

ON AIR

November 2019

The magazine for everyone
interested in Air Liquide



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Conversation



Sales momentum, a strengthened Executive Committee, digital transformation acceleration, a new HR strategy: Benoît Potier discusses these recent transformations, which reflect the Group's strategy, and explains why they were launched.

You have announced new appointments to the Group's Executive Committee. Can you explain this evolution in the management team?

Benoît Potier: Strengthening the Executive Committee will help speed up the implementation of our transformation strategy. Our businesses are changing significantly in line with our customers' expectations and digital and technological progress. With a stronger, younger, more feminine, and more international team with a broader range of expertise, Air Liquide will be able to better support not only its customers but also industrial and social changes on a global scale.

Digital is at the heart of Air Liquide's transformation. This year, several steps have been taken in this regard. Can this be seen as a change of scale?

Benoît Potier: Air Liquide has indeed crossed a threshold in 2019. In recent years, the Group has been through a major technological and cultural transformation. Digital, which has now a more prominent position in the Executive Committee, is at the heart of Air Liquide's major projects.

Today, digital is therefore a key part of our transformation at all levels of our organization. It boosts our ability to innovate, and thus to invent the future. This transformation, which we are implementing with our customers and all our stakeholders, is the cornerstone of our profitable, regular and responsible growth model.

The new *Be, Act, Engage program is set to be rolled out within Air Liquide. What is its purpose and what will it offer to Group employees?**

Benoît Potier: Society is changing significantly: it is more inclusive, more complex and moving at a faster pace, prompting us more than ever to adopt collaborative working methods and renew our approach, both individually and collectively. With the *Be, Act, Engage* program, Air Liquide is adjusting to these societal changes, to offer greater listening, more dialog and more collective action within the Group. By specifically encouraging employees to express themselves and listen to one another, we are creating the conditions to progress collectively and commit the Group to tomorrow's world.

* *Be, Act, Engage, the Way we Work at Air Liquide*

A reinforced Executive Committee



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A. BENOÎT POTIER

Chairman and Chief Executive Officer.

B. MICHAEL J. GRAFF
Executive Vice President, supervising the Americas and Asia Pacific hubs, he is also in charge of the Electronics world business line.

C. FRANÇOIS JACKOW

Executive Vice President, supervising the Europe Industries, Europe Healthcare and Africa/Middle East & India hubs, as well as the Healthcare world business line and Customer Experience Function.

D. FABIENNE LECORVAISIER

Executive Vice President, in charge of Finance, Operations Control and General Secretariat.

E. GUY SALZGEBER
F. JEAN-MARC DE ROYERE

Executive Vice President, in charge of the Industrial Merchant world business line, as well as the following functions: Innovation, Digital and IT, Safety, Procurement, Public Affairs and Sustainable Development. He also supervises the Global Markets & Technologies activity, including the newly created Hydrogen Energy world business line.

G. FRANÇOIS VENET

Senior Vice President, in charge of Strategy. He also supervises the Large Industries world business line and Engineering & Construction.

H. FRANÇOIS ABRIAL

Vice President, in charge of the Asia Pacific hub.

I. SUSAN ELLERBUSCH

Vice President, in charge of the US Large Industries, Electronics and Hydrogen Energy businesses, as well as Canada's Large Industries, Industrial Merchant and Healthcare businesses.

J. MATTHIEU GIARD

Vice President, supervising the Industrial Merchant world business line, Procurement and Efficiency programs.

K. ARAMELLÉ LEVIEUX

Vice President, Group Human Resources.

L. ÉMILIE MOUREN-RENOUARD

Vice President, in charge of Innovation, Digital & IT, Intellectual Property, as well as Global Markets & Technologies activity.

M. DIANA SCHILLAG

Vice President, in charge of Healthcare activities in Europe.

N. PASCAL VINET

Chief Executive Officer of Airgas.

