955 – American

C **FABIENNE LECORVAISIER**
Executive Vice-President in charge of Finance, Operations Control and General Secretariat
Born in 1962 – French

D **GUY SALZGEBER**
Executive Vice-President
Frankfurt Hub Executive
Vice-President supervising Europe Industries
Supervises Group Procurement
Born in 1958 – French

E **FRANÇOIS DARCHIS**
Senior Vice-President
Innovation and Development
Vice-President
Supervises Information Technologies, Industrial Merchant Business Line and the Group's Corporate Sustainability Program
Born in 1956 – French

F **JEAN-MARC DE ROYERE**
Senior Vice-President in charge of International, Governance and the Group's Corporate Sustainability Program
Chairman of the Air Liquide Foundation
Born in 1965 – French

G **FRANÇOIS JACKOW**
Senior Vice-President in charge of Healthcare activities
Supervises Africa, Middle-East and India
Vice-President Customer Experience
Born in 1969 – French

H **FRANÇOIS VENET**
Senior Vice-President
Strategy Vice-President
Supervises Large Industries Business Line and Engineering & Construction
Born in 1962 – French

I **FRANÇOIS ABRIAL**
Shanghai Hub Executive
Vice-President supervising Asia Pacific
Born in 1962 – French

J **PASCAL VINET**
Chief Executive Officer of Airgas
Born in 1962 – French

K **ARMELLE LEVIEUX**
Vice-President Group Human Resources
Born in 1973 – French

The ambition of Air Liquide is to lead its industry, deliver long-term performance and contribute to sustainability. To achieve this ambition, the Group is implementing a customer-centric transformation strategy. In 2017, this strategy was rolled out successfully through all Group activities and geographies, with concrete progress in terms of customer experience and digital. Every day, Air Liquide creates value for its customers, its patients and all its stakeholders.

Strategy execution

A customer-centric transformation strategy



More than 3.5 million customers and patients across the world place their trust in Air Liquide. All are operating in a changing environment. The energy and environmental transition, changes in healthcare as well as digitization give rise to new usages and challenges. In addition, the industrial offer is increasingly moving toward an approach centered on the end user, thereby transforming the traditional value chain.

Air Liquide's ambition is to lead its industry, deliver long-term performance and contribute to sustainability. To achieve this, the Group is implementing a customer-centric transformation strategy to deliver long-term profitable growth. As such, it relies on operational excellence, selective investments, open innovation and a network organization.

This transformation strategy is based on innovation and leveraging digital. It is implemented in the context of the 2016-2020 NEOS company program. This program commits Air Liquide's 65,000 employees to providing an unrivalled experience in all its business lines to the Group's 3.5 million customers and patients. This approach is part of a continuous improvement process.

Examples:

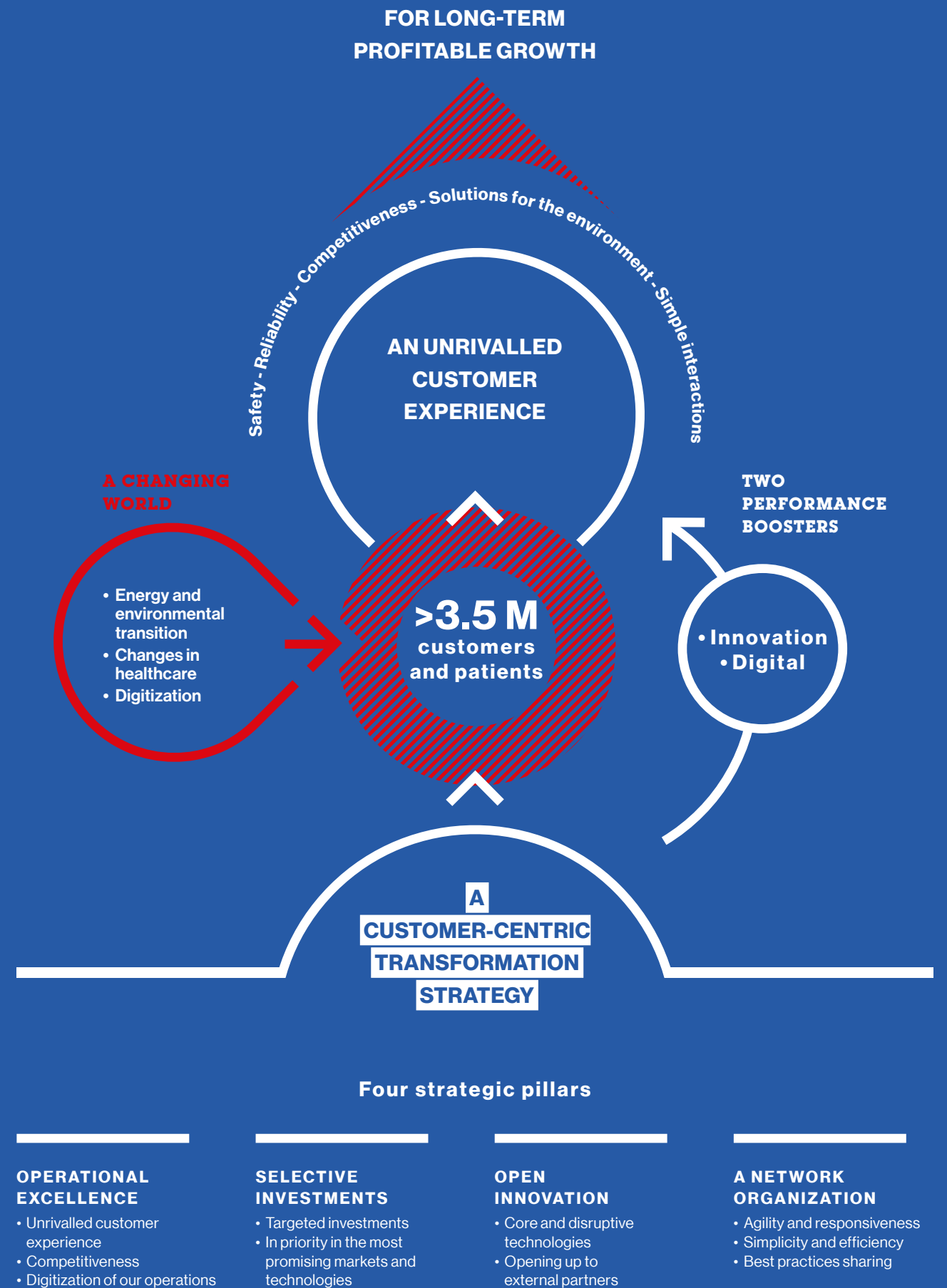
Safety First: the constant attention the Group pays to safety concerns its employees, subcontractors, industrial facilities, transportation and the deployment of the Group's products and services with its customers and patients.

High reliability: the Group pays careful attention to the quality of its products and its compliance with current standards and regulations. It works to supply its customers on time in all circumstances while ensuring their ability to operate continuously.

Enhanced competitiveness: Air Liquide is unique in its precise understanding of the needs and industrial processes of its customers. It provides them with targeted solutions that make them more competitive in their markets. So, competitiveness doesn't end with cost and price, it also includes quality, reliability and safety.

Solutions for the environment: the Group develops brand new solutions by leveraging its innovation capacity in favor of cleaner industries. It helps its customers reduce their CO₂ emissions and improve their environmental footprint. More broadly, Air Liquide helps its customers, particularly in developing economies, shift from a strategy of "producing more" to "producing better".

Simple interactions: Air Liquide works hard to make its customer journey more fluid by simplifying interactions. Digital technologies play a key role in this approach as well as the listening skills and engagement of its local teams. •



A customer-centric transformation strategy

The customer experience in the words of those who live it, and those who strive every day to make it even better.



EASY TO DO BUSINESS WITH

THOMAS HEISEL

Air Liquide customer
Purchasing department,
Saarland university, Germany

“Air Liquide has been supplying us with liquid helium for fourteen years and cylinder gases since January 2017. Recently, we started using the MyGas customer online Air Liquide portal and we love it! It gives us greater flexibility in our interactions with Air Liquide. For example, we are free to determine when and how often we check our inventories or review our invoices. Through MyGas, we can also easily get a good overview of our orders and expected delivery dates, as well as filing and checking the status of requests online. What do we like best about MyGas? The quick overview, the time savings and the all-in-one service.” ●



MEETING CUSTOMER NEEDS IN EXTREME CONDITIONS

SUSAN ELLERBUSCH

Vice-President of Air Liquide Large Industries and Electronics activities in Houston, U.S.

“Hurricane Harvey struck the Texas and Louisiana coasts in August 2017, bringing destruction and massive flooding. A severe test for the region’s petrochemical and refining industry, the extreme conditions underlined the importance of customer-centricity. With some of our customers forced to shut down temporarily, we activated our emergency plan. Key to our response: open and transparent communication. Working closely with our customers, we were able to take needed actions together to ensure continuity of our operations and reliability of supply on which their operations depend. I especially want to recognize the solidarity and professionalism of our teams, who stayed focused on meeting our customers’ needs and kept safety top of mind even while many faced threats to their own homes.” ●



A RELIABLE AND HIGH-QUALITY SERVICE

FERNANDO TORELLY

Executive Director,
Sírio Libanês Hospital in
São Paulo, Brazil

“Air Liquide is a valued partner that supplies our hospital with medical gases used in emergency services, operating theatres or intensive care units. We chose Air Liquide following a rigorous selection process based on the high quality of their products and services and competitive pricing. In addition to supplying us with gases, Air Liquide installed the entire gas distribution system for our building. The Group aims to develop strategic partnerships over the long term and meets the hospital’s expectations in terms of safety, reliability and continuity of our operations.” ●

Contributing to sustainability

02

Long-term performance and contributing to sustainability are at the core of Air Liquide's ambition. The Group has also determined several prerequisites to action: safety, ethics and the respect for human rights and the environment.

