

Air Liquide
is transforming...

2016 Annual Report

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... and it shows

The acquisition of Airgas and the launch of the NEOS Company Program for the period 2016-2020 mark a new milestone in the history of Air Liquide.

With the acquisition of Airgas, Air Liquide has grown in size. Today, the Group counts 67,000 people (as of December 31, 2016) and serves more than three million customers and patients worldwide. By strengthening its presence in the United States, the world's largest industrial gas market and also a country at the cutting edge of innovation and digital technologies, Air Liquide is entering a new phase in its development and growth.

With its NEOS Company Program, Air Liquide is implementing a customer centric transformation strategy to deliver profitable growth over the long term. This strategy, in which innovation is the predominant path to growth, is designed to offer new solutions for the challenges posed by the energy and environmental transition, healthcare, and the digital transformation. Air Liquide will thus continue to create value for all of its stakeholders.

Thanks to solid fundamentals, optimal positioning both geographically and in terms of market dynamics, and a transformation program based on innovation and leveraging digital, Air Liquide continues to ensure its long-term solid performance in various business environments.

In a changing world, the Group can count on the commitment and professionalism of all its employees, the confidence of its customers and partners, and the loyalty of its shareholders. It can also rely on its leading positions in the world's major industrial basins, proprietary technologies, its capacity for innovation, and its solutions and services.

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, 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.

The precision of the sign to echo expertise and innovation.

The elimination of the frame to suggest the openness to the world.



The roundness and the lower case typeface to convey the Group's proximity to its stakeholders.



Discover the Group's transformation at airliquide.com and on social media:

[@airliquidegroup](https://twitter.com/airliquidegroup) [#AirLiquideistransforming](https://www.linkedin.com/company/airliquide) and on [LinkedIn](https://www.linkedin.com/company/airliquide).



2016
NEOS ONBOARDING DAY

Air Liquide launched its new Company Program for the 2016-2020 period. The NEOS program engages all of the Group's employees worldwide.



The year 2016 in images





2016
ACQUISITION OF AIRGAS

With the acquisition of Airgas, the largest in Air Liquide's history, the Group has grown in size.

ARC WELDING SAFELY

WARNING
DANGER: PROTECTIVE EQUIPMENT
These people are not wearing the appropriate
protective equipment. In the case of a welder, it is
essential to wear a mask, gloves, and protective
clothing.
The welder should wear the appropriate
protective equipment.
The welder should wear the appropriate
protective equipment.
The welder should wear the appropriate
protective equipment.

ELECTRIC

Interview with Benôit Potier

Chairman and CEO



2016 WAS AN EVENTFUL YEAR FOR AIR LIQUIDE AND MARKS A NEW STAGE IN ITS HISTORY. WHAT'S CHANGED?

The acquisition of Airgas and the launch of our company program made 2016 an exceptional year. In less than a year, we completed the acquisition of Airgas, finalized the financing - and I would like to thank once again the investors and shareholders who renewed their confidence in us -, divested certain assets required in the United States, merged our operations, and generated the first synergies. The success of these steps is encouraging for the future. At the strategic level, the Group achieved with this acquisition a major milestone in its geographic expansion and the extension of its markets. We reached a new scale, with 17,000 new employees, and today serve more than three million customers and patients worldwide. By strengthening our presence in the U.S., the world's largest industrial gas market, Air Liquide's positions are more geographically balanced between the American and European continents. The acquisition has also changed the profile of our businesses, with a greater weight for Industrial Merchant, in line with the global market for industrial gases. Change is also accelerating around us, including the geopolitical environment, the expectations of our customers, digital penetration in our businesses, and projects of consolidation in our industry. To respond to these new challenges and opportunities, we are implementing our company program, a customer-centric transformation program that combines targeted industrial investment, digital development, and innovation to fuel growth in the coming years. All of our employees are mobilized around this program, which guides us toward our 2016-2020 objectives.

WHAT IS YOUR ASSESSMENT OF THE GROUP'S PERFORMANCE IN 2016?

The Group's performance in 2016, which includes Airgas as of May 23, 2016, was strong, with an increase in revenue, net income, and net earnings per share, despite unfavorable currency and energy impacts. Consolidated revenue for the year amounted to 18,135 million euros, up +14.6% on a reported basis compared with 2015. Business was lifted by higher volumes in Large Industries, the strength of the Healthcare sector, and the promising markets served by the new Global Markets & Technologies entity. All geographic zones progressed on a comparable basis, benefiting in particular from stronger growth in developing economies. The Group generated 315 million euros in efficiency gains in 2016 and is continuing to strengthen its competitiveness. We also recorded the first synergies with Airgas, which amounted

“With Airgas,
the Group achieved
a major milestone
in its geographic
expansion and
the extension
of its markets.”

BENOÎT POTIER



February 25, 2016
AirLiquide Shanghai
Research and Technology
Center opening ceremony.

to 45 million dollars in 2016. Our balance sheet is solid, reinforced by robust cash flow of 3.7 billion euros and the success of the capital increase. Debt at the end of the year was thus contained below our forecasts. Net profit increased by +5.0% to 1,844 million euros, making it possible to propose a dividend of 2.60 euros per share at the next General Shareholders Meeting in May 2017. The Board of Directors also decided to grant one free share for 10 existing in the second half of 2017.

WHERE ARE YOU TODAY WITH AIRGAS?

First of all, I am pleased to see that the integration is going well. We share common values. For example, the teams are committed to safety in operations, operational excellence, and customer satisfaction. They are mobilized to ensure that the next steps are successful, including the achievement of synergies.

We plan to generate a total of more than 300 million dollars in synergies with Airgas by the end of 2019; two thirds of which are cost synergies anticipated by the end of 2018.

By combining the strengths of Airgas, in particular its strong customer culture, its unique multichannel distribution network with 1,100 points of sale in the U.S., and its e-commerce and telesales platforms, with Air Liquide's operational excellence and innovation capabilities, we are confident in our ability to create more value for our customers. Lastly, we also are looking at how the Airgas Industrial Merchant model can be applied in other regions of the world.

INNOVATION IS A MAJOR SOURCE OF DEVELOPMENT. WHAT DOES THIS MEAN IN CONCRETE TERMS?

Innovation is indeed a predominant path to growth. Our innovation is part of an open, user-centric ecosystem supported by science, technology, customer experience, and the incubation of new activities. It is focused on the challenges of energy and environmental transition, health and digital transformation.

Here are just a few examples of our achievements in 2016: we continued to develop new activities with the commissioning of new biogas purification units and the deployment of hydrogen stations worldwide, thus contributing to clean transportation. In Healthcare, we are working on the patient journey through the development of our e-health offer to better support chronic disease patients in their home and facilitate coordination between healthcare professionals through digital treatment follow-up. Innovation is also allowing us to rethink the way we manage our assets: "Connect", the transformation project for our plants in France, illustrates the digital transformation of



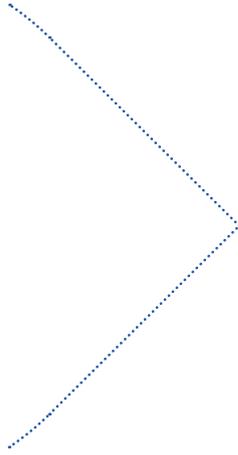
Change is also accelerating around us, including the geopolitical environment, the expectations of our customers, digital penetration of our businesses, and projects of consolidation in our industry.



It is by transforming the customer experience through innovation and by leveraging digital that we are differentiating ourselves.



" AIR LIQUIDE IS ON TRACK FOR THE YEARS AHEAD "



our operations. In Industrial Merchant, we are leveraging the expertise of Airgas teams in the customer journey to develop e-commerce platforms and multichannel distribution of our products. Another example is in Electronics, where we are responding to the new expectations of semiconductor manufacturers of next generation chips, continuously expanding our range of high-value advanced materials. It is by transforming the customer experience through innovation and by leveraging digital that we are differentiating ourselves.

YOU HAVE REAFFIRMED YOUR AMBITION TO CONTRIBUTE TO A MORE SUSTAINABLE WORLD. WHAT IS YOUR APPROACH?

For us, performance and sustainability come together. Beyond the major imperatives of safety and ethics, we have defined two priorities for our sustainable development policy: air quality and dialogue with our stakeholders.

Because air is a common, vital, and universal asset that is now threatened everywhere in the world, we are strengthening our actions to improve air quality for health and the environment. Through our air technical expertise and ability to innovate, we have solutions that contribute to improving air quality through our operations and on our customers' sites. The second priority is engaging in continuous and in-depth dialogue and interaction with all stakeholders. This is how we can contribute to a more sustainable world and the development of our host communities. In particular, the Air Liquide Foundation demonstrates this commitment by supporting projects in the countries where we operate.

WHAT ARE YOUR PRIORITIES FOR 2017?

In an uncertain geopolitical context, our priority is to ensure excellence in our performance in all areas of our operations, while focusing on their safety and efficiency. In 2017, we will continue to integrate Airgas and concentrate on achieving the expected synergies. We will continue to innovate, focusing in particular on digital and the customer experience, and investing in promising markets while continuing efforts to improve our competitiveness. With strong fundamentals and transformation at work within the Group, we are confident in our ability to generate profitable growth and achieve our goals. Air Liquide is on track for the years ahead!

Board of Directors

as of December 31, 2016



Benoit Potier
Chairman and CEO



Pierre Dufour
Senior Executive Vice-President



Thierry Peugeot
Member of the Audit and
Accounts Committee

Thierry Desmaret
Lead Director, Chairman
of the Appointments and Governance
Committee, member
of the Remuneration Committee

9 independent
members

6 nationalities

5 women



Siân Herbert-Jones
Chairman of the Audit
and Accounts Committee



Geneviève Berger
Director

2016 HIGHLIGHTS

On December 31, 2016, the Board of Directors has 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...) in various sectors: cosmetics/consumer goods, automotive, petroleum/chemicals, health/research, pharmaceuticals and services.

AMONG THE TOPICS EXAMINED IN 2016

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 2016, the Board of Directors focused on:

- the completion and financing of **the Airgas acquisition**;
- **Issues related to strategy**, including the new NEOS company program, investment decisions, innovation and technology development strategy in Engineering and Construction, Large Industries and Industrial Merchant;
- **Governance issues**: changes in the composition of the Board and its Committees, Group risk management, human resources;
- **Issues related to Corporate Social Responsibility**, as part of the Corporate Sustainability Program defined by the Group in 2016.



Jean-Paul Agon
Chairman of the Remuneration Committee,
Member of the Appointments
and Governance Committee

Karen Katen
Member of the Appointments
and Governance Committee

Sin-Leng Low
Member of the Audit
and Accounts Committee



Philippe Dubrulle
Director representing
the employees

Annette Winkler
Member of the Remuneration
Committee

Brian Gilvary
Director

Meeting customers

November 29-30, 2016, Frankfurt

As part of a Board of Directors meeting on innovation held at the Air Liquide hub in Frankfurt, Germany, Group Directors met with several Industrial Merchant customers from the region. A review of session highlights.

NOVEMBER 29

In the morning, the Board meeting opened with a working session dedicated to the Group's strategy, including sustainable development. During the afternoon, the Board members received a presentation focused on technological and Research and Development projects in Engineering and Construction and Large Industries.

