

AG-Power

Efficient production of electricity and bio-coke through high-pressure gasification of agricultural waste and residues



CHALLENGE

In the AG-Power project, innovative solutions for the efficient production of renewable electricity and bio-coke from agricultural residues and waste are to be developed and validated on a pilot scale under practical conditions. The research focus is on the production of hydrogen-rich synthesis gas (main components H₂ and CO) at high temperatures and pressures (high-pressure gasification). The originality of the proposed approach lies primarily in the use of a novel process combination referred to as the Biomass-fired Top Cycle (BTC). The BTC system is to be tested for the conversion of agricultural residues and waste into electricity, bio-coke, and heat.

OUR PROJECT

As a scientific partner, TU Bergakademie Freiberg will be involved in the joint project by determining kinetic data for the pyrolysis and gasification of agricultural waste and residues at high temperatures and high pressures. The KIVAN test facility intended for the investigation of gasification kinetics (solid throughput up to 1.5 kg/h) is specifically designed for determining reaction kinetics at process temperatures up to 1150 °C and process pressures up to 100 bar under entrained flow conditions. In addition, several thermogravimetric balances will be used to characterize the pyrolysis and gasification of solid samples (sample quantities from approx. 10 mg to approx. 2 g) under both atmospheric and high-pressure conditions. The data will be made available to the project partners for the development of the aforementioned technology.

PARTNERS

- KTH Royal Institute of Technology
Stockholm Sweden
- RISE Research Institutes of Sweden
- Polytechnische Universität Portalegre Portugal
- H&O Development AB Sweden
- Meva Energy AB Sweden

FUNDING

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DURATION

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„Diese Maßnahme wird mitfinanziert mit Steuermitteln auf Grundlage des vom Sächsischen Landtag beschlossenen Haushaltes.“



**Kofinanziert von der
Europäischen Union**



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