To contribute to a more sustainable world, the Group has drawn up a sustainable development strategy which focuses on two areas:

1. improve air quality and prevent global warming;
2. strengthen dialogue with Group stakeholders.

This strategy is part of the NEOS corporate program for the 2016-2020 period.

In this context, Air Liquide has been rolling out a specific Corporate Sustainability Program (CSP) within the Group to accompany the creation of solutions to meet environmental and societal needs:

1. the first focus area is to improve air quality and to prevent global warming. Air is a common, vital and universal good. Its quality is being threatened in many regions around the world by unbalanced development, causing public health issues (heart diseases, strokes, and respiratory diseases) and exacting a substantial cost, both human and financial, to society.

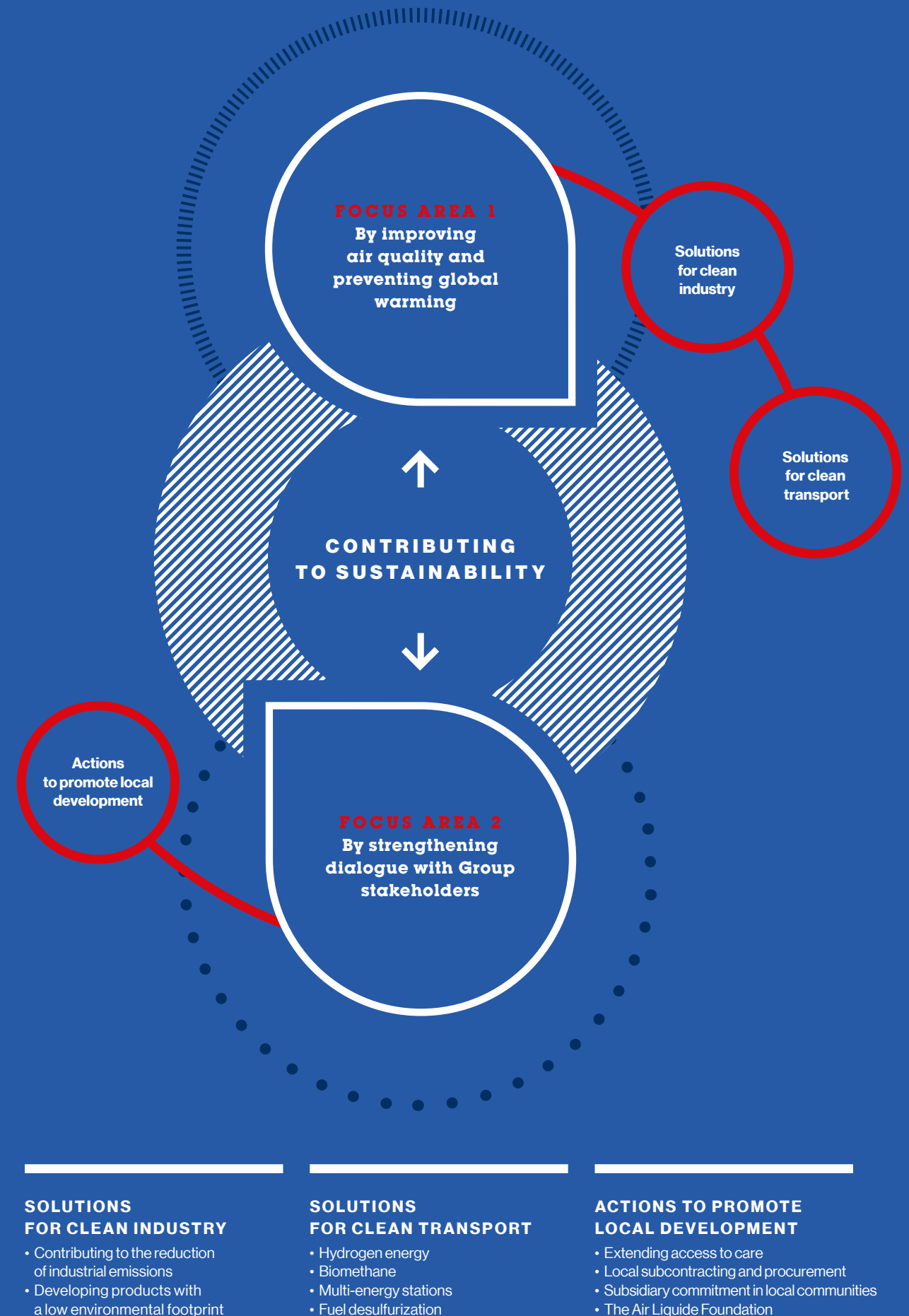
The Group prioritizes developing solutions for a cleaner industry and cleaner transportation.

2. continuous and extensive dialogue with its stakeholders is the second focus area for the Group's sustainable development strategy. It is by collaborating and working together with them that the

Group can contribute to a more sustainable world. This is why local initiatives are encouraged as part of Air Liquide's Corporate Sustainability Program. The Air Liquide Foundation also contributes to these through its own projects.

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 Air Liquide Foundation. The ESC also examines environmental risk management as well as the quality of the Group's reporting in this field. ●



Contributing to sustainability

These two testimonials illustrate Air Liquide initiatives to promote local development and its commitment to a cleaner industry.



SENSITIZING CHILDREN TO SAFETY

JUNFANG PAN

Head of the Tianheng Mingdu Kindergarten in Shanghai, China

“Volunteer employees from Air Liquide came to our school to share their expertise in the field of safety and raise awareness with the children, who were accompanied by their teachers and parent representatives. Through knowledge sharing, experiments and interactive games, the volunteers reinforced the importance of safety in daily activities like riding bikes, crossing the road or waiting for the school bus. The session made a great impression on the children, many of whom went home and shared with their parents the importance of safety. We would like to work with Air Liquide to continue this innovative learning program in the future.” ●

TOWARDS A CLEANER TRUCK FLEET IN EUROPE

PHILIPPE VIENNOT

Air Liquide Industrial Director, Industrial Merchant, Europe

“In 2017, we took on a great adventure. With our external partners in the supply chain, we set out to move the majority of our 1,700 trucks in Europe towards cleaner and quieter solutions to cut down on pollution and fine particle emissions. Today, air quality has become a public health concern in many metropolitan areas. To meet this challenge, we must have adequate infrastructure on a national and European level and win over a large number of partners, so we engaged in an in-depth dialogue with them. Our local teams have taken action in Spain notably, where the first trucks powered by liquefied natural gas (LNG) are now in use. The Group’s commitment to clean mobility as well as our skill set and regional presence allow us to contribute to the energy transition. We are already well on our way!” ●



Creating value over the long-term

Air Liquide creates value for the society and the environment, and to ensure the long-term future of its business. This is the value creation chain explained here.

OUR SCIENTIFIC TERRITORY

The small molecules essential to life, matter and energy.

O₂
Oxygen

H₂
Hydrogen

N₂
Nitrogen

Ar
Argon

He
Helium

OUR RESOURCES

The three building blocks of our value creation chain.

Human capital

- ~65,000 employees
- Diversity of employee profiles
- 29% of women among managers and professionals
- 3,800 employees contribute to innovation

Industrial capital

- 2.6 billion euros of investment decisions made in 2017
- Close to 300 million euros per year in innovation expenses
- Proprietary technologies
- 442 production units, 24 million gas cylinders and 13,000 trucks
- Strong presence in industrial basins

Financial capital

- Long-term customer contracts
- "A" range credit rating
- Strong balance sheet
- Long-term shareholder base
- Shareholding breakdown: 68% institutional shareholders and 32% individual shareholders

