HISTORY OF THE AIR LIQUIDE GROUP

1902

ORIGIN

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

1906

FIRST INTERNATIONAL DEVELOPMENTS

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

1913

LISTING ON THE STOCK EXCHANGE

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

1946

NEW ADVENTURES, DIVING

New adventures shared with Captain Cousteau led to the creation of Spirotechnique (today known as Aqua Lung™), which designs, manufactures and sells diving regulators and other equipment used for professional and leisure diving.

A CENTURY OF INTERNATIONAL DEVELOPMENT

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

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

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

In 2004, there was a second major acquisition: certain businesses of Messer Griesheim in Germany, the United Kingdom and the United States. In 2007, the Group purchased minority interests in its joint ventures in Japan and Southeast Asia.

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

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

1952

THE CRYOGENIC REVOLUTION

Storing gas in liquid form in cryogenic tanks allows vast quantities to be transported by road or rail within a radius of around 250 km from the production site. In 1954, the first liquid oxygen plant started up in the North of France.

1960

PIPELINE NETWORK STRATEGY

By delivering gas to several customers through pipelines, Air Liquide adopted a network strategy for the first time, linking its gas production units through a pipeline network. The Group multiplied production capacity to meet soaring demand from large industries: firstly, for oxygen in the steel industry, and secondly, for nitrogen in chemicals.

The Large Industries business was launched with customers committing to long-term contracts of 15 years or more. The Group currently manages a global network of more than 9,200 km of pipelines in particular on the Gulf Coast, in Northern Europe, in the Ruhr valley in Germany and in several Asian countries.

1962

SPACE INDUSTRY

Convinced of the industrial potential of cryogenics, Jean Delorme, Chairman & CEO, decided to create a research center near Grenoble dedicated to these technologies. The first applications were rapidly integrated in the space industry. Air Liquide has been a partner of the space adventure and the Ariane program for 50 years. The Group's contribution has been as much in the production of the fluids essential for launch (oxygen, hydrogen, helium and nitrogen) and the supply of associated services, as in the design and production of the tanks and cryogenic equipment of the launchers.

1970

A TRADITION OF INVENTIONS

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

1976

A TECHNOLOGICAL BREAKTHROUGH

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

1985

A NEW MARKET, ELECTRONICS

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

1995

EXTENDED OFFERING: HYDROGEN AND STEAM

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

PROTECTING LIFE

Originally an oxygen supplier to hospitals, Air Liquide has become a specialist in the Healthcare sector. The Group launched its Home Healthcare activity and set up a dedicated network of specialist teams. Medical gases were progressively classified as drugs and manufacturers were required to file market authorizations. The Group also developed in the Hygiene sector, an activity that naturally complemented the hospital services. Most recently, Air Liquide launched significant research programs in therapeutic gases, used for anesthesia, resuscitation, and pain relief.

2007

ORGANIZATION BY BUSINESS LINE

The Air Liquide growth drivers for the coming decades are solid and sustainable, based on changing lifestyles: industrial growth of developing economies, increasing energy needs and environmental challenges, healthcare and high technology. To capture this growth, the Group created a new organizational structure based on four World Business Lines. They combine the technical, financial and operational expertise that are specific to each of the businesses of the Group – Large Industries, Industrial Merchant, Healthcare and Electronics – and centralize the specific market expertise. The Group remains geographically focused, but each zone or country benefits from the support and experience of the business lines to accelerate its development.

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

2008

LAUNCH OF THE ALMA PROGRAM TO STEP UP GROWTH

The Group launches the ALMA corporate program. Driven by the ambition to be the recognized leader of its industry, the Group announces its mid-term objectives for an average annual revenue growth of +8% to +10%, 600 million euros in efficiencies over three years and a return on capital employed of between 11% and 12%.

2009

RESILIENCE IN AN UNPRECEDENTED CRISIS

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

2010-2012

UPDATED OBJECTIVES – NEW TERRITORIES, NEW ACQUISITIONS

Slowly emerging from a crisis that reshuffled global growth, Air Liquide announces at end-2010 new objectives for its ALMA program in terms of performance and responsibility. These objectives were revised at end-2013 to factor in a slower-than-expected recovery in growth, in particular in Western Europe and Japan.

The Group accelerates its presence in new territories, including Turkey, Ukraine and Mexico, and strengthens its presence in China. These developments contributed to the increase, in seven years, of the developing economies share of Gas & Services revenue from 15% to 26% in 2014.

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

2013-2014

NEW INITIATIVES IN THE INNOVATION FIELD – HYDROGEN MOBILITY

Innovation is central to Air Liquide's strategy. In 2013 Air Liquide launched two initiatives to promote open innovation: i-Lab, Air Liquide's new ideas laboratory, and ALIAD, the Group's capital investment subsidiary that takes minority stakes in innovative technology start-ups. In 2014, the Group decides on new investments with the modernization of the Paris-Saclay Research Center, the creation of a center for the development of gas cylinders for industry and healthcare, and the launch of a technical center of excellence for cryogenic production technologies.

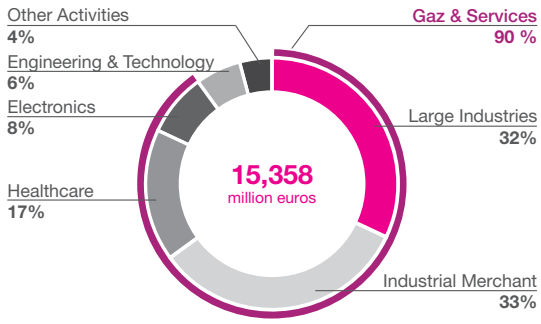
In addition, on a worldwide scale, Air Liquide actively contributes to the development of the hydrogen energy activity by accompanying automotive manufacturers launching fuel cell electric vehicles on the market. Air Liquide confirms its commitment to a more environmentally friendly energy source, with the creation of its Blue Hydrogen® label accompanied by ambitious objectives. The first hydrogen filling stations have opened (United States, Japan, France, Germany, Denmark, and the Netherlands), the vast majority of which are accessible to the general public.

ACTIVITIES AND RISK FACTORS

Activities

The Group classifies its activities as follows: Gas & Services, Engineering & Technology and Other activities. Additional information is available in the 2014 Performance section of this report.

2014 Group revenue



GAS & SERVICES

The supply of gas involves local production in order to limit transport costs. Air Liquide gas production units are therefore located throughout the world and can supply several types of customers and industries, with the relevant volumes and services required. The operational management of the Gas & Services activity is organized by four geographic regions (Europe, Americas, Asia-Pacific and the Middle-East and Africa) and coordinated at World Business Line level to better adapt to the changes in the different markets:

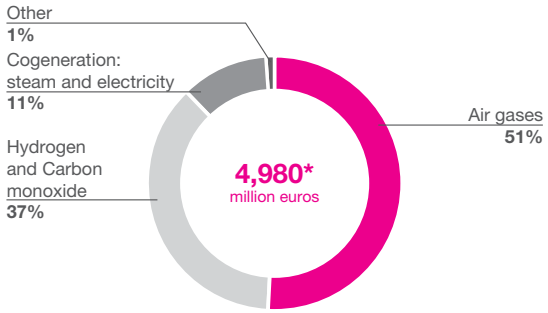
- **Large Industries** supplies industrial gases by operating major production units. It serves customers in the metals, chemicals, refining and energy industries with high gas consumption, requiring delivery through a dedicated plant or pipeline. Large Industries also supplies the Group's other business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

Depending on their end use, gases are distributed in different states and using various means: in gaseous form through a pipeline network, in liquid form in cryogenic trailers, and in gaseous form in high-pressure cylinders for small quantity orders or specialty gases. The Gas & Services activity represents 90% of the Group's total revenue.

LARGE INDUSTRIES

The Large Industries business line proposes gas and energy solutions to customers in the chemicals, metals, energy and refining industries, that are essential for their own industrial production, to improve process efficiency and to make their plants more environmentally friendly. The world leader in this sector, Air Liquide benefits from dedicated in-house development and engineering teams, differentiating proprietary technologies and rigorous processes for selecting investments and carrying out projects, which often include pipeline networks, reaching out over several hundreds of kilometers.

2014 Large Industries revenue by activity



* *36% of Gas & Services revenue.*

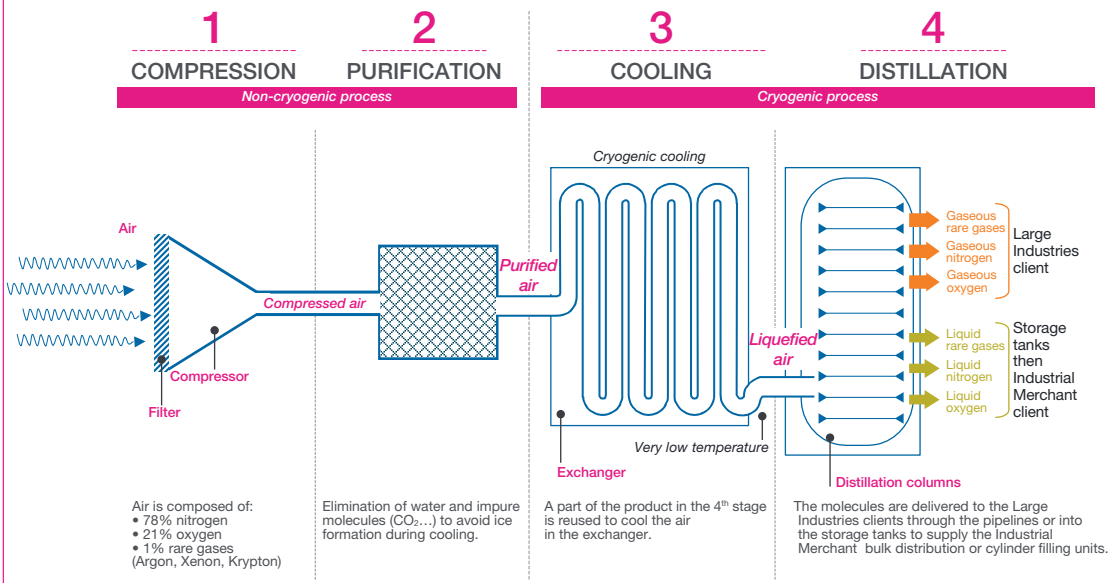
LARGE INDUSTRIES PROCESSES

Separation of air gases (ASU: Air Separation Unit)

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

AIR GAS PRODUCTION

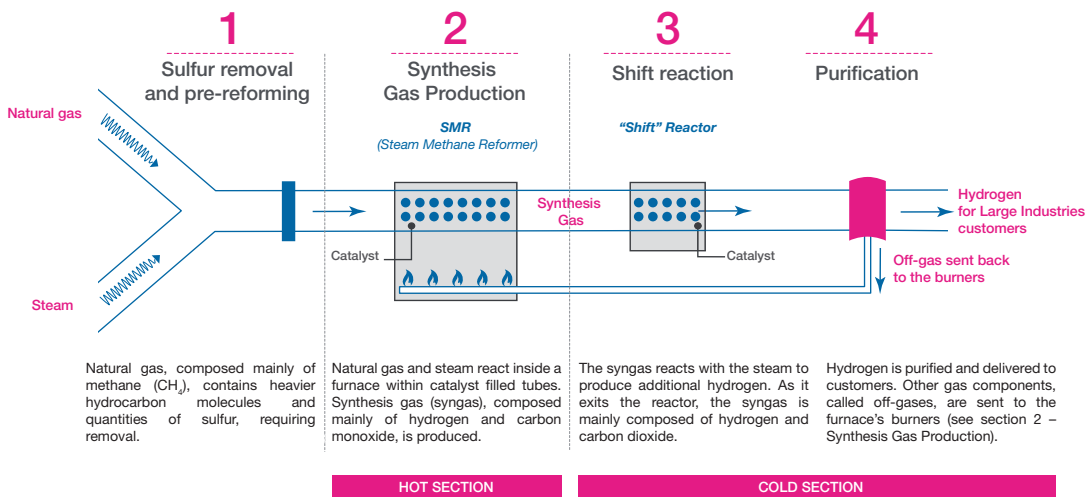
Simplified diagram of an air separation unit's operation



Hydrogen and carbon monoxide production unit (SMR: Steam Methane Reformer)
By steam reforming natural gas, an SMR produces hydrogen and carbon monoxide. The most significant raw material is natural gas; electricity and water consumption is modest.

HYDROGEN PRODUCTION

Simplified diagram of an hydrogen unit's operation



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

This business line provides oxygen, nitrogen, argon, hydrogen and carbon monoxide through a network of plants and pipelines. At December 31, 2014, these were 355 large Air Separation Units (ASUs), 47 Steam Methane Reformers (SMRs) producing hydrogen and carbon monoxide around the world and 17 cogeneration plants.

In the **metals** industry, oxygen is used in steel production to improve energy performance and reduce emissions. The majority of new projects are currently located in developing economies.

The **chemicals** industry uses mainly oxygen, hydrogen and carbon monoxide in its manufacturing processes, and nitrogen for the inerting of installations.

The **refining** industry requires hydrogen to desulfurize fuels and break up heavy hydrocarbons. The demand for hydrogen is growing due to the combination of increasingly stringent emissions legislation and use of heavier hydrocarbons.

Numerous industries linked to **energy** or **chemicals** use large quantities of oxygen to transform coal, natural gas and syngas hydrocarbons for the production of chemical products, synfuel or electricity. To meet customer requirements, the supply of large quantities of gas is indispensable. Air Liquide supplies its customers directly by pipelines from a dedicated plant or different plants linked by a network. Air Liquide has built its own pipeline networks progressively over the last 40 years. With a total length of more than 9,200 km, these networks stretch, for example, across Northern Europe, from Rotterdam through to Dunkirk, and along the Gulf Coast in the United States from Lake Charles (Louisiana) to Corpus Christi (Texas). Many other mid-sized local networks have also been built in other significant and fast developing industrial basins in Germany, Italy, Singapore and more recently, South Korea and China.

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

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

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

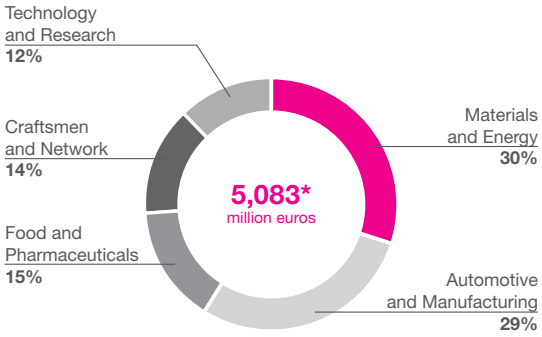
The **Large Industries** business line operates under long-term contracts, where costs are indexed, in particular to energy costs. These contracts, that include take-or-pay clauses, offer considerable visibility of future revenue and protection in the event of a significant fall in customer volume consumption (below the minimum take-or-pay level). The long investment cycle and high capital intensity require a solid balance sheet. The signing of new contracts is a guarantee of future growth.

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

INDUSTRIAL MERCHANT

The Industrial Merchant business line serves a wide range of markets and customers – craftsmen, SMEs, large multinational industrial groups – offering comprehensive gas solutions for the implementation and optimization of their industrial processes. Supported by a global network of business experts and extensive geographical coverage, Air Liquide provides more than 1 million of its customers with innovative solutions including industrial gases, application equipment and related services.

2014 Industrial Merchant revenue by end-market



* *37% of Gas & Services revenue.*

The Industrial Merchant activity serves five primary markets:

- **Materials and Energy:** Customers in this market use a wide range of different gases. Oxygen is used to reduce energy consumption in glass and metal manufacturing processes and to treat wastewater. Nitrogen is used to create inert atmospheres for the conservation of oxygen-sensitive products. Carbon dioxide is used in drinking water treatment, helium for professional diving and magnetic resonance imaging. Nitrogen and carbon dioxide can be used for the enhanced recovery of oil and gas and, in certain cases, the reduction of water and solvent consumption.
- **Automotive and Manufacturing:** Dedicated solutions exist depending on production needs. Argon and argon mixtures are used for metal parts welding in manufacturing industries, hydrogen and nitrogen for thermal treatment, specialty gases for waste gas analysis, helium for airbags and specialty gases (krypton, xenon) for lighthouses and thermal insulation. Oxygen and acetylene are used in metal heating and cutting operations. Air Liquide therefore enables customers to produce high quality products, while improving their manufacturing processes and preserving their working environment.
- **Food and Pharmaceuticals:** The Group's technologies help increase shelf-life and improve food and pharmaceutical manufacturing and cooling processes. The three major activities in this market are the supply of carbon dioxide for beverages, gas mixtures for modified atmosphere packaging and nitrogen for process inerting and cold production. Air Liquide ensures these products comply with prevailing market regulations and in particular the complete traceability of its gases.
- **Technology and Research:** Industrial gases are used in the assembly and encapsulation of electronic components in optoelectronics processes – particularly LED manufacturing and optic fiber and silicon cylinder drawing. Specialty gases required, in particular, for the calibration of analysis instruments are widely used in research centers and analytical laboratories. Specific, highly technical gases and equipment have been developed for these various applications.
- **Craftsmen and Network:** A wide range of gases are offered for use in plumbing, heating, ventilation, air conditioning, industrial maintenance and auto repair activities mostly for welding. These gases are often sold in special-purpose packaging – cylinders in compressed gaseous form, tailored to customer usage requirements.

Such gases can be supplied to the customer's site in gaseous form in high pressure cylinders, in liquid form using dedicated cryogenic trailers, or are produced using on-site production equipment. Distribution remains traditionally local, with deliveries rarely exceeding 250 km from the production site. To support this local presence, the Industrial Merchant activity mainly relies on the gas production capacities of the Large Industries activity and then develops its own distribution logistics. Air Liquide ensures the reliability of the gas supply and quality of materials used (tanks and cylinders). The installation of telemeters and development of tracking systems is becoming more widespread in order to optimize distribution logistics.

The **Industrial Merchant** activity is characterized by a wide range of customers, markets, applications and solutions or services. Contract terms vary and can be as long as five years. Revenue comes from the sale of gas and related services. It is an expert service business with a high technology and innovation content, extremely local, with geographic density of coverage being a key factor. Competition can vary between areas.

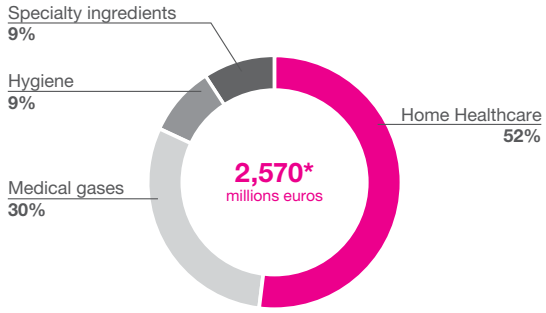
Innovation with regards to markets, products and applications is a major growth driver. Business growth is generally dependent on local industrial production growth.

