

Paris, Düsseldorf and Tokyo, 7 September, 2012

New hydrogen filling stations in Europe and Japan

Major developments coming in sustainable mobility

press release



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Hydrogen, a clean energy carrier

Used in the fuel cell, hydrogen combines with oxygen from air to produce electricity, **with water as the only by-product.**

Hydrogen can be produced from a various range of energy sources, natural gas, in particular, but also renewable energy sources. Hydrogen thus has great potential to provide clean energy and ensure reliability of supplies.

Air Liquide is present across the entire hydrogen energy chain (production, distribution, high-pressure storage, fuel cells and hydrogen filling stations).

The automotive industry has announced that vehicles powered by fuel cell technology will be on the market by 2015. Air Liquide is preparing for **the emergence of hydrogen in transport** by supporting the rollout of the **necessary filling station infrastructure** globally. These developments have recently received strong government backing in Europe and Asia.

Today, Air Liquide officially opened its **first public hydrogen filling station for passenger cars** in Germany, in the city of Düsseldorf. This state of the art station will be followed by **10 new hydrogen filling stations** that will be designed, built and rolled out in the next three years under the auspices of the German government's major demonstration project. **By 2015 Germany will have a supply network of at least 50 public filling stations.**

Those new steps are in line with the Group's announcement in October 2011 that it would invest in 20 new stations in Europe.

Driven by the the same dynamic, two other stations have been installed recently by Air Liquide in Oslo, **Norway**, and in the **Swiss** city of Brugg.

In **Japan**, the government sees hydrogen as a promising major energy source for cars and expects to install **about 100 hydrogen distribution stations for fuel cell vehicles by 2015.** Air Liquide Japan intends to build a significant number of them and, in support of this goal, has recently set up a specialized team focused on the hydrogen business. The Group is already very active in Japan in this field, having so far installed 3 hydrogen energy stations (in Tokyo, Kawasaki, and Saga). One of these stations demonstrated the feasibility of a complete "Blue Hydrogen" chain, from wood chips to clean mobility.

Air Liquide is getting ready to play a supporting role in the switch to the new energy mix that includes hydrogen. Today, **some 60 hydrogen filling stations** have been designed and delivered by Air Liquide around the world, helping to spread the use of hydrogen for clean mobility.

François Darchis, Senior Vice-President and a member of Air Liquide's Executive Committee, commented: ***"Air Liquide is proud to support those government initiatives. Those new developments illustrate the commitment of the Group to participate to the deployment of the hydrogen energy infrastructure worldwide. Hydrogen is one of the innovative solutions that offer a response in the short term to the challenges of sustainable mobility: reducing greenhouse gases, local pollution in our cities and dependency on oil-based fuels thus contributing to the preservation of the environment."***

Blue Hydrogen

With Blue Hydrogen, Air Liquide is moving towards a gradual decarbonization of its hydrogen production dedicated to energy applications.

In practical terms, Air Liquide takes a commitment to produce at least 50% of the hydrogen necessary for these applications through carbon-free processes by 2020, by combining:

- renewable energy sources, water electrolysis and biogas reforming,
- carbon capture and storage technologies during the hydrogen production process based on natural gas.

Air Liquide is the world leader in gases for industry, health and the environment, and is present in 80 countries with 46,200 employees. Oxygen, nitrogen, hydrogen and rare gases have been at the core of Air Liquide's activities since its creation in 1902. Using these molecules, Air Liquide continuously reinvents its business, anticipating the needs of current and future markets. The Group innovates to enable progress, to achieve dynamic growth and a consistent performance.

Innovative technologies that curb polluting emissions, lower industry's energy use, recover and reuse natural resources or develop the energies of tomorrow, such as hydrogen, biofuels or photovoltaic energy... Oxygen for hospitals, home healthcare, fighting nosocomial infections... Air Liquide combines many products and technologies to develop valuable applications and services not only for its customers but also for society.

A partner for the long term, Air Liquide relies on employee commitment, customer trust and shareholder support to pursue its vision of sustainable, competitive growth. The **diversity** of Air Liquide's teams, businesses, markets and geographic presence provides a solid and sustainable base for its development and strengthens its ability to push back its own limits, conquer new territories and build its future.

Air Liquide explores the best that air can offer to preserve life, staying true to its sustainable development approach. In 2011, the Group's revenues amounted to **€14.5 billion**, of which more than 80% were generated outside France. Air Liquide is listed on the Paris Euronext stock exchange (compartment A) and is a member of the CAC 40 and Dow Jones Euro Stoxx 50 indexes.

Air Liquide in Germany

employs 4,000 employees and serves about 350,000 customers. It has been present since 1971 and currently operates 42 industrial sites in key regions.

Air Liquide has been very active in deploying hydrogen energy projects in Germany, where four hydrogen filling stations have already been built in the past for private uses.

Air Liquide in Japan

Established in 1907 in Japan, as Japan first industrialized, Air Liquide now serves 15,000 customers across the country, particularly in Electronics, thanks to its 2,600 employees. The Group also has a Research and Technology Centre in Tsukuba (near Tokyo) and an Engineering center in Harima (near Kobe). Japan serves as a technology & research base for Air Liquide in Asia and beyond.