Through demonstrations conducted by Air Liquide teams, the Directors were able to learn about innovations deployed by the Group in major industrial projects and discuss them with the experts who developed them. The day concluded with a roundtable moderated by the president of a major German industrial company on the theme of economic and global challenges as seen from Germany.



NOVEMBER 30

With the Airgas acquisition reinforcing Air Liquide's position in Industrial Merchant in North America, Board members were briefed on this business in Europe during the second day. Covering more than 70 sectors with more than 1,000 applications, Industrial Merchant is highly diversified and in full transformation, driven particularly by digital. To better understand the evolution of market needs, Directors visited a number of key customers in the Frankfurt area, including Braun, Opel, PepsiCo and Ebbecke, an SME expert in materials processing. During their meetings, they reviewed the diversity of industrial gas applications being used by these customers and discussed the added value of Air Liquide solutions in

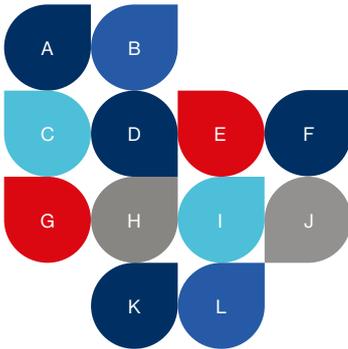
customer production processes. Board members then held a long discussion with a distributor of Air Liquide gases and equipment, supplying professionals and craftsmen in the region. The customer visits provided the Directors with a better understanding of the Industrial Merchant activity in Europe and the relationship of trust established by Air Liquide with its customers and distributors.

To conclude the two days, the Board members heard short presentations on Industrial Merchant in Europe, organized in the form of a marketplace: through demonstrations by the teams, Board members were able to discover the latest digital innovations that are improving the customer experience in this strategic business for Air Liquide.



General Management & Executive Committee

as of March 15, 2017



A **Benoit Potier**
Chairman and CEO
Born in 1957 - French

B **Pierre Dufour**
Senior Executive
Vice-President and Director
Born in 1955 - Canadian

C **François Darchis**
Senior Vice-President
Innovation, Digital, Science,
Technologies
Supervising IT and Industrial
Merchant Business Line
Born in 1956 - French

D **Guy Salzgeber**
Senior Vice-President
Europe Industries Frankfurt Hub
Executive Vice-President
Supervising Group Procurement
Born in 1958 - French

E **Fabienne Lecorvaisier**
Vice-President
Chief Financial Officer
Finance, Operations Control
Born in 1962 - French

F **Michael J. Graff**
Senior Vice-President
Houston Hub Executive Vice-President
Chairman of the Airgas board
Supervising Electronics Business Line,
Safety and Industrial Systems (SIS)
Born in 1955 - American

G **Jean-Marc de Royere**
Senior Vice-President
International, Governance and
Corporate Social Responsibility
Born in 1965 - French

H **François Abrial**
Vice-President
Shanghai Hub Executive
Vice-President
Born in 1962 - French

I **François Venet**
Vice President
Strategy
Supervising Large Industries
Business Line and
Engineering & Construction
Born in 1962 - French

J **Kwong Weng Mok**
Vice-President
Deputy Head of Asia
Born in 1953 - Singaporean

K **Pascal Vinet**
CEO of Airgas
Born in 1962 - French

L **François Jackow**
Vice-President
Healthcare Activities
Supervising the Dubai Hub
and Clients Department
Born in 1969 - French





New Dimension

With the acquisition of the American company Airgas, finalized on May 23, 2016, Air Liquide has grown in size: present in 80 countries, the Group now employs 67,000 people and serves more than three million customers and patients throughout the world.

A new size, a new balance between America and Europe, a new profile in line with the global market of industrial gases: Air Liquide is ideally positioned to generate profitable growth and create long-term value for all stakeholders.

A look back at this historic acquisition for Air Liquide and this exceptional year, rich in achievements across all of the Group's businesses and geographic zones.

Air Liquide's new profile

>3 million
customers and patients



including 1 million
new customers

following the acquisition of Airgas

May 23, 2016



67,000
employees

Including 17,000
new Airgas
employees

30%

of Group managers are
women
(excluding Airgas
and Welding)

1.4

**Employee lost-time
accident frequency
rate**

per million hours worked
(excluding Airgas,
including Diving)



2016 Key figures

Revenue

€ 18,135 M

Excluding Welding and Diving, restated as discontinued operations

Net profit

€ 1,844 M

Expenses dedicated to innovation

€ 288 M

410,000
individual shareholders

as of December 31, 2016

2.60 euros

dividend per share

Proposed at the May 3, 2017
Annual General Shareholders Meeting

Attribution of **1** free share
for 10 existing

Decision of the Board of Directors on February 14, 2017
for the second half of 2017.

Group revenue (in millions of euros)



17,331
Gas
& Services



474
Engineering
& Construction



330
Global Markets
& Technologies

Gas & Services revenue by World Business Line (in millions of euros)



7,565
Industrial
Merchant



5,037
Large
Industries



3,111
Healthcare



1,618
Electronics

Gas & Services revenue by geography



38%
Europe



36%
Americas



23%
Asia-Pacific



3%
Middle East
and Africa

Group shareholding (as of December 31, 2016)



institutional
shareholders



individual
shareholders



CLOSE-UP ON AIRGAS

Airgas: A historic acquisition

Completed May 23, 2016, the acquisition of Airgas, a leading supplier of industrial gases and related products and services in the United States, strengthens the Group's presence in the U.S. market, the world's largest for industrial gases.

1 million
customers

More than
17,000
employees

More than
1,100
locations,
including 900 branches
and retail stores across
the U.S.

WHO IS AIRGAS?

Founded in 1982, Airgas grew rapidly, externally through acquisitions - more than 450 in 30 years - as well as organically. By 2016, it had become one of the leading suppliers in the United States of industrial, medical and specialty gases and hardgoods, such as safety equipment. Its customer-centric organization serves a diverse base of 1 million customers through a unique multi-channel distribution network of 1,100 sites and branches, e-commerce and telesales. Its primary markets include manufacturing and metal fabrication; construction; life sciences and healthcare; food, beverage, and retail; energy and chemicals; primary materials and services; defense, and aerospace.

Keys to success of the Airgas business model:

- broadest packaged gas, bulk gas and hardgoods offering in the United States
- strong customer-centricity with fast and flexible response
- seamless multi-channel distribution network
- decentralized model

MORE VALUE CREATION FOR CUSTOMERS

Airgas brings its vast U.S. geographic coverage, significant market density, advanced digital capabilities and a wide range of products. Air Liquide brings its technology and Research & Development capabilities and its North American bulk supply chain strength and market knowledge. The result is a complete end-to-end offer, benefiting customers.

RAPID OPERATIONAL INTEGRATION

Completion of the acquisition was announced on May 23, 2016. The operational integration was successfully completed October 1, 2016, reflecting the two companies' complementary qualities, including the similar cultures and a common base of knowledge and expertise of their teams.

**FINANCING STRATEGY:
AN UNPRECEDENTED OPERATION**

The strategy to finance the \$13.4 billion Airgas acquisition was designed to meet three long-term objectives. First, maintain the Group's credit rating in the "A" category and a solid balance sheet, required to secure long-term contracts with major international customers; second, preserve financial leeway to seize targeted external growth opportunities; lastly, provide an opportunity to shareholders wishing to participate more actively in the Group's development.

Unprecedented in scope, the financing package was successfully completed in less than five months following acquisition closure.

Air Liquide set up a three-stage financing approach:

- **3 billion euro bond in June 2016** – the issue, the largest in Air Liquide history, was 4 times oversubscribed, reflecting investor confidence in Air Liquide.
- **Capital increase in September 2016** – with preferential subscription rights offered to Air Liquide shareholders, the first capital increase undertaken by the company in 30 years generated strong momentum, raising € 3.3 billion on an overall subscription rate of 191.2%.
- **Five bonds totaling \$ 4.5 billion issued in September 2016** – a first ever for the Group, the issue was carefully prepared and executed under excellent liquidity conditions. Nearly 5 times oversubscribed, it was a resounding success.



**Behind the scenes
of the acquisition on:
airliquide.com/thebigstory**



High value-added integration

The successful integration of Airgas reflects the two companies' complementary cultures and shared values. **Pascal Vinet**, Air Liquide Executive Committee member, who became Airgas CEO following the acquisition, and **Andy Cichocki**, longtime Airgas executive and now COO, compare perspectives.

How does the acquisition of Airgas transform the Air Liquide Group?

Pascal Vinet: The acquisition marks a major transformation in Air Liquide's presence in the United States. With Airgas, we've strengthened our leadership in the world's biggest and strongest market, adding more than one million customers. We now have continuum of coverage through the combined offer, from packaged gas^(a) to bulk gas, on-site supply and hardgoods. Airgas' footprint also is enabling us to build on our strengths in Large Industries, or in Research and Development, to accelerate deployment of new offerings and technologies.

What are some of the ways Air Liquide's and Airgas' relative strengths match up?

Andy Cichocki: The two companies' capabilities are highly complementary. Air Liquide is specialized in customers' process gas needs, Airgas in consumables and small packaged gas.

P.V.: In Healthcare, for example, Airgas adds the geographic reach we were lacking, while Air Liquide brings its knowledge of the hospital market, medical gas activities and healthcare products and services. Air Liquide also brings a huge global technology portfolio and our U.S. Research & Development center in Delaware, which is a great tool for the Airgas teams.

How is the integration proceeding?

P.V.: It's going as planned. We completed the integration of operations in October 2016, just four months after the acquisition. The fast progress is enabling us to optimize our supply chain, services, administrative structure and back office and to quickly deliver on cost synergies, a major focus for 2017.

A.C.: We're also leveraging some significant growth synergies, such as cross-selling. For example, Airgas sales people are learning what Air Liquide technologies they can sell to their customers. The potential for growth synergies is exciting, and we've only begun to appreciate the extent of our many opportunities. We're in a situation where 1+1 is much greater than 2!

How are the respective cultures coming together?

A.C.: The people part of the integration is going very well. We recognize that we have more in common than differences, even if the respective companies grew up differently. The single strongest parallel is the strong safety culture in both companies. Both of us also value people and are committed to being leaders in our market.



Pascal Vinet, CEO of Airgas and Andy Cichocki, Airgas COO

P.V.: We're leveraging the strengths of each company. Airgas comes from a local angle, historically built on acquisitions and with a great local service culture. Air Liquide's legacy is one of great innovation and offering a technology service approach.

What is the business and growth strategy for the future?

A.C.: In the near-term, we're leveraging the collective customer base to ensure we do a great job in the U.S. Our emphasis is on operational efficiencies, market share and penetration, a lot of basic blocking and tackling, to use an American football term. We're also already looking at how we can leverage our combined strengths to other markets, beginning with Canada and Mexico.

P.V.: To grow in the U.S., we'll leverage Air Liquide's supply chain and technology capabilities and Airgas' geographic reach, multi-channel approach and advanced digital capabilities. We also will continue to apply Airgas' successful distributor acquisition model in the U.S. to reinforce density and create value. Finally, we continue to look at how we can share knowledge and tools to further strengthen ourselves globally in areas such as e-business capabilities and instilling a customer-first mindset everywhere.

(a) Packaged gases are gases sold in cylinders

SYNERGIES ON SCHEDULE

Airgas' synergies amounted to \$ 45 million in 2016.