HEALTHCARE

The Healthcare business line provides gases, services, medical devices, equipment and hygiene products to more than 7,500 hospitals and clinics and 1.2 million homecare patients around the world. The business line includes the specialty ingredients activities of its subsidiary Seppic, serving the cosmetics, pharmaceutical and vaccine markets.

Air Liquide is one of the world leaders in this business sector, which is subject to both stringent regulatory requirements relating to the drug designation status of several of its gases and multiple stakeholders (patients, doctors and payers). Whereas the geographic spread of the medical gases activity segment corresponds to that of the Industrial Merchant activity, the breakdown of the Home Healthcare business, Hygiene, and Specialty ingredients segments are more focused on Europe. As a result, around 80% of the Healthcare business line's sales are in Europe.

2014 Healthcare revenue by activity



* *18% of Gas & Services revenue.*

In hospitals and in clinics, Air Liquide provides medical gases, such as oxygen and nitrous oxide, for operating theaters, intensive care, emergency care and, more generally, medical wards.

The Group also innovates and develops therapeutic gases used particularly for resuscitation in cases of acute pulmonary arterial hypertension (VasoKinox™), and pain relief (Kalinox™). Several therapeutic gases are still in the research and development phase and the Group is in the process of extending its existing market authorizations.

Air Liquide also supplies hospitals and clinics with a large range of medical hygiene products (for hands, skin, instruments, surfaces, etc.) to fight in particular nosocomial infections. Air Liquide thus contributes to patient safety, particularly in operating theaters and intensive care units. Some hygiene products are also supplied to manufacturers, whose processes require impeccable cleanliness.

In Home Healthcare, Air Liquide has extended its services beyond oxygen therapy. The Group looks after more than 1.2 million patients at home suffering from chronic obstructive pulmonary disease, sleep apnea, diabetes, or Parkinson's disease by providing them with long-term medico-technical services and follow-up care. By closely monitoring patient prescriptions and by enhancing patient observance of treatments, Air Liquide is now a key player in patient/doctor/payer relations and contributes to improving patient health and quality of life on a daily basis, as well as enhancing efficiency of health systems.

The Healthcare activity has been growing worldwide partly through the implementation of healthcare infrastructures and systems in many developing economies. The Home Healthcare activity, which allows a patient with a chronic disease to stay at home, is developing due to high prevalence of chronic diseases and an aging population. This activity also helps to meet the growing constraints on health spending in developed countries.

Through its subsidiary Seppic, Air Liquide produces and markets specialty ingredients such as excipients and active ingredients for cosmetology, adjuvants for vaccines, film-coating systems for medication, etc.

Over the last 20 years, Air Liquide has become a leading healthcare player in Europe (France, Germany, Italy, the United Kingdom, Scandinavia, Spain, and the Netherlands), Canada and Australia. The Group also has businesses in the United States (medical gases only), South America, Africa and Japan and has recently expanded in Eastern Europe, South Korea and China, as the local healthcare systems develop.

The Healthcare business line produces and distributes medical gases for hospitals and provides healthcare services for homecare patients. It operates in a strict regulatory framework. Density, quality of support services and efficiency are essential to offset the pricing pressure of healthcare systems, particularly in advanced economies.

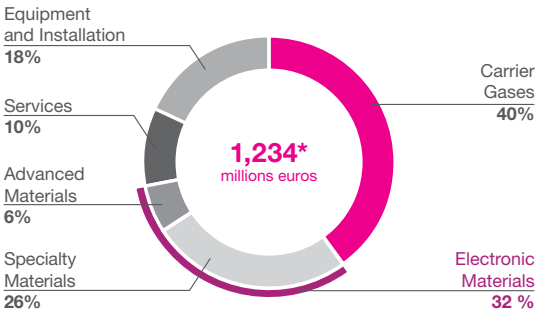
Air Liquide is present along the continuum of care: from treatment of acute diseases (with medical gases in hospitals), to treatment of chronic diseases at home (with home healthcare), and prevention/well-being (with the hygiene and specialty ingredients activities).

With aging populations, the greater need for care services due to an increase in chronic diseases and the development of healthcare systems in developing economies, the Healthcare activity represents a solid growth driver for the Group.

ELECTRONICS

Air Liquide serves major manufacturers of semiconductors, flat panel displays and solar cells, leveraging its expertise, global infrastructure and strategic proximity to manufacturers worldwide. Its innovative Electronic Materials respond to increasingly challenging customer demands for improved mobility, connectivity, computing power and energy consumption. The Group offers include ultra-pure carrier gases, a wide range of specialty gases and advanced precursor molecules, enabling equipment for safe distribution, purification and on-line purity control. The most sophisticated of these molecules are essential for the continuous miniaturization of the new microchips. On site, manufacturers can rely on the Group's expertise in the total management of these products and equipment as well as on its cutting-edge analytical services used to improve continuously their production processes.

2014 Electronics revenue by product



* *9% of Gas & Services revenue.*

The Electronics business line supplies customers with carrier gases (primarily ultra-pure nitrogen) from on-site facilities for the transport of molecules, inerting, and protection of electronic systems, and purging of manufacturing tools. The need for a regular and constant supply of carrier gases requires long-term commitments from customers and the building of production units near their premises or even on the customer's site.

The Group also provides materials for electronics such as specialty gases and advanced precursor modules used in semiconductor, flat panel, and solar cell manufacturing. Air Liquide develops and markets a significant value-added range of advanced precursors known as ALOHA™. The 2013 acquisition of Voltaix has extended the Group's range of advanced precursors, strengthened its relations with key customers, and created new synergies in the research and industrialization of innovative molecules.

The Electronics business line also supplies equipment and installs ultra-pure chemicals products and gas distribution units and networks at its customer's new manufacturing facilities.

Finally, given its expertise and its desire to offer customers a comprehensive service, Air Liquide also provides just-in-time, on-site fluid management and quality control services under rigorous safety conditions.

The Electronics business model is based on long-term carrier gas supply agreements and constant technological innovations to satisfy customer requirements by designing new precursor molecules. The combination of carrier gas, specialty gases, new precursor molecule and equipment and installation activities enables Air Liquide to limit revenue volatility in this cyclical sector that offers strong growth potential.

The Electronics activities are based 62% in Asia, 25% in the Americas and 13% in Europe.

The **Group's Electronics** activity covers three different activities:

- Carrier gases have a business model based on long-term agreements and take-or-pay-type clauses. Growth is dependent upon the signing of new contracts and investment in customer-dedicated on-site production units.
- Electronic Materials are distributed worldwide. Demand varies with electronics goods consumption and production cycles. These gases are high purity products requiring a high level of technical expertise.
- Finally, equipment and installation sales depend on the momentum of the Electronics sector investment cycle.

In the Electronics sector, where long-term growth is accompanied by short cycles, the mix of activities specific to Air Liquide with its long-term contracts, offers a real advantage.

INDUSTRIAL SYNERGIES

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

In its search for improved performance, the Group favors synergies in a number of areas:

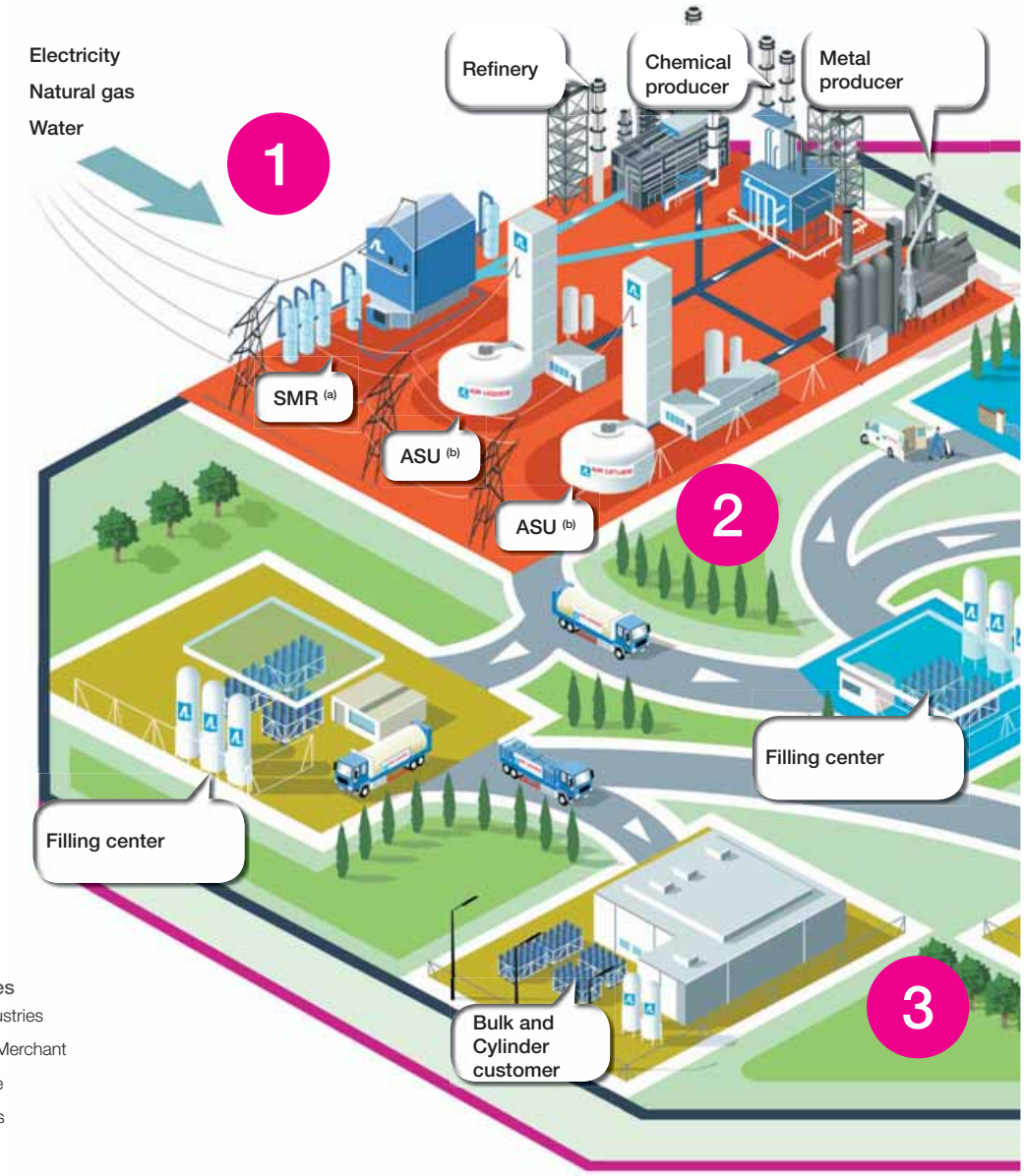
- Industry: local investment in new assets, followed by mutualization of these assets between the different business lines; globalization of energy supply and specifically energy (electricity and natural gas) purchasing;
- Engineering and Technology: sharing of global Group expertise, knowledge transfer, support to the geographic regions;
- Research and Development: constant efforts to develop new applications;
- Human Resources: common managerial culture across a range of regions and businesses, aimed at selecting, training and developing the potential of the Group's men and women and favoring a unique sharing of competencies.

The combination of all these synergies represents a true ecosystem which continues to expand and allows Air Liquide to grow and continue to create long-term value.

Standard development model

1
- Identification of industrial basins and their potential in terms of growth and mutualization
- Signing of various Large Industries contracts
- Mutualization of production assets (construction of a pipeline network) in order to strengthen guaranteed supply and optimize operating costs

Industrial Synergies



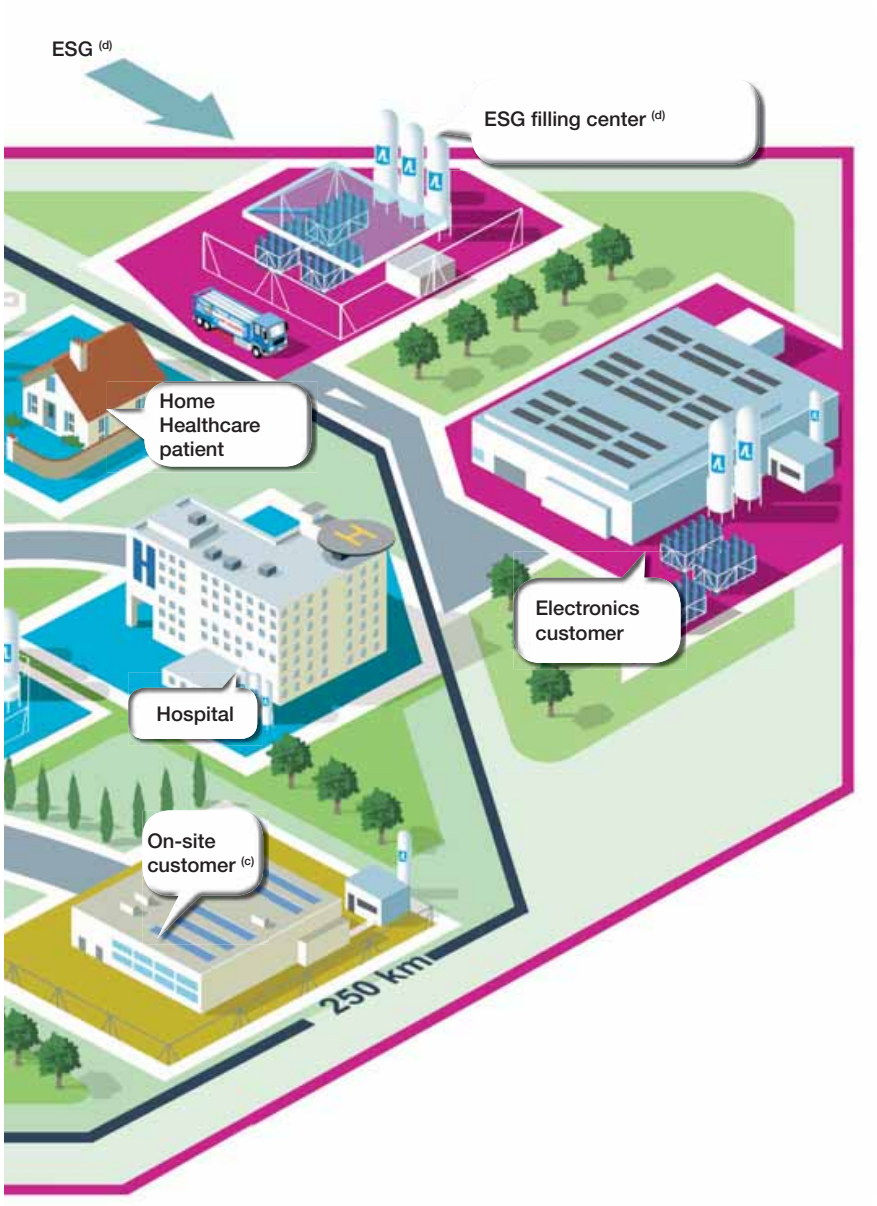
(a) SMR: Hydrogen and carbon monoxide production unit (Steam Methane Reformer).
(b) ASU: Air gases production unit (Air Separation Unit).
(c) On-site: Small local production unit.
(d) ESG: Electronic Specialty Gases.

2

- Liquifaction of gas sourced from Large Industries to supply Industrial Merchant, Healthcare and Electronics (piggyback principle)

3

- Acquisition of local distributors to accelerate roll-out in the area



ENGINEERING AND TECHNOLOGY

The Air Liquide Group was founded upon innovation: a new industrial process to separate air gases. In 2013, due to the ramp-up of the aB&T network (advanced Business & Technologies), the Group combined the financial reporting of its Engineering & Construction and advanced Business and Technologies activities under the Engineering & Technology heading.

Engineering & Construction

To provide customers with the gases required for their industrial production, Air Liquide engineers have developed proprietary technologies. For over a century, the Group has therefore designed and produced gas production units for its own use or for sale to customers who prefer to produce their gas requirements internally. Today, Air Liquide is still recognized for its ability to constantly improve ASU productivity based on its mastery of its proprietary technologies.

The whole range of proprietary technologies enables Air Liquide customers to optimize use of natural resources in order to provide clean and sustainable energy. The Engineering & Construction activity contributes to the transformation of the energy industry and helps to protect the atmosphere.

Indeed, since the acquisition of Lurgi in 2007, the Group has expanded its range of technological expertise. It now possesses its own proprietary technologies, developed by Lurgi for over 50 years, to produce hydrogen and carbon monoxide through steam methane reforming. This acquisition also widened the Group's offering into coal and natural gas conversion technologies to produce syngas, synthetic natural gas, methanol, propylene, liquid fuels and biofuels. Given the very large quantity of industrial gases required in all these activities, this expanded Engineering & Construction know-how has helped the Group to be involved, upstream of industrial gas production projects, in the development of its customer processes and thus boosting its sales growth. Some of these processes, at varying stages of development, offer technical solutions to fight climate change by enabling the capture of a virtually pure CO_2 flow emitted by industrial sites.

Air Liquide's Engineering & Construction activity is primarily geared toward industrial gas production technologies. Accordingly, in 2014, 62% of its orders in hand concerned the manufacture of air gas or hydrogen and carbon monoxide production units.

To cover all the Group's primary markets, the Engineering & Construction business has extensive geographical coverage with 15 major engineering centers worldwide, based in North America, Europe and Asia. Because of this coverage, the Group is able to meet global demand, while containing production costs.

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

Internally, the Group is able to benefit from the relevant engineering resources for the investment projects linked to its Gas & Services activity. It provides a high level of expertise, which is crucial to the design of efficient units that specifically respond to the needs of the Group's industrial gas customers. It enables optimal operational management for units once they are up and running to reduce energy costs and limit technical disruptions. It also facilitates site takeovers for the Group, by ensuring the right assessment of the quality of assets purchased.

