

Press release

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Treating sewage sludge and incinerating it with low emissions: Saxony's "ReKlär" collaborative project develops innovative solutions

Against the backdrop of increasing demands for resource-efficient waste recovery and the goal of energy self-sufficiency for municipal wastewater treatment plants, there is a growing need for innovative solutions for the thermal recovery of sewage sludge. Against this backdrop, the "ReKlär" collaborative project-financed by the Saxon Development Bank (SAB) with a total budget of 1.9 million EUR has been launched in partnership with a Saxon network of industry and research institutions. The goal is to develop an innovative integrated system that enables small and medium-sized municipal wastewater treatment plants, in particular, to recycle sewage sludge in a cost-effective and resource-efficient manner.

The focus of the project "Comprehensive Development and Optimization of Fuels and Burner Concepts for Low-Emission Sewage Sludge Incineration – ReKlär" (Project No.: 100784296) is the development of a homogeneous, storable fuel made from dewatered sewage sludge, as well as a burner system specifically tailored to it for efficient and low-emission thermochemical recovery. "By combining both subprojects, the goal is to develop a practical system for decentralized thermal sewage sludge recovery that is specifically designed to meet the needs of small and medium-sized wastewater treatment plants serving up to 50,000 population equivalents, most of which do not utilize biogas. In particular, the scalability to smaller wastewater treatment plants is what makes this project innovative, as no holistically designed system for the treatment and utilization of sewage sludge for this plant size has been available from a single source to date," explains Dr. Claudia Kirsten, project manager at the DBFZ.

In addition to the environmental benefits (emissions reduction, resource utilization) of the developed concept, the system also offers economic potential through effective heat utilization, eliminated transportation costs, revenue from purchased single-component materials and ash that is predominantly recycled externally, as well as a long-term reduction in storage and disposal costs. The project is thus intended to make a significant contribution to achieving the politically set goals of largely energy self-sufficiency for municipal infrastructure by 2040, including the replacement of fossil natural gas and heating oil as energy sources.

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As part of the collaborative project, the DBFZ is responsible for processing and comprehensively characterizing the sewage sludge, additives, fuels produced, and ash through standardized laboratory analysis, and assesses their compliance with national and international standards. In addition, the legal framework surrounding the use of sewage sludge for energy is being evaluated. Furthermore, the DBFZ provides support in the metrological measurement of emissions from burner systems, as well as in the design and adaptation of burners and additional emission reduction technologies.

Regional industry partners such as NMT Heizsysteme GmbH, Richter Fördertechnik + Metallbau GmbH, Taupitz GmbH & Co. KG, and GAD GmbH contribute their expertise in the fields of fuel technology, mechanical and thermal process engineering, plant engineering, and digital measurement technology with the goal of developing an integrated technical solution for the decentralized thermal utilization of sewage sludge.



The Gröditz Wastewater Treatment Plant as an associate partner in the "ReKlär" project. Picture: © Heiko Brabetz

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