

Air Liquide transforms its network in Germany by connecting a large electrolyzer producing renewable hydrogen

Air Liquide is planning to build in Oberhausen, Germany, a renewable hydrogen production plant by electrolysis. With a total capacity to reach 30 megawatts (MW), a first phase of the project is expected to be operational by early 2023 with 20 MW. What is unique about this project is that the electrolyzer will be integrated into the existing local pipeline infrastructure of Air Liquide to supply key industries and mobility with renewable hydrogen in one of the most industrialized regions of Germany. To accelerate the implementation of this project, public funding has been granted by the German Federal Ministry of Economic Affairs and Energy. This worldscale electrolyzer will be the first to be built in the framework of the partnership between Air Liquide and Siemens Energy.

The new Proton-Exchange Membrane (PEM) electrolyzer to be built by Air Liquide will produce renewable hydrogen from water and renewable electricity. **The technological solution for the project is being developed in the framework of the previously announced partnership between Air Liquide and Siemens Energy.** By 2023, the two partners will implement a 20 MW electrolyzer plant that will produce renewable hydrogen and renewable oxygen. In a second phase, Air Liquide has planned to increase the plant capacity to 30MW.

The PEM electrolysis is expected to start operating in early 2023 and will be the first large-scale renewable hydrogen production connected to both existing hydrogen and oxygen pipelines, with nearly 15 large industrial sites already connected today. This will support sectors such as Steel, Chemicals, Refining and Mobility in North Rhine-Westphalia by accelerating the availability of gases produced with renewable electricity for their efforts to reduce their carbon footprint.

This project has received a funding notification from the German Federal Ministry of Economic Affairs and Energy. Elisabeth Winkelmeier-Becker, Parliamentary State Secretary at the Federal Ministry of Economics, stated: *"With the National Hydrogen Strategy we have taken a decisive step towards the further development of the energy transition. At the same time, the market ramp-up of the H2 economy offers great economic opportunities, especially after the impact of the Corona Pandemic. The Ministry of Economics has therefore been working at full speed for a year to create the regulatory and legal framework. Now we need concrete and ambitious projects. The project of Air Liquide in Germany has a showcase character in this context. It demonstrates how "green" hydrogen can be used to sustainably transform industry as well as certain transport sectors. At the same time, the project is a strong signal for the positioning of the Rhine-Ruhr region in the hydrogen sector."*

François Jackow, Executive Vice President and a member of the Air Liquide Group's Executive Committee supervising Europe Industries activities, said : *"We highly value the support of the German Ministry of Economic Affairs to this groundbreaking project. Leveraging on Air Liquide's existing hydrogen pipeline network, the renewable hydrogen produced will accelerate the decarbonization of the Rhine-Ruhr industrial basin and it will foster clean mobility in a densely populated region. The construction of this industrial scale renewable hydrogen production plant will mark the first realization of the partnership Air Liquide and Siemens Energy created to enable the emergence of a sustainable hydrogen economy in Europe. It is in line with Air Liquide's Sustainable Development Objectives, which include contributing to the development of a low-carbon society with hydrogen as one of its key levers."*

Air Liquide in Germany

Air Liquide employs more than 4,000 people and serves approximately 100,000 customers in Germany's most important industrial regions. It supplies a number of industries, such as the aircraft, automotive, food and beverage, chemical, electronic, and energy sectors, as well as the healthcare industry, and is very active in the deployment of hydrogen energy projects.

Air Liquide's commitment to hydrogen

In full support of the 2015 Paris agreement, Air Liquide's commitments address the urgency of climate change and energy transition, targeting carbon neutrality by 2050. As a pioneer in hydrogen, the Group is convinced that hydrogen is a cornerstone of the energy transition. In the past 50 years, the Group has developed unique expertise enabling it to master the entire supply chain, from production and storage to distribution, contributing to the widespread use of hydrogen as a clean energy carrier for a wide range of applications such as industrial usages and clean mobility.

Air Liquide is committed to reaching several goals, investing approximately 8 billion Euro in the low-carbon hydrogen full value chain by 2035, and a total of 3 GW electrolysis capacity by 2030.

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A world leader in gases, technologies and services for Industry and Health, Air Liquide is present in 78 countries with approximately 64,500 employees and serves more than 3.8 million customers and patients. Oxygen, nitrogen and hydrogen are essential small molecules for life, matter and energy. They embody Air Liquide's scientific territory and have been at the core of the company's activities since its creation in 1902.

Air Liquide's ambition is to be a leader in its industry, deliver long term performance and contribute to sustainability - with a strong commitment to climate change and energy transition at the heart of its strategy. The company's customer-centric transformation strategy aims at profitable, regular and responsible growth over the long term. It relies on operational excellence, selective investments, open innovation and a network organization implemented by the Group worldwide. Through the commitment and inventiveness of its people, Air Liquide leverages energy and environment transition, changes in healthcare and digitization, and delivers greater value to all its stakeholders.

Air Liquide's revenue amounted to more than 20 billion euros in 2020. Air Liquide is listed on the Euronext Paris stock exchange (compartment A) and belongs to the CAC 40, EURO STOXX 50 and FTSE4Good indexes.