Our achievements over the past six months

Innovation

QLIXBI, A DISRUPTIVE SOLUTION FOR WELDERS



Welders practice a demanding job. Working in a highly competitive market, they are required to manage several factors, such as the supply of gas, which is essential to welding. Designed with them and for them, Qlixbi is a disruptive solution combining a new generation of gas cylinder with a range of digital solutions.

This efficient, trustworthy and digital Qlixbi solution meets real-life needs of welders in workshops. The connector clips onto the cylinder without a wrench and can rotate 360°, limiting the risk of injuries. Supply continuity is guaranteed thanks to connected services which allow users to check stock online and get gas delivered automatically. The fab assist app also facilitates the cooperation between teams in workshop, allowing them to share files and technical drawings, monitor ongoing projects and their progress status.

Qlixbi transforms the welding experience.

Find out more:
airliquide.com/qlixbi

Air Liquide's Scientific Challenge

TO IMPROVE AIR QUALITY

For its second Scientific Challenge, Air Liquide focused on improving air quality and the fight against climate change, using Essential Small Molecules⁽¹⁾. More than 130 proposals were received from 34 countries. From among these, the jury selected those proposed by José Manuel Serra Alfaro from the Valencia Institute of Chemical Technology in Spain, Christophe Copéret from ETH Zurich⁽²⁾, Switzerland, and Wenbiao Shen from the Nanjing Agricultural University in China. Congratulations to the winners! Partnerships will now be formed with them to develop their scientific proposals and transform them into market-adapted technologies.

(1) Oxygen, nitrogen, hydrogen, etc. are Essential Small Molecules for life, matter and energy. They embody Air Liquide's scientific territory.

(2) Zurich's Federal Institute of Technology.

**For more information
on the winning projects:**
airliquide.com/2018challenge

Hydrogen energy

SOUTH KOREA UNFOLDS ITS ROADMAP

Air Liquide has designed a second hydrogen station in a bus depot in Busan, South Korea. Fully financed by Hyundai Motor Group, it will be run by local service station operator Daedo. Hydrogen-powered electric vehicles will be able to charge at the facility in just three minutes. South Korea, like China, Germany, Japan and the United States, is one of the leading countries in the development of hydrogen as a clean energy source. Air Liquide is committed to supporting the country in its efforts. This year, the Group will supply an additional three stations as part of the government's plan of installing 310 stations across the country to fuel more than 67,000 vehicles by 2022.

Energy transition

THYSSENKRUPP STEEL & AIR LIQUIDE: TOGETHER FOR LOW-CARBON PRODUCTION



Air Liquide and thyssenkrupp Steel, a world-leading supplier of carbon steel flat products, partner for innovative low-carbon hydrogen steelmaking. For the first time, hydrogen will be injected on a large scale to partially replace coal used in blast furnaces during steel production. Another illustration of the immense potential of hydrogen!



In its role as a corporate citizen, Air Liquide is supporting its customers in the improvement of their carbon footprint. The partnership with thyssenkrupp Steel is built on this objective. In the long term, hydrogen could significantly reduce the amount of coal used in the steel industry.



PHILIPPE BLOSTEIN,
METALS MARKETING DIRECTOR, AIR LIQUIDE

The maritime industry and the environment

TURBO-BRAYTON, A TECHNOLOGY ENDORSED BY OUR CUSTOMERS

The maritime industry is also faced with the issue of greenhouse gas emissions. This sector represents around 3%⁽ⁱ⁾ of the world's total CO₂ emissions. Solutions are being introduced to reduce this footprint and Air Liquide is contributing with its Turbo-Brayton technology. The solution developed by the Group reliquefies natural gas evaporation from tankers and stores them in a container in liquid form. This system generates natural gas savings and contributes to reducing greenhouse gas emissions. More than 20 contracts worth a total of 100 million euros have been signed by the Group over 2018-2019, representing 120,000 tons of CO₂ equivalent emissions avoided per year.

(i) Third IMO (International Maritime Organisation) Greenhouse Gas study 2014.