The Engineering & Construction activity also acts for third party customers. Air Liquide designs and builds customized units that the customer will own and operate. First and foremost, this third-party customer activity allows the Group to permanently assess the competitiveness of its technologies and commercial offering. Air Liquide is also able to forge close relations with customers that produce their own gas and better understand their industrial processes and investment projects. In certain cases, negotiations initially steered toward the sale of equipment were finalized by the signing of a long-term industrial gas supply contract. As part of this third-party customer activity, the strategy consists of favoring research and equipment supply contracts that are less risky than contracts which also include construction. Accordingly, the contribution to consolidated revenue can vary significantly from year to year.

aB&T – advanced Business and Technologies network

In order to accelerate the development of opportunities in markets which require a different approach to that used on its traditional markets and business models, the Group decided in 2013 to set up the advanced Business and Technologies network (aB&T), composed of Group subsidiaries and activities driven by an entrepreneurial spirit, innovation and agility. This global network, present in Europe, the Americas and Asia, is organized around four main fields:

- New markets (such as, hydrogen energy);
- Leading-edge technologies for major scientific or aerospace projects, such as the LHC (Large Hadron Collider) of the CERN (European organization for nuclear research), the ITER project (International Thermonuclear Experimental Reactor) or the Ariane space program;
- Industrial information technology for programs targeting efficient manufacturing, management optimization, traceability, etc.;
- Investments, with the ALIAD subsidiary.

In advanced Business (new markets), the Group provides its customers with the best of its technologies and solutions in sustainable energy using industrial gases, such as hydrogen and nitrogen. Hydrogen energy is thus a strong growth activity for which the Group already manages the complete industrial cycle (production, storage, distribution and use by the end-customer). Air Liquide is actively contributing to the implementation of this activity and the development of hydrogen as a clean energy source.

The Group is dedicated to the challenges and momentum of new energy sources and is also working on global solutions dedicated to the valorization of biogas.

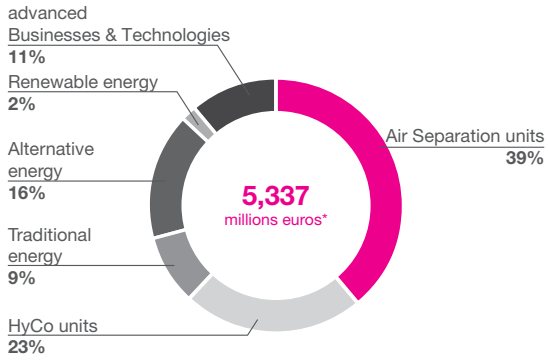
Air Liquid invests in technology start-ups through its ALIAD entity, created in 2013, and thus has rapid and privileged access to the technologies developed by these young and innovative companies. ALIAD will contribute to the Group's growth and competitiveness through the partnerships that accompany these investments.

The Engineering & Construction activity provides the Group with a genuine competitive edge, enabling it to offer turnkey solutions to its customers both inside and outside the Group and to engage in a procedure of continuous improvement of industrial processes and reduction in the cost of its assets.

The aB&T network, with its entrepreneurial culture, goes beyond the scientific, technological and sales frontiers to shape new markets and business models and thus contribute to the Group's future growth.

In 2014, consolidated third-party Engineering & Technology sales totaled 912 million euros and orders in hand amounted to 5.3 billion euros.

Engineering & Technology orders in hand [(a)] as at end-2014



* *Including 3.1 billion euros from third-party orders.*

OTHER ACTIVITIES

Over time, Air Liquide has developed other activities in addition to the sale of gas and equipment. The 2014 consolidated revenue of Other activities amounted to 579 million euros, representing 4% of Group revenue.

Welding

Air Liquide is a leading player in the development of welding and cutting technologies, offering a complete range of related equipment, consumables and services on the market, through internationally renowned brands. Established primarily in Western and Eastern Europe, Air Liquide Welding covers a wide range of markets: shipyards, automotive, transport equipment, infrastructures, boilers, distributors, machinery and equipment, energy, etc. Air Liquide Welding pursues continuous innovation, constantly striving to improve the performance, productivity, safety and comfort of operators.

Diving

Aqua Lung™ provides deep-sea diving and swimming equipment to professionals and private individuals.

(a) Orders in hand represent the contractual value of all Group and third-party contracts managed by the Engineering & Construction and aB&T entities, excluding projects under warranty, from the signature date.

Competition

On a worldwide scale, the **Industrial Gases** sector comprises four global companies: Air Liquide, Linde (Germany), Praxair (United States) and Air Products (United States).

There are also a number of regional players, such as Taiyo Nippon Sanso (Japan), Airgas (United States), Messer (Germany), Yingde (China) and Hangzhou Oxygen Plant Group (China).

Finally, numerous medium-sized players are also present in local markets.

In **Large Industries,** the customer can choose between self-production and over-the-fence gas supply. Self-production is estimated to account for 80% of hydrogen production and 65% of oxygen production globally, although with significant geographical disparities. Companies self-producing gas thus remain the Group's greatest competition. However, the potential to convert self-production into over-the-fence supply represents a major growth opportunity for the Large Industries business line. The level of self-production varies strongly depending upon the region, sector and local culture. In advanced economies, the supply of oxygen is largely over-the-fence, while the supply of hydrogen for refining remains essentially in-house. In developing economies, while relatively new, over-the-fence supply is accelerating significantly. Air Liquide, the world leader in over-the-fence industrial gases supply, is in competition with the three other major global players and the local players.

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

In **Electronics,** three companies play a major role: Air Liquide, Air Products and Taiyo Nippon Sanso.

Finally, in **Healthcare,** most of the gas industry players also provide hospitals with oxygen, but few are present on the promising therapeutic gas market. The Home Healthcare segment became more consolidated in 2012, with the ramp-up of Linde following the purchases of activities in Europe and the United States. Air Liquide continues to consolidate its number one position in Europe. Nevertheless, the market remains fragmented in all regions with a multitude of small companies and associations. This fragmentation provides acquisition opportunities. Finally, Air Liquide is the only industrial and medical gases producer to have developed a Hygiene and Specialty Ingredients activity. Air Liquide is positioned as a fully-fledged player in the Healthcare sector, which represents a significant differentiating factor.

In **Engineering & Technology,** Air Liquide also competes with industrial gas players. In the "cold" technologies used for air separation, the competitors are Linde, Air Products and Praxair. In the "hot" technologies used for producing hydrogen, in coal gasification and the chemical conversion of syngas, the most widely known competitors are Technip (France) and Haldor Topsoe (Denmark). Competition from developing economies is also growing: for example Hangzhou Oxygen Plant Group, Yingde and Kaifeng (China) in air gases.

Risk Factors

The Group identifies the risk factors to which it is exposed using a formal risk management approach. This approach involves the regular monitoring of risks and the implementation of necessary mitigation measures.

The Report from the Chairman of the Board (page 140) presents the main underlying internal control and risk management procedures put in place.

SPECIFIC BUSINESS-RELATED RISKS

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

The risks associated with these characteristics are mitigated by various factors, which include primarily the diversity of customers, industries served, applications, and countries in which the Group operates, as well as the significant share of business that is subject to specific contracts, a strict investment project authorization and management process, and a tailored energy policy.

Innovation and intellectual property-related risks

The Group's activities are not dependent on third-party patents. They are mainly based on technology, processes and designs developed, internally notably, by its Research & Development, Marketing, and Engineering teams, as well as through partnerships with third parties which are mostly protected by patents, drawings and models as well as by brands. There is nonetheless a risk of third-party rights being infringed, in particular when several market players are developing similar technologies. The Group is also

developing innovative activities in collaboration with numerous partners: contractual risks may arise in terms of the division of rights between these partners of the results obtained.

Measures aimed at ensuring the respect of intellectual property are set out in the Chairman's Report on page 144.

Engineering & Construction-related risks

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

Measures to limit commitments on the most complex projects are described in the Control Activities section of the Chairman's Report on page 142.

These projects generally extend over several years. Potential risks relating to design (taking into account freedom to operate in terms of existing patents), purchasing, transport or construction and more generally to the overall quality of work may arise at different stages of the project. Risks relating to these projects are often greater during the construction stage:

- the quality and delivery times for critical equipment on one hand, and costs and on-site construction costs and deadlines on the other may give rise to project start-up setbacks and impact project profitability;
- unexpected technical problems may also arise as a result of new innovative processes being implemented. Preliminary tests on pilot or demonstration units therefore help reduce such risks prior to commercial implementation;
- certain projects are located in regions that may be a source of political risks. Constant monitoring of such projects over the long term limits such risks.

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

Industrial investment-related risks

The Group may be exposed to certain risks specific to its industrial investments. Each investment project may be affected by different factors linked primarily to project location, customer quality and the competitiveness of the site, as well as to design, cost estimates and the construction of gas production units. The investment authorization process is led by Resources and Investment Committees, which apply extremely strict appraisal criteria to projects. These Committees comprise regional, technical and financial managers that vary depending on the nature of the project considered, and are chaired by an Executive Committee member. The investment decision-making process is explained in the Investment cycle and financing strategy section on page 43.

Business-related risks

The primary business-related risk is the risk of customer bankruptcy or closure of a customer's production site. The diversity of the Group's geographic presence in 80 countries mitigates customer and market risks. The Group's subsidiaries serve a very large number of customers (more than one million worldwide) in a broad range of industries: chemicals, steel, refining, food, pharmaceuticals, metals, automotive, healthcare, electronics, photovoltaic and research laboratories. The Group's top customer represents around 2% of revenue, the Group's top 10 customers represent around 13% of revenue and the top 50 customers represent around 28% of revenue.

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

- the Large Industries business and a third of the Electronics business respectively rely on 15-year to 20-year contracts and 10-year take-or-pay secured contracts, ensuring a guaranteed minimum revenue. These contracts provide strong future cash flow predictability;
- the contracts in the Industrial Merchant business, generally with a one to five year duration, also including services relating to storage and cylinders;
- in the Home Healthcare business, positions vary between health systems, with certain countries awarding one to five-year contracts on a regional and pathology basis following invitations to tender.

Risks of customer business interruption following major climatic or political events are limited by the wide diversity of countries in which the Group operates and the necessary recourse to gases in critical situations. Gases are needed to secure industrial or chemical installations (inert gases), maintain local industrial activity (essential to industrial processes) and even sustain life (medical gases). They are therefore often protected or prioritized depending on the situation.

The amount of operating receivables as well as provisions for doubtful receivables are shown in note 18 – Trade receivables to the consolidated financial statements on page 232.

Supply-related risks

Electricity and natural gas are the main raw materials used by production units. Due to the geographic spread of its activities, Group supply contracts are diversified. Where the local market permits, Group subsidiaries secure these resources through medium to long-term supply commitments and competitive

bidding scenarios with the objective of achieving the most reliable and competitive energy costs available in any particular market. The Group passes on cost variations to its customers via indexed invoicing integrated into medium and long-term contracts.

Commodity risk is described in note 28.2 to the consolidated financial statements on page 258.

INDUSTRIAL RISKS

Industrial risks concern numerous sites and various industrial processes and distribution methods.

The Group's key priority is its safety policy, with a formal objective of "zero accidents, on every site, in every region, in every unit." The safety results for the past 20 plus years illustrate the long-term effectiveness of Group policy in this area.

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

- products: the intrinsic properties of certain products packaged by the Group classifies them in the dangerous materials category, for which tailored procedures and means of detection have been defined;
- processes and their operation: cryogenics is used to separate gases by distillation, store them and transport them. This very low temperature technique requires specific means of control and protection. In addition, pressure is central to the Group's processes. Pressurized equipment is designed with security features restricting uncontrolled release;
- logistics and transportation: each year, delivery vehicles, sales staff and technicians travel many kilometers. Strict compliance with the highway code and the regular maintenance of vehicles contribute to the safety of drivers and third parties. Furthermore, industrial sites use several types of motorized lifting gear. Training in the use of such equipment and user permits are required;
- engineering and construction: industrial risks are factored in from the design phase of future installations. Subsequently, during the construction phase, prevention plans and rigorous organization enable the coordination of the various trades;
- delivery reliability: a variety of solutions ensure the supply of gas to customers; direct pipeline to a production unit, on-site storage with remote surveillance enabling the automatic trigger of resupply or bar-coded gas cylinders ensuring the traceability of products.

The Group has an Industrial Management System (IMS), which defines the management processes covering the above points. It is described in greater depth in the Chairman's Report on page 143.

ENVIRONMENTAL AND CLIMATE RISKS

The industrial and medical gas business presents few environmental risks. Around 85% of the Group's large production units separate the components of atmospheric air, that is oxygen, nitrogen, argon and rare gases. These plants "without chimneys" do not use any combustion processes and consume almost exclusively electrical energy. They are particularly environmentally friendly as they emit almost no CO_2, sulfur oxide or nitrogen oxide. Nonetheless, electricity consumption generates CO_2 emissions by the suppliers of this energy, known as indirect emissions. The Group's two other main activities are hydrogen production and cogeneration, which account for nearly 15% of large production units and which use combustion processes emitting CO_2 and nitrogen oxide, as well as low quantities of sulfur oxide.

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

Environmental risks primarily comprise the following components:

- the Environmental Footprint, involving the Group's activities worldwide, is closely monitored: sites under the European Seveso directive and equivalent sites worldwide, electrical and thermal energy consumption, annual water supply, emissions into water and the atmosphere, waste and by-products, the distance covered by delivery trucks and progress made toward quality (ISO9001) and environmental (ISO14001) certifications;
- Group direct and indirect greenhouse gas emissions are measured at all production sites;
- the Group analyzes and monitors the environmental risk factors at the main stages of its product life cycles;
- a mapping of sites located in hydric stress areas enables the identification of water supply risks;
- the Group is in constant dialogue with stakeholders to assess the risk to its image associated with environmental issues.

Climatic risks are reviewed at both Group and site level:

- Air Liquide continuously monitors risks associated with changes in environmental protection legislation, particularly concerning the European Trading Scheme and other CO_2 allocation exchange systems existing or under development around the world, in order to assess the impact of any regulatory changes on the Group's activities;
- weather-related and climatic disasters risk disrupting the smooth running of operations. Mitigation measures targeting extreme weather-related phenomena exist at the main sites located in high-risk areas.

A detailed energy and environment report is presented in the Sustainable Development report in this Reference Document on page 71.

FINANCIAL RISKS

Financial risk management is a priority for the Group.

The financial risk management processes are detailed in the Chairman's Report on page 144, in accordance with a governance structure that defines the role of the Finance and Management Control Department, the various Committees and the role of local entities.

The Finance and Management Control Department also analyzes country and customer risks on investment decisions and provides input on these risks at Investment Committee meetings.

Foreign exchange risk

Since industrial and medical gases are not transported over long distances, most products are manufactured in the country where they are sold. Thus, the exposure of the Group's activities to currency fluctuations is limited.

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

Furthermore, the Group provides a natural hedge and reduces its exposure to exchange rate fluctuations by raising debt in the currency of the cash flows generated to repay debt. Thus, financing is raised either in local currency, or when contracts are indexed in euros or US dollars, in foreign currency (EUR or USD).

Foreign exchange translation risk (translation of local currency financial statements into euros) mainly corresponds to the sensitivity to the main foreign currency exchange rates — the US dollar (USD), the Japanese yen (JPY) and the Chinese renminbi (RMB).

Note 28.2 to the consolidated financial statements describes the foreign exchange transaction risk management process and the derivative instruments used, as well as sensitivity to foreign currency exchange rates.

Interest rate risk

The Group's objective is to reduce the impact of interest rate fluctuations on its interest expenses and, guided by the principle of prudence, to finance long-term assets with shareholders' equity and fixed-rate long-term debt. Since most of Air Liquide's activities are based on long-term contracts (10 to 15 years), a policy promoting interest rate risk hedging ensures control over financing costs when deciding on long-term investments.

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

Note 28.2 to the consolidated financial statements describes the sensitivity of the Group's financial expenses to interest rate fluctuations and the interest rate repricing schedule for fixed-rate debt and interest rate hedging instruments.

Financial counterparty and liquidity risk

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

Note 28.2 to the consolidated financial statements describes financial counterparty and liquidity risk for the year ended December 31, 2014. Notes 6, 18.1 and 18.2 to the consolidated financial statements provide a breakdown of trade and other operating receivables and allowances for doubtful receivables.

DIGITAL RISKS

The Group's activities, expertise and, more generally, its relations with all the players in its social and economic environment depend on increasingly dematerialized and digitalized operations. These operations depend on interdependent information systems and communication networks on both a human level and in functional and technical terms.

This digital dependency accentuates the risks of data confidentiality, data processing integrity and information systems availability that may have important financial, operational or corporate image impacts for the Group.

A long-term operational program aims to continue to strengthen the Group's prevention and monitoring mechanisms in a context of ever-changing cyber-threats and digital risks. This program will enable the application of the digital security policy described on page 143 of the Chairman's Report in priority fields and activities.

HUMAN RESOURCE MANAGEMENT RISKS

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

The Group therefore encourages a performance-focused, motivating and involved professional environment, through a human resources policy aiming to identify, attract, retain and develop competent employees from all walks of life. The objectives of this policy are set out in the Chairman's Report on page 144.

LEGAL RISKS

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

In Healthcare, the evolution of the regulatory environment is monitored with particular vigilance and reinforced means adapted notably to public markets and to the marketing of products which may be subject to drug regulatory control. As indicated in the Report from the Chairman of the Board of Directors on the internal control and risk management procedures instituted by the Company (page 144), the risks relating to contracts and competition law, as well as anticorruption issues, are specifically monitored.

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

Liabilities and contingent liabilities related to disputes are described in notes 23 and 31 to the consolidated financial statements.

INSURANCE MANAGEMENT

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

Property damage and business interruption

Group property and business interruption are covered by property and casualty insurance policies underwritten in each country in which the Group operates. Almost all of these policies are integrated into an international program.

These policies, which are generally of the "All Risks" form, cover fire, lightning, water damage, explosions, vandalism, impact, machinery breakdown, theft and, depending on the country and in limited amounts, natural disasters.

Business interruption is insured for most production sites under these same policies.

The coverage period for business interruption is 12 to 18 months.

Deductible amounts are proportional to the size of the sites.

The Group has retained a portion of property damage and business interruption risk through a captive reinsurance company in Luxembourg. This captive reinsurance company is fully integrated within the property damage and business interruption international program. This company covers losses of up to 5 million euros per loss over and above the deductibles to a maximum of 14 million euros per year. Beyond these amounts, risks are transferred to insurers. The captive reinsurance company is run by a captive manager approved by the Luxembourg Insurance Commission.

This captive reinsurance company is fully consolidated. Its balance sheet as of December 31, 2014 totaled 55 million euros.

Insurers conduct regular visits at the main industrial sites for risk prevention purposes.

Civil liability

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

These two policies cover liability of the Group companies for any damage they might cause to a third party in the course of doing business (operational risk) or arising from their products (product risk). Furthermore, with certain limitations, these policies cover "pollution" risk and product recall costs.

The coverage amounts underwritten exceed 500 million euros. Both policies are built on several overlapping insurance lines and each line has been underwritten for a given amount with several insurers sharing the risk. Beyond the first line, the upper lines pick up the excess risk from the lower lines.