OUR PREREQUISITES TO ACTION

Safety

Ethics

Respect for human rights

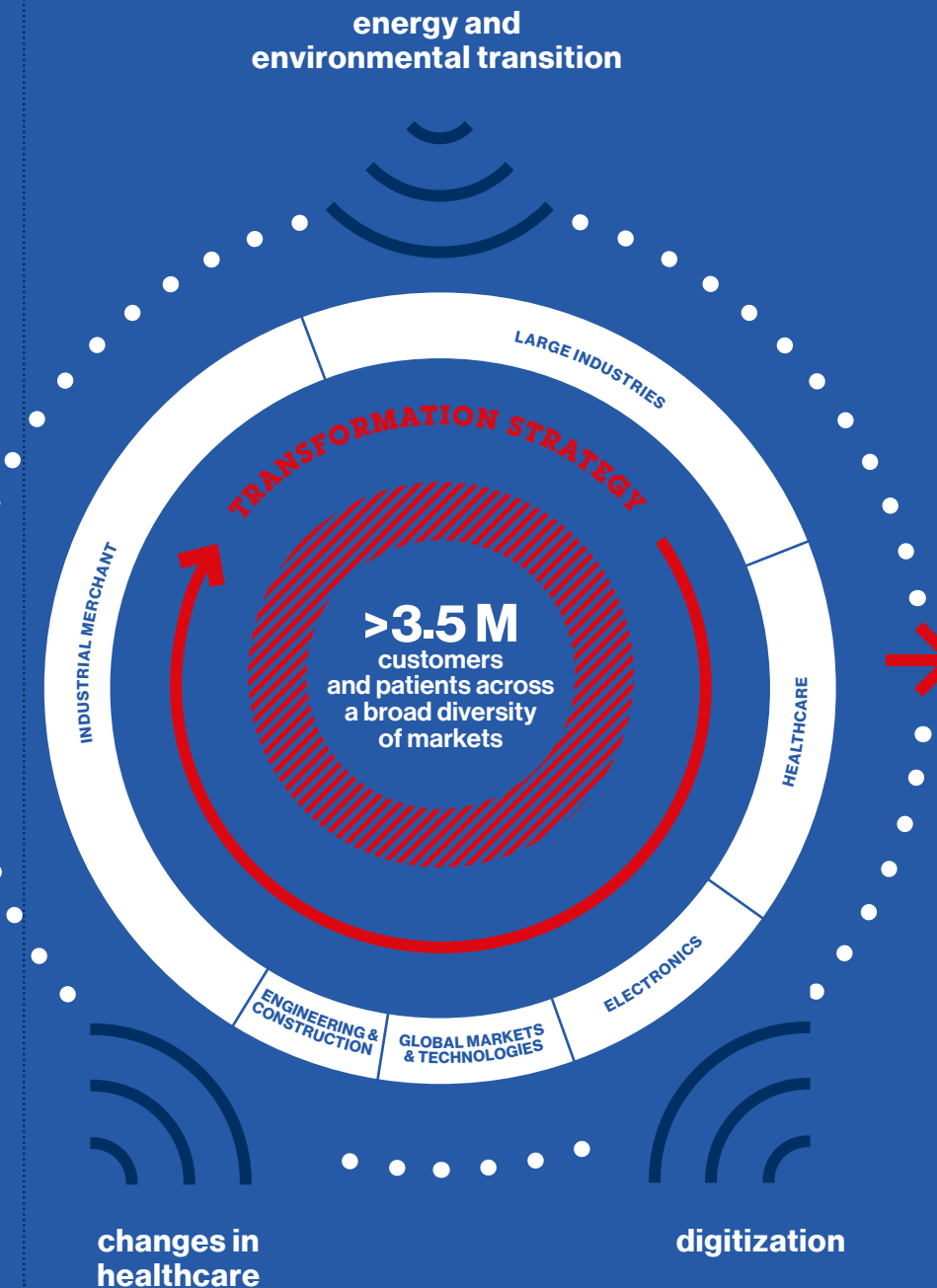
WHAT WE DO

World leader in gases, technologies and services for Industry and Health.

- Production and valorization of **molecules**
- Integration and commercialization of **proprietary technologies**
- Delivery of **services** and **digital solutions**

OUR BUSINESSES

Open to the world, the Group is implementing a customer-centric transformation strategy throughout its businesses and geographies.



OUR IMPACT

Creation of value over the long-term.

SOCIETY

- Safety as a priority for our employees, customers, subcontractors and suppliers
- Deployment of the new "Voice of Customer" program across 30 countries
- Healthcare activity and in particular the fact that we are taking care of 1.5 million patients at home
- Local development: a presence in 80 countries and dense regional coverage
- Air Liquide Foundation projects
- Assessment of almost 200 suppliers on subjects such as environment, social, business ethics and procurement policies.
- 73% of employees attended a training program at least once during the year

ENVIRONMENT

- >40% of sales relate to solutions that protect life and the environment
- Close to 60% of Group innovation expenses contribute to improving the environmental footprint and healthcare
- 11.5 million tons of CO₂ emissions avoided among Group clients thanks to Air Liquide solutions
- 69% of electricity consumed by the Group is low-carbon or renewable (up 15% over the past five years)

LONG-TERM PERFORMANCE

- Group Revenue: +6%^(a) average annual growth over 30 years
- Adjusted net earnings^(b) per share: +7.5%^(a) average annual growth over 30 years
- Adjusted dividend^(b) per share: +8.6%^(a) average annual growth over 30 years
- 29th free share distribution in 2017

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

2017 figures

Creating value over the long-term

Two Air Liquide shareholders share their views on the Group's sustainable performance, and the trust-based relationship they have with the company.



A PROFITABLE AND SUSTAINABLE GROWTH

ROGER MORLEY

Portfolio Manager, MFS,
United Kingdom

“As loyal Air Liquide shareholders since 2000, we particularly appreciate the regularity of its profit and its generation of long-term profitable growth.

The Group supplies industries with gases and services essential to their activities. Many of the supply contracts are very long-term, which provides visibility and regularity in sales and profit. Air Liquide also competes in markets where its ability to innovate stimulates demand for its products. Whether helping a refinery to produce in a more clean and efficient way or delivering healthcare services that contribute to patient quality of life, Air Liquide is providing value for customers and society. For us, that's the mark of a sustainable and viable business for the long-term.” ●



EXCEPTIONAL CARE AND SERVICE

GISÈLE S.

Individual shareholder, France

“I inherited Air Liquide shares from my mother in 2014; she had been a shareholder for over thirty years.

I find that Air Liquide has a long-term vision, which makes it easier to plan for the future as a shareholder. That gives me confidence. In addition, the Group is really well organized for its shareholders and offers a service that you can't find anywhere else. At Air Liquide, the atmosphere is special. The amount of attention and the high quality of the information is remarkable. What most tied me to the Group is when I participated in the share capital increase in 2016 as part of the purchase of Airgas. I really felt involved in the life and future of the Group.” ●

In 2017, Air Liquide took a new step of its development and has acquired a new scale with the successful integration of Airgas. This strengthened the Group's positions in terms of geographical presence, especially in the United States, the world's largest market for industrial gases. In a more favorable global economic environment, the Group has been successful not only in achieving a good level of organic sales growth, but also in signing new contracts and continuing its development of promising new markets. 2017 was marked by significant progress in customer experience, customer satisfaction and digital transformation. Here are five stories that illustrate that progress.

Positions reinforced



Successful integration

2017 marks a new step for the Group which successfully integrated Airgas. The cost synergies related to this successful integration are achieved more rapidly than planned. So by the end of 2017, the total amount of synergies generated since the acquisition was US\$215 million, compared with the US\$175 million initially announced.

Lamar Davis
Airgas in the United States

REINFORCING OUR LEADERSHIP IN THE UNITED STATES

AIRGAS

With the acquisition of Airgas and its successful integration, Air Liquide has reinforced its position in the United States, the world's largest industrial gases market.

At the same time, the Group strengthened its position in industrial markets, customer experience and supply chain competitiveness.



The 2016 acquisition of Airgas allowed Air Liquide to strengthen its presence in the United States while rebalancing its positions in Europe and the United States.

In 2017, focus was made on completing the integration of Airgas in the U.S. Its successful integration resulted in cost synergies in 2017 ahead of initial plan. At the same time, Air Liquide is developing its leadership across three areas: industrial markets, customer experience and supply chain competitiveness.

Industrial markets: new offers

In combining Airgas' strong customer-centric approach and digital channel expertise with Air Liquide's innovation and culture of safety and efficiency, the key elements are in place to accelerate growth of the Industrial Merchant activity in the U.S. as well as in other countries leveraging the Airgas model.

For example, Airgas has successfully deployed Air Liquide's FLOXAL™ on-site technologies across its U.S. network. It has allowed Airgas to meet medium to large-sized customer needs, providing them with a supply of nitrogen, oxygen and hydrogen on site at their customer locations. The technology provides customers with the continuous and reliable supply they need to grow their business.

In addition, by leveraging Air Liquide's customer base, Airgas' product offering is being introduced in Canada and the network of retail branches is being expanded into Mexico. With the integration of Airgas, Air Liquide's Industrial Merchant Mexico business has grown significantly over the last two years.

Customer experience: bringing it to the next level

The Group also continues to leverage Airgas' industry-leading multi-channel capabilities for interacting with customers, including e-business, telesales and a wide network of more than 900 retail stores.

Digitization continues to be a major element of enhanced customer experience, and solid progress in that field was made in 2017: 30% of Airgas customers are now interacting online via Airgas.com to manage their accounts, track delivery certificates, locate

or contact their branch, as well as order products. These good practices are also being deployed in Europe with the launch in April 2017 of Mygas.com, Air Liquide's European online ordering platform. Moving towards increased simplicity in the customer journey, the Airgas product catalog has been integrated into some large customers' purchasing systems in order to facilitate rapid procure-to-pay processes.

Air Liquide also focuses on expanding customer relationships with Airgas' key accounts to explore new development opportunities beyond the U.S. and provide global framework agreements.



"When you put these two companies' capabilities together, we have a great shot at creating the most effective manufacturer-supplier-distributor company ever seen in this market space."

Henry Battle, Airgas Vice President, Materials and Power

**SYNERGIES
AHEAD
OF PLAN**

**End of 2017,
US\$215 M**
total cumulative synergies since the acquisition,
including:

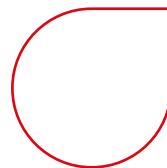
US\$190 M
cost synergies

*Packaged gases activities
Bulk activities
Process and procurement
Administrative*

US\$25 M
sales synergies

*Cross-selling
Product availability
Gas applications
On-site offers*

**Objective:
>US\$300 M**
synergies at
the end of 2019



Conversely, Air Liquide key accounts can now benefit from Airgas' position and expertise in the U.S.. For example, a historic Air Liquide key account, Airbus, signed a contract with Airgas to supply its satellite manufacturing facility located in Florida.

Supply chain: increasing competitiveness

In terms of supply chain, 2017 marked the completion of the operational integration of Airgas and Air Liquide's packaged gases and specialty gases activities.