In total, Air Liquide expects to achieve over \$ 300 million in synergies with Airgas by the end of 2019. Cost synergies, which represent two thirds of all synergies, are expected to be realized before the end of 2018.

They correspond to the optimization of operations, processes, purchases and back office.

In terms of sales synergies, these include the deployment of Air Liquide offerings through the Airgas network and Airgas offers in Canada and Mexico.

> \$ 300 million
of synergies by the end of 2019





Multi-channel success story

A key to Airgas' success on the U.S. market is its unique multi-channel distribution strategy: its network of retail branches, locations and field sales force, combined with the market's strongest digital and telesales capabilities. Leaders from each of the three channels discuss how they work together around a common objective: to provide the best possible service to the customer.

PHYSICAL PRESENCE The extensive geographic network of retail branches is an integral part of the Airgas packaged gas business model in the United States. The more than 1,100 locations are the backbone of Airgas' close proximity with customers, offering small and large businesses and individual entrepreneurs a "one-stop shop" for their cylinder gas and services needs as well as related safety and welding hardgoods. The branches are fully integrated with and are complemented by the company's digital and telesales activities. "We receive orders online that are channeled to us through the website," says Bobby Needham, manager of a branch in Tampa, Florida. "However, a lot of our customers appreciate the human contact and the ability to ask questions. We have a sign hanging up in the store that says, 'If you don't take care of the customer, somebody will.' I want to make sure our customer keeps coming back."

DIGITAL The customer experience is at the heart of the digital technology platform and capabilities built by Airgas. More than 600,000 visitors per month connect to Airgas.com to make purchases, check orders and obtain information on products and safety standards and over 100,000 new users have been added each year. "Everything we do is driven by our customers," says Ron Stark, Airgas Senior Vice President of Sales and Marketing. "We're fully integrated with all of our channels to make it fast and easy for customers to do business with us through a seamless, transparent experience. Customer data is managed on a single software platform, SAP, and considered as a sale made by the field teams, regardless of how the purchase is actually made. The premium is all about providing ease of business value to the customer." To appreciate how Airgas' advanced e-Business capabilities are enabling it to improve customer reach and service, one has only to look at the numbers. More than half of Airgas 1,200 key accounts do business digitally and more than 4 million administrative tasks are performed by customers online annually. "Customers are telling us that our digital capabilities are a defining factor in their decision to do business with us," says Kelly Justice, Airgas Senior Vice President of e-Commerce and Marketing. "It's a source of competitive advantage we're working to build on, piloting projects such as digitized reordering and deliveries to increase speed, efficiency and convenience for customers. We're constantly innovating so that we stay a step ahead."

TELESALES Unique in the U.S. industrial gas industry, the Airgas telesales platform, called Airgas Total Access, is fully integrated with the other channels. In addition to generating direct sales to customers independently, telesales teams organized in six call centers around the U.S. support branches and field sales teams, and drive e-business traffic to the web site. "We proactively pursue new business as well as collaborating closely with our counterparts in the regional sales teams," says Don Carlino, the Airgas Executive overseeing Airgas Total Access. "Our telesales representatives work to pursue customer solutions. They can also work collaboratively with our field teams, following up immediately after their visit so that the customer has a quote in his hands and a knowledgeable specialist on the phone with additional information 30 minutes after the sales rep's visit." Ensuring team members are extremely well-versed in Airgas products and how to use them is a critical element of the team's success. "We invest a significant amount of resources in recruiting, onboarding and training our team members," says Kerrie Sodano, Vice President of Sales, Airgas Total Access.



**Bobby
Needham,**

Manager of a branch
in Tampa, Florida



**Kelly
Justice,**

Airgas Senior Vice
President of e-Commerce
and Marketing



**Kerrie
Sodano,**

Vice President
of Sales, Airgas
Total Access

Businesses of Air Liquide

Oxygen, nitrogen and hydrogen: these small molecules essential to life, matter and energy are at the heart of the Group's expertise. Thanks to them and to Air Liquide's international presence its employees deliver innovative solutions to more than three million customers and patients worldwide.

INDUSTRIAL MERCHANT

44% of 2016 Gas & Services revenue

From independent craftsmen to large industrial companies, we offer to our customers solutions adapted to every stage of the production process: industrial and specialty gases, application technologies, welding and safety equipment, and related services. Increasingly, we leverage digital capabilities to provide a simple and reliable experience to our customers. Inventiveness, strong customer proximity and relationships guide our teams' commitment to moving industries forward. The applications are infinite - inerting, weld cutting, food cryogenics, oxy-combustion, water treatment ... - with permanent development.

LARGE INDUSTRIES

29% of 2016 Gas & Services revenue

We provide our customers with industrial gas solutions essential to their own production, as well as technologies that deliver performance and energy efficiency. Our unmatched networks of production units linked to pipelines worldwide enable us to supply gases to the world's major industrial basins and guarantee customers a high level of reliability and uninterrupted supply of gas over the long term.



HEALTHCARE

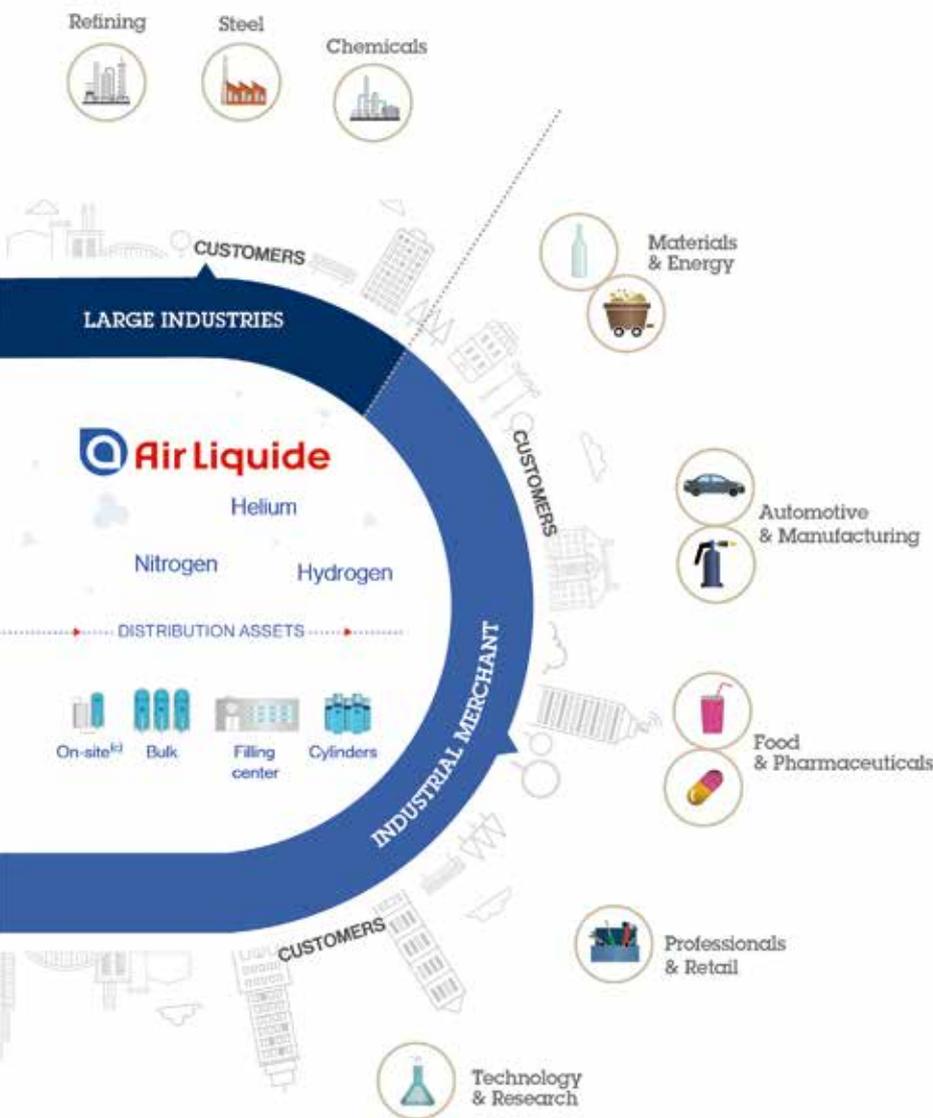
18% of 2016 Gas & Services revenue

As a recognized leader in medical gases, home healthcare, hygiene products and healthcare specialty ingredients, we provide to healthcare professionals and patients customized and effective products and services, which contribute to protect vulnerable lives. Present in the continuum of care from hospital to home, we accompany 1.4 million patients in the world and we strive to constantly improve our offer in order to better respond to the needs of patients and healthcare professionals.

ELECTRONICS

9% of 2016 Gas & Services revenue

A world reference in molecule design, manufacturing and delivery, we contribute to the innovation of the world's most advanced companies in the electronics industry. Present in the markets of semiconductors, photovoltaics and flat panel displays, our 3,000 employees continuously share our customers' ambition to push the boundaries of what is possible. Working closely with each customer, we engineer innovative and cost-effective solutions and keep improving our products and processes to move nanotechnology forward. By designing the infinitely small, we enable our customers to think amazingly big.



ENGINEERING & CONSTRUCTION

Partner of choice for the design, engineering and construction of state-of-the-art production units worldwide, for Air Liquide and third-party customers, we deliver innovative technologies and create durable solutions that respond to the challenges of our customers. Our industrial gas production, energy conversion and gas purification technologies enable customers to benefit from a wide range of industrial process operations and optimize the use of natural resources.

GLOBAL MARKETS & TECHNOLOGIES

The "Global Markets & Technologies" activity, created in 2015, focuses on new markets requiring a global approach – those relating to the energy transition, such as hydrogen energy; markets with high technology content (aerospace, space); and those relating to the maritime sector, such as offshore platforms or maritime transport of high value-added molecules. We incubate new activities, relying on science, technologies, business models and digital usages.

(a) ASU: Air Separation Unit.

(b) SMR: Hydrogen and carbon monoxide production unit (Steam Methane Reformer).

(c) On-site: Small local production unit.

Global presence

With the acquisition of Airgas, the Group strengthened its presence in the United States, the world's largest industrial gases market. It extended its leadership by balancing its American and European positions. In 2016, revenue grew in all geographies (on a comparable basis) and particularly in developing economies (+8%).

€6,230 M

Americas

Following the acquisition of Airgas, Gas & Services revenues in the Americas zone increased by +77.8% in 2016, excluding currency and energy impacts, and by +1.8%, excluding Airgas. Supported by production unit start-ups, sales in Large Industries grew strongly (+7.4%) over the year. In Industrial Merchant, North America was affected by weak manufacturing activity (Energy, Metal Fabrication, Construction) compared to 2015, while demand remains strong in the Food, Beverage and Pharmaceuticals markets.