The policy underwritten by the Company in France serves as an umbrella for subsidiaries outside of North America. Under this umbrella, each foreign subsidiary has its own policy covering damages to third parties incurred through its activities or products. The amount insured for each subsidiary in its policy depends on the amount of its revenue. The coverage under the Group's umbrella policy is supplemental to any local amounts.

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

2014 PERFORMANCE

The solid performance in 2014, in an unsettled environment, resulted once again in the Group achieving its objective of net profit growth. Group revenue reached 15,358 million euros, up +4.5% versus 2013 on a comparable basis. On a reported basis, growth reached +0.9% penalized, in particular, by a strong currency impact at the beginning of the year. The Gas & Services activity has continued to make progress in all business lines, especially in the Americas and Asia. Developing economies continued to show sustained momentum, up +14% on a like-for-like basis. The increase in advanced economies was more modest at +1%, affected by the economic slowdown in Western Europe.

Greater efforts on costs and efficiency, generating a high level of savings at 321 million euros, contributed to increasing the operating margin by nearly +20 basis points to 17.1%. Net profit (Group share) rose to 1,665 million euros, up +1.5% as published. As an indication only, net profit (Group share) would have been up +3.8% excluding the currency impact and the operating impact of the disposal of Anios at end-2013.

Investment decisions totaled 2.1 billion euros, reflecting greater selectivity in the Group's investment process. Net cash from operating activities was up +1.0%, as an indication +2.3% excluding currency, financing investments while strengthening the Group's financial structure.

The Board of Directors proposes a nominal dividend to be submitted to the Shareholders' Meeting of May 6, 2015 at 2.55 euros per share. This represents an increase of +10.3% for the shareholder taking into account the free share attribution on June 2, 2014. The pay-out ratio is estimated at 54.0%.

2014 key figures

(in millions of euros)	2013	2014	2014/2013 published change	2014/2013 comparable change [a]
Group revenue	15,225	15,358	+0.9%	+4.5%
of which Gas & Services	*13,837*	*13,867*	*+0.2%*	*+4.1%*
Operating income recurring	2,581	2,634	+2.1%	-
Operating income recurring *(as % of revenue)*	16.9%	17.1%	+20bps	-
Net profit (Group share)	1,640	1,665	+1.5%	-
Adjusted earnings per share *(in euros)* [b]	4.79	4.85	+1.3%	-
Adjusted dividend per share *(in euros)* [b]	2.31	2.55 [c]	+10.3%	-
Net cash flows from operating activities [d]	2,803	2,830	+1.0%	-
Net capital expenditure [e]	2,240	1,931		-
Net debt	6,062	6,306		-
Debt-to-equity ratio	55.7%	53.3%		-
Return On Capital Employed – ROCE after tax [f]	11.1%	10.8%	-	-

(a) Excluding natural gas, currency and significant scope impacts. Natural gas is an essential raw material for the production of hydrogen and the operation of cogeneration units. All Large Industries hydrogen and cogeneration contracts have clauses indexing sales to the price of natural gas. Hence, when the natural gas price varies, the price of hydrogen or steam for the customer is automatically adjusted proportionately, according to the price indexation clauses.

(b) Adjusted for the free share attribution of June 2, 2014.

(c) Subject to the approval of the May 6, 2015 Shareholders' Meeting.

(d) Cash flow from operating activities after change in working capital requirement and other elements.

(e) Including transactions with minority shareholders.

(f) Return On Capital Employed — ROCE after tax: (net profit after tax before deduction of minority interests - net cost of debt after taxes)/((shareholders' equity + minority interests + net indebtedness) average over the fiscal year).

2014 highlights

During 2014, Air Liquide continued to expand in growth markets and major industrial basins, in both developing and advanced economies. This year was also synonymous for the Group with major developments in innovation, particularly in hydrogen mobility.

DEVELOPMENT OF INDUSTRIAL ACTIVITY

In 2014, thanks to its industrial competitiveness and its technological differentiation, Air Liquide strengthened its positions in the major industrial basins on the Gulf Coast and in the Rhine-Ruhr area.

- In the United States, Air Liquide signed two major long term contracts for the supply of 2,400 tons per day of oxygen each, to two methanol manufacturing plants: one to be built by Natgasoline (an OCI fully owned subsidiary) in Beaumont (Texas), and the other for Yuhuang Chemical, Inc., a major Chinese petrochemical company in St. James Parish (Louisiana). Both plants will be connected to the pipeline networks and represent an investment of 230 million euros. Via its Global Engineering and Construction activities, Air Liquide provides its MegaMethanol® process technology to both companies, thus demonstrating its leading position in offering an integrated value proposition for large-scale methanol production.
- In the Rhine-Ruhr area, Air Liquide strengthened its position with the signing of a major long-term supply contract with ThyssenKrupp Steel Europe AG. Industrial gas requirements, including oxygen (4,600 tons per day), nitrogen and argon, will be supplied via Air Liquide's local pipeline network. This 500 km pipeline is fed by Air Liquide Air Separation Units, including Germany's largest, (with a capacity of 2,400 tons per day), which was commissioned in 2012.
- In southern Brazil, Air Liquide invested 40 million euros in a new Air Separation Unit. This Unit will both provide gas to Klabin, the country's leading pulp and paper manufacturer, and help develop the Industrial Merchant and Healthcare activities in the region.
- In Australia, Air Liquide announces a long-term agreement with Nyrstar, an integrated mining and metals company. The Group will invest 60 million euros in a new Air Separation Unit at Port Pirie site. The project is designed to reduce the environmental footprint of the site and to enhance both efficiency and production capabilities.
- In South Korea, Air Liquide sold its 40% stake in Daesung Industrial Gases in order to focus on the strategic development of its fully-owned subsidiary, Air Liquide Korea.

In China, Air Liquide saw major developments during 2014. The Group strengthened its position in the growing Electronics sector.

- Air Liquide signed a major long-term contract with CEC Panda Flat Panel Display Technology (a joint-venture between CEC Panda and Sharp LCD) for the supply of ultra-pure carrier gases to their first fab that will manufacture Oxide-TFT screens, based in Nanjing Crystal Park (Jiangsu Province). These new screens will be used in mobile devices and TV sets on Generation 8.5 size glass substrates. Air Liquide will invest some 25 million euros.
- Air Liquide also signed a major contract with the BOE Technology Group to supply its new flat panel fab based in Chongqing in China. The Group invested 30 million euros in a highly-efficient on-site generator that will produce 30,000 Nm^3/h of ultra-high purity nitrogen. Air Liquide will supply the majority of BOE's fabs in China with a total of 100,000 Nm^3/h of nitrogen for five sites.

FURTHER ADDITIONAL ACQUISITIONS IN HEALTHCARE

An aging population and the rise in the number of patients affected by chronic diseases are major public health issues. Air Liquide continued with its strategy of patients densification in the Group's geographies through additional acquisitions in home healthcare.

- In July 2014, Air Liquide acquired Seprodom, a key player in accompanying patients with chronic diseases at home in the French overseas departments and territories.
- In December 2014, Air Liquide acquired the home healthcare service provider ARAIR Assistance (which generated revenue of 34 million euros in 2013), as well as ARAIR Group's support and training services. ARAIR is a leading player in home healthcare in the Central region of France.

CONTINUED INVESTMENT IN INNOVATION

- In France, the Group made major investments for a total amount of close to 100 million euros for the modernization of the Paris-Saclay Research Center, the creation of a center for the development of gas packaging for industry and healthcare on the same site, and the launch of a technical center of excellence for cryogenic production technologies in Vitry-sur-Seine.
- In the 3rd quarter 2014, Air Liquide began the construction of a Research and Technology Center in Shanghai. The center, which will be operational at end-2015, represents a 25-million euro investment and will cover several research and development areas. It will ultimately house 200 highly skilled employees.
- The international ITER project, through its European organization Fusion For Energy (F4E), entrusted Air Liquide with the supply of additional cryogenic equipment for a total of around 65 million euros. This follows on from the signing of a major contract in 2012 for the supply of three helium refrigerators with record combined cooling capacity.

MAJOR DEVELOPMENTS IN HYDROGEN MOBILITY

The year 2014 was marked by major advances in the global deployment of hydrogen energy:

- In France, the first hydrogen filling station for forklift trucks started up on IKEA's logistic platform near Lyon. It allows greater productivity thanks to rapid forklift truck refilling relative to battery recharging time. In Saint-Lô, France, the Conseil Général de la Manche installed a hydrogen filling station for its fleet of fuel cell electric vehicles.
- In Denmark, Air Liquide installed four new hydrogen filling stations, as part of the Copenhagen Hydrogen Network, supported by the European Commission. These stations marked a significant step in the creation of a distribution network at national level.
- In the Netherlands, Air Liquide inaugurated its first hydrogen filling station for the general public in September 2014 in Rotterdam. The filling station is part of the Hydrogen Infrastructure for Transport project, a European deployment project supported by the European Union.
- In Japan, in Nagoya and Toyota, the Group built, with Toyota Tsusho Corporation, two hydrogen filling stations for public use.
- In the United States, Air Liquide announced a partnership with Toyota to build 12 hydrogen filling stations in the northeast of the country. This infrastructure will support the launch in April 2015 of Toyota's "Mirai" hydrogen fuel cell electric vehicle.

Air Liquide also announced the acquisition of FordonsGas, a company that distributes Bio- and Natural Gas for Vehicles (Bio-NGVs) for the Swedish transportation market. Air Liquide will benefit from FordonsGas' experience in the distribution of an alternative fuel, useful experience in terms of its infrastructure deployment strategy in hydrogen mobility.

REFINANCING AT ATTRACTIVE RATES

To refinance debt reaching maturity and continue to fund its development while benefiting from very attractive market conditions, in 2014, Air Liquide issued bonds for a total amount of 858 million euros with maturities of between eight and 15 years. The main transaction was carried out as part of the EMTN program for a total of 500 million euros over 10 years and with a record low coupon of 1.875% per year.

2014 Income Statement

REVENUE

Revenue *(in millions of euros)*	2013	2014	2014/2013 change	2014/2013 comparable change [(a)]
Gas and Services	13,837	13,867	+0.2%	+4.1%
Engineering & Technology	803	912	+13.6%	+15.6%
Other activities	585	579	-1.1%	-1.0%
TOTAL REVENUE	**15,225**	**15,358**	**+0.9%**	**+4.5%**

(a) Excluding currency, natural gas and significant scope impacts.

Group

The **Group's 2014 revenue** reached **15,358 million euros,** a reported increase of +0.9% compared to 2013, penalized by a negative currency impact of -1.9% which was particularly strong at the beginning of the year, and a natural gas impact of -0.6%. **On a comparable basis** (excluding currency and natural gas impacts and revised for the impact of the disposal of Anios at end-2013), revenue for the year increased by **+4.5%.**

The first quarter benefited from a favorable comparable basis and sales continued to increase like-for-like during the following three quarters.

Revenue by quarter *(in millions of euros)*	Q1 2014	Q2 2014	Q3 2014	Q4 2014
Gas and Services	3,416	3,391	3,446	3,614
Engineering & Technology	175	230	213	294
Other activities	143	151	142	143
TOTAL REVENUE	**3,734**	**3,772**	**3,801**	**4,051**
2014/2013 published change	**+1.0%**	**-2.4%**	**+1.0%**	**+3.9%**
2014/2013 comparable change [(a)]	**+6.2%**	**+3.6%**	**+4.3%**	**+3.9%**

(a) Excluding currency, natural gas and significant scope impacts.

CURRENCY, NATURAL GAS AND SIGNIFICANT SCOPE IMPACTS

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

Since industrial and medical gases are rarely exported, the impact of currency fluctuations on activity levels and results is limited to euro translation impacts with respect to the financial statements of subsidiaries located outside the Euro zone. Fluctuations in natural gas prices are generally passed on to customers through price indexation clauses.

(in millions of euros)	Group	Gas & Services
2014 revenue	**15,358**	**13,867**
2014/2013 published change *(in %)*	+0.9%	+0.2%
Currency impact	-294	-278
Natural gas impact	-87	-87
Significant scope impact	-168	-168
2014/2013 comparable change [(a)] *(in %)*	**+4.5%**	**+4.1%**

(a) Excluding currency, natural gas and significant scope impacts.

Gas and Services

Unless otherwise stated, all the changes in revenue outlined below are on a comparable basis (excluding currency, natural gas and significant scope impacts).

Gas & Services revenue reached **13,867 million euros,** showing **comparable growth of +4.1%,** with all business lines posting growth. Revenue was up +0.2% in published data, penalized by a negative currency impact of -1.9% and a natural gas impact of -0.6%.

Revenue *(in millions of euros)*	**2013**	**2014**	**2014/2013 change**	**2014/2013 comparable change**
Europe	7,058	6,640	-5.9%	-1.1%
Americas	3,225	3,416	+5.9%	+7.9%
Asia-Pacific	3,184	3,444	+8.2%	+11.6%
Middle-East and Africa	370	367	-0.8%	+4.6%
GAS & SERVICES	**13,837**	**13,867**	**+0.2%**	**+4.1%**
Industrial Merchant	5,081	5,083	+0.0%	+3.0%
Large Industries	4,940	4,980	+0.8%	+3.6%
Healthcare	2,689	2,570	-4.4%	+3.7%
Electronics	1,127	1,234	+9.5%	+12.0%

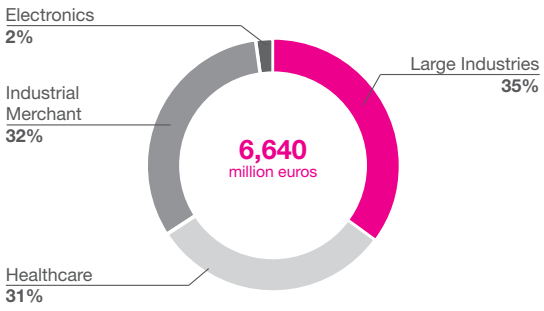
Gas & Services sales share in developing economies

Due to a higher growth rate, the share of developing economies in the Gas & Services revenue continue to progress and reach 26% in 2014. This contribution was even higher for industrial activities at 29.5%.

Europe

Revenue in Europe totaled **6,640 million euros,** down -1.1%. Sales increased slightly, excluding the disposal of the cogeneration activities at end-2013 and the impact of the drop in electricity costs. Oxygen levels were stable, whereas demand for hydrogen increased significantly, a sign of resilience in the North European industrial basins. The region continued to benefit from momentum in the developing economies, which increased by +5.4% in a complex geopolitical context. Sales were down slightly in Western Europe, with the 4th quarter posting a slight improvement compared with the previous two quarters.

Europe Gas & Services 2014 Revenue



- **Large Industries** revenue decreased by **-3.9%.** Excluding the disposal of the cogeneration plants at end-2013 and lower electricity prices, sales were stable. Hydrogen volumes were up, boosted by demand from the refining industry mainly in Northern Europe. Oxygen volumes remained stable, with Eastern and Southern Europe offsetting the drop in volumes in Northern Europe.
- **Industrial Merchant** sales declined slightly by **-1.1%.** Developing economies continued to post solid growth thanks to the ramp-up of new facilities, in particular in Russia with growth exceeding +25%. However, business in advanced economies suffered from a persistently difficult economic climate. The 4th quarter showed signs of stabilization with increasing liquid volumes. Spain posted growth for the second

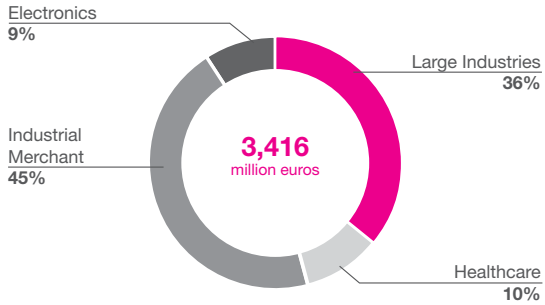
quarter in a row. The price impact was slightly down for the year at -0.2%, with a small positive price impact in Northern Europe and Spain.

- **Healthcare** continued its development, with **+1.9%** growth. The Home Healthcare activity grew by +2.9% with few acquisitions in 2014, still driven by increased demand and the expansion of the portfolio of therapies treated. The number of patients has exceeded one million in Europe. Pressure on tariffs remained throughout the region, in particular in Spain and France. In medical gases for hospitals, budgetary pressure affected gas volumes in France and Southern Europe, whereas Northern Europe saw a slight increase in volumes. In prevention and well-being, Specialty Ingredients saw a +3.1% increase in revenue, whereas Schülke's Hygiene activity improved by +11.0%. The pricing impact was negative during the year, slightly below -2%.
- **Electronics** revenue increased **+3.1%,** due to an upturn in carrier gas sales.

Americas

Gas & Services revenue in the Americas totaled **3,416 million euros,** up **+7.9%.** Industrial activity remained sustained in North America, with an increase in oxygen and hydrogen volumes, a solid improvement in bulk sales and positive elasticity in Industrial Merchant prices. Growth was regular over the year in South America, in particular in Large Industries and Healthcare, and reached close to +15% despite a slowdown in Brazil at the end of the year.

Americas Gas & Services 2014 Revenue

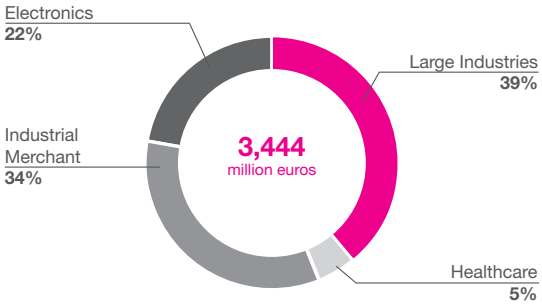


- **Large Industries** reported revenue growth of **+4.7%.** Oxygen and hydrogen volumes improved throughout the region, thanks to ramp-ups in Latin America and sustained demand in North America where customers continued to benefit from competitive energy prices. Cogeneration volumes were down markedly following production unit turnarounds in the United States and a fall in the market price of electricity in Canada.
- The **Industrial Merchant** activity was up **+6.4%,** driven by very strong bulk sales growth throughout the region, and in particular in Canada and Mexico where our activity ramp-up continues. The cylinder activity declined throughout the region. Pricing campaigns continued all year long, with an average effect of +4.4% in 2014.
- **Healthcare** revenue rose by **+10.6%** driven by the performance of Home Healthcare in Latin America (Argentina, Brazil) and Canada which benefited from additional acquisitions. Sales of medical gases to hospitals also increased throughout the region. Pricing pressure remains strong.
- **Electronics** activity was up **+29.5%** benefiting particularly from the acquisition of Voltaix, a company specializing in molecules and advanced precursors. The comparison effect of this acquisition came to an end at the beginning of the 4th quarter. Specialty gas sales in the United States more than doubled over the year and growth exceeded **+40%** for the **ALOHA™ range.** Carrier gases also posted solid growth. Equipment and installation sales improved significantly, evidence of the sector's gradual recovery in the region.

