

Air Liquide to build two new hydrogen production units with carbon capture technology in Shanghai Chemical Industry Park

Shanghai Chemical Industry Park Industrial Gases Co., Ltd (SCIPIG), a subsidiary of Air Liquide, will invest more than 200 million euros to build two hydrogen production units and related infrastructure in Shanghai Chemical Industry Park (SCIP). These units will bring significant environmental benefits, as they are designed to replace current supply from a third party coal-based gasification unit, will be equipped with CO₂ capture and recycle technology and will be connected to SCIPIG existing local network. These two units will come in addition to two other hydrogen units and four air separation units that SCIPIG already operates in the Park.

Through **more than 15 year-long contracts, these units will produce hydrogen and carbon monoxide for the supply to Covestro China and Shanghai Lianheng Isocyanate Company (SLIC, a joint-venture led by BASF and Huntsman) in the Park, as well as mobility, other industrial and electronics customers in the Yangtze River Delta megalopolis.** The two units will have a total hydrogen (H₂) production capacity of around 70,000 Nm³/h. They will be equipped with units to capture and recycle carbon dioxide (CO₂) to contribute to the production of carbon monoxide (CO) for a total capacity of 28,000 Nm³/h.

Planned to be operational in phases, starting from the year end 2023, the two Steam Methane Reformers (SMR), will be designed and built by Air Liquide Engineering & Construction. They would not only replace a third party coal-based gasification unit, but will also be equipped with CO₂ recycle units and connected to the existing SCIPIG local network. **This will avoid the emission of 350,000 tonnes of CO₂ per year**, which is comparable to the equivalent electricity-related emissions of 1 million Chinese households. Connecting the production units to SCIPIG's local pipeline network will further enhance the reliability and flexibility of gas supply.

Air Liquide has been actively involved in the development of the Shanghai Chemical Industry Park since 1996. Host to major international and local chemical companies, the park covers 29,4 km² and is located near the Shanghai Yangshan port, one of the busiest container ports in the world. Among other initiatives, Air Liquide recently announced the creation of a joint venture with Shenergy and SCIP to use the hydrogen produced by SCIPIG to supply hydrogen refueling stations across the Yangtze River Delta and support the fast growing hydrogen vehicles market in the region.

François Abrial, Member of the Air Liquide Group's Executive Committee supervising Asia Pacific, said, *"These new investments further enhance Air Liquide's long-term collaboration with Covestro, SLIC and Shanghai Chemical Industry Park. Leveraging our expertise in hydrogen production as well as carbon capture and utilization, the project demonstrates our capacity to bring solutions for our customers which are reliable, competitive, and beneficial to the environment. A specialist in the decarbonization of the industry, Air Liquide is proud, with this project, to support Shanghai's ambitious climate plan."*

Holly Lei, President of Covestro China, stated, *"We are pleased to further strengthen our partnership with SCIPIG in the Shanghai Chemical Industry Park. The new investment will provide a reliable supply of important raw materials to Covestro Integrated Site Shanghai. In addition, we will realize the synergy to reduce the carbon footprint of hydrogen, which as a fuel can contribute to a low-carbon mobility in the Yangtze River Delta Region. In this regard, our ambition to become climate neutral goes hand in hand along the value chain and beyond the company boundary."*

Ma Jing, Director of Shanghai Chemical Industry Park Administration Committee, said, *"We welcome SCIPIG's new investment in the park. Bringing in innovative technologies, it will help us to transition away from coal-based gas production and drastically reduce associated carbon emissions. At present, SCIP is actively implementing a new roadmap for green and low-carbon development in line with the national strategic*

deployment. SCIPIG's new investment will play an important role in reducing carbon emissions in the park. SCIP will, as always, assist in facilitating the construction and operations of this project and in promoting the use of low-carbon hydrogen to contribute to our common carbon peak and carbon neutral objectives."

Air Liquide China

Air Liquide in China operates more than 120 plants and employs nearly 5,000 employees. With a strong presence in the key coastal industrial areas, Air Liquide is now expanding into the center, south and west. Its main business activities include industrial and medical gas operations, home health service, Engineering & Construction (designing, manufacturing and installing air separation units/hydrogen facilities), as well as Innovation activities.

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About Air Liquide Group

A world leader in gases, technologies and services for Industry and Health, Air Liquide is present in 75 countries with approximately 66,400 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.

Taking action today while preparing the future is at the heart of Air Liquide's strategy. With ADVANCE, its strategic plan for 2025, Air Liquide is targeting a global performance, combining financial and extra-financial dimensions. Positioned on new markets, the Group benefits from major assets such as its business model combining resilience and strength, its ability to innovate and its technological expertise. The Group develops solutions contributing to climate and the energy transition—particularly with hydrogen—and takes action to progress in areas of healthcare, digital and high technologies.

Air Liquide's revenue amounted to more than 23 billion euros in 2021. Air Liquide is listed on the Euronext Paris stock exchange (compartment A) and belongs to the CAC 40, CAC 40 ESG, EURO STOXX 50 and FTSE4Good indexes.