HOME HEALTHCARE

Reinventing home healthcare

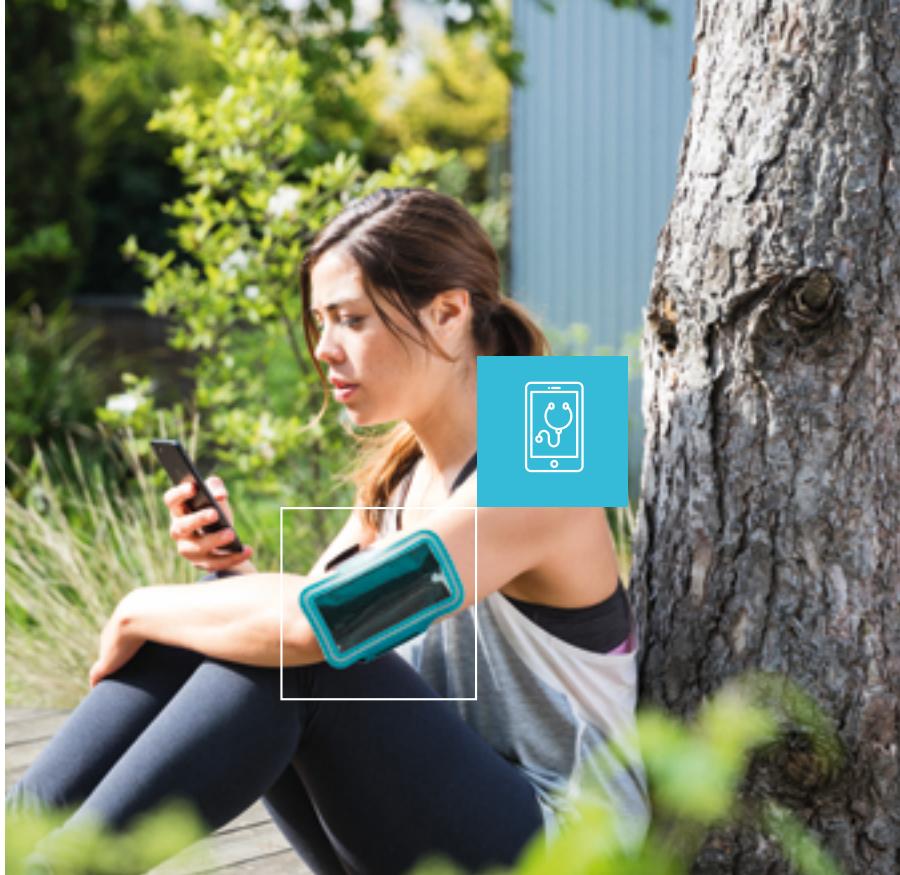
The increase in the number of chronic diseases,⁽¹⁾ new patient expectations, hospital overcrowding, and higher costs for treatment and its follow-up are major challenges for our healthcare systems. This new landscape provides an opportunity to collectively reinvent the patient pathway for chronically ill patients by focusing on personalized home care. **As a committed player in this field, Air Liquide develops innovative patient-centric solutions that help improve therapeutic follow-up and quality of life.**





THE HUMAN FACTOR, AN IRREPLACEABLE PRESENCE

The patient's relationship with a qualified expert is essential for the treatment of complex chronic diseases. Air Liquide mobilizes multidisciplinary teams of nurses, technicians, doctors, and pharmacists, which work in cooperation with patients and the prescribing doctors.



As life expectancy increases, demand for home healthcare is growing constantly. Supporting adherence to treatment for patients at home helps to reduce the cost of care while encouraging patient independence and improving quality of life.

In practice, unsuitable care support or failure to adhere to treatment can lead to additional financial costs due to complications or emergency hospitalizations, as well as indirect costs (side effects, nutritional issues, absence from work, instability or isolation). "This trend is changing the behavior of healthcare payers – both public and private – which are shifting towards performance-based payments by adapting the payments made by a healthcare provider based on the patient's adherence to treatment," says Grégory Olocco, Vice President of Markets, Strategy and Innovation at Air Liquide Healthcare business line.