Asia-Pacific

Revenue in the Asia-Pacific region increased by **+11.6%** to **3,444 million euros.** Sales growth continued in the region's main countries with strong momentum in all business lines. China continued to benefit from start-ups in December 2013 and January 2014. Japan saw growth in all four quarters, thanks to the cycle peak in Electronics.

Asia-Pacific Gas & Services 2014 Revenue



- **Large Industries** sales increased by **+19.1%,** buoyed by the ramp-up of the new units in China. Air gas and hydrogen volumes increased throughout the region.

- **Industrial Merchant** activity posted **+6.3%** growth during the year. Liquid volumes improved markedly in the region, driven by strong growth in China. The cylinder activity was also steady despite major pricing pressure. Developing economies increased strongly at +12.5%, in particular with a comparable increase of almost +15% in China where all market segments reported growth. The pricing impact was -0.3% over the period. Excluding Australia, where there was strong competition, the pricing impact is positive for the region.
- **Electronics** sales were up **+8.3%.** Japan confirmed a return to growth in 2014, with an improvement of more than +3% and sales accelerating throughout the year. Sales of the ALOHA™ range grew by over +60% in the region, mainly in China, Japan and Taiwan. Carrier gases also posted significant sales growth, driven by the ramp-up of new contracts in China, Taiwan and Korea.

Middle-East and Africa

Middle-East and Africa revenue totaled **367 million euros,** up **+4.6%. Large Industries** improved mainly in South Africa thanks to the ramp-up of a new unit for the metals market. **Industrial Merchant** activity also grew in South Africa, benefiting from an improvement in the supply of argon during the year. The situation was more contrasted in the Middle-East where geopolitical tensions weighed on activities. In Saudi Arabia, the initial start-up phases of our hydrogen units and those of our customers on the Yanbu site began, with commissioning scheduled for the first half of 2015.

Engineering & Technology

Engineering & Technology revenue totaled **912 million euros**, up **+15.6%** compared to 2013, reflecting third-party customer project progress.

In 2014, total order intake reached 1.4 billion euros, down from the record level of 2013. The vast majority of projects concerned air gas production units. The level of order intake was well balanced between Group projects and third-party customer projects and reflects greater selectivity of both Group investments and third-party client projects during the year.

Orders in hand reached 5.3 billion euros as at December 31, 2014, and reflects a good level of order intake in 2013 and 2014.

Other activities

The -1.0% decline in revenue for **Other activities** in 2014 is linked to the weakness of the Welding activity, down -3.0% over the year. The Welding activity nonetheless improved during the second half, thanks to a slight recovery in the European metals, automotive and construction sectors.

Diving (Aqua Lung™) was slightly up +3.5% for 2014. The year was marked by a drop in activity in the military industry as well as the disposal of non-strategic activities.

Revenue *(in millions of euros)*	**2013**	**2014**	**2014/2013 change**	**2014/2013 comparable change** [(a)]
Welding	404	392	-3.0%	-3.0%
Diving	181	187	+3.3%	+3.5%
TOTAL	**585**	**579**	**-1.1%**	**-1.0%**

(a) Excluding currency, natural gas, and significant scope impacts.

OPERATING INCOME RECURRING

Operating income recurring before depreciation and amortization totaled 3,873 million euros, up +1.5% in reported figures. The pricing effect was positive on the whole over the period at +0.4%, partially offsetting cost inflation on constant volume of +2.0%, and efficiencies were at a very high level.

For the full year, efficiencies amounted to **321 million euros**, exceeding the annual target of more than 250 million euros. These efficiencies represent a 2.8% cost saving. Of this amount, 69 million euros stem from the realignment plans undertaken in 2013 in structures where activity had suffered from falling demand.

In the industrial domain, other projects designed to reduce energy consumption, optimize the logistics chain and roll out global or regional purchasing platforms were continued.

Depreciation and amortization amounted to 1,239 million euros, slightly up by +0.2%, with the impact of unit start-ups and acquisitions partly offset by more efficient asset management and better control over investments.

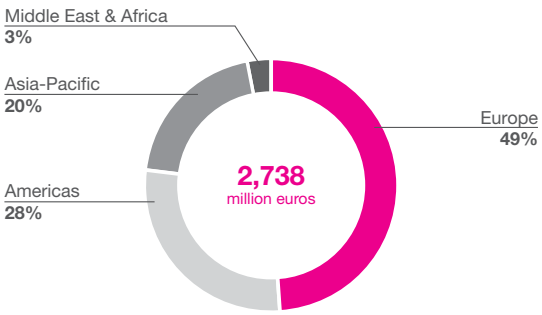
The Group's operating income recurring (OIR) reached 2,634 million euros in 2014, an increase of +2.1% over 2013 or +5.1% on a comparable basis. The operating margin (OIR to revenue) was up +20 basis points at 17.1%.

Gas & Services

Gas & Services operating income recurring totaled **2,738 million euros,** up **+3.1%.** The OIR margin amounted to 19.7%, compared to 19.2% in 2013. Excluding the natural gas impact, the operating margin was again up +40 basis points.

Cost inflation, excluding the impact of energy indexation, remained relatively stable during the year at +2.5% for the full year. Prices rose by +0.5% due to continuing efforts in Industrial Merchant (+1.2%) and despite ongoing pricing pressure in Healthcare. Efficiencies totaled 298 million euros. A portion of these efficiencies was absorbed to offset the difference between cost inflation and rising prices. The remaining efficiencies, i.e. retention, helped improve the margin. The retention rate was 36% in 2014.

Gas & Services 2014 Operating income recurring



Gas & Services Operating margin [a]	2012	2013	2014
Europe	18.3%	19.1%	20.3%
Americas	24.0%	23.6%	22.7%
Asia-Pacific	15.1%	15.1%	16.0%
Middle-East and Africa	21.2%	17.9%	17.6%
TOTAL	**18.8%**	**19.2%**	**19.7%**

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

Operating income recurring in **Europe** totaled **1,346 million euros,** stable compared to 2013. Excluding the natural gas impact, the operating margin was significantly higher, up **+70 basis points** at 19.8%. The operating margin benefited in particular from efficiencies generated by the realignment plans initiated in 2013, as well as a reduction in charges relating to changes in pension plans in France and the Netherlands. The Large Industries margin was strengthened by industrial efficiencies while the Healthcare margin, benefiting from the economies of scale of volume growth, was resilient despite the pressure on tariffs.

Operating income recurring in the **Americas** amounted to **776 million euros,** up **+2.0%.** Excluding the natural gas effect, the operating margin was down **-40 basis points** but nonetheless remained at a high level of 23.2%. The operating margin was penalized by an increase in transport costs which was partly due to weather conditions at the beginning of the year and partly offset by industrial efficiencies in Industrial Merchant and Large Industries.

In **Asia-Pacific,** operating income recurring amounted to **552 million euros,** a marked increase of **+14.5%.** The operating margin, excluding natural gas, was up **+90 basis points,** thanks to efficiency plans launched in 2013 in Japan, plant start-ups and the growth of Industrial Merchant in China as well as industrial efficiencies in Large Industries and Electronics.

Operating income recurring for **Middle-East and Africa** amounted to **65 million euros,** a decline of **-2.7%.** The operating margin was down **-30 basis points,** impacted by the geopolitical situation in the Middle East and by argon supply difficulties in South Africa early in the year.

Engineering and Technology

Operating income recurring for Engineering & Technology amounted to **76 million euros.** Operating income recurring as a percentage of revenue at 8.3% remained in line with the Group's target range of between 5% and 10%.

Other activities

The Group's Other activities reported operating income recurring of **36 million euros,** up **+10.9%,** while the operating margin as a percentage of revenue totaled 6.1%, an increase of +60 basis points. This improvement was the result of efficiencies, in particular related to the realignment plans initiated in 2013 in Welding.

Research & Development and corporate costs

Research & Development and Corporate Costs include intersector consolidation adjustments and amounted to **215 million euros**, up **+11.4%,** particularly reflecting the Group's efforts to strengthen its innovation structures.

NET PROFIT

Other operating income and expenses showed a **positive balance of 16 million euros** compared to a positive balance of 26 million euros in 2013. They included 37 million euros of expenses incurred principally for further realignment programs in various countries, provisions for litigation-related risks, and certain one-off costs, offset by 63 million euros of capital gains on disposals, in particular relating to the sale of a polymer engineering and construction activity.

The **net financial expense of -251 million euros** was -17.7% lower than the -305 million euros in 2013. The **net finance costs,** up slightly +4.1%, reflects a stable average cost of net indebtedness at 4.0% coupled with a slight increase in average net debt over the year, in particular in developing economies.

Other financial income and expenses decreased significantly to -21.7 million euros compared with -84.7 million euros in 2013 due to a gain on the partial disposal of a financial stake in a start up as well as a reduction in financial expenses relating to adjustments in certain pension plans.

Taxes totaled 678 million euros, up +10.9%. The **effective tax rate** was **28.3%** compared to 26.6% in 2013. This increased rate is the result of the fact that the 2013 rate benefited from the impact of the reduced rate on the capital gains from the disposal of Anios stake.

The **share of profit of associates** was **4 million euros** down from 14.5 million in 2013 following the disposal of a stake in a Korean joint venture. **Minority interests** fell by **-6.9%,** amounting to 59.8 million euros.

Overall, **net profit (Group share)** amounted to **1,665 million euros** in 2014, up **+1.5%** in reported terms.

Net earnings per share were 4.85 euros, up **+1.3%** compared to 4.79 euros (adjusted for the 2014 free share attribution) in 2013. The average number of outstanding shares used for the calculation of net earnings per share as of December 31, 2014 was 343,214,086.

Change in the number of shares

	2013	2014
Average number of outstanding shares [(a)]	342,664,899	343,214,086

(a) Used to calculate earnings per share, 2013 adjusted for free share attribution on June 2, 2014.

Number of shares as of December 31, 2013	312,831,676
Options exercised during the year, prior to the free share attribution	511,594
Cancelation of treasury shares	(1,000,000)
Free shares issued	32,095,812
Options exercised during the year, after the free share attribution	433,801
NUMBER OF SHARES AS OF DECEMBER 31, 2014	**344,872,883**

DIVIDEND

At the Shareholders' Meeting on May 6, 2015, the payment of a dividend of 2.55 euros per share will be proposed to shareholders for fiscal year 2014, up +10.3% taking into account the free share attribution on June 2, 2014. Total estimated pay-out taking into account share buybacks and cancelation will amount to 899 million euros, up +10.3%, representing a pay-out ratio of 54.0%

The ex-dividend date has been set for May 18, 2015 and the dividend will be paid from May 20, 2015.

2014 cash flow and balance sheet

(in millions of euros)	2013	2014
Cash flow from operating activities before change in working capital	**2,949**	**2,943**
Change in working capital requirement	(19)	74
Other items	(127)	(187)
Net cash flow from operating activities	**2,803**	**2,830**
Dividends	(877)	(885)
Purchases of property, plant and equipment and intangible assets, net of disposals [(a)]	(2,240)	(1,931)
Increase in share capital	126	60
Purchase of treasury shares	(115)	(116)
Other	344	(202)
Change in net indebtedness	**41**	**(244)**
Net indebtedness as of December 31	(6,062)	(6,306)
Debt-to-equity ratio as of December 31	**56%**	**53%**

(a) Including transactions with minority shareholders.

NET CASH FLOW FROM OPERATING ACTIVITIES

Cash flow from operating activities before changes in working capital amounted to 2,943 million euros, down -0.2% compared to 2013. **Net cash from operating activities after changes in working capital requirement** amounted to 2,830 million euros, **up +1.0%** compared to 2,803 million euros in 2013, or as an indication +2.3% excluding currency impact. This performance was in particular impacted by the expensing of the realignment plans, provisioned in 2013.

CHANGES IN WORKING CAPITAL REQUIREMENT

The working capital requirement fell slightly (-74 million euros) in 2014. Excluding taxes, it was quasi stable, in particular as a result of better recovery of trade receivables, and stood at 6.8% of revenue, compared to 6.6% in 2013.

The increase in other items reflects, in particular, adjustments to certain pension plans in Europe.

CAPITAL EXPENDITURE

In 2014, gross capital expenditure totaled 2,175 million euros, including transactions with minority shareholders. Gross industrial capital expenditure reached 1,902 million euros in 2014, a decrease of -11.8% compared to 2013. The Gross financial capital expenditure, including transactions with minority shareholders, amounted to 273 million euros. Gross capital expenditure in the Gas & Services activity, including transactions with minority shareholders, represented 14.4% of sales, compared to 17.6% in 2013.

Group gross capital expenditure

(in millions of euros)	Industrial investments	Financial investments [(a)]	Total capex
2009	1,411	109	1,520
2010	1,450	332	1,782
2011	1,755	103	1,858
2012	2,008	890	2,898
2013	2,156	401	2,557
2014	**1,902**	**273**	**2,175**

(a) Including transactions with minority shareholders.

The assets disposals, for a total amount of 244 million euros, included non-strategic activities, in particular the disposal of a stake in a Korean joint venture and that of a polymers engineering and construction activity. Including minority interest buyouts, total net capital expenditure amounted to 1,931 million euros.

Industrial capital expenditure

Industrial investments amounted to 1.9 billion euros in 2014, down -11.8% compared to 2013. This trend reflects more selectivity in projects, strict control of capital expenditure and efforts to better load existing capacity and in particular, the recently started-up units.

Gas and Services investment by region was as follows:

Gross Industrial investments by geographical region

	Gas and Services				
(in millions of euros)	**Europe**	**Americas**	**Asia-Pacific**	**Middle-East and Africa**	**Total**
2013	771	610	512	171	2,064
2014	**718**	**613**	**379**	**83**	**1,793**

Financial investments

Financial investments amounted to 179 million euros, 273 million euros including transactions with minority shareholders. These included the acquisition of ARAIR and Seprodom in Home Healthcare, FordonsGas in Biogas, and numerous small acquisitions of distributors in Industrial Merchant in particular in developing countries. Disposals of financial investments totaled 15.8 million euros.

NET INDEBTEDNESS

Net indebtedness at December 31, 2014 at **6,306 million euros,** was up 244 million euros compared to the end of 2013, due to a negative currency impact of 222 million euros. Excluding the currency effect, the stability of the debt level reflects solid cash flow and the efforts to contain the working capital and capital expenditure. The **debt-to-equity ratio was 53%, a slight decrease** compared to December 31, 2013 and confirms a further improvement in the Group's financial structure.

ROCE

The return on capital employed after tax was **10.8%** versus 11.1% at the end of 2013, reflecting the adverse effect of currency fluctuations on results and capital employed. At constant exchange rates, return on capital employed was stable at 11.1%. Assets under construction, which will contribute to growth in the medium term, remain high and should gradually decrease with the start-up of major projects in 2015 and 2016.

In addition, value creation, reflected by the difference between return on capital employed and the average cost of capital, continued to increase and reached 570 basis points at the end of 2014.

INVESTMENT CYCLE AND FINANCING STRATEGY

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

Investments

OVERVIEW

The Group's investments reflect its growth strategy.

They can be classified into two categories:

- Industrial investments, which bolster organic growth or guarantee the efficiency, maintenance or safety of installations;
- Financial investments, which strengthen existing positions, or accelerate penetration into a new region or business segment through the acquisition of existing companies or assets already in operation.

The nature of the industrial investment differs from one World Business Line to the next: from gas production units for Large Industries, to filling centers, logistics equipment, storage facilities and management systems for Industrial Merchant, Electronics and Healthcare. Capital intensity varies greatly from one activity to another.

Capital intensity

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

Capital intensity varies significantly from one business line to another:

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

Whatever the capital intensity, any project must enable the Group to achieve its return on capital employed (ROCE) objective over the long term.

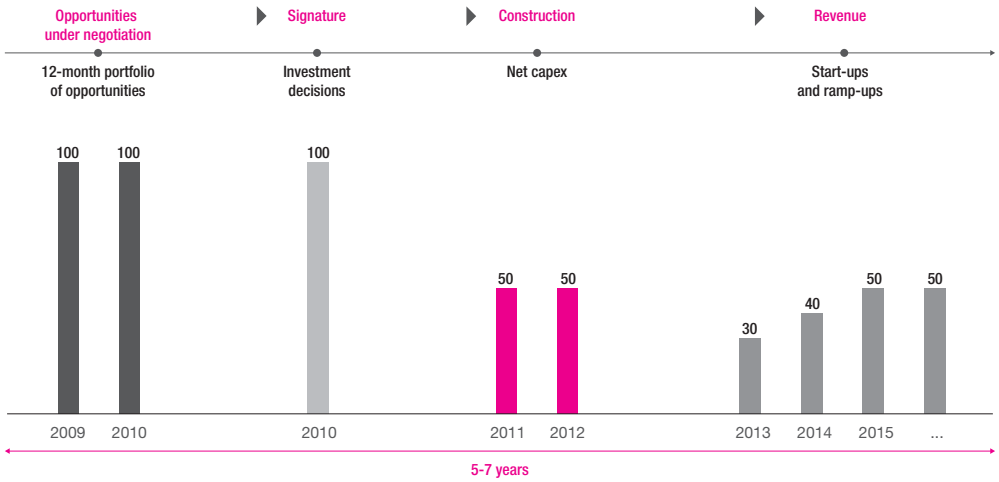
Because of the differences in capital intensity among the various Group activities, **OIR margins will vary accordingly.**

The Group's capital intensity varies depending on the activity mix, project type and the price of raw materials.

The theoretical lifespan of a contract in Large Industries

Long-term development is one of the key characteristics of the industrial gas business. It is particularly evident in the investment cycle, where there is approximately a five-year span between the study of a new construction project for a Large Industries customer and the first corresponding industrial gas sales. **Monitoring this cycle is essential to anticipating the Group's future growth.** The following chart sets out each stage in this process.

Investment cycle of a Large Industries contract



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

- **Identification and Negotiation** phase: The project is registered in the portfolio of investment opportunities and enters into the development process. Projects exceeding 5 million euros of investment are monitored within the portfolio of potential opportunities and split between those for which a decision is expected within 12 months and those for which the investment decision will take more than one year. Projects are then discussed and negotiated with the customer. Contracts can be removed from the portfolio for several reasons:

  1. The contract is signed, it is removed from the portfolio and therefore becomes an investment decision;
  2. The project is abandoned by the customer;
  3. The customer decides against an over-the-fence gas supply, or the project is awarded to a competitor;
  4. The project is delayed beyond 12 months: it is removed from the 12-month portfolio but remains in the long-term portfolio.