In the bulk gases area, the strong complementarity of Airgas and Air Liquide activities in the U.S. has been a source of increased competitiveness for the combined company. Airgas can now source a larger proportion of its bulk gases supply from Air Liquide's Large Industry

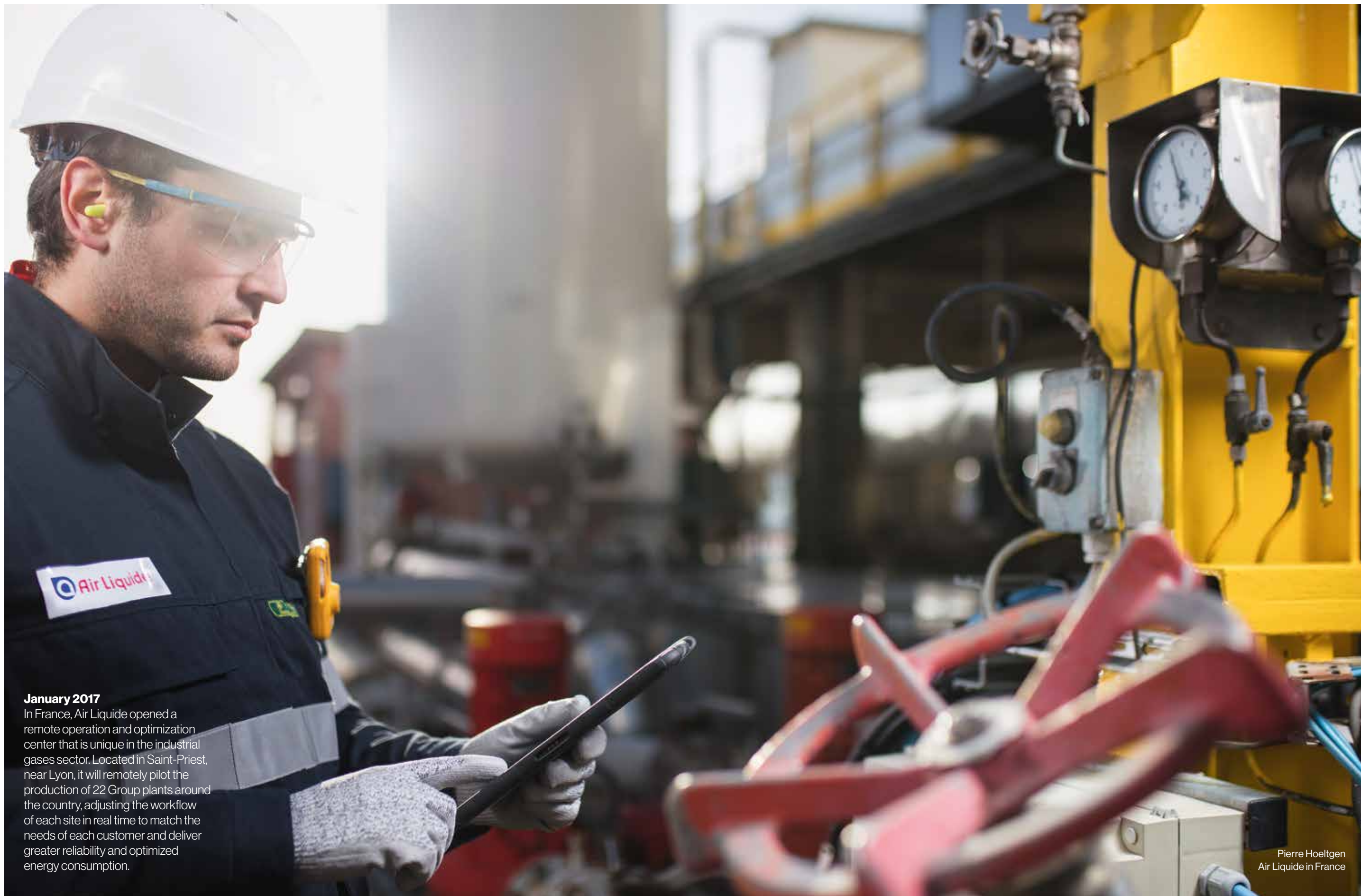
network in the U.S., reducing dependence on external sources.

Bulk supply chain distribution operations were also integrated by leveraging digital tools. Deliveries are now managed through a single company-wide platform, which coordinates routing and dispatch activities creating efficiencies and streamlining processes.

In addition, onboard computer systems are deployed in the Airgas truck fleet to significantly improve administrative efficiency.



Discover this story and many more on airliquide.com



January 2017

In France, Air Liquide opened a remote operation and optimization center that is unique in the industrial gases sector. Located in Saint-Priest, near Lyon, it will remotely pilot the production of 22 Group plants around the country, adjusting the workflow of each site in real time to match the needs of each customer and deliver greater reliability and optimized energy consumption.

Pierre Hoeltgen
Air Liquide in France

UNLOCKING POTENTIAL THROUGH DIGITAL

DIGITAL TRANSFORMATION

The Smart and Innovative Operations (SIO) program, launched by the Large Industries activity, leverages the latest digital technologies to transform the way the Group operates its production units. This transformation allows Air Liquide to strengthen its competitiveness, improve operational excellence and enhance customer experience.

During 2017, the SIO program experienced a major acceleration into Air Liquide's operations.

Progressively deployed across the Group, it has already generated several million euros of efficiency gains in Large Industries in its first year.

A major milestone was reached with the January 2017 opening of the first remote operation and optimization center in Saint-Priest, France, near Lyon, which will allow remote management for 22 production units in France.

Cost savings are generated through both improved reliability and increased efficiency.

For example, predictive analytics allow incidents to be prevented. This reshapes the way Air Liquide's Large Industries Business Line addresses its maintenance strategy, increasing availability of supply and providing even more reliability. Likewise, data is used to build a decision-making tool used for identifying optimal operating conditions and providing the set of adjustments needed on key parameters to reach the best economical point of operation.

Developing experts' skills

Central to the success of this digital transformation of operations are Air Liquide's people. The Group is relying on its industrial experts to design and create SIO's digital tools, in collaboration with Digital Transformation teams and external partners such as start-ups, and then analyze the resulting data. *"People are the key to every step",* says Large Industries Human Resources Director for SIO, Edwige Paquin. *"Digital further strengthens the expertise of our teams, taking our decision-making capabilities to the next level. We apply digital where it creates maximum value."*

The real-time information provided through SIO also shifts the focus from what has occurred in the past to what is happening now and in the future. This contributes to unlocking the full potential of Air Liquide's





“By integrating and leveraging digital technologies, we are increasing the reliability, efficiency and flexibility of supply to our customers.”

Emmanuel Garnier, Air Liquide SIO Director

teams, enabling needs to be better anticipated and applying skills and knowledge where most needed.

The shift is creating new roles in the Large Industries operations organization: “real-time pilots” and “data analysts”. They are located in new remote operation and optimization centers to monitor multiple plants to spot efficiency gaps, anticipate maintenance needs and adapt production levels.

Roles are also evolving on production site with SIO. Remote monitoring of plant operations

allows more time for value adding tasks like ensuring the daily monitoring of equipment and gas availability, and spending more time locally with the customer.

Training is deployed to accompany employees in this transformation, developing their skills and competencies. Key priorities for all: increased agility and an emphasis on working more collaboratively.

Opening doors to value co-creation

The transformation of Air Liquide operations plays a key role in

further enhancing the customer experience. In addition to helping reach a new level of excellence in reliability and efficiency, the initiative is opening new possibilities to engage in value co-creation with customers. *“Digital transformation provides an opportunity to optimize our own operations”,* says our customer Dirk Jan De With, Chief Procurement Officer at Covestro. *“By sharing data and information throughout our supply chain, we can truly improve our efficiency.”*

The ambition? Leverage the data collected and offer customers more flexibility and optionality throughout the life of the contract.



In terms of reliability, SIO delivered a new historic step in Air Liquide’s reliability performance, ahead of targets.

Through SIO, Air Liquide also now works with customers at strategic levels to co-develop Industry 4.0.



Discover this story and many more on airliquide.com



September 2017

Air Liquide rolls out Chronic Care Connect™, its first e-health solution, which serves to support patients with chronic conditions remotely, at home, using digital technology. It provides the personalized daily support required to deliver effective preventive care and improve patients' quality of life.



AT THE HEART OF CHANGES IN HEALTHCARE

E-HEALTH

Healthcare is experiencing a revolution.

Digital technologies have become an integral part of healthcare, transforming usages and economic models in ways that benefit patients and health professionals alike.

In 2017, Air Liquide launched its first e-health offer⁽¹⁾, Chronic Care Connect™, thereby delivering an innovative solution in an environment undergoing important change. Read on for details.

⁽¹⁾ E-health, also known as digital health, refers to fields in the medical industry that employ digital technologies.

The health sector is facing significant challenges, in every country. Chronic diseases are becoming

increasingly prevalent as urbanization spreads, the population ages, and sedentary lifestyles become more common. New digital technologies are allowing patients to be better informed and take an active role in their own care. They are also helping health professionals do their jobs. Finally, health systems are trying to define new care models that will allow them to address these new challenges while also controlling health costs.

Connecting patients and healthcare professionals

E-health offers effective responses to these changes for all stakeholders in the healthcare system, specifically patients, healthcare professionals, and public health authorities. France is currently at the leading edge of this trend with its national program, ÉTAPES⁽²⁾, which is aimed at creating the conditions needed for making telemedicine a reality.

