

Pressemitteilung**Steinbeis Europa Zentrum****Anette Mack**

07.06.2023

<http://idw-online.de/de/news815665>Forschungs- / Wissenstransfer, Forschungsprojekte
Chemie, Energie, Umwelt / Ökologie
überregional**EU Project eQATOR tackles CO₂ emissions in the chemical sector**

Carbon emissions from the conventional production of chemicals is a major contributor to climate change. Process electrification and use of renewable resources can go a long way towards reducing emissions. In the frame of the EU project eQATOR, a consortium of industry and research partners is employing these techniques to develop innovative solutions to decrease CO₂ emissions in syngas production. Steinbeis Europa Zentrum supports the communication activities in the project, exploitation of the project results and data management.

According to the International Energy Agency (IEA), the chemical sector is the largest industrial energy consumer and the third largest industry subsector when it comes to direct CO₂ emissions. Within the sector, methanol is a commonly produced base chemical with a high variety of applications for example in pharmaceuticals or textiles. Methanol is produced from syngas, the product of steam reforming of methane, a chemical reaction that requires a large amount of heat. This heat is usually generated by the combustion of fossil fuels and accounts for about 10% of the CO₂ emissions of the entire sector. Reducing these emissions is therefore paramount to reaching climate goals and achieving the green transition.

In the frame of the Horizon Europe funded eQATOR project, a consortium of 15 European industrial and research partners coordinated by the Norwegian organisation SINTEF is creating scalable catalytic reactor technology for the conversion of biogas to syngas with improved efficiency. The central innovation is the development of catalysts heated electrically either by resistive or microwave heating, which allows for small reactor size and eliminates the need to heat large volumes of gas. Using electricity generated from renewable energy rather than fossil fuels leads to a drastic decrease in CO₂ emissions; implementation of the eQATOR technology is estimated to save from 7 Mt CO₂/year in 2030 to 45 Mt CO₂/year in 2045.

The project started on 1st June 2022 and will continue until 30th November 2025. Some progress has been made and partners have taken the first steps towards achieving project goals. A range of catalysts has been tested and analysed for their suitability. Lab-scale reactors are up and running and four process simulations have been developed, based on two different biogas compositions and two different process schemes. Technical work is accompanied by an integrated sustainability assessment, including an analysis of the techno-economic feasibility, environmental footprint as well as impact on society and rural development.

“The goal of the eQATOR project is to demonstrate that small-scale methanol production from biogas with innovative catalytic reactor technologies will decrease CO₂ emissions and the use of fossil carbon sources, while simultaneously building a vision for local methanol economies,” says eQATOR coordinator Richard H. Heyn.

As a project partner Steinbeis Europa Zentrum supports the communication activities in the project, exploitation of the project results and data management.

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ēQATOR - Electrically heated catalytic reforming reactors (Grant Agreement No 101058293). Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union. Neither the European Union nor the granting agency can be held responsible for them.

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URL zur Pressemitteilung: <http://www.eqator.eu> - More information about the project