- **Signature** phase: the two parties reach an agreement. The signing of a long-term contract represents the business entity's commitment to an investment decision, once validated by the internal governance bodies. The project is removed from the portfolio of investment opportunities and is registered in current investments.

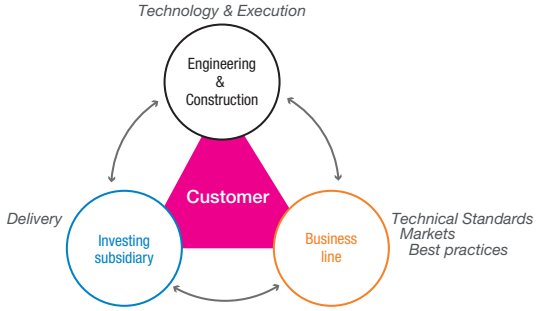
- **Construction** phase: The construction of the unit generally takes between 12 and 24 months and sometimes up to 36 months depending on the size of the project. This is the capital expenditure period The project remains in current investments.

- **Revenue** phase:

  1. **Commissioning:** the unit starts up. Sales begin according to the needs of the customer and with a guaranteed minimum volume at the **take-or-pay** level, guaranteeing minimum profitability from the beginning of the contract;
  2. **Ramp-up:** this is the unit's ramp-up phase. Over the course of the contract term, volumes increase above the **take-or-pay** level to the nominal amount defined in the contract. Nominal capital intensity is achieved at the end of this phase.

Governance for a Large Industries project

Three Air Liquide **entities** are at the heart of a Large Industries customer project, from development through to its execution.



The Large Industries World Business Line ensures the global customer relationship, provides the required know-how and ensures the overall consistency of the project, in terms of both contract and technical standards. It is also responsible for good internal governance practices.

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

Engineering & Construction provides the technologies and guarantees that they are competitive, both overall and specifically for each project, thanks to a good industrial architecture solution. Engineering & Construction is responsible for the vast majority of the execution of the project.

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

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

Once the project has been through the decision process, approved by Air Liquide and signed with the customer, it is **executed** by a team composed of representatives of the investing subsidiary and of Engineering & Construction, under the supervision of the geographic region.

For very large scale projects, a specific EMI (Executing Major Investments) team of experts supports the subsidiary for the development and execution stages.

During the start-up of a unit, responsibility for the project is transferred to the local operational teams, under strict standards to ensure the site's security and integrity. The local subsidiary manages the unit, and the financial performance review is undertaken by the Group and Regions Operations Control.

THE RESOURCES AND INVESTMENT COMMITTEE

An investment decision amounting to over 5 million euros is subject to a precise evaluation and authorization process, undertaken at Group level by the Resources and Investment Committee (RIC). Each meeting is chaired by the Executive Committee member in charge of the World Business Line concerned and brings together the Director of the activity and regions affected by the investment, the Chief Financial Officer or the Finance and Operations Control Director, as well as the Group Human Resources Director (when HR subjects are examined).

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

- The **location of the project:** the analysis will take into account whether the project is based in an industrial basin with high potential, whether it is connected to an existing pipeline network, or whether it is in an isolated location;
- The **competitiveness of the customer's site:** based on size, production process, cost of raw materials and access to markets;
- **Customer risk;**
- **Contract clauses;**
- **End products and the stability of future demand** for these products;
- **Quality of the technical solution;**
- **Country risk:** evaluated on a case-by-case basis and can lead to changes in the financing policy and supplementary insurance cover.

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

PORTFOLIO OF OPPORTUNITIES

As at December 31, 2014, the 12-month portfolio of opportunities totaled 3.2 billion euros, down 400 million euros compared to end-2013. This change is due to a higher level of investment decisions during the 4th quarter; the level of abandoned or delayed projects, exiting the portfolio at the end of the year was in line with the usual changes observed.

As at December 31, 2014, 64% of projects in the portfolio were located in developing economies and well spread over the Group's four geographic regions. Compared to end-December 2013, the share of European projects decreased to about 20%, as the Group's development resources were realigned with the geopolitical context. The share of projects in China and North America increased slightly, reflecting renewed investment momentum in 2014 in these two regions. The share of the rest of Asia declined slightly. The investment opportunities include nine site takeovers that are currently operated by the customers themselves, reflecting the continuing trend toward outsourcing of industrial gas production.

The majority of the opportunities are in the Large Industries business line. The share of Large Industries projects relating to metals has decreased, relating to the chemicals sector remains stable, whereas the share relating to energy has increased.

INVESTMENT CYCLE DEFINITIONS

Investment opportunities at the end of the period

Investment opportunities taken into account by the Group for a decision within the next 12 months. Industrial projects generating revenue of >5 million euros for Large Industries and >3 million euros for other business lines. Includes replacement assets and efficiency projects. Excludes maintenance and security-related investments.

Decisions during the period

Cumulative value of industrial and financial investment decisions. Growth and non-growth industrial projects, including replacement, efficiency, maintenance and security assets. Financial decisions (acquisitions).

Current investments at the end of the period [(a)]

Cumulative value of investments for G&S projects that have been decided but not yet started up. Gas & Services industrial projects of >10 million euros, including replacement assets and efficiency projects, excluding maintenance and security, alone.

Future revenue

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

(a) Different from construction in progress (see note 13.1 to the consolidated financial statements on page 227) without threshold or activity criteria.

INVESTMENT DECISIONS AND INVESTMENT BACKLOG

In 2014, industrial and financial investment decisions, representing Group commitments to invest, reached 2.1 billion euros. Three quarters of these decisions relate to growth projects. Despite a significant drop in the amount of these decisions compared with the particularly high level seen in 2013, the pace of signatures accelerated throughout the year.

The amount of industrial decisions in 2014 was down by around 0.3 billion euros, reflecting increased selectivity in terms of investments. Large Industries represented around half of investment decisions, with Industrial Merchant accounting for a quarter. The other quarter included Health, Electronics and Other activities.

In geographical terms, industrial decisions were spread across all regions. Asia and the Americas represented the Group's two main investment regions, with numerous projects in energy, valorization of shale gas in the United States and coal conversion in China. Europe's share represented around a quarter of investment decisions.

Financial investment decisions reached some 200 million euros in 2014. In Home Healthcare, these included the acquisition of Arair in France and Seprodom in French overseas regions, and local players in Brazil, Canada and Korea. They also included the acquisition of FordonsGas in biogas and the acquisition of local Industrial Merchant players in China, Brazil, Canada, Mexico and the United Kingdom.

The total investment backlog amounted to 2.8 billion euros, leading to a future contribution to revenue of approximately 1.2 billion euros after full ramp-up.

Investment decisions

(in billions of euros)	Industrial investment decisions	Financial investment decisions (acquisitions)	Total investment decisions
2010	1.8	0.4	2.2
2011	1.9	0.1	2.0
2012	2.0	0.9	2.9
2013	2.2	0.5	2.7
2014	**1.9**	**0.2**	**2.1**

START-UPS

In 2014, 20 units were commissioned, a similar level to that seen in 2013. Some start-ups, initially planned for 2014, will be completed in 2015.

Start-ups were mainly located in developing economies in 2014. In China, many of the start-ups were air gas production units for the chemicals and energy conversion markets. In Asia, the start-ups were mainly units for the Electronics sector.

The number of start-ups in 2015 should be slightly higher.

Financing strategy

The Group's financing strategy is regularly reviewed to provide support to the Group's development and take into account changes in financial market conditions, while respecting a credit profile in line with Standard & Poor's long term-minimum "A" rating. This credit profile depends on key ratios such as net debt to equity and cash flow from operations before change in working capital to net debt. Air Liquide's "A+" rating was confirmed by Standard & Poor's on November 27, 2014.

In 2014, the existing principles of prudence were maintained:

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

DIVERSIFYING FUNDING SOURCES

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

Air Liquide uses the short-term commercial paper market, in France, through two French Commercial Paper programs of up to an outstanding maximum of 3 billion euros, and in the United States through a US Commercial Paper program (USCP) of up to an outstanding maximum of 1.5 billion US dollars.

Air Liquide also has a Euro Medium Term Note (EMTN) program to issue long-term bonds of up to an outstanding maximum amount of 9 billion euros. At the end of 2014, outstanding bonds issued under this program amounted to 4.5 billion euros (nominal amount). The Group's EMTN program allows, in particular, for bonds to be issued in the main currencies (euro, US dollar, Japanese yen) as well as in other currencies (Chinese renminbi, Swiss franc, pound sterling and rouble).

In 2014, the Group conducted four bond issues under its EMTN program – one public issue for a total amount of 500 million euros and three through private placements for a total, at December 31, 2014, of 358 million euros, in order to finance its investments.

As of December 31, 2014, funding through capital markets accounts for more than 80% of the Group's total gross debt, for an amount of bonds outstanding of 5.5 billion euros, across all programs, and 375.1 million euros of commercial paper.

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

To avoid liquidity risk relating to the renewal of funding at maturity, and in accordance with the Group's internal policy, the Group aims to limit its short-term debt maturities to 2.6 billion euros, an amount which is covered by committed credit facilities. At December 31, 2014, the amount of debt maturing in 2015 was equal to 1.3 billion euros.

In addition, the Group has a 1.3 billion euros syndicated credit facility reaching maturity in November 2019 after the exercise of the first one-year extension option in 2014. At December 31, 2014, the contract has a second one-year extension option, which, if it would be exercised, would lengthen the maturity to November 2020.

At December 31, 2014 the total amount of undrawn committed syndicated and bilateral credit facilities was 2.57 billion euros.

Net indebtedness by currency

	2013	2014
Euro	31%	25%
US dollar	32%	40%
Japanese yen	13%	11%
Chinese renminbi	14%	14%
Other	10%	10%
TOTAL	**100%**	**100%**

Investments are essentially funded in the currency in which the cash flows are generated, creating a natural currency hedge. Air Liquide's debt is thus mainly in euro, US dollar, Japanese yen and Chinese renminbi, which reflects the significant weight of these currencies in the Group's investments and cash flow.

The share of the Group net indebtedness denominated in euro decreased mainly because of the financing of industrial investments in the United States (in US dollar). The share of net indebtedness denominated in Japanese yen also decreased, due to cash raised by the disposal of a stake in a Korean company partly owned by AL Japan.

CENTRALIZATION OF FUNDING AND EXCESS CASH

To benefit from economies of scale and facilitate capital markets financing (bonds and commercial paper), the Group uses a dedicated subsidiary, Air Liquide Finance. At December 31, 2014, this subsidiary centralized the vast majority of the Group's financing transactions. This centralization continued in 2014, in particular for the financing of investments in developing economies in Asia and the Americas. It also hedges currency, interest rate and energy risk for the Group's subsidiaries in those countries where it is permitted by law.

In the countries where it is permitted by law, Air Liquide Finance also centralizes cash flow balances through direct or indirect daily cashpooling of these outstandings or through term loans. When this is not possible, there are nonetheless domestic cashpoolings, allowing periodic intercompany loans to Air Liquide Finance.

As of December 31, 2014, Air Liquide Finance had granted, directly or indirectly, the equivalent of 8.0 billion euros in loans and received 3.7 billion euros in excess cash as deposits. These transactions were denominated in 24 currencies (primarily the euro, US dollar, Japanese yen, Chinese renminbi, pound sterling, Swiss franc, Singaporean dollar and Brazilian real) and extended to approximately 230 subsidiaries.

The matching by currency within Air Liquide Finance, resulting from the currency hedging of intra-group loans and borrowings, enables to avoid generating foreign exchange risk for the Group.

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

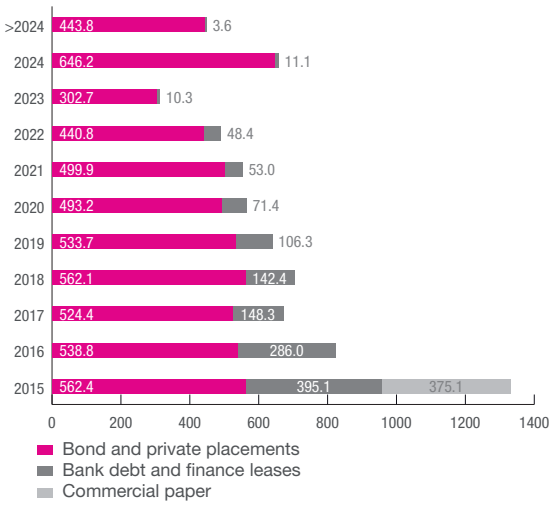
DEBT MATURITY AND SCHEDULE

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

The average of the Group's debt maturity is 5.4 years, at December 31, 2014.

The following chart represents the Group's debt maturity schedule. The single largest annual maturity represents approximately 18% of gross debt.

Debt maturity schedule *(in millions of euros)*



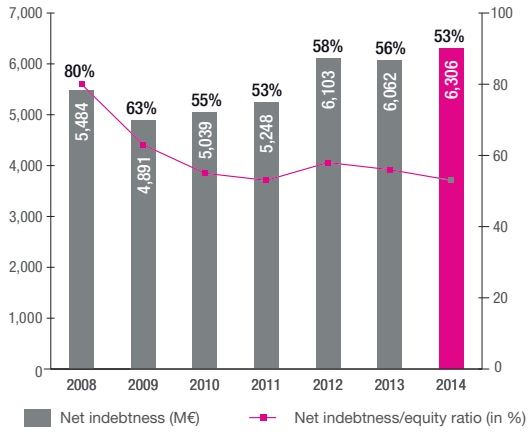
CHANGE IN NET INDEBTEDNESS

Net indebtedness stood at 6,306 million euros as of December 31, 2014, compared to 6,062 million euros as of December 31, 2013, an increase of 244 million euros.

This increase is due, in particular, to a negative currency impact, as the euro depreciated against several other currencies at the end of 2014.

Cash flow generated by the operational activities funds almost all investments and dividends.

Net indebtedness as of December 31



The **net debt to equity ratio** stood at 53% at the end of 2014 (compared to 56% at the end of 2013). This reduction is due to greater selectivity in Group's investment process. The equivalent ratio calculated using the US method of net indebtedness/(net indebtedness + shareholders' equity) reached 35% at the end of 2014, compared to 36% at the end of 2013. The financial expenses coverage ratio (operating income + share of profit of associates/net finance costs) stood at 11.6 in 2014 compared to 11.9 in 2013.

The average cost of gross indebtedness increased slightly in 2014 due to the increase in the share of funding in developing economies where benchmark rates are higher, and the Group's decision to issue longer-term maturities to benefit from the fall in interest rates in the main currencies.

The **average cost of net indebtedness** was 4.0% in 2014, stable compared to 2013 (4.0%). Cost of net indebtedness is calculated by dividing net finance costs for the fiscal year (268.8 million euros in 2014, excluding capitalized interest) by the year's average outstanding net indebtedness.

This stability is due to the increase in the average cost of indebtedness in developing economies, which is offset by the decrease in financial expenses on long-term bond issues and increasingly centralized cash management.

BANK GUARANTEES

In connection with its Engineering & Construction activity, the subsidiaries of the Group sometimes grant bank guarantees to customers, during the tender period (bid bond), and after contract award, during contract execution until the end of the warranty period (advance payment bond, retention bond, performance bond, and warranty bond).

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

The projects, for which these guarantees are granted, are regularly reviewed by the Management and, accordingly, when guarantee payment calls become probable, the necessary provisions are recorded in the consolidated financial statements.

INNOVATION

Innovation is one of the three pillars of the Group's strategy. Innovating enables Air Liquide to open up new markets and to create new growth opportunities.

Innovation to boost growth

The Group's innovation expenses amounted to **278 million euros** in 2014, representing **1.8%** of its revenue. This ratio is slightly higher than that of the past five years. Innovation expenses correspond to the OECD definition, namely research and development, market launch and marketing expenses for new offers and products.

The number of patented new inventions reflects the Group's innovation capacity. **Almost 300 new patent applications** were filed in 2014.

Air Liquide has a portfolio of **3,369 inventions** protected by **10,777 patents.**

Almost 6,200 employees contribute to the Group's innovation process; these employees belong to the following entities:

- technology: nine Research & Development sites in Europe, the United States, and Asia, the advanced Business & Technologies network, and 15 main centers for Engineering & Construction;
- marketing and market launch: 11 ALTEC technical centers, which develop gas application technologies for customers and form a network of application experts; two centers of excellence – one dedicated to gas packaging for Industry and Health, the other to cryogenic production technologies – as well as centers of excellence in Hygiene, Specialty Ingredients, advanced Electronics materials.

The operational teams in the 80 countries where the Group operates are responsible for rolling out innovations on a local basis as soon as they come on to the market.

The Group innovates in three areas:

- in its **core business,** based on team expertise. This means that the Group improves its oxygen or hydrogen production technologies every year, in order to reduce energy consumption and polluting emissions. In the healthcare and industry field, it includes digital and additive manufacturing tools to bring higher value-added offers to the market;
- in **adjacent businesses:** the teams require audacity in order to go beyond the traditional frontiers. They are opening up new markets such as biogas and refrigerated transport for fresh products, or are rolling out a new offer for oil platforms;
- in the **transformational businesses:** the intuition of employees enables the Group to explore these markets, which have the potential to transform people's lives. For instance, Air Liquide is one of the most active players in the hydrogen energy market, which is currently seeing the emergence of early results following a decade of effort.

Air Liquide's innovation approach combines **science and technology** with **entrepreneurial spirit.**

It is based on three factors: in-depth scientific knowledge of around twelve **molecules** (including oxygen, nitrogen and hydrogen), the capacity to develop and test **technologies,** and a strong understanding of its customers' and patients' **usage.**

In 2014, Air Liquide continued with measures implemented in 2013 to strengthen its innovation approach. Thus from **science and technology** (role of Research & Development, of the Engineering business and the ALTEC centers), the Group relies on its **advanced Business & Technologies** network to **develop the spirit of enterprise,** its **i-Lab** (innovation lab) to boost **open innovation** and **ALIAD,** its investment vehicle in technology start-ups.

