Aurubis: First copper anodes produced with hydrogen

- **Successful start to the series of hydrogen tests at the multimetal company's Hamburg plant**
- **CEO Roland Harings: "Hydrogen is the energy source of today"**
- **First Mayor of Hamburg Peter Tschentscher: "Hamburg is optimally positioned as a forward-looking region for hydrogen"**

Hamburg, May 27, 2021 – Today, Aurubis started the series of tests for hydrogen use on an industrial scale in copper anode production at the Hamburg plant. The pilot project in which hydrogen and nitrogen were introduced in the production facility (anode furnace) instead of natural gas went according to plan. Initially, the current tests will gauge the reaction of the facility to the introduction of hydrogen and ensure that the individual production steps, which are highly sensitive in the energy-intensive metal production process, run smoothly.

In the medium term, hydrogen could replace fossil fuels in the production process, making production more climate-friendly overall. Due to hydrogen's high reactivity, Aurubis expects enhanced efficiency in the production process as well. The hydrogen for the tests at Aurubis is supplied by Air Liquide, a long-term Aurubis partner that operates an oxygen unit on the Hamburg plant premises, among other things.

With the first-time use of hydrogen on an industrial scale, Aurubis demonstrates another key step towards carbon-neutral multimetal production: while the conventional use of natural gas as a reducing agent forms carbon dioxide, the use of hydrogen only generates water vapor as a by-product. "Hydrogen has long been considered the energy source of the future. In addition to electricity, it can become the energy source of today if competitive parameters are created for its use. With the successful start of the hydrogen pilots, Aurubis shows how the carbon-neutral future can look with the help of innovation," said Aurubis AG CEO Roland Harings. He emphasized, "When it comes to climate protection, Aurubis has been a forerunner for a long time already. We support the goal of a carbon-neutral continent by 2050. As a multimetal company, we can and want to contribute to this goal – through innovative products and production processes."

Significant reduction in emissions

Aurubis' CO_2 footprint is already considerably lower than the industry average: With the current processes, Aurubis emits – compared to the average of all copper smelters – about half of the global CO_2 footprint per ton of copper output. "By using hydrogen, we can achieve additional significant emission reductions," remarked Plant Manager Dr. Jens Jacobsen. "The savings potential for the Hamburg smelter in this area alone amounts to 6,200 tons of CO_2 annually."

Hydrogen region Hamburg – a hub for Germany and Europe

"Hamburg is a forward-looking region for innovative climate protection. Today, Aurubis is taking a crucial step to make industry more climate-friendly," said First Mayor of Hamburg Dr. Peter Tschentscher. "Hydrogen is the central energy source

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of the energy transition. Generated from renewable energies, it can replace coal, crude oil, and natural gas – in industry, as a CO_2-free fuel in transport, as a means of flexible energy storage, and as a sustainable energy source in many other areas. Hydrogen is already being used in Hamburg in a number of pilot projects on a large scale, like the one here at Aurubis. Our goal is to become the biggest hydrogen center of the north: in sustainable production, technology development, and the establishment of a strong hydrogen economy."

Series of tests to conclude in late summer

The extensive tests starting on May 27 will investigate hydrogen use in continuous operation until the late summer. The long-term goal is to determine the conditions under which hydrogen can be used for poling purposes in the anode furnace instead of natural gas. Furthermore, the technical insights that are gathered in this process are intended to establish the foundation for additional hydrogen activities in the Group.

"We are glad to have the support of the city and to do our part in making Hamburg the hydrogen hub of northern Germany. If the tests go positively in late summer, this will open up additional opportunities to use hydrogen as an alternative, at Aurubis and beyond," underlined Ulf Gehrckens, Senior Vice President Corporate Energy & Climate Affairs at Aurubis. The Hamburg Authority for Economic Affairs and Innovation supports the project, financially and otherwise.

Aurubis is committed to the goal of becoming carbon-neutral by 2050 at the latest and is already successfully implementing CO_2 reduction projects at all of the company's production sites. These include the use of industrial waste heat, the power-to-steam procedure, and wind energy for sustainable electricity generation.