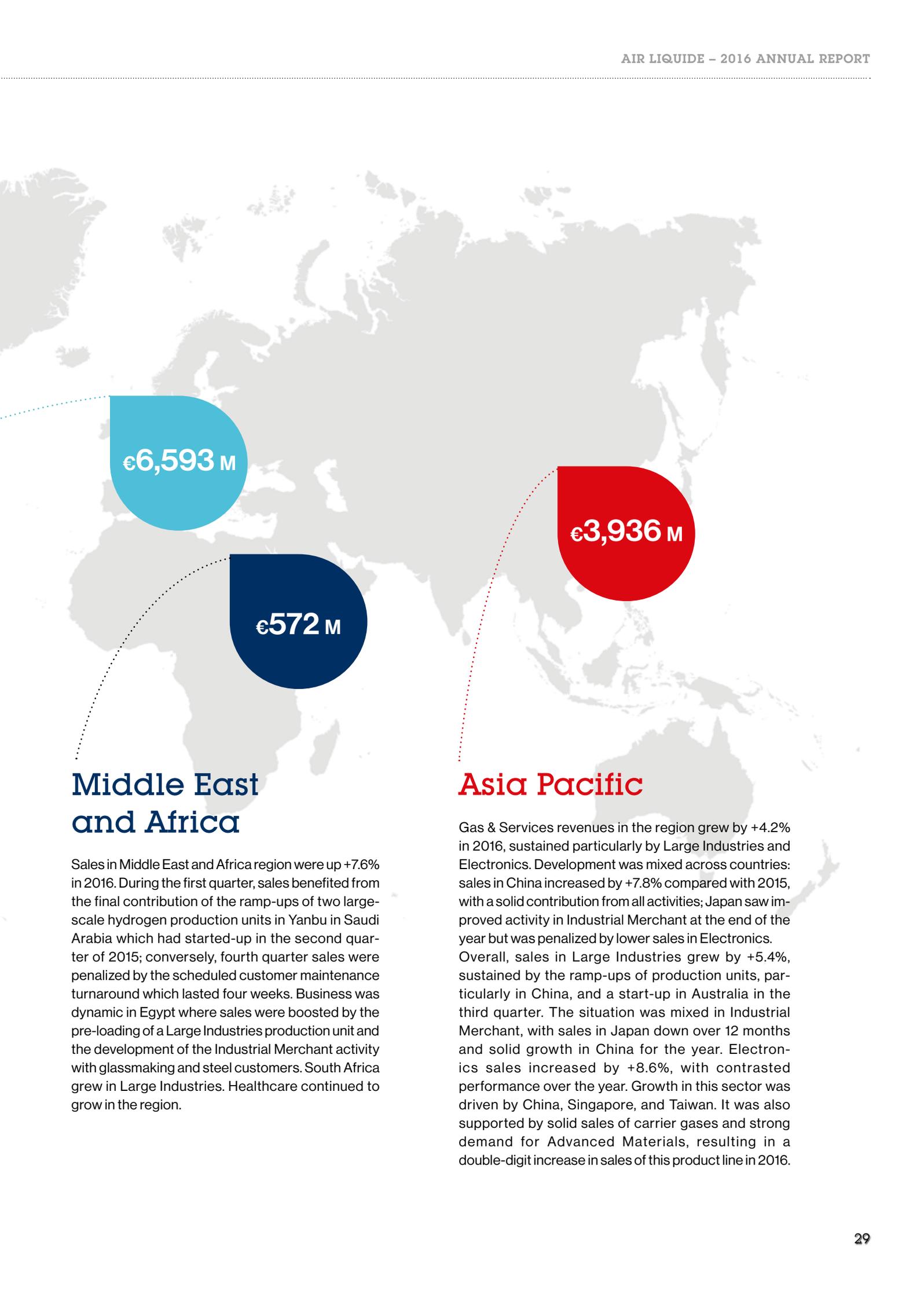
In South America, all activities are growing, with good momentum in Large Industries and Healthcare. The latter posted double-digit revenue growth in Brazil and Argentina.

Europe

Gradual recovery was confirmed in Europe in 2016. Gas & Services revenue grew by +2.0% compared with 2015. The Healthcare activity continued to develop strongly and became the Group's largest activity in the zone (35% of Gas & Services sales in Europe). Large Industries benefited from the ramp-ups of production units, including in Germany and Poland, as well as good development in Eastern Europe. The Industrial Merchant activity remained stable over the year: the Food, Beverage and Pharmaceuticals markets are growing while the Manufacturing sector remains challenging. The cylinders activity showed signs of improvement in the fourth quarter of 2016.

Gas and Services revenue.

Gas & Services growth is expressed on an estimated comparable basis: excluding significant scope (Airgas), currency and energy (natural gas and electricity) impacts.


 A world map in light gray with three callout bubbles. A light blue bubble points to the Middle East and Africa region with the value €6,593 M. A dark blue bubble points to the Africa region with the value €572 M. A red bubble points to the Asia Pacific region with the value €3,936 M.

€6,593 M

€3,936 M

€572 M

Middle East and Africa

Sales in Middle East and Africa region were up +7.6% in 2016. During the first quarter, sales benefited from the final contribution of the ramp-ups of two large-scale hydrogen production units in Yanbu in Saudi Arabia which had started-up in the second quarter of 2015; conversely, fourth quarter sales were penalized by the scheduled customer maintenance turnaround which lasted four weeks. Business was dynamic in Egypt where sales were boosted by the pre-loading of a Large Industries production unit and the development of the Industrial Merchant activity with glassmaking and steel customers. South Africa grew in Large Industries. Healthcare continued to grow in the region.

Asia Pacific

Gas & Services revenues in the region grew by +4.2% in 2016, sustained particularly by Large Industries and Electronics. Development was mixed across countries: sales in China increased by +7.8% compared with 2015, with a solid contribution from all activities; Japan saw improved activity in Industrial Merchant at the end of the year but was penalized by lower sales in Electronics. Overall, sales in Large Industries grew by +5.4%, sustained by the ramp-ups of production units, particularly in China, and a start-up in Australia in the third quarter. The situation was mixed in Industrial Merchant, with sales in Japan down over 12 months and solid growth in China for the year. Electronics sales increased by +8.6%, with contrasted performance over the year. Growth in this sector was driven by China, Singapore, and Taiwan. It was also supported by solid sales of carrier gases and strong demand for Advanced Materials, resulting in a double-digit increase in sales of this product line in 2016.

Europe

STRENGTHENED STRATEGIC PARTNERSHIP WITH ARCELORMITTAL

Air Liquide and ArcelorMittal, the world's largest steel producer, strengthened their long-standing collaboration by signing two long-term renewal contracts. The Group will continue supplying oxygen, nitrogen and argon to the ArcelorMittal production sites located in the industrial port areas of Fos-sur-Mer and Dunkerque, France. The use of these three gases enables steel mills to improve their output and energy performance while reducing atmospheric emissions. ArcelorMittal also entrusted Air Liquide to support the growth of its industrial gas needs at its site in Ghent, Belgium. In response, the Group will expand its pipeline network in Benelux. Air Liquide already operates a 4,700-kilometer pipeline network in Europe, the world's most extensive network.

Air Liquide is demonstrating its ability to support the shift in the European steel industry to high value added steel, produced at the three ArcelorMittal sites, for the automotive, construction and packaging industries as well as other industrial applications.



Americas

BRAZIL: ACQUISITION OF A HYGIENE SPECIALIST

In 2016, Schülke, a subsidiary of Air Liquide specializing in hygiene and hospital disinfection, announced the acquisition of Vic Pharma, the second largest independent company in Brazil's hygiene market. The company offers a wide range of products for the disinfection of surfaces, medical instruments and devices, as well as antiseptic solutions for pre- or post-operative treatments. It also boasts an extensive distribution network that enables Vic Pharma to supply its products to hospitals throughout the country.

This acquisition, resulting in a majority shareholding (75%), strengthens Air Liquide's presence in Brazil's healthcare market. Over the past decade, Air Liquide has supported the growth of this market, one of the world's largest, particularly through the development of its home healthcare business via its subsidiary VitalAire.



Asia Pacific

DELIVERING HIGH-TECH SOLUTIONS IN CHINA

In Asia-Pacific, Air Liquide further strengthened its role as a key partner in high-tech, process-driven markets, particularly in electronic assembly and packaging, lighting and fiber optics. In 2016, contracts were signed in China with some of the world's largest manufacturers of optical fiber and preform, including Yangtze Optical Fiber (Qianjiang), Shin-Etsu YOFC Optical Preform and Zhongtian Technology Fine Materials. Air Liquide will supply these customers with high purity hydrogen as well as oxygen, nitrogen, argon, carbon dioxide and helium.

In the field of innovation, the Shanghai Research and Technology Center (SRTC), inaugurated in February 2016, supports operations with a customer-centric approach. It hosts the Electronic Components and Packaging Competence Center (ECGCC), created in April 2016. Major ongoing research projects include AMOLED^(a) for flat panel displays and processes for the manufacturing of high-tech glass.

(a) AMOLED : active-matrix organic light-emitting diode



Middle East and Africa

HYDROGEN CHARGING STATION: A FIRST IN DUBAI

It is a first in the United Arab Emirates: Air Liquide has installed a hydrogen charging station in Dubai, in partnership with Toyota and its exclusive local distributor, Al-Futtaim Motors. The station makes it possible to charge the vehicles used in a pilot project set up by Al Futtaim and Toyota designed to test their operation in the local environment's high temperatures in the interest of developing this mode of clean mobility in the country.

Completed in just eight months, the project is part of the UAE government's ambitious renewable energy program. By the end of 2017, the Air Liquide Group will have 100 hydrogen charging stations worldwide.





Transformation Strategy

In a changing world, Air Liquide's customer-centric transformation strategy aims at profitable growth over the long term. It relies on operational excellence and selective investments as well as on open innovation and a network organization already implemented on a global scale. To implement its strategy and reach its 2016-2020 objectives, Air Liquide launched its company program, NEOS. Air Liquide can also count on the commitment and professionalism of all its employees, mobilized to always better serve its customers and patients.

A closer look at how this transformation strategy is implemented each day by Air Liquide teams, through 2016 achievements that combine entrepreneurial spirit, know-how, innovation and a long-term vision.

A customer-centric transformation strategy

Our ambition:
lead our industry,
deliver long-term
performance,
and contribute
to sustainability.

To achieve its ambition, Air Liquide is implementing its customer-centric transformation strategy to deliver long-term profitable growth.

WHY A TRANSFORMATION STRATEGY? With the acquisition of Airgas, Air Liquide has grown in size, both geographically and in terms of its markets. In addition, we are interacting with a changing world: the energy and environmental transition is underway; the world of healthcare is changing due to longer life expectancy, an increase in chronic diseases, and the introduction of new technologies; the digital transformation is modifying our ways of working, consuming, and communicating. To meet these challenges, we are implementing a transformation strategy, based on innovation and leveraging digital.

WHY "CUSTOMER CENTRIC?" With Airgas, we now serve one million additional customers in a highly customer-intimate business. We serve more than three million customers and patients worldwide. The industrial offer is increasingly moving toward an approach centered on the end user, transforming the traditional value chain. In this changing environment, our strategy is to bring new, effective solutions to respond to the new expectations and needs of our customers, helping them to increase their competitiveness and to make a difference in their markets.

THE 4 STRATEGIC PILLARS

#1

OPERATIONAL EXCELLENCE

While remaining focused on the industrial fundamentals of safety and reliability, operational excellence also means for Air Liquide ensuring an unrivaled customer experience, enhanced competitiveness and digitized operations.

See Yanbu: operational excellence in action, page 40.

#2

SELECTIVE INVESTMENTS

Air Liquide investments are subject to an extremely rigorous selection and control process. Through our network organization, we have brought certain investment decisions closer to the field to increase responsiveness and agility. To sustain the Group's long-term growth, we focus on the most promising markets and technologies.