- The **advanced Business & Technologies** network, which was established in 2013, includes a dozen subsidiaries focused on four areas: Business, Technologies, Information Technologies and Investment. This network boosts the Group's **entrepreneurial spirit.** In 2014, the advanced Business & Technologies teams continued to roll out new hydrogen filling stations in Europe, Japan and the United States, and acquired FordonsGas, a company that distributes Compressed Biogas for natural gas vehicles (Bio-NGVs) for the Swedish transportation market. The aB&T network also contributed to major scientific projects (ITER, JT 60) and developed new technologies for the Solar Impulse teams, the first solar-powered airplane capable of flying day and night without fuel.
- The **i-Lab** is the laboratory for new ideas, which helps accelerate the pace of the Group's innovation and explore new markets. It also supports the various Innovation entities and the Group's World Business Lines in the development of new offerings, products and technologies. Based in Paris, France, i-Lab gets support from all of the Group's R&D sites, notably in Europe, the United States, and Asia. This laboratory is both a think-tank and a venue for experimentation (the "Corporate Garage") in new ideas for Air Liquide. It is permanently connected to the global innovation ecosystem, in order to

boost open innovation. In 2014, the i-Lab implemented this **open innovation** strategy, in particular, with a competition among architecture students in Europe on the topic of the Oxygen Plant of the Future, and the creation of a start-up incubator "Breathe in the city", in Paris, to develop new offers for improving air quality.

- **ALIAD**'s role is to invest in **minority stakes in start-ups,** in order to promote the **Group's access to technological innovations** developed outside the Group. ALIAD is based in the same premises as the i-Lab. It encourages the setting up of **R&D and/or business agreements** between the start-ups in its portfolio and the Group's entities. The target sectors for these investments are energy transition, management of natural resources, healthcare technologies, digital technologies and electronics.

  ALIAD made four new investments in 2014 in **innovative technology start-ups: McPhy Energy,** a company which develops generators for hydrogen production by water electrolysis and solid hydrogen storage; **Solumix,** a start-up which has developed a new eco-friendly building insulation material; **Xylowatt,** a company that is specializing in the production of clean syngas from solid biomass; and **Quanta,** a UK-based company that is specializing in the development and design of a hemodialysis system for patients. ALIAD has made **nine investments** from its creation in 2013 to the end of 2014.

The **Healthcare World Business Line** identifies and analyzes the latest trends in order to adapt and develop its business model and ensure its implementation. Together with its medical R&D team, it has continued with its pre-clinical and clinical trials so as to identify new applications for certain medical gases. Faced with the challenges relating to the management and cost control of chronic diseases, the Healthcare World Business Line has continued to innovate in **e-healthcare,** particularly with the COMET study which assesses the impact of remote monitoring of patients with COPD (Chronic Obstructive Pulmonary Disease).

Moreover, in 2014, the **Group invested in new innovation centers.**

Air Liquide has decided on three investments in France for an amount of nearly **100 million euros.**

- The Group is modernizing its **Paris-Saclay Research Center,** near **Versailles,** which is its main Research & Development center in the world. It will allow Air Liquide to reinforce its **open innovation** strategy through academic and industrial research partnerships with players from the Paris-Saclay innovation ecosystem.

- Moreover, Air Liquide has created a **center for the development of gas packaging for industry and health** on its Paris-Saclay site. This center aims to develop and industrialize the new packaging, which is easy to use, easily traceable, safe and integrated with digital technologies and new materials. The objective is to bring new offers to the market quicker.

- Finally, Air Liquide has announced the creation of a **technical center of excellence for cryogenic production technologies** in **Vitry-sur-Seine,** near Paris. Within the Engineering & Construction activity, this center will be responsible for developing and industrializing innovative technologies with high added-value for the production of oxygen, as well as bringing together expertise in this field.

In Asia, the Group started the construction of a **new Research and Technology Center** located in the Xinzhuang industrial park, in Shanghai, **China,** which represents an investment of nearly **25 million euros.**

In Engineering & Construction, a new **manufacturing center** for the Group's Air Separation Units was opened in **Ras-al-Khaimah, in the United Arab Emirates,** in December 2014. This center will complement, in terms of both geography and technology, the Group's other two manufacturing centers in France and China.

The Group's Healthcare business also invested in its subsidiary Seppic, dedicated to healthcare specialty ingredients, for the creation of a **new facility** in **Castres, France.** Seppic operates the leading global chain in bulk sterile packaging for adjuvants for vaccines and injectables.

Innovation for society

Almost 60% of the Group's innovation expenses in 2014 are related to protecting life and the environment.

Innovation expenses correspond to the OECD definition, namely research and development, market launch and marketing expenses for new offers and products.

Projects related to **preserving the environment** mainly included:

- new technology research and development programs which improve the **energy efficiency of the Group's production units,** thus reducing the environmental footprint of the Group's activities and improving that of its customers and partners;

- the research on the **efficiency of oxy-combustion** for both Air Liquide and its customers;

- all **hydrogen production and distribution** processes, from desulfurizing hydrocarbons in refineries to accompanying the deployment of hydrogen energy;
- **Carbon Capture Use and Storage** (CCUS);
- the **second-generation biofuels;**
- the **valorization of biomass** and the purification of **biogas** for sale in the form of Bio-NGVs;
- the production and implementation of **gas for photovoltaic cells;**
- the research work on **liquid nitrogen-powered cryogenic cooling** to transport fresh products.

The innovations in **healthcare and hygiene** include:

- the research in medical gases, in particular into anesthesia, analgesia and respiratory diseases;
- the work on hygiene and sterilization products to combat nosocomial infections;
- the development of adjuvants for vaccines.

Promoting expertise and encouraging entrepreneurship

The inventiveness of the teams that interact with customers and patients on a day-to-day basis enables the Air Liquide Group to constantly reinvent its business, and to anticipate the challenges of its markets. The Group has not only implemented programs to encourage and recognize the talent and expertise of its experts that contribute to innovation, but also, since 2014, the talent of its internal entrepreneurs.

The **recognition of technical expertise** is a key factor for innovation. In 2003, Air Liquide launched **Technical Community Leaders** (TCL), a promotion and recognition program for the technical field and for the expertise of Group employees. Since TCL was created, **more than 2,500 experts** have been recognized, thus playing a key role in sharing expertise, knowledge and technical excellence. In 2014, six International Fellows, 20 International Senior Experts and 85 International Experts based in very diverse regions (Europe, Asia-Pacific, North and South America) were recognized by TCL. This community for the Group's technology experts contributes to the transfer of technical know-how, to the sharing of best practices, and to the long-term development of the skills that Air Liquide will need in the future. The initiative is conducted in close collaboration with the World Business Lines.

#invent, the Group's recognition program for **inventors,** rewards the inventors who are responsible for patents that are successfully marketed, or that give Air Liquide a competitive advantage. A trophy is awarded for the best invention of the year, selected among the patent registrations filed within each World Business Line in the past two years, and a bonus to inventors as soon as a patent is delivered. This new program ensures greater responsiveness for rewarding inventors, and better monitoring of inventions. **Almost 2,500 rewards** have been awarded to inventors employed by Air Liquide since 1997. Air Liquide's patent portfolio contains over 10,000 patents, and the Group applies for registration of around 300 new patents every year.

These patents are not only invented by the Group's R&D employees, but also by the Engineering & Construction teams, the advanced Business & Technologies network and the operations.

More than 50% of the new patents registered by the Group protect **inventions relating to its core business** (gas production and separation technologies, and its Healthcare activity). The patents keep pace with the Group's development in different regions. The new patents registered in 2014 have a geographical breakdown as follows: 39% in Europe, 24% in the Americas, 21% in Asia-Pacific and 16% in Africa-Middle-East.

In 2014, the Group celebrated the contributions of **its employee entrepreneurs** during an event organized simultaneously in Paris, Houston, Frankfurt and Shanghai. Almost 800 managers took part worldwide. This initiative encourages the entrepreneurial spirit as a tool for innovation. It is also an opportunity to acknowledge projects which contribute to growth, and to share new ways of developing the Group's activities.

Innovating within the global ecosystem

In a constantly changing world, the dynamic management of interactions with the innovation system, which is known as "open innovation" has become a key innovation factor.

Thanks to the development of a large number of collaborative processes between its operating entities and customers, Research & Development with academic partners and SMEs, and between the advanced Business & Technologies network and innovative start-ups and institutional and private partners, this open innovation has enabled Air Liquide to explore new growth opportunities.

More than 60% of Research & Development projects were conducted as part of public-private partnerships in 2014. Air Liquide signed a scientific cooperation agreement with **King Abdullah University of Science and Technology (KAUST),** in

Saudi Arabia, and joined its industrial partnership program (KICP). This agreement marked the start of a promising partnership in numerous key fields for Air Liquide, such as photovoltaic, catalysis, combustion and porous materials, and reinforced Air Liquide's leadership among global academic research institutes and industrial leaders in the Middle East.

In France, Air Liquide and the CEA, **Commissariat à l'énergie atomique et aux énergies alternatives** (**French atomic energy and alternative energy commission),** strengthened their partnership by signing a five-year strategic agreement.

Air Liquide collaborates with **100 scientific academic partners and technology institutes** worldwide, and supports **seven research chairs.**

In Healthcare, Air Liquide draws on its partnerships with the **Institut du cerveau et de la moelle épinière (Brain and spine Institute – Neuronal degeneration),** with the **Institut Pasteur** to better understand gas mechanism of certain organs, and with the **University of Montreal** on the treatment and monitoring of patients suffering from Chronic Obstructive Pulmonary Disease (COPD).

These partnerships also provide the Group with access to **third-party intellectual property rights.** They enable Air Liquide to explore new growth opportunities, in adjacent businesses and transformational businesses, beyond the Group's core business.

The innovation ecosystem is global, and involves a new distribution of clusters that are active in the innovation field. The Group's organizational structure, which includes its base in France and three hubs in Frankfurt, Houston and Shanghai, provides it with better connections to trends in local markets, and enables it to improve the way in which it anticipates its customers' and patients' requirements, and to imagine new ideas and solutions, whether they involve technologies or new business models.

Some initiatives launched in 2014

Air Liquide is exploring new areas by developing technologies and by building new business models, in order to meet its customers' and patients' needs, and pursue its profitable growth over the long term. The Group innovates for the benefit of society.

HEALTHCARE: INNOVATION FOR THE BENEFIT OF PATIENTS AND HEALTHCARE PROFESSIONALS

In 2014, Air Liquide continued with the roll-out of its **new medical oxygen cylinder called TAKEO™** which has an "intelligent" digital display informing the user about the remaining consumption time until the oxygen runs out and emits a warning sound when the oxygen level is low. This cylinder is therefore safer to use, and enables medical staff to optimize oxygen consumption. This cylinder has also been designed to be easier to handle for medical staff thanks to its new ergonomic design. This innovation in oxygen therapy is now available to healthcare professionals in 15 countries worldwide (countries in Western European and South America as well as Canada, China, etc.), and makes Air Liquide stand out from its competitors by raising market standards.

Moreover, the **subsidiary Seppic's new sterile facility in France producing adjuvants for vaccines and injectables** benefits from recent technological advances in terms of pharmaceutical standards and doubles the Group's production capacity in bulk produced and packaged sterile pharmaceutical excipients.

ELECTRONICS: A STEP UP IN ADVANCED MATERIALS

In 2014, Voltaix, an electronic materials company based in the United States and acquired in 2013, was integrated. Voltaix's products complement Air Liquide's ALOHA™ product line of advanced precursors. This acquisition creates new synergies in the **research and industrialization process for innovative molecules.**

By combining the resources and expertise of Voltaix with those of the ALOHA™ teams, Air Liquide created an **"Advanced materials" unit** which allows it to capitalize on new growth opportunities and expand its markets and product offerings for semiconductor manufacturers around the world. This acquisition also enables Air Liquide to meet growing consumer demand for increasingly powerful flat panels, tablets and smartphones.

These **advanced precursors,** molecules with specific physical and chemical properties, are at the heart of the new generation of chips – used in new servers or smartphones – and are manufactured in state-of-the-art plants. Air Liquide is involved in all stages of a process including the design, screening and industrialization of advanced precursors, by working closely with leading companies of the semiconductor industry and process tool makers. The Group relies in particular on its new advanced Electronics materials center in South Korea.

INNOVATIVE OFFERS FOR INDUSTRIES AND CRAFTSMEN

Air Liquide continued with the global roll-out of its newly improved range of **arc welding gases: ARCAL™,** a range of four high-quality argon and carbon dioxide based products which meet all day-to-day welding needs, from high carbon steel or stainless steel to light alloys, in particular for the aerospace, rail, offshore and construction sectors.

ARCAL™ cylinders are all equipped with SMARTOP™ taps for **heightened security and ease of use,** in particular thanks to a new, more ergonomic cap. For bulk users, ARCAL™ is also available in liquid form, with the mix carried out directly on the

customers' premises with bulk mixing installations. With ARCAL™, customers benefit from the expert support of Air Liquide, a major player in welding gases for more than 30 years.

In 2014, Air Liquide also continued to **roll out ALbee™,** its innovative **small gas cylinder** for craftsmen and occasional users. Following its success on the European market, the ALbee™ brand is now available for sale in Argentina, Canada and Japan.

ALbee™ products are ready to use and aim to make the daily life of professionals and DIY enthusiasts easier for welding, air conditioning maintenance and the inflation of helium balloons. Its **business model is also pioneering:** the user buys the cylinder and a service. When the cylinder is empty, the user exchanges it for a full cylinder and therefore only pays for the gas used, which ensures a perfect control of spending.

ALbee™ uses the Group's **latest technologies** in terms of cylinders: an integrated valve/regulator, the MINITOP™, which makes opening and closing the cylinder easier, gauges its content and provides an easier and more flexible connection, while at the same time improving user safety. In 2014, a new more compact and lighter size than the cylinders on the market was added to the range: ALbee™ PLUS, which is already available in Great Britain.

DEVELOPMENT WITHIN THE INNOVATION ECOSYSTEM IN FRANCE

In 2014, the Group began work to modernize its **Paris-Saclay Research Center,** near **Versailles,** which is its main Research & Development center in the world. A single building will house the **researchers and laboratories** and will have pilot platforms with equipments for designing and testing technologies under industrial-scale conditions. It will allow Air Liquide to reinforce its **open innovation** strategy through academic and industrial research partnerships with players from the Paris-Saclay innovation ecosystem. Air Liquide thereby reinforces its presence in this ecosystem, which now includes almost 11,000 researchers and 48,000 students, and which by 2020 will be one the 10 biggest innovation hubs in the world.

Moreover, in 2014, **Air Liquide and the CEA** decided to **strengthen their partnership through a five-year strategic agreement.** This agreement extends to three new areas the work already being conducted jointly: advanced materials and manufacturing for the plants of the future, digital technologies for big data processing, connected objects for continuous improvements in operations and services for customers and patients.

The aim of this strategic partnership is to **accelerate the industrialization of new technologies** and to deploy new uses in the production or application of gases for industry and healthcare. By leveraging the synergies of the two partners' acquired skills and expertise, the projects conducted will also seek to combine and strengthen the innovation ecosystems of all participants, comprising, in particular, French SMEs and innovative start-ups.

Air Liquide and the CEA are already working together on the emergence of new energy sectors with a pilot unit for second-generation biofuel production in Bure-Saudron (France), as well as on hydrogen energy, as part of the "Battery autonomy and power" plan, which is one of the French government's 34 industrial plans. This **long-term public-private partnership** is aligned with Air Liquide's **open innovation approach** and strengthens its commitment to France's innovation ecosystem.

I-LAB: FIRST STEPS TO BOOST THE GROUP'S OPEN INNOVATION APPROACH

In 2014, the **i-Lab** organized a competition among architecture students in Europe for their ideas on the **Oxygen Plant of the Future.** This competition of ideas, entitled "Rock my Plant", offered architecture students the opportunity to dream up and design the Air Separation Unit of the future, using the main technological bricks that make up this production plant.

Thanks to this competition, 65 students from seven architecture schools in France, Italy, Poland and Turkey were given the opportunity to present their ideas and vision for reinventing the aesthetics and the organization of the oxygen production plant of the future. In total, 40 projects were submitted. The jury was co-chaired by the architect Jean Nouvel and François Darchis, a member of Air Liquide's Executive Committee in charge of innovation.

All of the projects were a source of inspiration for Air Liquide, and the ideas from the winning projects may be implemented by the Group. Following this event, Air Liquide filed applications for five new patents.

At the same time, Air Liquide's i-Lab and Paris Région Lab inaugurated the **"Breathe in the City" start-up incubator.** Four start-ups have currently joined the incubator to develop products, services and technologies centered around air quality in the city. Selected for their innovative approach in terms of technologies and applications, the start-ups will benefit from the know-how of Paris Région Lab and Air Liquide's expertise.

With its "Breathe in the City" initiative, Air Liquide's i-Lab intends to develop new offerings by joining forces with these young companies, to meet the numerous challenges arising in terms of air quality: reducing polluting emissions, helping patients with respiratory difficulties, providing clean air on the move, measuring, mapping and treating air quality.

CONTRIBUTION TO MAJOR INTERNATIONAL SCIENCE PROJECTS

The objective of the **international project ITER** is to develop an experimental reactor that will demonstrate the scientific and technical feasibility of fusion as a new source of energy. Fusion for Energy (F4E), the organization that manages Europe's contribution to ITER, has signed a contract with Air Liquide for the supply of cryogenic equipment that will complete the largest centralized refrigeration system ever built.

To obtain the very powerful electromagnetic fields required to confine and stabilize nuclear fusion, it is necessary to use superconducting magnets that only work at extremely low temperatures. This temperature requirement is met **through the cryogenic equipment supplied by Air Liquide,** which is based on the properties of liquefied helium. Its temperature is just 4.5°C above the lowest possible temperature, -273.15°C, better known as "absolute zero". In 2012, Air Liquide signed a contract with the ITER Organization for the supply of **three helium refrigerators with record combined cooling capacity.**

In 2014, F4E entrusted Air Liquide with the responsibility of supplying a second set of additional cryogenic equipment, for a **total amount of around 65 million euros.** This state-of-the-art equipment will be jointly developed by the Air Liquide Engineering & Construction teams and Air Liquide advanced Business & Technologies. It will be installed and commissioned on the ITER site at Cadarache, in Saint-Paul-lez-Durance, near Marseille, from 2016.

The purpose of the **JT-60SA project,** a Tokamak-style infrastructure, based in Naka in **Japan,** is to support the ITER project's research activities on fusion by working on the capacity to control and maintain the plasma for several hours. JT-60SA is led by the Japanese Atomic Energy Agency (JAEA) in collaboration with the French organization CEA. For this project, **Air Liquide delivered a helium refrigeration system,** intended to cool the Tokamak. This system, which will be commissioned in 2015, proves Air Liquide's **capacity to meet major scientific challenges by supplying very high tech systems.**

ACQUISITION IN THE BIO-NGV SECTOR IN SWEDEN

Air Liquide acquired **FordonsGas, a company that distributes Bio- and Natural Gas for Vehicles (Bio-NGVs)** for the Swedish transportation market. Founded in 1998, FordonsGas owns and operates more than 40 Bio-NGVs stations in Sweden, making it one of the largest distribution networks for this fuel in Sweden. The company employs 32 people and generates annual revenue of around 20 million euros. The filling stations operated by FordonsGas enable taxis, corporate vehicle fleets, buses, and even cars belonging to individuals to acquire fuel that is more environmentally friendly. Nearly 70% of the Bio-NGVs is produced from renewable energies.

