

Press release

Leipzig, 29/10/2025

Research in the 'biogeniV' innovation alliance: Fermentation residues from biogas plants to be turned into green chemicals

With funding approval from the Federal Ministry of Research, Technology and Space (BMFTR), two forward-looking research projects on the sustainable use of biogenic residues have been launched as part of the 'WIR! – Innovation and Structural Change' programme. The 'Residual Material Drying' project, coordinated by the DBFZ with funding of just under €514,000, received its grant on 1 August 2025. The closely related 'Residual Material Gasification' project, led by the TU Bergakademie Freiberg, received its grant of just under €1,300,000 on 1 September 2025.

Both research projects are part of the biogeniV innovation alliance and pursue the common goal of converting biogenic residues that have been little used or used inefficiently to date, such as fermentation residues from regional biogas plants, into high-quality chemical energy sources such as green methanol. The project consortium of the sub-project 'Residue drying – analysis of processes for the treatment of biogenic residues for further thermochemical use' is led by the DBFZ and, together with Cosun Beet Company Anklam (CBC) and mele Energietechnik (mele), is developing processes for the energy-efficient dewatering, drying and compaction of fermentation residues into high-quality products. "By mixing the fermentation residues with regionally produced residues such as roadside wood, landscape maintenance material or industrial residue streams, chemical and energy-specific properties can be specifically influenced and modified. This also creates a homogeneous product that can be stored, dosed and transported, making it ideal for use in gasification," explains project manager Dr. Claudia Kirsten from the DBFZ, who is conducting research into the efficient processing and utilisation of residues together with her team.

The project partner, the Technical University of Freiberg (TU BAF), has various facilities available for gasifying the newly developed fuels. To process the resulting synthesis gas into green methanol, scientists led by Prof. Dr. Martin Gräbner from the TU Bergakademie Freiberg, together with the Stralsund University of Applied Sciences and the Cosun Beet Company Anklam, are using a suitable facility for methanol synthesis. By combining the processes of waste refinement, gasification and methanol production from aqueous fermentation residues as waste to green methanol, the project partners involved aim to develop an optimal utilisation concept for energy and material flows – including the integration of waste heat and green hydrogen.

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Green methanol is considered a promising fuel of the future, especially for shipping. Several initiatives for the production of green methanol are currently underway in Mecklenburg-Western Pomerania. "Biogenic residues will play a central role in the future, as lower production costs are expected than, for example, for electricity-based green methanol from hydrogen and CO₂. We are excited to see the results of these projects and recognise the great potential for producing green methanol in our region," says Daniel Fink, production manager for bioenergy at Cosun Beet Company in Anklam. With its proximity to the Baltic Sea and inland waterways, the region in particular has the potential to become a model region for new, sustainable value chains based on green methanol.

biogeniV alliance

Together with the Hanseatic City of Anklam, Cosun Beet Company (Anklam sugar factory) as one of the largest processors of agricultural crops in the region, and the Leibniz Institute for Plasma Science and Technology (INP), the 'biogeniV' innovation alliance has established a network of currently 26 partners and other stakeholders with common development goals. biogeniV connects renowned research institutions with processors of agricultural products and biogas producers, as well as technology developers and providers.

Weitere Informationen:

<https://www.biogeniv.de/en/home>

https://www.innovation-strukturwandel.de/strukturwandel/de/programm/wir_/wir_.html



From left to right: Prof. Dr. Martin Gräbner (TU BAF), Dr. Claudia Kirsten (DBFZ), Jenny Stukenbrock (CBC), Nikolaus Manolikakes (DBFZ), Dr. Felix Baitalow (TU BAF), Dr. Markus Piechotka (mele). Picture: © Anne Zschächner

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