On the personal and family side, the price can be high for both patients and their caregivers. Pedro, a patient supported by Air Liquide, has suffered from severe sleep apnea for a year: "My sleep apnea prevented my wife from sleeping. And the idea of wearing a mask worried me. But when I saw the benefits, I was persuaded to wear it every night," he explains. The initial steps of accepting a specific treatment and equipment are often critical. Patients and their families must be able to quickly see the benefits for their health and quality of life or they run the risk of abandoning the treatment.

A new approach is required, one that is focused on the patient and coordinated with all players. This approach combines efficient treatment with overall knowledge of the patient pathway of care to optimize the treatment of chronic diseases from both a therapeutic and

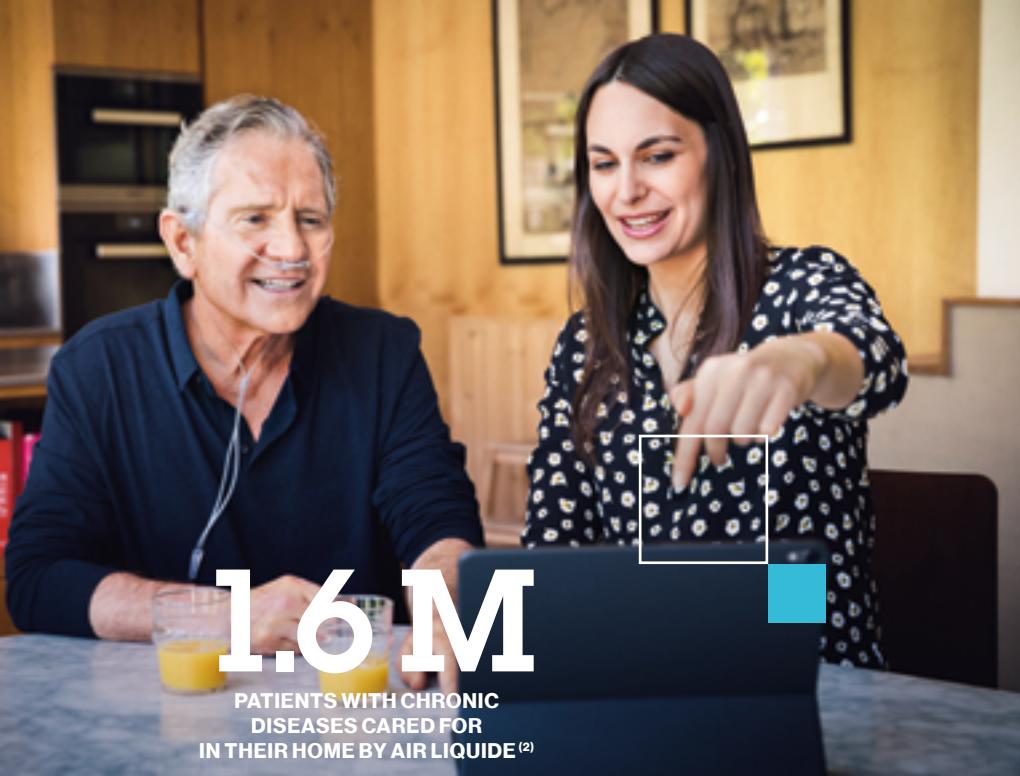
organizational point of view. Air Liquide's approach involves listening to the patient's needs and offering made-to-measure care that takes physiological data, lifestyle, and family circumstances into consideration. "We are working on patient adherence to treatment. The aim is to give each patient the means to better engage in their own care. Better-monitored treatment means better patient health, a relieved doctor, and lower indirect costs for the paying party," says Grégory Olocco.