Launched in 2017, Chronic Care Connect™, Air Liquide's first e-health innovative solution, is part of the ÉTAPES program. This medical telemonitoring solution is designed to provide remote, at-home assistance to patients with chronic diseases. This is made possible by efficiently connecting patients with healthcare professionals throughout the patient care journey. Depending

⁽²⁾ Experiments in telemedicine for improved healthcare pathways (Expérimentations de télémédecine pour l'amélioration des parcours en santé in French).



on the doctor's care plan, the patient uses the appropriate monitoring devices (such as a blood pressure cuff, scale, or blood sugar monitor, for example) or clinical questionnaires. Each piece of equipment is connected to a digital tablet that lets the patient access their data and educational materials. The information is analyzed remotely and sent to the doctor. At the same time, Air Liquide's teams contact the patient and his or her doctor on a regular basis. In this context, data protection is an important issue and a major focus for Air Liquide.

The benefits of this solution are threefold. The patient receives personalized and continuous care that helps improve his or her quality of life—all without having to leave the comfort of home. Doctors have access to an operational solution that lets them monitor changes in their patients' clinical condition. For the time being, the solution targets two chronic pathologies, diabetes and heart disease. Finally, by preventing hospitalization, Chronic Care Connect™ also helps control healthcare costs.

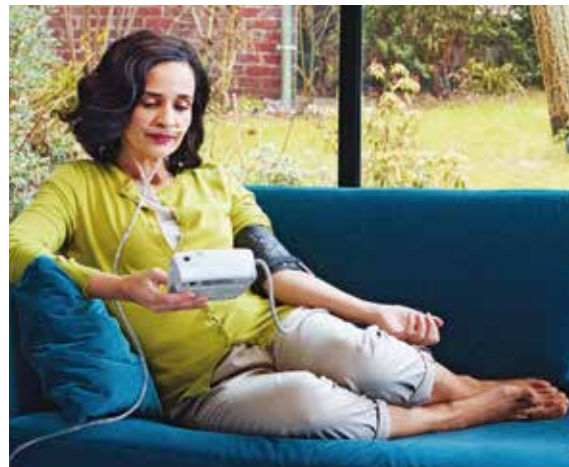
Air Liquide is rolling out its e-health solution in France and Spain by providing assistance to the already substantial number of health facilities and physicians using the technology and by increasing the number of diseases that can be treated with Chronic Care Connect™.

Working together to determine the future of healthcare

For e-health to reach its full potential, all stakeholders within the ecosystem must feel the tangible benefits of its use, and the distribution of added value must be balanced. They must therefore work together to create the solutions and economic models of tomorrow. To design Chronic Care Connect™, Air Liquide collaborated

“With Chronic Care Connect™, Air Liquide has reached a new milestone in moving forward with e-health. Our solution puts patients at the center of an ecosystem of healthcare professionals, all of whom are connected with each other to offer more effective healthcare.”

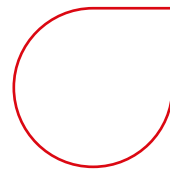
Grégory Olocco, Vice-President of Markets, Strategy and Innovation at Air Liquide Healthcare World Business Line



(3) Arthur D. Little, 2016

1.5 M
patients worldwide
received at-home care from
Air Liquide in 2017

US\$136 bn
estimated global value
of the e-health market in 2017⁽³⁾



with the entire healthcare ecosystem, harnessing its capacity for innovation to help patients, healthcare professionals, and public authorities.

Air Liquide thereby acts as a facilitator of treatment and its monitoring. The Group's primary advantage stems from its human element; indeed, its home healthcare activity cares for 1.5 million patients throughout the world.

“This human aspect is absolutely essential”, explains Grégory Olocco, Vice-President of Markets, Strategy and Innovation at Air Liquide Healthcare World Business Line. “We have naturally developed highly advanced expertise in digital technologies, medicine, and science, all of which are essential in e-health. But what really makes the difference is the human element. That’s what gives this technology its true meaning and power. At Air Liquide,

we know what patients actually need because we already work with them on a daily basis. Our nurses speak with their patients, listen to them, and help them. This makes us particularly well suited to take on the e-health sector.”

A growing sector

After first developing in the United States, e-health is now spreading to other regions of the world, especially Europe. Air Liquide stands out in this promising market with an offer that combines human expertise with digital technology.



Discover this story
and many more
on airliquide.com



2017 was a record year for Air Liquide in the Asian electronics market. During the year, the Group signed 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.



Ren-Kai Chen
Air Liquide in Taiwan

A BIG PLAYER IN THE INFINITELY SMALL

ELECTRONICS

Electronics is at the heart of the digital transformation that is profoundly changing the way we live, work, and communicate. New, ever more powerful technologies are created every day at a nanometric scale. In this great challenge of the infinitely small, Air Liquide is positioning itself as a major player by helping leaders of the electronics industry in the race to innovate.

Five major digital transformation trends are deeply impacting everyone's usages and accelerating the pace of change in the electronics market. Smart communications in cities, cars, homes, and more are growing exponentially, allowing all connected objects (which are projected to number 200 billion by 2021⁽¹⁾) to interact with each other and with people, especially via smartphones. The autonomous car sector is booming and incorporating increasingly sophisticated electronics systems. Augmented reality and virtual reality are also growing dramatically, driven by the development of professional applications and the healthcare sector. Big data is a key issue for storing and processing the massive amount of information generated by all these changes. The effective management of all this information is allowing the rise of artificial intelligence, which represents a major technological disruption, providing automatic translation in real time and robot personal assistants.

A comprehensive and highly innovative offer

In response to these changes, Air Liquide is helping leaders in the electronics industry throughout the world. The Group supplies these companies with the high-purity gases that are essential to their manufacturing processes.

(1) Source: Intel.

It also provides them with the specialized electronic materials, analytic services, equipment, and facilities they need.

Air Liquide also designs and produces innovative advanced electronic materials that improve the connectivity performance and calculating power of technological equipment while also limiting their power consumption. In fact, 100% of all latest generation smartphones have components, chips, and memories made with Air Liquide's advanced materials. In seven years, advanced material families, including those developed by the Group, have reduced the size of the transistors on a smartphone chip from 65 to 10 nanometers. As a result, phones have a better battery life (a smartphone battery that could once last 5 hours can now last 14), are faster and include more advanced features, leading to a better customer experience.

Another example is the Group's enScribe™ product line. This new family of advanced etching materials, developed by the Group, helps semiconductor manufacturers meet the





“Air Liquide is now a world leader in the design, production, and supply of advanced molecules and materials for the electronics industry. The Group is perfectly positioned to take advantage of this market’s incredible potential in the years to come.”

Jean-Baptiste Salles, Vice-President Electronics Markets and Customers at Air Liquide

technological and environmental challenges facing their sector. Designed to build a new generation of memories with 3D technology, the enScribe™ innovative materials can create new chip architectures using a deep etching process. In addition, due to their chemical structure, these materials have a shorter lifespan in the atmosphere, thereby reducing the impact of the etching process on the environment.

Flawless quality

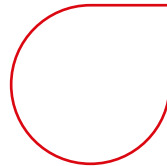
Another key challenge in the sector is the need for impeccable quality in the product supplied.

€1,644 M

Air Liquide’s 2017 Electronics activity revenue

100%

of last-generation smartphones have components, chips and memories made with Air Liquide’s advanced materials.



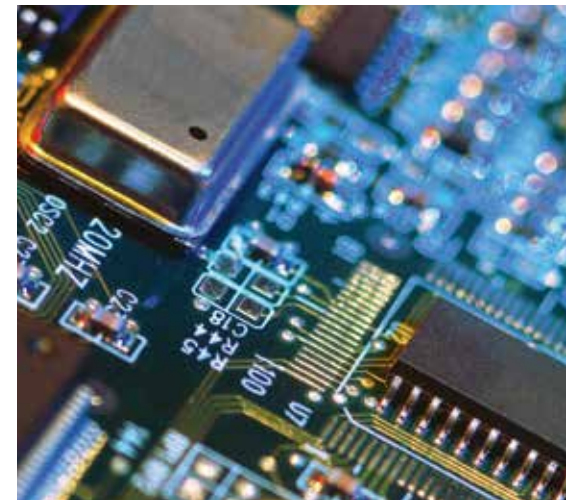
At a nanometric scale, the slightest imperfection in the components can have significant consequences. Air Liquide has therefore implemented a specific Quality Management System for its Electronics activity. The system consists of a series of procedures, tools, and performance indicators designed to control the quality of product manufacturing. Finally, as a critical supplier to the Electronic industry, Air Liquide follows the Code of Conduct for the electronics industry which was implemented by its main customers within the Responsible Business Alliance (RBA).

technologies, and one-eighth of all vehicles in circulation throughout the world will be connected. As a result of these major transformations, the electronics market is booming, and Air Liquide is well positioned to capitalize on its growth potential.