Sweden is one of Europe's key markets in the development of sustainable mobility based on Bio-NGVs. In 2009, the Swedish government rolled out an Energy and Climate policy with the objectives of reducing greenhouse gas emissions by 40% between now and 2020 and eliminating the use of fossil fuels in the transportation sector entirely by 2030. Today, there are nearly 50,000 natural gas vehicles (NGVs) on the road in Sweden that run on natural gas, enabling the rapid development of Bio-NGVs as a fuel source.

In Sweden, Air Liquide has supplied its gas liquifaction technologies to one of the world's largest biogas production plants. This acquisition will allow the Group to better understand the new consumer usages of sustainable mobility, today through the distribution of Bio-NGVs and tomorrow through the distribution of hydrogen energy.

Air Liquide also works on solutions for the valorization of biogas using a process that extracts methane from biogas, via a patented gas separation technology that uses membranes designed and manufactured by the Group. Air Liquide is the global leader in the biogas purification market, with a capacity of 100,000 m^3 per hour and more than 10 years' experience in this sector. The Group continued to roll out its offer in 2014. Air Liquide now has more than 35 customers in this market.

START OF A HYDROGEN FILLING STATION INFRASTRUCTURE

The Air Liquide Group actively contributes to the development of the **hydrogen energy sector on a global scale,** in particular through initiatives aimed at deploying hydrogen filling stations in Europe, the United States and Asia. The Group has already developed and supplied more than 60 hydrogen stations worldwide. The first filling station for the general public was opened in 2012 in Düsseldorf, Germany. The stations developed by Air Liquide allow Fuel Cell Electric Vehicles (FCEVs) to fill up in less than five minutes, and FCEVs themselves offer an autonomy that can reach up to 500 kilometers in range.

2014 marked an **acceleration in the development of hydrogen as an energy carrier** and the **roll-out of a hydrogen filling station infrastructure.**

In **Europe,** Air Liquide installed four new hydrogen filling stations in **Denmark,** as part of the Copenhagen Hydrogen Network, supported by the European Commission. These four filling stations – two in Copenhagen, one in Aalborg and one in Vejle – complement two stations already in service, located in Copenhagen and in Holstebro. This development is a significant step in the creation of a **distribution network at national level.**

In **the Netherlands,** Air Liquide inaugurated its first hydrogen filling station in **Rotterdam.** This filling station is part of the European hydrogen infrastructure roll-out project *Hydrogen Infrastructure for Transport* supported by Air Liquide and six other European partners.

In **France,** Air Liquide won the tender launched by the Conseil Général de la Manche to supply and install a hydrogen filling station in **Saint-Lô.** Installing this new station constitutes the first step in the process of rolling out an infrastructure for hydrogen distribution in France. In **Germany,** Air Liquide is also involved in the *H_2 Mobility initiative*, which aims at rolling out around 100 hydrogen filling stations throughout the country by 2017.

In **Japan,** Air Liquide has started, in partnership with Toyota Tsusho Corporation, the construction of two hydrogen filling stations in the **Aichi** area (Atsuta in Nagoya and Fukada in Toyota city). Japan aims to install 100 hydrogen filling stations by the end of 2015 in four major cities (Tokyo, Nagoya, Osaka and Fukuoka) and alongside the highways connecting them.

In **China,** Air Liquide was the exclusive partner for hydrogen solutions in the "2014 Innovation March" organized by SAIC Motor Corp. to promote new energy vehicles. Starting in Shanghai and ending in Kunming (Yunnan), the 52-day long roadshow crossed China from north to south, and east to west, passing through 64 cities in 15 provinces. During the tour, Air Liquide provided a standard mobile hydrogen filling station that helped set a record in China: 10,000 km were driven by three cars fueled by hydrogen supplied by Air Liquide.

In the **United States,** Air Liquide is developing a network of new hydrogen filling stations, in collaboration with Toyota Motor Sales USA, Inc. (Toyota). This project is part of the US sales launch of the constructor's new hydrogen fuel cell electric vehicle, the "Mirai". Air Liquide's hydrogen fueling infrastructure in the northeast United States will initially consist of 12 filling stations across a number of states.

Hydrogen helps protect the environment, by responding to the challenges posed by sustainable transport: reducing greenhouse gas emissions and local pollution in urban areas. The creation of a distribution network is one of the major challenges in the commercial roll-out of hydrogen fuel cell electric vehicles.

THE BLUE HYDROGEN® INITIATIVE

Blue Hydrogen is an Air Liquide initiative that aims to gradually lower the carbon content of its hydrogen production dedicated to energy applications. 95% of the hydrogen that the Group produces is currently from natural gas. Air Liquide is committing to increasing, by 2020, the percentage of hydrogen produced for these applications from carbon-free processes, i.e. sources that emit no CO_2. The Group's objective is to produce at least 50% of the hydrogen required by hydrogen energy applications from carbon-free energy sources, by combining:

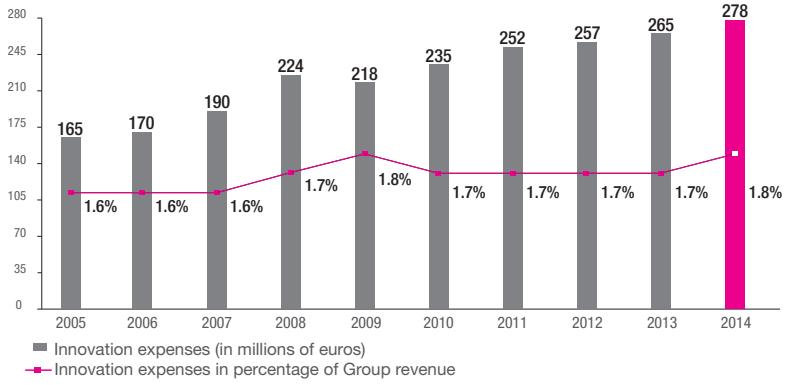
- **the reforming of biogas;**
- **the use of renewable energies in water electrolysis;**
- **the technologies to capture and re-use carbon from the CO_2 emitted during the production of hydrogen from natural gas.**

INNOVATION INDICATORS CONCERNING THE GROUP AS A WHOLE

	At December 31, 2014
Number of employees working in entities contributing to innovation	**6,200**
Number of researchers	**1,100 researchers with 35 nationalities**
Number of R&D sites	9
R&D industrial partners	100
R&D scientific partners (academic and technology institutes)	100
Number of advanced Business & Technologies employees	**1,100 employees**
Number of countries where aB&T is present	9
Number of Engineering & Construction employees	**3,600**
Engineering centers	15
Number of employees in other entities contributing to innovation	**400**

	2010	2011	2012	2013	2014
Innovation expenses *(in millions of euros)*	235	252	257	265	278
Group revenue *(in millions of euros)*	13,488	14,457	15,326	15,225	15,358
Innovation expenses as a % of revenue	**1.7%**	**1.7%**	**1.7%**	**1.7%**	**1.8%**

Innovation expenses



Patents	2010	2011	2012	2013	2014
Number of patented inventions	2,830	3,109	3,215	3,288	3,369
New patent applications filed during the year	301	332	316	321	287
Percentage of new patents protecting the core business (within the portfolio) [(a)]	46%	46%	47%	54%	59%

(a) Gas production and separation technologies, and Healthcare activity.

STRATEGY AND OUTLOOK

Strategy

For many years, Air Liquide's growth strategy has been founded on creating long-term value. To do so, the Group relies on its operational competitiveness, its targeted investments in growth markets and innovation to open new markets and create new opportunities.

The Group is committed to delivering a regular and sustainable performance for its shareholders and maintaining its strong dividend pay-out policy year after year. This long-term performance is based on continuous growth of the industrial gases market worldwide, a solid business model and a managerial culture founded on consistent performance.

COMPOUND ANNUAL GROWTH RATE (CAGR) OVER 30 YEARS

- Revenue: +5.6%
- Cash flow from operating activities before changes in working capital: +6.9%
- Net profit: +8.3%
- Earnings per share [a]: +7.7%
- Dividend per share [a] [b]: +9.3%

(a) Adjusted for previous two-for-one share splits and free share attributions.
(b) Subject to the approval of the Shareholders' Meeting on May 6, 2015.

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

The growth rates during the rebound from the 2008-2009 financial crisis varied greatly between advanced and developing economies. The gap between the growth rates in these economies has varied from 9 points in 2005 to 18 points in 2010 and is now below 5 points.

Against this backdrop, the Group's strategic approach has shifted from a geographical viewpoint, where industrial growth came mainly from increased capacity in developing economies, to **a market viewpoint,** where each country aims to attract new investments in growth sectors.

As a result of this new approach, the Group has outlined three major trends which shape its markets.

THREE MAJOR TRENDS, SOURCES OF GROWTH

Industry globalization and resource constraints

Countries, industrial basins and companies all compete on a global scale. They are constrained by the availability of resources (energy, raw materials, expertise and human resources) and are required to adapt to market demand.

This major trend is due to three main factors:

- A need for industrial customers to globalize and modernize their production facilities, which is leading to an increase in outsourcing (mainly in developing economies) and in the intensity with which industrial gases are used in industrial processes;
- A decorrelation in energy prices in different parts of the world which is leading to a wave of re-industrialization in certain countries, such as the United States with the exploitation of shale gas;
- A general willingness of countries and companies for energy independence or enhanced competitiveness, which leads to the use of local energy resources, such as coal in China. These new

energy conversion projects, to transform coal and natural gas, are appearing in both advanced and developing economies and represent significant opportunities for the Group.

Thus, new industrial investments are more evenly divided between developing economies and advanced economies, reflecting industrial globalization. In the latter, these investments are mainly in networks based in large traditional industrial basins (the Gulf Coast and Northern Europe). The Large Industries and Industrial Merchant business lines are at the heart of this major trend.

The Group has an extremely wide portfolio of technologies at hand which allows it to provide its customers with different industrial gas production processes (air separation units, steam reforming, gasification, etc.). Combined with the project implementation capacities of the Engineering & Construction activity, operational excellence and Group presence in more than 60% of the major industrial basins, these technologies allow the Large Industries business line to capture future market growth through its classic Over the Fence (OTF) business model (customer outsourcing).

The Group also owns technologies for industrial gas separation (e.g. membranes), purification (e.g. Rectisol) and transformation (e.g. methanol, Fischer Tropsch, MTP, etc.). These technologies can be offered to customers via the sale of licenses, services or proprietary equipment.

The Industrial Merchant business line also benefits from this major trend through the sale of nitrogen and carbon dioxide for oil extraction activities. Their use minimizes the environmental impact, in particular water and chemical solvent consumption.

More generally, the development of manufacturing industries driven by this re-industrialization is a source of growth for the Industrial Merchant activity.

Evolving consumption and demography

Urbanization, the growth in middle classes, increasing demand for mobility and communication, climate-change concerns, the increasing importance of health and well-being, longer life expectancy and more chronic diseases are all factors in the Group's development.

Each country's healthcare spending is strongly correlated to the maturity of their health system. There are three main stages of evolution:

- The development of hospital infrastructure aimed at treating acute diseases, such as in China;
- Then the development of home healthcare aimed at treating chronic diseases, currently underway for example in Brazil;
- Finally, the development of prevention and well-being while, at the same time, containing healthcare spending, where Germany and the United States are today.

Air Liquide provides solutions for patient needs throughout the healthcare system. The Group's strategy is to target both regions and markets.

In the domain of acute disease management, Air Liquide has continued its growth by structuring a dedicated health activity in China, Taiwan, Chile, Egypt and Russia over the past three years. At the same time, the Group is constantly renewing its offering with innovative products, such as its new oxygen cylinder for the Takeo™ hospitals.

In the home healthcare sector, the Group continued its acquisitions in 2014 in France to strengthen its position as European leader. Its offering is also backed by innovative solutions aimed at improving the quality of life of patients with diabetes or Parkinson's disease.

Finally, in prevention and healthcare cost management, Air Liquide provides innovative solutions such as remote observation, as well as hygiene products and specialty ingredients used in the pharmaceuticals and cosmetics markets.

The Industrial Merchant activity also benefits from these changes in consumption and demography. To offset the scarcity of natural resources and the increase in pollution, industry and urban areas are looking for environmentally friendly long-term solutions. Industrial gas solutions exist for water treatment, waste management, recycling, the design of low-energy consumption infrastructures and connectivity.

For many years, the Industrial Merchant activity has been helping its customers to improve their productivity and the quality of their products, optimize their procedures and make more efficient use of resources. This includes launching new reliable, simple and cost-effective offers to meet the needs of the manufacturing industry, such as welding or oxy-combustion for recycling aluminum.

Finally, population growth, changes in lifestyles and the emergence of middle classes in developing economies increase demand for industrial gases in sectors such as food, pharmaceuticals, technology and research, etc. For example, Air Liquide is currently developing certified pure CO_2 for fizzy drinks and is installing new production facilities.

The Group has the necessary strengths to transform these opportunities into future growth thanks to its renowned expertise in numerous industrial gas applications and customer processes, its global and local presence in more than 80 countries and its efficiency programs.

An appetite for innovation

The third major trend is based on an appetite for innovation among individuals, but also companies and society as a whole.

The significant development in the high technology market is driven by numerous consumer product innovations and, more generally, by the increasing complexity of our industries. Hence, demand for high purity industrial gases has risen substantially to meet the needs of semiconductor, flat panel or solar panel manufacturers, particularly in Asia.

Increased needs in mobile telecommunications and power, coupled with a decrease in the energy consumption of new equipment, drives innovation. These needs require new precursor molecules, or precursors, to develop increasingly sophisticated chips. The Group has specifically reinforced its offering in this field of designer molecules offering high value-added for customers through the acquisition of Voltaix, which strengthens its existing ALOHA™ brand.

Scientific and technological innovations are generated by dedicated traditional structures, Research & Development, Engineering & Construction. Additionally, the Group has organized its innovation process to include an entrepreneurial dimension (advanced Business & Technology network), one of disruptive innovation (i-Lab) and strategic investment (ALIAD).

The Group continues to develop in fields with strong growth prospects, such as hydrogen as a clean energy carrier, as demonstrated by the development of captive fleets. Converting one percent of the global autos fleet to hydrogen would represent a worldwide market of 15 billion euros.

Air Liquide is extremely well placed to benefit from the growth opportunities generated by these three major trends.

A SOLID BUSINESS MODEL

The Large Industries activity, which benefits from long-term contracts with take-or-pay clauses, and the Healthcare activity, which is enjoying steady growth independently of the economic cycle, provide security. They now account for over half of Gas & Services revenue. In addition, through its four World Business Lines, the Group serves a wide range of customers and industries, with an extensive regional diversity and a growing market share in developing economies, another guarantee of solidity.

Air Liquide confirmed the resilience of its business model in 2009. In an economic crisis of exceptional scale, Air Liquide, the global sector leader, reported a slight decline in sales and stable net profit.

In 2014, in a mixed environment, Air Liquide again relied on the solidity of its model to improve its performance. The Group's indebtedness is stable. The balance sheet strength facilitates the financing of its development projects and acquisitions in all business lines. Each of these characteristics represents an asset that supports the Group's long-term growth.

PERFORMANCE AND RESPONSIBILITY

The search for economic performance and the attention paid to society's major issues, notably the protection of the environment, are closely linked. Companies are no longer evaluated on their financial performance alone. They are also judged on their commitment to and efforts in terms of Responsibility. The Group has confirmed its ambition to be the leader in its industry, by demonstrating its long-term performance and behaving responsibly. The Group thus creates a **virtuous dynamic where Responsibility is an integral part of Performance.**

Performance

The Group's 2010 sales growth targets were based on estimated growth in the industrial gases market of between +7% and +8% per year between 2010 and 2015. The global economic recovery having been slower than expected, these estimates have been updated in 2013. The new forecasts expect market growth of between +4% and +5% annually between 2010 and 2015. As a result, Air Liquide's average annual sales growth target, which had been +8% to +10% in a normal context, was rephrased at the end of 2013 as revenue growth relative to the market of +1% to +2%.

The initial 12 billion euros investment budget for the 2011-2015 period has been confirmed and net capital expenditure between 2011 and 2014 is in line at 8.9 billion euros.

The operational efficiencies target, initially set at more than 200 million euros per annum for the five-year period, has been increased by 30% to a total target of 1.3 billion euros for the 2010-2015 period.

For the fourth consecutive year, efficiency strongly exceeded the annual target and reached 321 million euros in 2014. This brings cumulated efficiency to 1,178 million euros for the 2011-2014 period.

Finally, the initial ROCE target of 12-13% is now between 11% and 13% by 2015, taking into account the longer investment cycle.

The 2014 ROCE stood at 10.8%, or 11.1% without currency impact, within the revised target range against a backdrop of moderate and greatly contrasting economic recovery.

Responsibility

As an integral part of Air Liquide's strategy, Responsibility creates new opportunities and constitutes a sustainable performance driver while at the same time providing solutions that respond to society's major issues.

At end-2013, the Group confirmed its ambition to be the leader in its industry, delivering long-term performance and acting responsibly. The objective of embedding Responsibility in the way we act and manage our operations and initiatives represents another step in ensuring that Responsibility is at the heart of the way the Group runs its operations and initiatives, to ensure that the Group fulfills its ambition.

This Responsibility approach is widely adopted within the Group and is presented in Chapter 2 of this document.

Outlook

In a mixed environment that was also marked by rapid changes in exchange rates and the oil price, the Group achieved a solid 2014 performance, in sales, operating margin and cash flow.

Revenue growth in 2014 was primarily driven by strong momentum in the Americas, Asia-Pacific and the developing economies, and by robust Electronics activity. In Europe, performance remains contrasted, albeit with a slight improvement in the fourth quarter. Overall, on a comparable basis, all of our Gas & Services and Engineering & Technology businesses reported growth in the fourth quarter, as well as for the year as a whole.

In 2014, the Group continued to improve its competitiveness, in particular through successful cost adjustments and substantial efficiency gains, which contributed to our increased operating margin.

The strength of the balance sheet, the investment backlog at 2.8 billion euros, and the new contracts signed will contribute to growth in the next few years, as will the initiatives underway designed to accelerate innovation.

Assuming a comparable economic environment, Air Liquide is confident in its ability to deliver another year of net profit growth in 2015.