See Micron Fab 10X: a carefully prepared investment, page 42.

#3

OPEN INNOVATION

Innovation at Air Liquide is based on science, technologies, customer experience and the incubation of new activities. As part of our "open innovation" approach, we have developed partnerships outside the Group, both in our core business and for breakthrough technologies. Connected to innovation ecosystems around the world, we detect the most promising solutions upstream that will benefit our customers and patients.

See Solidia: a partnership born from "open innovation", page 44.

#4

A NETWORK ORGANIZATION

Skills, better distributed and exchanged globally and regionally, enable us to strengthen our proximity to customers and markets, accelerate decision-making and attract new talent locally.

See ITER: a network organization for an exceptional project, page 46.

2016-2020 NEOS OBJECTIVES

NEOS COMPANY PROGRAM

Our new company program guides us to reach our 2016-2020 objectives. NEOS commits the Group's employees to delivering in various economic environments; to being more closely connected to our customers, patients and all our stakeholders; and to constantly innovating in our core business and in our new frontiers to drive profitable growth.

PERFORMANCE

Revenue growth:

+6 to 8%^(a) CAGR

Efficiency gains:

>€300 M^(b)
on average per year

Airgas Synergies:

>\$300 M

ROCE:

>10%

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 for better environment and health

Be engaged in active dialogue with all stakeholders

NEOS DAY, Mobilizing all employees!

24-hour mobilization of all employees worldwide around the NEOS company program.



Performing
Connecting
Innovating





A dedicated community in our internal social network.
+3,000 members
in 24 hours



+ 1,000
shared photos



Serving the Customer Experience

In a changing environment in which customers have new and higher expectations, the Group is taking action to differentiate itself as the leader in customer experience (CX) on its markets.

Customer-centric transformation is at the heart of Air Liquide's strategy. *"By listening to our customers' voice, understanding their expectations, and responding to them by eliminating 'pain points' and creating 'delights,' we seek to deliver a superior customer experience,"* says Rich Jahr, VP Customers.

"We know customers value Air Liquide's professionalism, reliability and safety standards from more than 50,000 surveys conducted since 2011," says Customer Experience Director, Audrey Eudeline. *"The priority now is to build upon these well-identified strengths."*

Achieving the transformation is about more than changing processes, says Rich Jahr. *"It means moving beyond being a product supplier and application designer to focus on having a customer-centric value chain that differentiates us over the long term."*

MULTI-LEVEL ACTIONS

In tangible terms, Air Liquide is systematically implementing the CX initiative at all levels within the Group with an increased focus on being even more proactive and innovative, while being responsive to exceptional requests.

One new source of expertise being tapped is Airgas' proficiency in customer centricity and intimacy. Work teams have been created within Air Liquide to explore how elements of the Airgas customer-facing multi-channel distribution model such as its advanced digital capabilities can be applied elsewhere within the Group.

Other actions include actionable, real-time surveys enabling employees to respond immediately to remedy customer "pain points." Another priority is capitalizing on best practices around the world (see p.39) and sharing experiences among the more than 700 Air Liquide employees worldwide actively participating in the online CX community.

Ideas from outside the company are welcomed as well, including new CX concepts proposed by start-ups at Air Liquide open innovation Hackathons^(a). The most recent, held in Philadelphia and Paris, produced prototypes ranging from potential new offers tailored to meet the specific daily needs of dentists, to helpdesks at hydrogen stations. Air Liquide is working with startup winners to implement these new offers. The i-Lab, Air Liquide's innovation lab, also contributes to bringing new ideas within the Group, in collaboration with Customer Development teams.

**Transformation means to focus on having
a customer-centric value chain that
differentiates us over the long term."**

TRACKING PROGRESS

With all these and more activities underway, how will the company determine its success? *"Part of it is recognizing that simply satisfying customers isn't enough. We have to constantly measure perceptions to ensure we're surpassing their expectations,"* says Rich Jahr. *"Our focus must be on attracting more new customers and retaining more existing customers than anyone else on our markets."*

Ultimately, it means reinforcing the customer-centric culture company-wide to consistently deliver quality and value to customers over the long-term. Audrey Eudeline comments: *"It's about every employee, no matter what their role or position, knowing that they have the ability to make a difference. We can all delight our customer by delivering the unexpected!"*

Rich Jahr says the challenge is to create a mindset similar to Air Liquide's strong safety culture. With one obsession: zero lost customers. *"The question for each of us every morning needs to be, 'What am I going to do TODAY to make my customer's life better?'"*

(a) a Hackathon is a 48 hour-challenge gathering with multiple external start-ups, designers and developers with an interest in providing digital solutions to the different challenges presented to them.



1

Mapping and improving the customer journey

In Germany, a successful pilot project to improve the customer experience was rolled out during the summer of 2016. Team members worked on identifying customers' 'pain points' by analyzing satisfaction surveys, then worked hand-in-hand with front line employees, customers and distributors to identify priority improvement initiatives. Examples include empowering drivers with a new digital tool in order to provide more proactive services. In direct contact with the customer at the time of delivery, the driver is able to transmit real-time customer service requests using the tool, thereby optimizing response time. Deployed in just four months, the global project is being rapidly adopted around the world.

2

Improving the patient connection

AB2C global approach has been implemented in **Hong Kong** by Air Liquide affiliate Celki VitalAire to better connect with healthcare professionals and patients. Combining human and digital support, the program strengthens proximity by making the patient's life easier throughout the care journey with useful, adapted services. Examples include making oxygen refills online, receiving reminder SMS messages on future appointments, easily accessing information on treatment and follow-up reports, visiting Hong Kong's Vitalaire shops to seek advice from the staff and making home visit appointments with a technician. Facebook is also used to communicate with potential new customers. Another innovation is the online eShop, providing easy access to medical devices such as sleep apnea accessories, consumables and diabetes glucose monitors.

3

Airgas.com

Airgas' advanced digital capabilities were developed through a three-part strategy:

- 1:** driving customer adoption of the digital channel,
- 2:** simplifying the relationship with the customer and integrating digital with branch and telesales channels;
- 3:** engage the sales force by identifying new prospects.

Launched in July 2014, Airgas.com today receives more than 600,000 visitors per month; in only two years, total digital sales increased to 250 million dollars per year.

Yanbu: operational excellence in action



At Yanbu Industrial City in Saudi Arabia, the successful construction and start-up in 2015 of a world-class hydrogen production site showcases operational excellence in action. Performance is designed to deliver an unrivaled customer experience.

The March 2015 start-up of operations to supply the Middle East's newest world-scale refinery marked the continuation of the exceptional cooperation between Air Liquide and its customer YASREF, a Saudi Aramco-Sinopec joint venture. Even prior to the contract signing, Air Liquide teams were working with their counterparts at YASREF, developing an in-depth understanding of the customer's needs and making modifications to ensure that on-stream performance would match up with the plant's design.

The 350-million-euro industrial investment is the largest single industrial investment ever for Air Liquide, a long-term commitment reflected in the contract's 30-year duration. The project is also the company's biggest over-the-fence hydrogen contract, with total production capacity of 340,000 Nm³ per hour. The hydrogen enables the sulfur content of produced fuels to be reduced and meet clean transportation fuel standards.



Strategic Pillar



1

OPERATIONAL EXCELLENCE



An essential component of Air Liquide's culture, operational excellence is driving our sustainable performance, contributing to the long-term trust of our customers and other stakeholders.

Our high reliability and safety standards apply to all our activities. In particular, our industrial operations are differentiated on the market by our exemplary reliability rates, reaching 99.98% for pure oxygen supply. Reliability is foremost among the expectations of our customers, as it contributes directly to their own efficiency and performance. The Group is also recognized for its ability to carry out large-scale and complex industrial projects throughout the world, ensuring the highest level of safety.

While remaining focused on the fundamentals of safety and reliability, operational excellence also means for Air Liquide:

- implementing an unrivaled customer experience, continuously over the long term;**
 - continuously strengthening our competitiveness, a source of attractiveness for customers in highly competitive markets;**
 - digitizing our operations to increase responsiveness, flexibility and efficiency in serving our customers.**
- 

Abdallah H. Subvaiyyal,
VP, Manufacturing, Yasref



Air Liquide worked closely with us to make sure that our needs were met. We maintained an ongoing dialogue as construction advanced, sharing the same objective: achieving industrial excellence.

The result was a successful project delivered on-time, on budget and with an exceptional safety performance.”

Bryant Jackson,
General Manager, Air Liquide Arabia



Operational excellence is about people in the field that are committed and focused every day on our customers' priorities.”

ON TIME AND ON BUDGET

Ensuring the reliability of the hydrogen supply is a critical parameter for the refinery, which processes 400,000 barrels of heavy crude oil per day. *“Even a short interruption of hydrogen supply for a few hours can translate into days of downtime for refinery processing units,”* says Air Liquide Arabia General Manager Bryant Jackson. *“Our ability to demonstrate unparalleled reliability was a key success factor in winning the contract and earning our customer’s trust.”*

The standard of excellence in operational performance builds on the results achieved during the project’s construction and start-up phases by a dedicated project team drawn from business development, operations, engineering and construction.

More than 1,100 people took part in the construction, working more than 6.2 million hours without a single lost time accident. Air Liquide also showed its capacity to execute extremely large projects on time and on budget, ensuring that the hydrogen facility was ready for operation prior to the refinery’s completion.

GOING BEYOND

For Air Liquide, adding value for the customer also means going beyond ensuring reliable supply at a predictable cost, says Bryant Jackson. *“In investing significantly in this multi-billion dollar refinery project, we commit to a true partnership with the customer. By outsourcing their supply of hydrogen to a professional in the sector, the customer reduces their risk.”*

Like the construction phase, the Air Liquide Arabia team continues to be fully immersed in the refinery’s operations, providing ongoing opportunities to go beyond base supply to identify additional optimizations for refinery off-gas streams. The optimization of off-gas streams reduces costs for the refinery and delivers positive environmental benefits. *“We take pride in being able to delight the customer by also proposing improvements in areas that may not necessarily be on their radar,”* says Bryant Jackson.

All part of striving to be a world-class partner for a world-class project.

**YANBU PROJECT
KEY FIGURES****30-year**
CONTRACT**€ 350 M**
AIR LIQUIDE INVESTMENT**1,100 people**
involved in construction**6.2 million**
hours worked with zero lost time
accidentstotal hydrogen production capacity
340,000 Nm³
PER HOUR

Micron Fab 10X: a carefully prepared investment

Micron, a US-based company, is a world leader in innovative solutions for memory storage. Air Liquide is supporting its longtime customer by investing in Fab 10X, Micron's new ultra-innovative plant in Singapore. A look back on this major strategic investment, prepared and completed by the Group in record time.

With more than 30,000 employees, Micron is present in 18 countries around the world, including in the U.S. and Asia, where the market for electronics and appetite for innovation are especially strong. Micron manufactures today's major memory and storage technologies including 3D NAND, the latest technology to meet the market's growing need for storage capacity.

FAB 10X, A PROJECT FOR THE FUTURE

Singapore is home to Micron's largest manufacturing footprint. The company's newly expanded Fab 10X nearly doubles its clean room space in Singapore, adding an additional 255,000 square feet to the fabrication facility. This ambitious project was completed in 18 months on a budget of \$4 billion. It will facilitate efficient implementation of 3D NAND production, giving Micron the flexibility to gradually add incremental capacity in response to market requirements.





