TUBAF
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INSTITUTE OF ENERGY PROCESS ENGINEERING AND CHEMICAL ENGINEERING

PROFESSORSHIP OF ENERGY PROCESS ENGINEERING

DATIPilot-Sprint – KS-Meth

Production of synthetic methane and phosphorus from sewage sludge, fermentation residues, and other biogenic residual and waste materials that cannot be used otherwise.

CHALLENGE

The core idea of the project lies in a completely new approach to sewage sludge upgrading. Using an innovative thermochemical process (entrained flow gasification), phosphorus is recovered in a high-quality form on the one hand, and on the other, a synthesis gas is produced, which is converted into methane in a synthesis plant. All toxic components are thermochemically decomposed (e.g., pharmaceutical residues) or permanently bound in the slag (especially heavy metals).

OUR PROJECT

The focus is on elucidating the release mechanisms of phosphorus contained in biogenic residues, establishing the engineering fundamentals for the efficient separation of released phosphorus compounds from the gas phase using suitable gas scrubbing processes, developing an economically viable phosphorus recovery concept, conducting a techno-economic assessment of the process chain for the material utilization of biogenic residues with combined recovery of phosphorus and carbon, as well as disseminating the latest findings on innovative sustainable solutions for the energy system of the future within the scientific community, industry, policymakers, and the general public.

PARTNERS

- DBI Virtuhcon GmbH

FUNDING

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DURATION

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GEFÖRDERT VOM

Bundesministerium für Bildung und Forschung