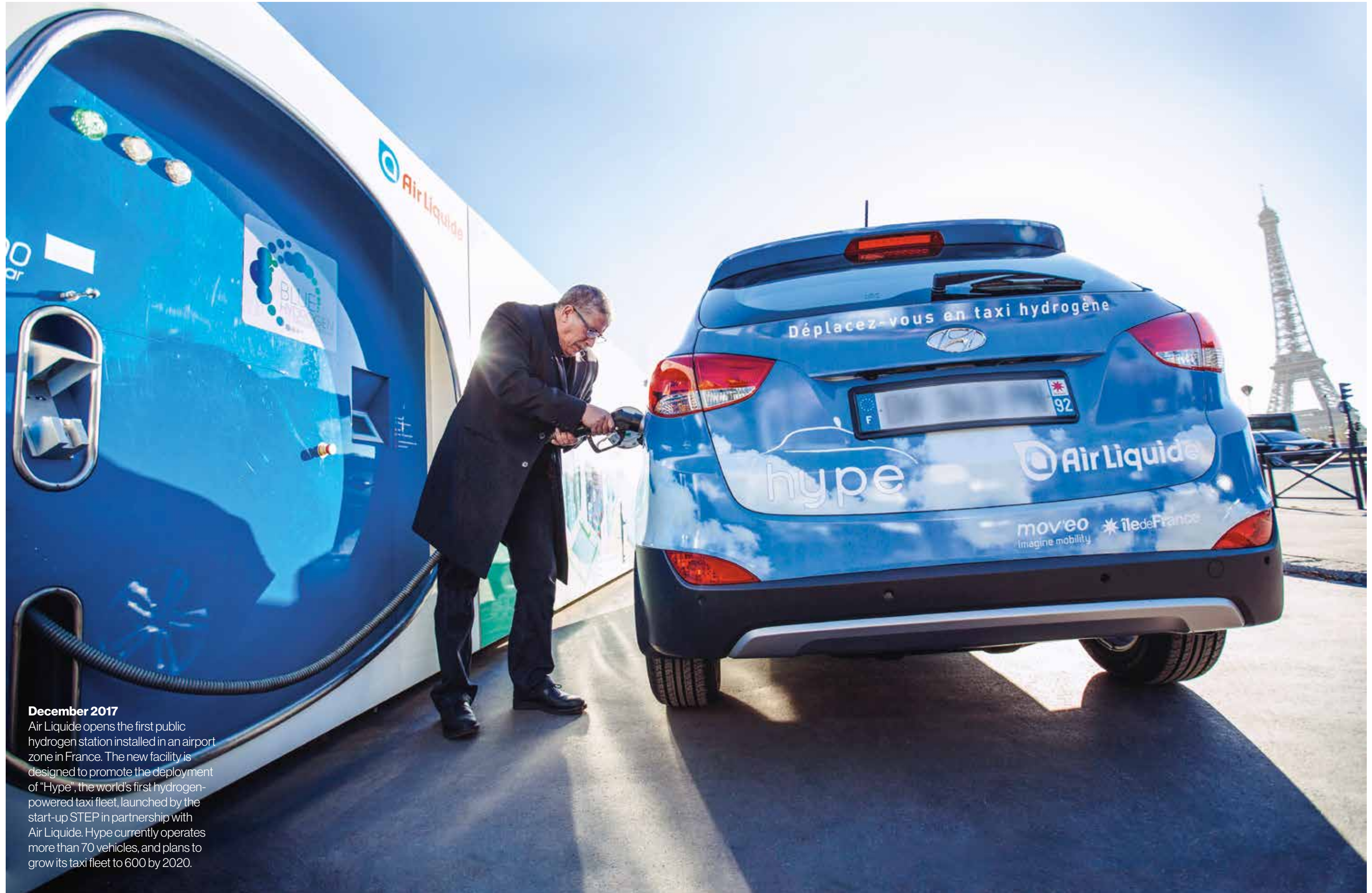
A powerful lever for growth

In 2020, there will be an average of 20 connected objects⁽²⁾ for each human on earth. 80 million patients⁽³⁾ will use connected healthcare



Discover this story and many more on airliquide.com

(2) Source: Intel. (3) Source: IBM.

**December 2017**

Air Liquide opens the first public hydrogen station installed in an airport zone in France. The new facility is designed to promote the deployment of "Hype", the world's first hydrogen-powered taxi fleet, launched by the start-up STEP in partnership with Air Liquide. Hype currently operates more than 70 vehicles, and plans to grow its taxi fleet to 600 by 2020.

TOWARDS A HYDROGEN SOCIETY

ENERGY TRANSITION

While many regions in the world have already started to shift towards greener energy, there are still significant challenges ahead. Hydrogen is a useful alternative to help meet these challenges and provide clean energy. Air Liquide is present throughout the hydrogen energy value chain and is actively working to promote this fuel source on an international level. The Group made significant progress in 2017, further strengthening its position in this highly promising market.

The commitments states agreed to during the United Nations Climate Change Conference (COP21), including **reducing greenhouse gas emissions in Europe and Japan by 80% by 2050 and switching 20% of China's energy supply to non-fossil fuels by 2030, indicate the extent of the challenges ahead.** The goals are clear: moving the energy sector away from carbon to limit global warming and reduce atmospheric pollution to improve air quality. Air Liquide is convinced that hydrogen will play an important role in reaching these two targets and has invested towards developing it as a clean energy source. The Group is a pioneer in this field and masters the entire industrial chain, from production, storage and distribution to use by the final customer.

Supporting the large-scale roll-out of hydrogen

Convinced of hydrogen's potential and backed by its expertise, Air Liquide is laying the groundwork for the advent of a hydrogen-based society. The year 2017 saw a key milestone when the Group founded the Hydrogen Council in partnership with Toyota. This initiative, the first of its kind in the world, joins together over 30 leaders in the transport, energy, and industrial sectors who have decided to speak with a single voice to convince public authorities and investors of the hydrogen's

potential with respect to climate change targets.

Air Liquide and its partners believe that hydrogen is an essential pillar in the energy transition. "Hydrogen, scaling up," a study carried out in November 2017 by the Hydrogen Council with support from McKinsey, identified five key markets for hydrogen energy. Hydrogen is a particularly effective solution for clean mobility as hydrogen-powered electric cars do not emit any greenhouse gases or particles and do not make any noise. Hydrogen could fuel 10 to 15 million cars and 500,000 trucks by 2030. In addition, the electricity produced by wind turbines and solar panels – intermittent by nature – can be converted into hydrogen. Hydrogen can be easily stored, meaning the energy could be used whenever demand increases. This is a significant advantage that can help support the large-scale production of renewable energies. Overall, according to the study, hydrogen could contribute to up to 20% of CO₂ emissions reduction targets by 2050 (if global warming is capped at 2°C).

Developing infrastructure and solutions for the future

Air Liquide is turning these prospects into reality. In 2017, the Group continued to build hydrogen stations. For example, it has designed and installed two stations in Japan, nine in Germany and the first hydrogen station in the United Arab Emirates in Dubai.



“Our innovative projects, including mobility solutions for individuals, refueling stations for buses, and programs aimed at forklift fleets and company fleets, position us as a leader in the development of hydrogen energy on a global scale.”

Pierre-Étienne Franc, Hydrogen Energy World Business Unit Director

France's first station in an airport zone was built in 2017 at Paris-Orly Airport. Another success is the Anaheim station located in California which completed 1,000 hydrogen fuel cell vehicle fill-ups after just 100 days in operation in early 2017.

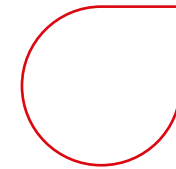
In terms of local municipalities, the Group delivered in 2017 a charging station in Oslo, Norway, to fuel five buses owned by a local transportation company. In the private sector in Canada, Air Liquide supplies four hydrogen stations that fuel the fleet of over 800 forklifts owned by the retail distribution group Walmart.

Towards carbon-free hydrogen

For hydrogen to live up to its full potential and foster energy transition, production will have to increase significantly and costs will have to be greatly reduced. Another key factor will be to gradually increase the share of carbon-free hydrogen produced globally. With its Blue Hydrogen program, Air Liquide is working to gradually phase out carbon from the hydrogen it produces for energy purposes. Concretely, Air Liquide has committed to producing at least 50% of the hydrogen needed for these applications without emitting any CO₂ by 2020.

The Group uses several innovative solutions dedicated to reducing CO₂ emissions resulting from hydrogen production: Cryocap™, for example, is a cryogenic solution that captures and recycles the CO₂ that is emitted when hydrogen is produced from natural gas. Hydrogen can also be produced without carbon through water electrolysis: Air Liquide developed a large-scale production process in Denmark that uses renewable forms of energy such as wind power. Finally, biogas reforming technology allows Air Liquide to produce hydrogen from biomethane, itself produced from biogas, which is also a renewable form of energy.

HYDROGEN BY 2050⁽²⁾: could contribute to **20%** of CO₂ emissions reduction targets — generate **US\$2.5 tn** of business — and could create **30 M** jobs throughout the world —



Discover this story and many more on airliquide.com and find out more about cH2ange on Facebook, Medium, Twitter and Youtube.

CH₂ANGE

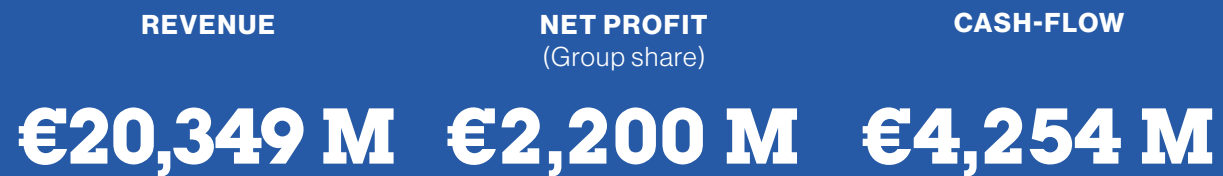
cH2ange is an initiative supported by the Air Liquide group to foster dialogue around the role hydrogen can play in the energy transition on social media.

(2) Source: Hydrogen, scaling up.

In 2017, Air Liquide has acquired a new scale, with annual sales surpassing 20 billion euros. All Gas & Services activities grew in 2017, in particular Industrial Merchant, which accounts for nearly half of the revenue. 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, with the high level of cash flow making a significant contribution to lowering debt.

2017 performance

Key financial figures for 2017



Net Profit recurring
€2,029 M⁽¹⁾

(1) Excluding the non-cash impacts of exceptional items and the U.S. tax reform.