Strategic Pillar



#2

SELECTIVE INVESTMENTS



Whether they involve new production units or the acquisition of companies, investments are essential because they nourish the Group's growth over time.

They enable us to support the development projects of our customers and the transformation of their activity.

They are also essential to innovation and to providing new and effective responses to society's major challenges, such as health and clean mobility.

As part of its NEOS company program, the Group has set a clear direction for 2016-2020, providing for an annual investment of between 10 and 12% of its sales.

This investment will be aligned with Air Liquide's new profile and include support for the development of Airgas, which will pursue its strategy of acquiring local distributors, and the introduction of new offers and technologies for Industrial Merchant's growth, which now represents 44% of Gas & Services revenue.

Air Liquide will also continue to invest in all of its business lines to support its growth and strengthen its competitiveness by ensuring reliability and safety, thereby achieving the NEOS objectives.



Air Liquide played a key role in building a large ultra-pure nitrogen and oxygen production unit on-site with one of the largest capacities to date for these technologies.

Steps to prepare for the investment's approval included regular exchanges between Air Liquide and Micron teams and detailed analysis of the project. The various discussions were critical to understand the customer's needs and to leverage Air Liquide's expertise in order to offer the best-in-class solution for the project.

A RIGOROUS INVESTMENT SELECTION PROCESS

Air Liquide played a key role in building a large ultra-pure nitrogen and oxygen production unit on-site with one of the largest capacities to date for these technologies. The benefits for Micron of the Fab 10X's integrated installation include high supply reliability and low total cost of ownership, as well as nitrogen supply flexibility to support future expansion at the plant.

NEW PHASE FOR THE MICRON-AIR LIQUIDE RELATIONSHIP

Air Liquide's decision to invest in the new Singapore site reflects a relationship of trust that dates back to 1993 with Micron, an industry leader recognized for its innovation.

A key driver behind the investment: Micron's already strong presence in Singapore, which includes a multi-technology center, an Asia-Pacific shared services center, a sales and marketing office, three fabrication facilities, and a testing and assembly site.

Steps to prepare for the investment's approval included regular exchanges between Air Liquide and Micron teams and detailed analysis of the project. The various discussions were critical to understand the customer's needs and to leverage Air Liquide's expertise in order to offer the best-in-class solution for the project.

Main steps

1 Identification
of an investment opportunity
The nature of investments varies depending on the activity.

2 Selection
by the Selection Committee, which allocates resources to analyze the project and define the Air Liquide proposal.

3 Review of investments
by the Investment Review Committees, organized at the regional level to better take into account operational needs and at the Group level to ensure alignment with the overall strategy.

Air Liquide teams involved in the process

Business Development teams
In the early stages of the project

Engineering teams
Definition of technical solution and investment amount

Mergers & Acquisitions teams
(for acquisitions)

World Business Line
Validation of investment alignment

Financial experts
Verification of project viability and profitability

Operational teams
Project management and customer relations

Air Liquide teams have regular exchanges with the customer throughout the process to respond to the customer's needs and challenges, ensure better understanding and management of project risks and secure medium- and long-term operational benefits.

Stringent, multiple selection criteria

- **geographic positioning:** for example, installation in a new country or the development of our presence in an industrial basin;
- **positioning in new markets:** study of development prospects;
- **quality and durability** of the customer and the site;
- **accompaniment** of strategic customers over the long term;
- **financial indicators**, such as profitability or the impact on Group financial instruments;
- **corporate social responsibility** indicators.

Solidia: a partnership born from open innovation

Through its partnership with the American start-up Solidia Technologies®, Air Liquide is well-positioned to unlock a new market for carbon dioxide (CO₂), underlining the potential for new business opportunities as the Group increasingly embraces open innovation.



Under an agreement announced in June 2016, Air Liquide is providing CO₂ injection equipment to produce Solidia Concrete™, formed with a new sustainable cement. Solidia's breakthrough technology cures concrete with CO₂ instead of water, enabling the environmental footprint of cement and the pre-cast concrete end product to be reduced by up to 70%.

The start-up approached a number of companies, seeking a partner to source the CO₂ required to support the vast market. "We were looking for a company with demonstrated creativity and a commitment to sustainability with which we could align," says Solidia CEO Tom Schuler. "We found these qualities at Air Liquide, in addition to the technical expertise, market knowledge and engineering talent we needed."



Strategic Pillar



#3

OPEN INNOVATION



Innovation enables Air Liquide to ensure its competitiveness, open new markets and create more added value for its customers and patients. The Group is constantly innovating, both in its core business and for breakthrough technologies.

It relies on its scientific and technological expertise, represented by its Research & Development department, its Engineering and Construction activity and its centers of expertise. Digital transformation teams are working to improve the customer / patient experience and Global Markets & Technologies, created in 2015, is nurturing new activities. The i-Lab laboratory of innovation and the ALIAD venture capital structure are helping to connect the Group with innovation ecosystems. 5,700 employees around the world are mobilized to contribute to innovation.

Backed by this internal mechanism, our "open innovation" approach is based on numerous partnerships with customers, start-ups, SMEs, suppliers, universities and research institutes around the world.

We are continuously strengthening our links with this global innovation ecosystem. These interactions are a determining asset for better anticipating market and user trends, exploring new growth opportunities and helping our customers make a difference in their markets.



Tom Schuler,
Solidia CEO



We were looking for a company with demonstrated creativity and a commitment to sustainability with which we could align.

We found these qualities at Air Liquide, in addition to the technical expertise, market knowledge and engineering talent we needed."

Gabriel Constantin,
Air Liquide's CO₂ and Beverage Markets Director



The Solidia technology is a game changer, potentially doubling the market for CO₂."

A NEW MARKET FOR CO₂

For Air Liquide, the partnership offers the opportunity to develop a new CO₂ market, reach new customers and contribute to a more sustainable world. *“The Solidia technology is a game changer, potentially doubling the market for CO₂,”* explains Gabriel Constantin, Air Liquide’s CO₂ and Beverage Markets Director. *“In addition to cost savings and a performance edge, the technology offers cement producers and concrete manufacturers – the ultimate customer – a solution for reducing CO₂ emissions from their industrial chain that currently contribute 5-7% of the world’s total.”*

The Solidia Concrete™ products consume less water, cost less to produce, and cure in less than 24 hours, compared to the 28-day curing cycle required for traditional concrete products. Commercial-scale production of the concrete, which has demonstrated higher quality performance than traditional concrete, is currently being tested by customers in North America and Europe. In addition to supplying the equipment, Air Liquide serves as the worldwide preferred provider of CO₂ for use with Solidia’s patented processes, thus offering a complete package.

OPEN INNOVATION: BUSINESS ACCELERATOR

Air Liquide also invested in the start-up through ALIAD, Air Liquide Venture Capital, an action that helped accelerate development of the technology. ALIAD US Investment Director Greg Fleming says a decision by leading cement producer Lafarge-Holcim to partner with Solidia further strengthened Air Liquide’s confidence in the project’s technical feasibility. *“This investment, with its high potential value, reflects a real interest that has developed within Air Liquide to engage with start-ups,”* he says. *“It demonstrates the importance of open innovation to the company’s transformation strategy and the potential to create new market opportunities to fuel our long-term growth.”*

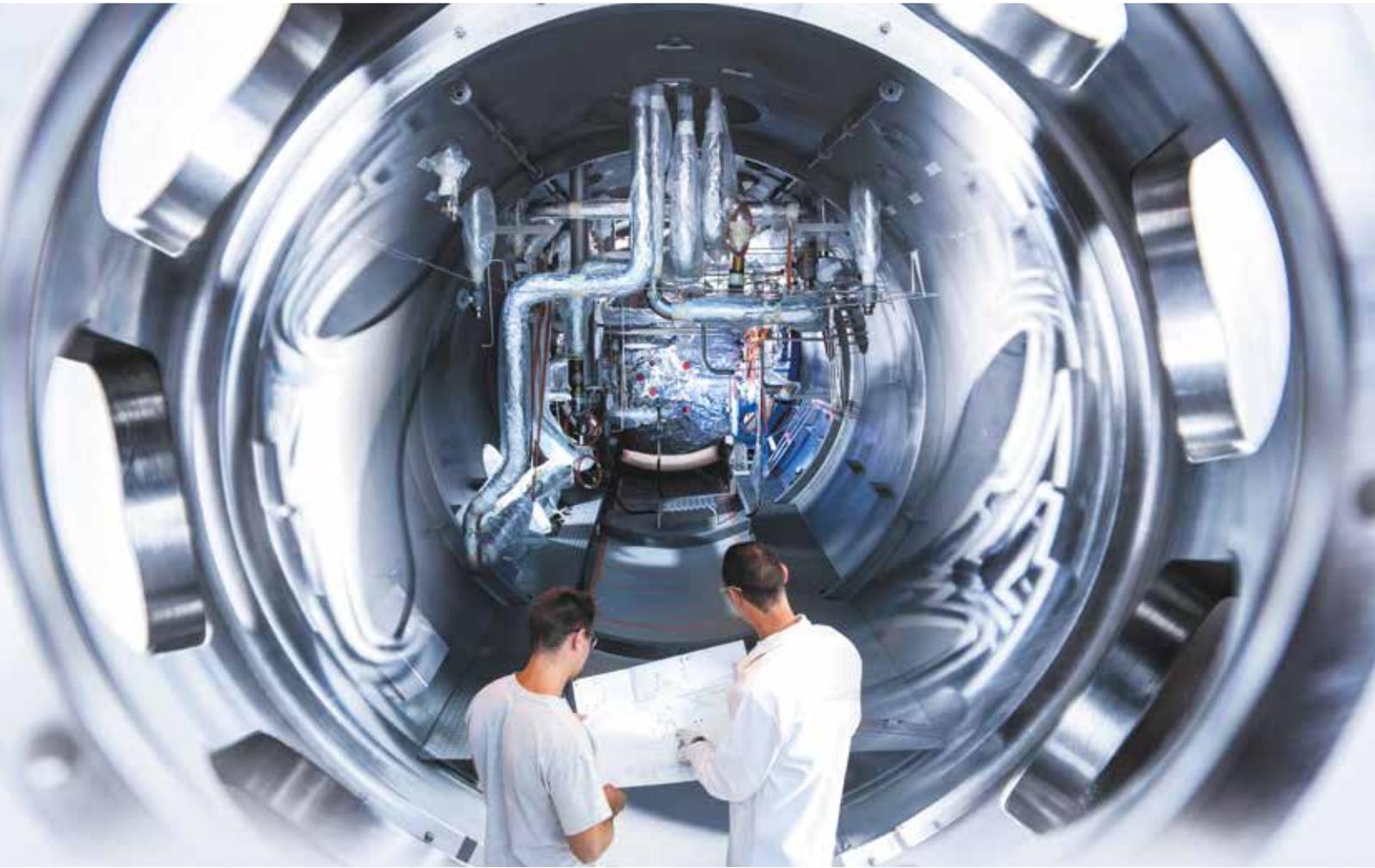


LESSONS FROM A START-UP PARTNERSHIP

Combining a small agile start-up with a large global company to bring a promising new technology to market can produce some interesting learning experiences, **according to Gabriel Constantin, Air Liquide’s CO₂ and Beverage Markets Director.**

“Time is the most important constraint for a start-up. They need to go fast and thus are willing to take more risks. With the criticality of time-to-market in today’s fast-changing markets, the importance of reinforcing agility is a useful lesson.”

