

Air Liquide to deliver hydrogen for thyssenkrupp's pioneering project for lower carbon steel production

Air Liquide and thyssenkrupp Steel, a world leading supplier of carbon steel flat products, join forces in a pioneering project to develop lower carbon steel production. For the first time, hydrogen will be injected to partially replace pulverized coal at a large scale in the blast furnace during steel production.

After successful completion of a pilot phase this autumn 2019, **Air Liquide will ensure a stable supply of hydrogen from its 200 km network in the Rhine-Ruhr Area.** This solution will be implemented at one of the blast furnaces in thyssenkrupp's integrated steel mills in Duisburg site, Germany. Transferred to all blast furnaces at the site, thyssenkrupp aims at reducing CO₂ emissions in the production process by up to 20%.

This initiative underlines the shared commitment of Air Liquide and thyssenkrupp Steel to a lower carbon future pathway. Both companies have set ambitious goals to curb their emissions drastically. **As part of its global approach to climate, Air Liquide has committed to promote solutions to help its clients reduce their carbon footprint.**

Hydrogen will play a significant role in the transition to a low-carbon future. It can replace coal used in iron and steel industrial processes such as in this project. Hydrogen can also be stored and transported in large quantities, allowing uses across many domains, such as transport, heat, industry and electricity. In the past 50 years, Air Liquide has developed unique expertise enabling it to master the entire hydrogen supply chain, from production and storage to distribution.

Guy Salzgeber, Executive Vice-President and member of the Air Liquide group's Executive Committee supervising industrial activities in Europe, said: **"Hydrogen is a cornerstone of the energy transition. We are very proud to announce this innovative project with our long-term partner thyssenkrupp to foster a low carbon steel production. This initiative fully reflects our strategy to collaborate with our clients to develop solutions to accompany their journey towards a more sustainable industry."**

About Air Liquide in Germany

The Air Liquide Group has been active in Germany for more than 100 years. Today, 4,500 employees work here to supply 100,000 customers and serve more than 200,000 patients. Air Liquide offers innovative solutions – gas, equipment and services – throughout Germany for a wide variety of industries, from automotive, healthcare, aeronautics, metallurgy and metal fabrication to the chemical and agri-food industries. Air Liquide in Germany is the number one supplier of air gases to large industrial and electronics customers.

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A world leader in gases, technologies and services for Industry and Health, Air Liquide is present in 80 countries with approximately 66,000 employees and serves more than 3.6 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. The company's customer-centric transformation strategy aims at profitable 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 21 billion euros in 2018 and its solutions that protect life and the environment represented more than 40% of sales. Air Liquide is listed on the Euronext Paris stock exchange (compartment A) and belongs to the CAC 40, EURO STOXX 50 and FTSE4Good indexes.