The patient at the heart of a consistent continuum of care

Madeleine, who has been diabetic for many years, suffers from several complications. "All these appointments with the cardiologist, the endocrinologist, and the ophthalmologist, both in the community and at the hospital, wear me out. I have to re-explain my case each time and

(1) In the world's industrialized countries, more than 60% of over-70s have at least one chronic disease.

Source: Stenholm S, Westerlund H, Head J et al. Comorbidity and Functional Trajectories from Midlife to Old Age: The Health and Retirement Study. J Gerontol A Biol Sci Med Sci 2014; 69: 1-7.



1.6M

PATIENTS WITH CHRONIC
DISEASES CARED FOR
IN THEIR HOME BY AIR LIQUIDE⁽²⁾

remember all the drugs that I've been prescribed and their dosage. It requires a lot of energy," she regrets. The home visits by a nurse and an Air Liquide technician have allowed Madeleine to better control her insulin pump treatment. When she has questions, she can now contact them at any time via a helpline. Lastly, a connected monitor allows her blood glucose to be checked in real time and helps avoid unnecessary medical appointments. As her doctor is notified only in the event of a problem, he can concentrate on high value-added medical procedures and regular discussions with the patient.

Combining human and digital interaction

Air Liquide holds two trump cards in the drive to transform home healthcare: its very close human proximity with its patients, at home, for more than thirty years, and its innovative strength, in particular in terms of digital solutions.

"Our offer allows us to personalize our patient care and switch from a reactive medical approach to a proactive one. All this is possible thanks to two complementary forces: human and digital interactions," explains Grégory Olocco. This unique combination, reinforced by operational excellence that is recognized by healthcare professionals, represents the value-added of Air Liquide's solutions. Combined with the human factor, connected healthcare helps to ease pressure on the current health system: upstream, by allowing for the personalization of care and the detection of any complications, and downstream, by streamlining interactions between the various healthcare players. A necessary alliance to help patients return home and stay in their home under the very best conditions in terms of both comfort and medical surveillance.

CHRONIC CARE CONNECT™ FOR CONTINUOUS CARE AND RAPID ACTION

Chronic Care Connect™ is a connected healthcare solution for patients suffering from chronic diseases and at risk of hospitalization. On the decision of the doctor, patients use one or more connected devices (scales, blood glucose monitor, etc.). The data collected is transmitted and analyzed remotely by nurses at the Air Liquide monitoring center, who are in regular contact with patients and their doctors.



DID YOU KNOW?

According to the World Health Organization, 50% of chronically ill patients do not adhere to their treatment properly.⁽³⁾

To help improve patient adherence, beyond simply complying with the prescription, Air Liquide factors in several criteria including a patient's lifestyle, expectations, motivation, and understanding of a treatment's mechanism of action. Promoting adherence means helping patients self-manage their illness.

(2) Air Liquide 2018 Reference Document, page 3.

(3) Sabate E. Adherence to long-term therapies: Evidence for action. Geneva: World Health Organisation; 2003.

AN EFFICIENT HEALTHCARE SYSTEM FOR EVERYONE

There is growing interest among doctors, patients and healthcare organizations for global support focused on the outcome of a patient's treatment. Our approach targets better adherence to treatment for patients, which benefits everyone!



The family

Family members are often the primary caregivers of chronically ill patients. Better understanding of treatment, easier interactions with healthcare professionals, and human and digital support all contribute to lightening the load for these caregivers.

The patient

Personalized care and the ability to contact Air Liquide's teams by telephone (or text message) guarantee better observance of treatment and reassure the patient.