Solidia CEO Tom Schuler adds: *“We live by the 70-30 rule that we’re never going to be able to make a decision based on 100% of the facts. If we have less than 30%, we’re making a bad decision because it’s a wild guess but if we wait until we have 70%, we’ve missed the opportunity because someone else is already there. In addition to sharing their expertise, Air Liquide has shown a remarkable ability to adapt and share in the risks of unlocking a potentially huge opportunity. We’re both learning from each other.”*



ITER: a network organization for an exceptional project

ITER is a huge experimental fusion reactor that will be commissioned in 2025. Currently under construction in Cadarache, France, it involves numerous international partners.

Air Liquide plays a key role in this innovative and complex project, equipping the site with the world's largest cryogenic plant, which will ensure continuous cooling of the reactor. To perform its mission, the Group leverages its network organization. The ITER reactor will test the production of energy by thermonuclear fusion, a highly promising technology: safe and low-polluting, the virtually unlimited technology is similar to that generated by the sun.

Air Liquide will supply approximately 80% of the ITER cryogenic system with an ultra-innovative cold-production plant, a key component of the project. A device of the same type has already been designed, installed, and successfully tested by the Group in Japan as part of the "JT60SA" fusion reactor project: a genuine small-scale model of ITER, it allows technologies to be tested and refined prior to their deployment in Cadarache.



Strategic Pillar



#4

A NETWORK ORGANIZATION



For several years, Air Liquide has been implementing a network organization in which skills can be better distributed both globally and regionally. This organization is built around a Base in Paris, and four Hubs - Houston, Frankfurt, Shanghai, and Dubai - that extend the Group's presence in these geographic zones.

Tangible benefits include increased proximity to customers and markets, more efficient processes, faster decision-making, and the ability to attract new talent locally.

Today, we are further strengthening this networking, leveraging a number of digital tools such as Kite, our collaborative platform for all employees worldwide. We also deploy interactive tools and immersive rooms to coordinate international projects in real time. These tools simplify relationships and foster synergies between teams, enhancing our agility and operational effectiveness. A major asset for mobilizing collective intelligence and expertise, wherever located, offering the best solutions to our customers.



Bernard Bigot,
CEO of ITER Organization



Air Liquide's teams throughout the world have demonstrated a remarkable level of listening and openness that enables them to understand and respond to our special needs. This is absolutely crucial to mastering such a complex international project. Impassioned professionals, they ensure true continuity of the relationship, essential for responding together to the challenges still to come!"

Éric Dupasquier,
ITER Project Manager for the helium refrigeration unit, Air Liquide



On the ITER project, we have deployed a transversal multi-project, multi-site approach. Coupled with digital visual management solutions, it has enabled us to anticipate and optimize our response to technical challenges while achieving significant efficiency gains."

WORKING IN SYNERGY WITH MULTIPLE INTERNATIONAL PARTNERS

The ITER project is supported by the European Union, China, the United States, the Russian Federation, India, Japan, and the Republic of Korea, with a total budget of approximately € 18 billion. Air Liquide is working hand in hand with four direct customers:

- "ITER Organization," the global steering body of the ITER project, for the helium refrigeration unit;
- "Fusion for Energy (F4E)," an agency of the European Union, for the nitrogen refrigeration unit;
- "ITER India," for the complex cryogenic lines;
- The Office of Atomic Energy (CEA), "Fusion for Energy" (F4E), and QST (National Institutes for Quantum and Radiological Science and Technology) in Japan for the "JT60SA" project.

The Group naturally interacts with each of these four customers on a daily basis as well as for numerous milestones that occur during the project's smooth execution. Air Liquide has also put in place extremely rigorous governance to control the risks inherent in such a vast, innovative and extended project.

In addition, the Group collaborates with multiple suppliers in a number of countries in Europe, as well as in the United States, China, and Turkey.

INNOVATIVE AND COLLABORATIVE WORKING METHODS

ITER is not only about pushing the limits of technology. It is also a great human adventure. More than 200 Air Liquide employees and 10 entities are mobilized around the project. To encourage teamwork, the organization of workspaces has been rethought, with broad and friendly open spaces conducive to collaborative work.

Visual management tools have also been tested for ITER and are currently being deployed by various Group entities. Digital tables are used in particular to analyze future equipment plans, with participants able to write notes on the digital models and save their comments.

Immersive rooms allow ITER teams to work in a much more interactive way by projecting plans and diagrams on a large scale. The result: increased efficiency, accelerated decision-making, and higher quality. All of these assets serve to develop and preserve the advanced skills indispensable to the ITER project – as well as solidifying Air Liquide's position as an expert partner of major scientific projects.

PROJECT ITER IN FIGURES:

MORE THAN

200

AIR LIQUIDE EMPLOYEES

mobilized on ITER worldwide

10X

During operation at maximum power anticipated in 2035, ITER should produce 10 times more energy than it consumes.



Contributing to sustainability

For Air Liquide, performance and sustainability come together. The Group has set two priority objectives for 2016-2020, which frame its sustainable development strategy: to improve air quality for a better environment and health and to pursue an active dialogue with all stakeholders.

IMPROVING AIR QUALITY

Air is a common, vital, and universal good whose quality is threatened in many parts of the world, with significant human and financial costs to society. Children, individuals with weakened immune systems, and the inhabitants of large cities are among the hundreds of millions of people worldwide who are particularly affected.

Through its expertise in air, respiration, and health, the numerous applications of its products, and its continuous innovation approach, Air Liquide makes a significant contribution to the improvement of air quality and the fight against global warming. In tangible terms, the Group actively engages with its stakeholders in the fields of health, industry, transport, and energy through its Research & Development and technology teams and an international network of experts.

We are helping to develop a more environmentally friendly industry by proposing nearly 50 sustainable industrial solutions to our customers to improve the ecological footprint of their production. For example, we supply the steel industry with large volumes of oxygen: used in blast furnaces, oxygen reduces the use of coke, which is highly polluting.

We are also promoting the development of cleaner modes of transport by developing innovative offers around biomethane and hydrogen energy (see p.52).

We strive to minimize the environmental footprint of our own operations as much as possible: for example, we encourage low-carbon electricity in our energy supplies and we continue to improve the energy efficiency of our production units and in the transport of our products.

Our "Corporate Sustainability Program," defined in 2016, guides our decisions in our day-to-day operations: for example, by looking at the carbon footprint of our technologies, in the selection of our investments and by practicing responsible procurement.

+90% of the planet's inhabitants do not benefit from the minimum level of air quality recommended by the World Health Organization.

11.2 million tons of CO₂ emissions avoided in 2016 in the steel industry, through the use of oxygen supplied by Air Liquide.

TWO IMPERATIVES: SAFETY AND ETHICS

Safety is Air Liquide's number one industrial responsibility. This constant concern for safety applies to employees and subcontractors, industrial installations, transport, and the implementation of the Group's products and services for customers and patients. Respect for human rights and business ethics is also an imperative for Air Liquide and a prerequisite for the balanced development of its activities.



ENGAGING IN AN ACTIVE DIALOGUE WITH OUR STAKEHOLDERS

In the 80 countries where it operates, Air Liquide maintains a continuous and in-depth dialogue with all stakeholders: employees, customers and patients, suppliers, partners, shareholders and investors, public authorities, local communities and non-governmental organizations.

For example, our subsidiaries around the world conduct ongoing customer satisfaction surveys to optimize their daily experience; we meet regularly with patient associations to test our health solutions with them to improve the treatment of chronic diseases; we work with public authorities and partners to build together a hydrogen society; we engage in dialogue with our shareholders and investors through regular in-person meetings and our unique digital tools.

This commitment to dialogue at all levels is essential to ensure sustainable growth that respects people and the environment and supports the development of local communities.

FIRST AIR LIQUIDE FOUNDATION AWARDS

Created in 2008, the Air Liquide Foundation embodies the Group's commitment to being a responsible company. In 2016, with the involvement of the Group's employees, it supported 31 micro-initiatives in 16 countries for local development and several ambitious scientific research projects: one in the field of environment and three in health and respiration.

The Air Liquide Foundation has also presented awards honoring the most innovative organizations among those it has supported in recent years.

The scientific research and environment prize was awarded to the National Center for Scientific Research in France for its study on natural insecticides in French Guiana. The award for health and respiration was presented to the PremUp Foundation for research on the lungs of premature infants.

The societal innovation award was presented to three associations for micro-initiatives to support local communities in France, Brazil and Senegal. Each of the winning organizations received a prize of 10,000 euros.

3. New Markets





New Markets

Transition to a carbon-free economy, emergence of electricity storage solutions, development of clean mobility... **The energy and environmental transition** is underway and Air Liquide intends to make a significant contribution. The latest development: inauguration of multi-energy stations, a pioneering solution for clean transportation.

Longer life expectancy, changing lifestyles, the rise of chronic diseases, and the introduction of new technologies. To meet these challenges in **healthcare**, Air Liquide applies its expertise throughout the continuum of patient care and continues to innovate. For example, the Group has designed a unique e-health offer to improve the patient's quality of life and compliance to treatment.

Finally, Air Liquide is implementing its **digital transformation**, which impacts the management of its assets, its relationship with its customers and how the Group leverages its ecosystems. "Connect," the plant of the future project, illustrates this approach.

TRANSITION UNDERWAY

-50%

reduction in noise emitted
by an engine running on natural
gas for vehicles – GNV – (versus diesel).

-85%

reduction in fine particles emitted
by an engine running on GNV
(versus diesel).

-90%

reduction in the carbon footprint
of an engine running on GNV bio
(versus diesel).

Clean multi-energy stations: a solution for the future of road transport

The Group will strengthen its actions to improve the environment and health through air quality, including by promoting clean transportation. A pioneer in hydrogen energy, Air Liquide is once again leading the way in France and Europe with the creation of multi-energy stations.

Nancy, France, June 2016: Air Liquide inaugurates the first clean multi-energy station in France. Since then, deployment of new stations is continuing in France and Europe. Dedicated to on-road freight transport, these stations offer carriers a single point of supply for compressed natural gas (CNG), liquefied natural gas (LNG), and liquid nitrogen.

The benefits of these energies? They are clean, allowing for the reduction of emissions of fine particles and CO₂, especially when the CNG and the LNG provided are based on biomethane. They are silent, offering a real benefit for night deliveries. They are also economical, with a lower cost per kilometer than diesel.

SHARED BENEFITS

With its new stations, Air Liquide is helping its retail and road transport customers move goods using more environmentally friendly alternatives. The stations help ensure compliance by trucks with demanding emissions regulations and particularly stringent anti-noise standards in city centers, where small convenience stores require frequent deliveries. The stations also open access to incentives for the use of biofuel.

More generally, Air Liquide's multi-energy stations benefit everyone: with 25% of CO₂ emissions generated from transport-related activities, these stations represent a promising solution in the fight against global warming. In addition, the initiative enables the Group to optimize its own production of biomethane.

“Air Liquide's clean multi-energy station enables natural gas and liquid nitrogen refueling at the same location. Combining a cold nitrogen cryogenics solution to our natural gas trucks makes a real difference for our customers: access to clean and quiet transportation.”

