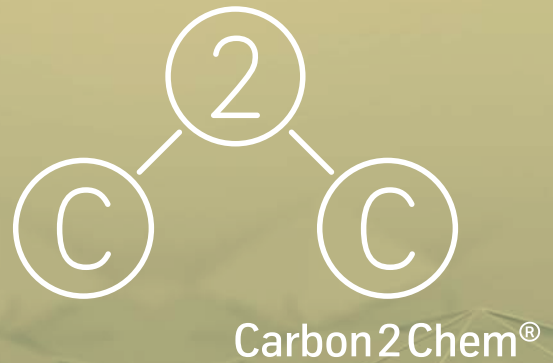


Brief description

JOINT PROJECT Carbon2Chem®

Keeping carbon in the loop



THE PROJECT

Using metallurgical gases from the steelmaking process as a raw material source for the chemical industry: Fundamental research into this has been conducted within the BMBF-funded joint project Carbon2Chem® since 2016. 19 partners from industry and science are working on sustainable climate protection measures that enable CO₂ emissions to be reduced and the use of fossil raw materials to be reduced or prevented within industry.

PROJECT AIM

Using renewable energy, CO₂ emissions from energy-intensive industrial sectors, such as steel, cement or lime, should replace fossil raw materials in the chemical industry as part of a cross-industrial production network. In the example of the steel industry, process gases from smelting used to date for energy production serve as primary materials for the production of synthetic fuels, plastics, and basic chemicals. Alongside green H₂, the purification of process gases is the central element that needs to be adapted to suit the CO₂ source and product synthesis. The modular approach to CO₂ use within cross-industrial production networks allows for application in the large industrial locations of other CO₂-intensive plants, such as cement and lime works and waste incineration plants.

MILESTONES

The first project phase (2016-2020) provided a positive assessment of technical feasibility and the sustainability and cost-effectiveness of the planned production network.

The consortium is currently working on large-scale implementation in the project's own laboratory at Fraunhofer UMSICHT and at the technical center on the site of thyssenkrupp Steel Europe AG. A particular focus of the activities concerns the development and assessment of systemic concepts and the scaling and optimization of the necessary processes in the laboratory and technical center as part of long-term tests. The work is being carried out with the aim of implementation on an industrial scale by 2026 in a third phase.

SPONSORED BY THE



Federal Ministry
of Education
and Research