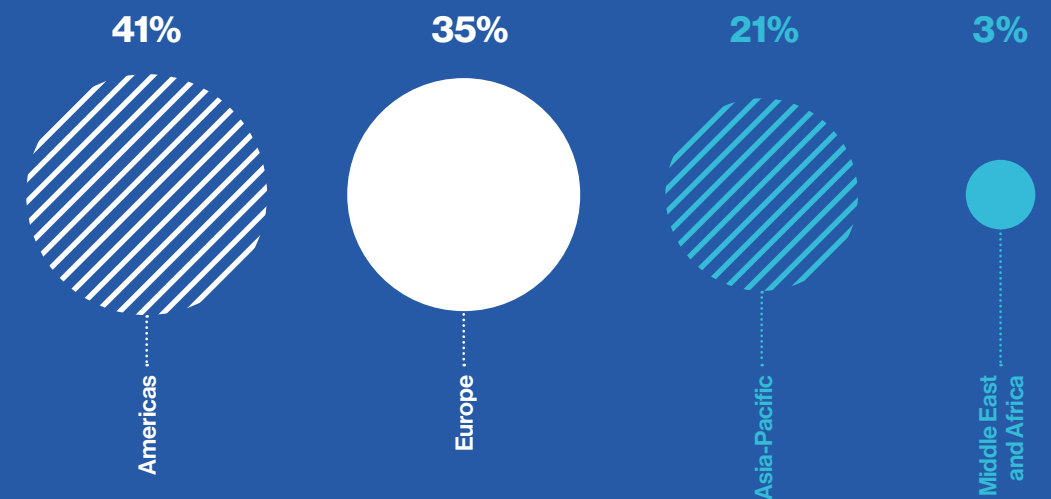
EFFICIENCIES

€323 M

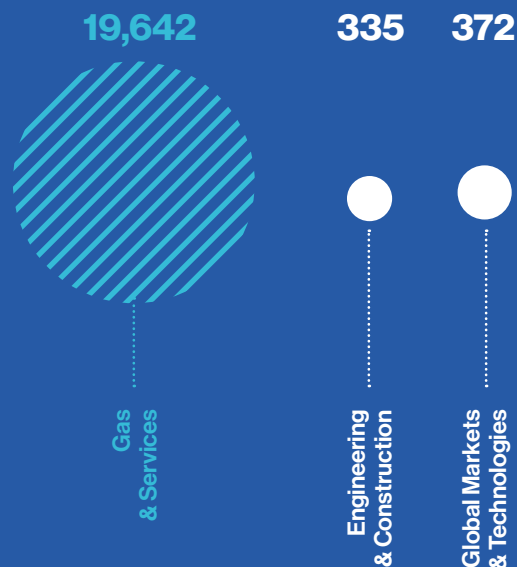
TOTAL CUMULATIVE AIRGAS SYNERGIES SINCE THE ACQUISITION (at year-end 2017)

US\$215 M

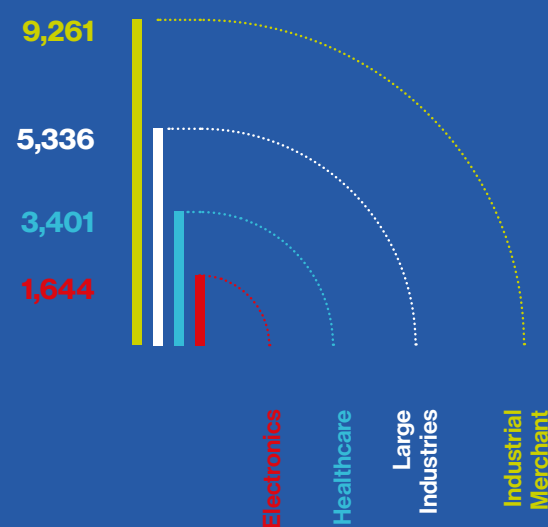
GAS & SERVICES REVENUE BY GEOGRAPHY



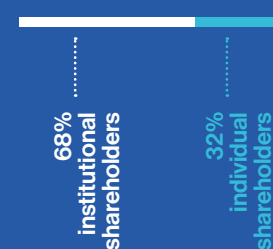
GROUP REVENUE (in millions of euros)



GAS & SERVICES REVENUE BY WORLD BUSINESS LINE (in millions of euros)



GROUP SHAREHOLDING (as of December 31, 2017)



410,000
individual shareholders

€2.65

dividend per share proposed at the May 16, 2018 Annual General Shareholders' Meeting, a **+12.4%** increase taking into account the October 2017 attribution of 1 free share for every 10 shares held.

Key non-financial figures for 2017

GLOBAL PRESENCE



ENVIRONMENT



of Group innovation expenses are related to projects that contribute to reducing environmental impact and improving air quality and healthcare.

SAFETY



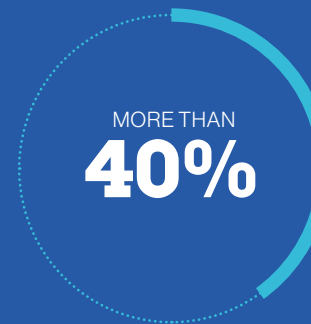
DIVERSITY



of women among managers and professionals



of Group innovation expenses are devoted to reducing CO₂ emissions (by reducing the carbon content of its own products or those of its customers).



Many applications of industrial and medical gases protect the environment for Group customers and the lives of its patients. These applications represent more than 40% of Group revenue.

Company Program objectives 2016-2020

2016-2020

Air Liquide is implementing its NEOS Company Program to reach its objectives for the period 2016-2020. This program enables the Group to deliver long-term performance, to be connected to its stakeholders and innovative. All the NEOS initiatives were launched in 2017.

PERFORMANCE

+6 to 8% ^(a) CAGR
revenue growth

>€300 M ^(b)
efficiency gains on average per year

>US\$300 M
Airgas synergies

>10%
ROCE after 5 to 6 years

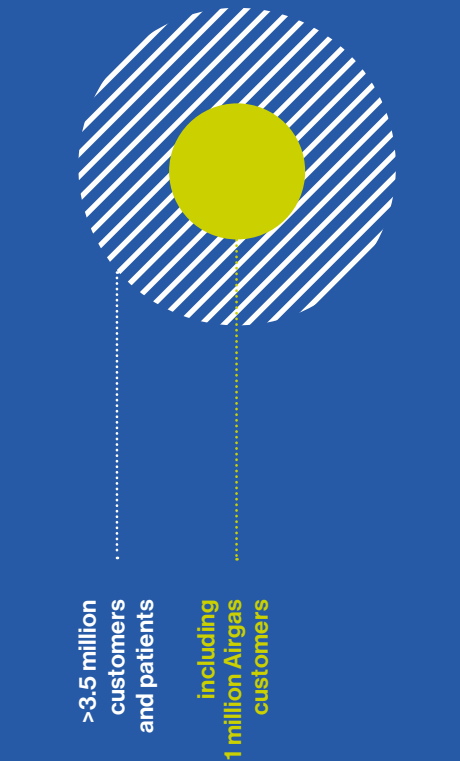
Maintaining rating from S&P

“A” range

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

RESPONSIBILITY

Improve air quality and prevent global warming.
Strengthen dialogue with Group stakeholders.



>3.5 million
customers and patients

~65,000
employees

2017 Air Liquide news



Discover the stories around these highlights in the Air Liquide group magazine: airliquide.com/magazine

Energy transition

1st Hydrogen Council launched in Davos

January 2017 was marked by the creation of the Hydrogen Council, currently composed of more than 30 companies from energy, transport, and industry sectors. The goal of this global initiative is to voice a united vision and long-term ambition for hydrogen to foster the energy transition and reach climate change targets. In concrete terms, the Council provides recommendations to a number of key stakeholders such as policy makers, business players, international agencies and civil society. A preliminary study called "Hydrogen Scaling Up" offers a precise and comprehensive road map regarding the roll-out of hydrogen and the key role it plays in the energy transition.



Open innovation

5 start-ups together with Air Liquide at the CES in Las Vegas

January 2017: Air Liquide participated for the first time in the Las Vegas Consumer Electronics Show (CES), a key trade show featuring innovative products in the electronics industry. The Group came along with five partnering start-ups: Diota, Imaging, Speachme, TAMR, and Ubleam. With Ubleam, which specializes in the Internet of Things, Air Liquide is co-developing in particular a tagging technology that transforms gas cylinders into connected objects. Customers can scan the logo on the cylinder to instantly access a wide variety of useful information on their smartphones.

3D printing

MX3D 3D-printed bridge in Amsterdam

A new-generation bridge will see the light of day in 2018, in Amsterdam's historic downtown district. A true technological feat, the bridge will be constructed using an innovative additive manufacturing process. A robotic arc welding machine will build the bridge in real time without human intervention, using 3D printing technology. Air Liquide is supporting the design firm Joris Laarman Lab by providing its expertise for the research and development phase, gas supply and arc welding. This is a significant contribution to a project foreshadowing a profound transformation in the way industrial objects will be manufactured in the future.



Space

Ariane 6 New contract for the future launcher

A long-time partner of the European space program, Air Liquide continues to provide cryogenics expertise for the development of the future Ariane 6 launch vehicle. The Group was selected to design, produce, and install the flexible transfer lines that will be used to refuel the launch vehicle with cryogenic propellant on the ground, right up until the very last moment before the launch. This agreement comes on top of the contracts signed by Air Liquide at the end of 2016, and is part of a full range of high-tech on-board and ground equipment, gases and related services developed by the Group. The countdown to Ariane 6's first flight in 2020 has begun!