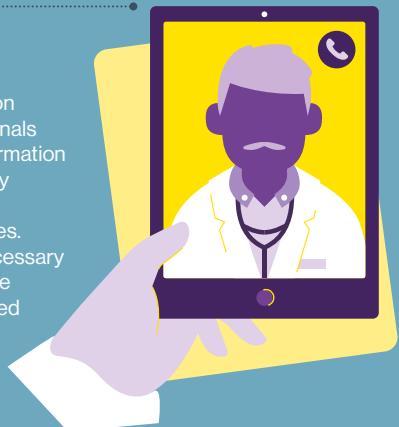
Healthcare coverage authorities

Committing to better adherence means taking all the necessary steps to ensure that a patient's treatment is successful. This approach leverages the quality of services provided to patients and the savings for the healthcare system as a whole in order to create the conditions for genuine therapeutic and economic efficiencies.



Healthcare professionals

Air Liquide encourages the efficient coordination of healthcare professionals by allowing patient information to be collected remotely and shared continually using connected devices. The result: fewer unnecessary appointments, and more time for high value-added medical procedures and discussions with the patient.



Society

The increase in chronic diseases has led us to review how they are treated at the community level. By providing appropriate homecare, indirect costs, such as those related to absence from work, isolation and instability, should be better managed.

COLLABORATION

Unexpected duos at Air Liquide

Nothing suggested that these employees would work together, yet, with highly different profiles, they formed unexpected duos during a project or a gathering... And that led to successful partnerships. They tell us all about it.

Larry Kiehnau
District Manager, Airgas, USA

& Judy Zhang

Vice President Bulk & Onsite, Industrial Merchant, Air Liquide China

The 'Airgas Live!' program allows Air Liquide Industrial Merchant field managers from around the world to have a closer look at the day-to-day, customer-centric operations at Airgas, meet the team, and bring new ideas and best practices for Industrial Merchant entities.

"'Airgas Live!' encourages open conversations. It was interesting to discover the similarities and differences in business between America and China. I was proud of how impressed Judy was by the high level of commitment of everyone in our organization."

LARRY

"Discovering how Airgas organizes and operates its Packaged Gases⁽¹⁾ activity was a fruitful experience. It gave me new ideas about safety behaviors, a customer-centric mindset, specialist capabilities reinforcement, an omnichannel strategy with telesales and e-business... Implementing these ideas will bring more value for our business."

JUDY

(1) Gas delivered in cylinders.





Andrew Reynolds

Chief Financial Officer for the South-West Europe Cluster, Air Liquide

& Roberto Orlando

Bulk Onsite Manager, Air Liquide Italy

The Managerial Mentoring program brings people together from different parts of the organization. The objective? Building bridges between countries, professions and generations in order to reinforce the South-West Europe Cluster.

"Mentoring is a two-way street – it's not just the "mentee" who benefits. The experience allowed me to see issues of our Cluster from a completely different perspective. Most importantly, a real personal relationship was formed – I was so proud of Roberto when he got a promotion, and so happy when he became a dad."

ANDREW

"Andy and I come from very different working contexts, but he was open-minded, an excellent listener and genuinely interested in coming up with solutions. His dedication motivated me to volunteer as a mentor myself, to pass along these values and help someone else grow in the company."

ROBERTO

Audrey Eudeline

Group Employee Engagement Director

& Astrid D'Coutho

Director of Human Resources & Corporate Communications,
Air Liquide India

Taking the pulse of the organization: this is the objective of the MyVoice initiative, currently being rolled out within the Group. Action plans will be identified from collected employee feedback and rolled out in order to improve their experience in the company.

"Despite coming from very diverse backgrounds, we quickly had a real synergy. My time spent inside the 'Customer Experience' program, combined with Astrid's HR experience and our shared open-mindedness, created the ideal conditions for a successful launch of MyVoice."

AUDREY

"I've been in France for six months working closely with Audrey and the benefits are already noticeable. We complement each other by sharing our perspectives, which will surely add value to the project. For both of us, the goal is happy employees, everywhere in the Group!"

ASTRID



We need you!

ON AIR is **YOUR** magazine,
so we want to hear your stories!

**Cleaner mobility, improved
air quality, new healthcare
solutions, healthier food.
Is your role at Air Liquide
a game changer?**

**Are you working with the Group
on a project that is changing
the world?**

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