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Important Milestone Reached at Steelanol CCU Plant in Belgium

- **Industrial production of ethanol at Europe's first carbon capture and utilization (CCU) project located on ArcelorMittal's premises in Ghent, Belgium**
- **Captures carbon-rich gases and converts them into ethanol through a carbon biorecycling process developed by LanzaTech**
- **Primetals Technologies among the contributors together with ArcelorMittal, E4tech (now ERM), and LanzaTech**

November 2023 saw the first industrial-scale production of ethanol at the Steelanol plant in Ghent, Belgium. This marks an important step toward full operation of the Steelanol plant. The project is a collaboration between ArcelorMittal, LanzaTech, ERM, and Primetals Technologies.

Captures carbon-rich gases

Steelanol is Europe's first carbon capture and utilization (CCU) project. The plant captures carbon-rich industrial gases from the blast furnaces at ArcelorMittal Ghent and biologically converts them into ethanol. Developed by LanzaTech, the technology works like a brewery: proprietary bacteria, the so-called "biocatalyst", consume carbon-rich gas and convert it into sustainable raw materials such as ethanol. The Steelanol plant has the potential to reduce annual carbon emissions from the Ghent plant by 125,000 tons. The ethanol produced can be used in, for example, sustainable aviation fuel, packaging, and textile production as well as perfumes and household cleaning products.

Allows steel producers to enter new markets

During a period of a few weeks, gases from the blast furnace were safely introduced into bioreactors at the Steelanol plant, which was followed by the first industrial production of ethanol from one of the four bioreactors on November 7. A further ramp-up of production is expected for the coming months. The plant has the capacity to produce 80 million litres of ethanol annually.

In December 2022, the plant was inaugurated, after which the cold commissioning phase and the inoculation took place. During inoculation the biocatalyst was introduced to start the growth of microorganisms. In June 2023, the first samples containing ethanol were produced in the inoculator.

LanzaTech's ground-breaking carbon biorecycling technology enables steel producers to prevent emissions and reuse the carbon from the steelmaking process to make new products, which in turn allows for the entrance into markets beyond steel. Primetals Technologies and LanzaTech have collaborated on technologies for the decarbonization of the steel industry for over ten years. This summer, the partners extended their partnership another ten years.

About the Steelanol partners

Headquartered in Chicago, U.S.A., LanzaTech (listed as LNZA on Nasdaq) has developed and owns the rights to the technology used at the Steelanol plant. ERM provides the full Life Cycle Assessment (LCA) methodology, based on data from the plant in Ghent, which will provide insights into the environmental performance of this type of ethanol. The Steelanol plant in Ghent will be operated and maintained by ArcelorMittal.

The market leader in environmental innovations for the metals industry, Primetals Technologies provides both high engineering competence as well as advisory services for process design and implementation.

Funding for Steelanol has been obtained from various sources, including from the European Union's Horizon 2020 program, the European Investment Bank, and the Belgian and Flemish governments.



A key part of the Steelanol plant, the bioreactors is where ethanol is produced.

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