

Scheuch in research project on CO2 reduction

Scheuch develops new technology for the direct conversion of CO2 emissions from incineration plants into valuable raw materials in a partner research project

A consortium of leading institutions and companies led by TU Wien has launched the innovative 'Direct Carbon Capture and Electrolysis' (directCCE) research project. This project aims to make a significant contribution to achieving climate neutrality in the intensive and manufacturing industries, securing Austria's position as a leading industrial location. The goal is to demonstrate a novel technology for the direct conversion of CO2 emissions from waste incineration plants into valuable raw materials.

Reaching the goal together

The Scheuch Group is part of the project consortium with the partner organisations Wien Energie, GIG Karasek GmbH, ENRAG GmbH, Montanuniversität Leoben, University of Innsbruck, NOVAPECC GmbH and Technical University of Vienna. Scheuch is strengthening the development of the project particularly through its many years of expertise in the field of gas pre-cleaning. Furthermore, and of crucial importance for the success of the project is the delivery of the CO2 capture technology by Scheuch.

Innovative technology

directCCE builds on previous research on combining CO2 absorption and direct electrocatalytic conversion, enabling the synthesis of synthetic hydrocarbons in a comparatively simple process. The project aims to demonstrate this technology on a semi-industrial scale, with a capacity of about one ton of CO2 per week.

The project's centerpiece is an integrated CO2 capture and electrolysis process that converts CO2-rich flue gas into synthesis gas. This gas then serves as a raw material to produce climate-neutral hydrocarbons. A specially developed combination of an electrolyte, capable of dissolving large quantities of CO2, with highly efficient catalysts for the electrochemical CO2 conversion plays a central role. This innovative process promises lower energy consumption, high cycle stability, and lower investment costs compared to traditional processes.

Leading the way for future industrial processes

With milestones such as the establishment of infrastructure, completion of flue gas treatment, and optimization of the catalyst material, directCCE not only pursues technological advancements but also a clear strategy for the patenting and exploitation of the developed technologies. The project's results will be crucial in facilitating the transition to a climate-neutral waste incineration and simultaneously promoting the development of proprietary technologies 'Made in Austria'.

The directCCE project is a pioneering step towards the complete decarbonization of industrial energy systems, highlighting Austria's commitment to sustainable industrial processes and environmental protection. By bringing together science, industry, and

technology, directCCE demonstrates how innovative solutions can contribute to tackling the climate crisis while simultaneously strengthening Austria's economic location.

This project is being funded by the Austrian Research Promotion Agency (FFG) as part of the "Vorzeigeregion Energie" call for proposals and is part of the NEFI (New Energy for Industry) innovation network.

About Scheuch Group

The Scheuch Group is a family-owned business whose goal is to make a positive impact to protecting the earth and local communities with sustainable technologies for air pollution control. For more than 60 years, the Upper Austrian company has been working to reduce particulate matter and emissions from the air by means of extraction, dust removal, conveying and flue gas cleaning. These technologies and others also reduce noise and odors that are produced during the manufacturing process. In addition to serving the industrial minerals, energy, metal, wood-based materials, glass and wood industries, the core business also includes service and components. Customers can leverage all or any of the services the company delivers from sales, project management, design, research & development, manufacturing, assembly, commissioning, and after-sales service. Today, the Scheuch Group and its more than 1,500 employees and subsidiaries across the globe, is regarded as a leading international environmental technology company.

Photo: project group

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The project group from science and industry is working on sustainable industrial processes to protect the environment.

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