Healthcare

O₂ First Oxygen House inaugurated by Air Liquide in Senegal

The new Oxygen House is the dedicated location for the Access Oxygen offer, which aims to provide medical oxygen to small, local health centers. In the Thiès region, over 140 health structures provide a population of over 1.4 million inhabitants, including the poorest, with local access to healthcare and medication. Oxygen House now provides them with access to medical oxygen, which is crucial in treating a wide variety of pathologies. Access Oxygen is a comprehensive offer that includes all the necessary equipment, services and training for providing oxygen therapy treatments. Access Oxygen will ultimately be available throughout Senegal.



Investment

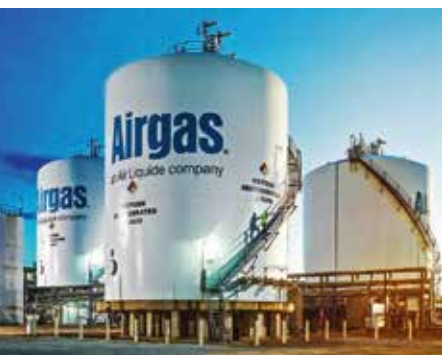
€40 M invested by the new joint venture with Sinopec in China

Sinopec is one of the largest integrated energy and chemical companies in China. Air Liquide and Sinopec, which have been partners since 2007, strengthened their relationship in 2017 by creating a new joint venture. Its role is to take over and optimize three existing Air Separation Units (ASUs), and build a new nitrogen production unit for a total investment of 40 million euros. At the same time, Air Liquide commissioned a new state-of-the-art ASU to supply Sinopec with oxygen and nitrogen in South China.





Discover the stories around these highlights in the Air Liquide group magazine: airliquide.com/magazine



Large Industries

€50 M
investment for a hydrogen production unit in Mexico

Air Liquide signed a long-term agreement with Pemex Transformación Industrial, a subsidiary of the state-owned oil and gas company Petróleos Mexicanos (PEMEX). The Group was selected to supply hydrogen to PEMEX's refinery located in the Mexican city of Tula de Allende. To do so, Air Liquide Mexico will invest 50 million euros for the takeover and optimisation of PEMEX's existing hydrogen production unit (SMR⁽¹⁾). The SMR will provide the Tula refinery with 90,000 Nm³ per hour of hydrogen, which will help produce cleaner transportation fuels. This agreement will also allow Air Liquide to strengthen its presence in central Mexico.

(1) Steam Methane Reformer.



Awards

1
"Gold Performance Excellence Award" given to Airgas by Boeing

Boeing awarded Airgas with this prize in recognition of the company's high level of performance. The award is a testament to the more than 25 years of successful collaboration between the two companies. Airgas supplies Boeing with industrial gases, welding hardgoods, personal protection and safety equipment, and dry ice, providing a key contribution to many strategic projects.



Hydrogen energy

1st
energy self-sufficient hydrogen vessel in the world

Energy Observer is an experimental catamaran that is making a 6-year world tour across fifty different countries. This unique vessel is powered by hydrogen and renewable energies. It is energy self-sufficient and doesn't emit greenhouse gases or fine particles. With more than 20 years of experience in the development of hydrogen energy, Air Liquide supports this one-of-a-kind project that demonstrates the crucial role hydrogen plays in the energy transition.

Healthcare

2
healthcare acquisitions in Japan and Saudi Arabia

In Japan, the acquisition of Sogo Sangyo Kabushiki Kaisha, a major home healthcare and medical gases company, has allowed Air Liquide to strengthen its healthcare presence in the country and increased the number of patients served at home by the Group to 20,000. In Saudi Arabia, where the healthcare sector holds significant potential, Air Liquide has announced that it purchased a majority equity stake (60%) in the Respiratory division of Thimar Al Jazirah Company (TAC). TAC is a major pharmaceutical, medical, and dental player within Saudi Arabia. With this purchase, the Group will be able to enter the home healthcare market in Saudi Arabia, serving over 1,400 patients.



Open innovation

8
new ALIAD investments in 2017

ALIAD, Air Liquide's venture capital investor, is continuing to invest in technology start-ups. Since its creation in 2013, 80 million euros have been invested. In 2017, ALIAD increased its financial commitment in six companies and carried out eight new investments. Ubleam, a French start-up specialized in the Internet of Things, is one of the companies singled out by ALIAD. ALIAD also invested in Dietsensor, which created an application that helps diabetics track the glucose levels of their meals, and in Diabeloop, a start-up which is developing an electronic synthetic pancreas that can automatically deliver insulin based on a patient's needs.

Electronics

€150 M
investment decision in electronics to support new clients in Asia

In the Asian electronics market, 2017 was a record year for Air Liquide. The Group signed 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 to supply ultra-pure carrier gases, which play a key role in the cutting-edge semiconductor industry, to its customers' new fabs. In addition, the demand for Air Liquide's advanced materials continued to grow in the Asia-Pacific region, notably in China, South Korea and Japan.



Consolidated income statement

(summarized)

For the year ended December 31

(in millions of euros)	2016	2017
Revenue	18,135	20,349
Purchases	-6,693	-7,721
Personnel expenses	-3,659	-4,138
Other income and expenses	-3,172	-3,348
Operating income recurring before depreciation and amortization	4,611	5,142
Depreciation and amortization expense	-1,587	-1,778
Operating income recurring	3,024	3,364
Other non-recurring operating income and expenses	36	-344
Operating income	3,060	3,020
Net finance costs	-389	-421
Other financial income and expenses	-14	-68
Income taxes	-747	-207
Share of profit of associates	6	5
NET PROFIT FROM CONTINUING OPERATIONS	1,916	2,329
NET PROFIT FROM DISCONTINUED OPERATIONS	11	-37
PROFIT FOR THE PERIOD	1,927	2,292
- Minority interests	83	92
- Net profit (Group share)	1,844	2,200
Basic earnings per share (in euros)	4.64	5.16
Diluted earnings per share (in euros)	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)	0.03	-0.09
Diluted earnings per share from discontinued operations (in euros)	0.02	-0.08

Net Profit recurring: ⁽¹⁾ €2,029 M

(1) Excluding the non-cash impacts of exceptional items and the US tax reform.

Consolidated balance sheet

(summarized)

For the year ended December 31

ASSETS (in millions of euros)	December 31, 2016	December 31, 2017
Goodwill	13,890	12,840
Other intangible assets and property, plant and equipment	22,003	20,137
Other non-current assets ^(a)	960	1,059
TOTAL NON-CURRENT ASSETS	36,853	34,036
Inventories and work-in-progress	1,323	1,334
Trade receivables and other current assets	4,090	3,963
Cash and cash equivalents ^(a)	1,576	1,694
TOTAL CURRENT ASSETS	6,989	6,991
ASSETS HELD FOR SALE	276	-
TOTAL ASSETS	44,118	41,027
EQUITY AND LIABILITIES (in millions of euros)	December 31, 2016	December 31, 2017
Shareholders' equity	16,742	16,318
Minority interests	383	400
TOTAL EQUITY	17,125	16,718
Provisions and deferred taxes	4,971	4,401
Non-current borrowings	14,890	12,522
Other non-current liabilities ^(a)	504	241
TOTAL NON-CURRENT LIABILITIES	20,365	17,164
Provisions	280	333
Trade payables and other current liabilities	4,103	4,264
Current borrowings ^(a)	2,064	2,548
TOTAL CURRENT LIABILITIES	6,447	7,145
LIABILITIES HELD FOR SALE	181	-
TOTAL EQUITY AND LIABILITIES	44,118	41,027

(a) Included derivatives.

Consolidated cash flow statement

For the year ended December 31

(in millions of euros)	2016	2017
Operating activities		
Cash flows from operating activities before changes in working capital	3,523	4,133
Changes in working capital	331	188
Others	-158	-67
Net cash flows from operating activities	3,696	4,254
Investing activities		
Purchase of property, plant and equipment and intangible assets	-2,259	-2,183
Acquisition of subsidiaries and financial assets	-12,165	-140
Proceeds from sale of property, plant and equipment and intangible assets and financial assets	830	477
Net cash flows used in investing activities	-13,594	-1,846
Financing activities		
Dividends paid		
• L'Air Liquide S.A.	-947	-1,031
• Minority interests	-72	-68
Proceeds from issues of shares	3,361	70
Purchase of treasury shares	4	-158
Transactions with minority shareholders	-14	-4
Net cash flows used in financing activities excluding increase (decrease) in borrowings	2,332	-1,191
Effect of exchange rate changes, opening net indebtedness of newly acquired companies and others	-563	780
Change in net indebtedness	-8,129	1,997
NET INDEBTEDNESS AT THE BEGINNING OF THE PERIOD	-7,239	-15,368
NET INDEBTEDNESS AT THE END OF THE PERIOD	-15,368	-13,371



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Annual Report, Reference Document,
Shareholder's Guide, Interactions, and more.
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Published by the Communications department of the Air Liquide group, April 2018
75 quai d'Orsay, 75007 Paris, France

Photos credits: Thomas Laisné / La Company, Gilles Leimdorfer / Interlinks Image, Augustin Detienne / CAPA Pictures, Bryan Meltz / CAPA Pictures, Gabo Morales / CAPA Pictures, Patrick Wack / CAPA Pictures, Pierre-Emmanuel Rastoin, Fotolia, Adrien Daste, Getty Images, Jean-Philippe Mesguen, iStock, Lucas Schifres / CAPA Pictures, Fotolia, Joseph Melin, Mourad Mokrani, Christophe Peus / CNES, ArianeGroup Holding, Air Liquide, Stéphane Remael / La Company, Kadeg Boucher, Thinstockphotos.

Design & Production: (ref.: ALRA017)

L'Air Liquide - S.A. company established for the study and application of processes developed by Georges Claude with issued capital of 2,356,439,277.50 euros