ALEXANDRE MICHEL, CHAIRMAN AND CEO OF THE TRANSALLIANCE GROUP, EUROPEAN TRANSPORT AND LOGISTICS COMPANY, AIR LIQUIDE CUSTOMER.

A CUSTOMER-CENTRIC APPROACH

In designing these new generation stations, Air Liquide remains focused on the customer. The Group began working with retailers and carriers to define a range of prices before developing the technical solution. An approach that ensured project viability and rapid implementation in just 16 months.

With these new stations, Air Liquide customers benefit from a comprehensive offer: the Group provides biomethane production, station design and management, and fuel distribution. This virtuous, integrated solution ensures optimal safety and operational performance for transporters.

Engaged in e-health

The rapid adoption of digital technologies in the field of health is opening new ways to provide innovative services to patients and healthcare professionals. Air Liquide is seizing this opportunity to provide better at-home support for patients suffering from chronic diseases. The three objectives: improving the daily life of patients, preventing the exacerbation of certain diseases that may lead to hospitalization, and increasing patient autonomy.

In 2013, Air Liquide revolutionized support for sleep apnea patients with the NOWAPI™ digital remote monitoring device. Today, 180,000 patients in France are equipped with this device at home. The Group continues to develop new solutions with digital services to support patients and assist in coordinating treatment follow-up by healthcare professionals.

A DIGITAL PLATFORM WITH CONNECTED OBJECTS

In 2016, Air Liquide developed a new digital platform in partnership with La Fe University Hospital in Valencia, Spain. This platform enables personalized home-based follow-up for approximately 200 patients suffering from chronic diseases who consult regularly with the hospital. With a digital tablet, each patient is connected to one or more measurement devices: tensiometer, thermometer, weight monitor, pulse oximeter, and blood glucose meter. The data is transmitted continuously to nurses at the Air Liquide monitoring center, who stay in regular contact with the patient and the hospital's healthcare professionals.

We feel safer because we know that the Air Liquide nurse is constantly informed. If she sees something abnormal, she calls us."

MANUELA ROMERO BLANCO - PATIENT

Every day, Air Liquide reminds me of the different measurements I need to take, it's reassuring."

FERNANDO GUAITA PONCE - PATIENT

What happens if the patient's condition worsens? As soon as certain thresholds - defined with the healthcare professionals - are exceeded, the nurses at the Air Liquide center receive an alert. They then contact the patient immediately and, using a decision support system, indicate the appropriate procedure, such as collecting additional information or consulting the patient's doctor or specialist. This preventive approach, combining technology and human contact, makes it possible to avoid aggravating the disease and potential hospitalization.

BENEFITS FOR PATIENTS AND HEALTHCARE PROFESSIONALS

In addition to tele-health solutions, Air Liquide also offers distance training and personalized coaching to help patients better control their disease and encourage them to follow their treatments as well as regularly providing them with appropriate recommendations. These solutions fit into the patient's existing patient care network of their attending physician, specialist physician, nurse, pharmacist, family, and friends. More efficient for patients, these solutions also help healthcare professionals optimize their time. Avoiding other forms of intensive care such as hospitalization is also less costly for the community.

KEY STRENGTHS IN THIS NEW MARKET

A leader in healthcare, Air Liquide directly supports 1.4 million patients at home in 35 countries. This knowledge of proximity support for patients is one of the company's major assets, along with its teams of nurses and technicians, its expertise in chronic diseases, and its ability to manage multiple diseases (sleep apnea, diabetes, respiratory or cardiac deficiencies).

Air Liquide also possesses the necessary expertise - medical, technological, data analysis, logistics, commercial, etc. - to play the role of e-health conductor, linking patients and healthcare professionals. Finally, Air Liquide is agile in adapting to different local healthcare systems around the world and their highly heterogeneous access models. This is an essential advantage in developing the young e-health market.

AIR LIQUIDE HEALTHCARE ACTIVITY IN FIGURES:

15,000

AIR LIQUIDE EMPLOYEES
dedicated to healthcare

35

COUNTRIES

#1

IN EUROPE
in home
healthcare

1,400,000

PATIENTS
worldwide supported
in their homes

“Connect”, the plant of the future project

Digital transformation is a major global trend that is both a challenge and a source of growth opportunities. In response, Air Liquide is transforming its industrial operations around the world. A guided tour of “Connect,” the plant of the future deployed in France.

Certified “Technology Showcase”^(a) in 2016, the “Connect” project includes a highly innovative operations center that enables remote control of 22 Air Liquide production units in France to optimize their energy consumption and reliability. The project is based on the introduction of new digital technologies into the daily work of production site teams. Co-built with more than 100 companies - including a dozen start-ups - “Connect” is fully aligned with the Group’s open innovation approach.

A PROJECT DESIGNED FOR CUSTOMERS

Like a control tower, the operations center oversees the oxygen, nitrogen, argon, and hydrogen needs of industrial customers in France. Capable of stopping or restarting a site remotely, it adjusts the production level at Air Liquide plants in response to customer demand. The production flows of each unit are thus adapted in real time 24/7 to the needs of each customer, optimizing the volume and gas supply chain nationwide.

The center also uses big data to improve the energy efficiency of production units. Algorithms developed by Air Liquide engineers make it possible to refine equipment settings based on nearly 15 years of data compiled at Group industrial sites around the world.

Large volume data analysis is enabling Air Liquide to develop predictive maintenance of production site equipment (see box). By identifying the “weak signals” that precede a malfunction, teams can anticipate and perform necessary technical interventions at the right time. This also means both enhanced security of supply for customers and increased efficiency for the Group.

A PROJECT THAT CREATES NEW PROFESSIONS

Two new jobs have been created in the operations center: “analysts” who study the production and optimization of energy consumption, and “real-time pilots” who are in constant contact with the sites. In the plants, skills also are evolving as a result of testing and new tools chosen by the technicians.

NEW DIGITAL TECHNOLOGIES AT THE HEART OF PLANTS

With “Connect,” Air Liquide is also deploying new digital tools adapted to the professions and practices of teams at production sites.

For example, connected goggles can be used to visualize site safety, maintenance procedures, and workflows. Their integrated camera facilitates the sharing of live information between experts: remote technical diagnostics are thus simpler and more efficient.

Digital tablets are used increasingly by operators, able to enter or access information in real time, anywhere on the production site.

3D scanning is also being developed, making it possible to quickly establish highly detailed site plans. All technical changes on the installations are thus integrated into 3D plans, facilitating maintenance operations, especially at the oldest units.

(a) certification awarded by the Alliance Industrie du Futur, which brings together France’s Industry and Digital professional organizations.



**BIG DATA
IN PLANTS**

450,000

the number of data points monitored and recorded every second by Air Liquide at its 400 production sites worldwide.

1 billion

amount of data collected daily by the Group.

"Connect" represents an investment decision of

€20 M

**"SMART AND INNOVATIVE
OPERATIONS,"
A HIGH VISIBILITY
PROGRAM**

"Connect" is part of Air Liquide's "Smart and Innovative Operations" (SIO) program, which integrates digital tools to analyze plant operating data. Deployed globally, this program focuses on automating and centralizing operations, optimizing the performance of each site and anticipating malfunctions. Digital predictive maintenance tools have already been implemented at 15 sites worldwide. For customers, SIO means more adapted service, improved reliability, and greater flexibility and responsiveness.

Thank you to our shareholders and investors...

... who have participated in financing the acquisition of Airgas. Air Liquide opens a new chapter in its history and continues toward its ambition to lead its industry, deliver long-term performance and contribute to sustainability.



Consolidated income statement (summarized) For the year ended December 31

(in millions of euros)	2015	2016
Revenue	16,380	18,135
Purchases	-6,164	-6,693
Personnel expenses	-3,069	-3,659
Other income and expenses	-2,885	-3,172
Operating income recurring before depreciation and amortization	4,262	4,611
Depreciation and amortization expense	-1,372	-1,587
Operating income recurring	2,890	3,024
Other non-recurring operating income and expenses	-132	36
Operating income	2,758	3,060
Net finance costs	-227	-389
Other financial income and expenses	-41	-14
Income taxes	-666	-747
Share of profit of associates	14	6
Net profit from continuing operations	1,838	1,916
Net profit from discontinued operations		11
Profit for the period	1,838	1,927
- Minority interests	82	83
- Net profit (Group share)	1,756	1,844
Basic earnings per share (in euros)	4.99	5.11
Diluted earnings per share (in euros)	4.97	5.10

Consolidated balance sheet (summarized) For the year ended December 31

(in millions of euros)	December 31, 2015	December 31, 2016
ASSETS		
Goodwill	5,730	13,890
Other intangible assets and property, plant and equipment	16,555	22,003
Other non-current assets ^(a)	936	960
TOTAL NON-CURRENT ASSETS	23,221	36,853
Inventories and work-in-progress	981	1,323
Trade receivables and other current assets	3,711	4,090
Cash and cash equivalents ^(a)	1,028	1,576
TOTAL CURRENT ASSETS	5,720	6,989
ASSETS HELD FOR SALE		276
TOTAL ASSETS	28,941	44,118

(in millions of euros)	December 31, 2015	December 31, 2016
EQUITY AND LIABILITIES		
Shareholders' equity	12,406	16,742
Minority interests	365	383
TOTAL EQUITY	12,771	17,125
Provisions and deferred taxes	3,435	4,971
Non-current borrowings	6,291	14,890
Other non-current liabilities ^(a)	475	504
TOTAL NON-CURRENT LIABILITIES	10,201	20,365
Provisions	271	280
Trade payables and other current liabilities	3,728	4,103
Current borrowings ^(a)	1,970	2,064
TOTAL CURRENT LIABILITIES	5,969	6,447
LIABILITIES HELD FOR SALE		181
TOTAL EQUITY AND LIABILITIES	28,941	44,118

(a) Included derivatives

Consolidated cash flow statement For the year ended December 31

(in millions of euros)	2015	2016
Operating activities		
Cash flows from operating activities before changes in working capital	3,150	3,523
Changes in working capital	-258	331
Others	-60	-158
Net cash flows from operating activities	2,832	3,696
Investing activities		
Purchase of property, plant and equipment and intangible assets	-2,028	-2,259
Acquisition of subsidiaries and financial assets	-384	-12,165
Proceeds from sale of property, plant and equipment and intangible assets and financial assets	131	830
Net cash flows used in investing activities	-2,281	-13,594
Financing activities		
Dividends paid		
• L'Air Liquide S.A.	-924	-947
• Minority interests	-51	-72
Proceeds from issues of shares	86	3,361
Purchase of treasury shares	-178	4
Transactions with minority shareholders	-11	-14
Net cash flows used in financing activities excluding increase (decrease) in borrowings	-1,078	2,332
Effect of exchange rate changes, opening net indebtedness of newly acquired companies and others	-406	-563
Change in net indebtedness	-933	-8,129
NET INDEBTEDNESS AT THE BEGINNING OF THE PERIOD	-6,306	-7,239
NET INDEBTEDNESS AT THE END OF THE PERIOD	-7,239	-15,368



INTERNET

See our annual publications:
Annual Report, Reference Document,
Shareholder's Guide, Interactions and more.
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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 67,000 employees and serves more than 3 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 €18.1 billion in 2016 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.