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Photo: 'Carbolyzer' pilot plant (Source: Rohrdorfer Group)

SPOTLIGHT

ROHRDORFER GROUP

Rohrdorfer Team develops a new innovative CCU technology

The Net Zero Emission Team of German Rohrdorfer Group has developed a novel CCU (Carbon Capture and Utilization) technology that combines carbon capture and conversion into a single step. The innovative process, with the working title iCCE (intensified Carbon Capture and Electrolysis), uses the benefits of an electrolysis and the waste heat generated during the process, for CO_2 desorption by amine scrubbing. In the process, a synthesis gas consisting of carbon monoxide and hydrogen is produced. These gases can be used for example in the iron industry for the reduction of pig iron or in the chemical industry for the generation of ethanol or ethylene, which are key feedstocks.

In 2025, Rohrdorfer installed a 'Carbolyzer' pilot plant (photo) utilizing an electrolyzer, developed by Rohrdorfer, combined with proven amine scrubbing process steps. The installation has been undergoing testing since June 2025. While the focus of the tests is on carbon capture and CO_2 avoidance, it is very useful to know, how the CO_2 can be converted into base products for other industries.

"We are currently testing several capture methods in parallel so that we can make an informed decision on which one to use for an industrial-scale plant," says Dr. Christopher Ehrenberg, Technical Director of the Rohrdorfer Cement Division. "We are concerned about the slow expansion of infrastructure for CO_2 transport and the consistent supply of green electricity. Both are essential for us if we are to achieve the EU's climate targets. We believe the federal and state governments have a duty to drive this expansion forward more decisively."

https://www.rohrdorfer.eu/co%e2%82%82-as-a-ressource-rohrdorfer-combines-capture-and-conversion/