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**BEST – Bioenergy and Sustainable Technologies GmbH**  
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Programme: COMET – Competence Centers for Excellent Technologies

Programme line: COMET-Zentrum (K1)

Type of project: Waste2Value, 04/2019 – 03/2023, multi-firm



## FROM WASTE TO VALUE

CONSTRUCTION HAS STARTED ON A NEW PILOT PLANT IN VIENNA, AUSTRIA, WHICH WILL DEMONSTRATE THE CONVERSION OF WASTE MATERIALS INTO ECO-FRIENDLY AND CARBON-NEUTRAL FUELS

The Waste2Value project is driving the use of waste residues to produce hydrogen-rich syngas. The project focuses on waste fuels such as sewage sludge, residues from the pulp and paper industry, and mixtures with waste wood. In a second process step, the syngas is synthesized into liquid fuel (high quality diesel and kerosene). The current stage of the project runs to 2023 and covers construction and start-up of the pilot facility to gain the relevant operational experience. The Waste2Value research programme examines the entire process chain, starting with the waste fuel, and including syngas production, purification, treatment and synthesis through to the final refining and use of the FT fuel in fleet trials for public transport. The plant is the first of its kind in the world designed to demonstrate the use of this technology in a single, end-to-end process in an industrial environment. The project results will allow the process to be evaluated in economic and technical

terms, providing the basis for the planned industrial-scale implementation of the process.

Construction of the plant began in September 2020, start-up is planned in the second half of 2021. The plant is being built by the SMS Group and is situated at the site of a hazardous waste incineration plant of Wien Energie in the urban area of Vienna.

## SUCCESS STORY



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### Impact and effects

The gasifier is the key technology for a series of downstream options to upcycle the syngas produced by

the gasifier. The various upcycling pathways to create CO<sub>2</sub>-neutral green diesel (Fischer-Tropsch (FT) fuel) and green kerosene, mixed alcohols, synthetic green natural gas and green hydrogen, all play a role in the City of Vienna's decarbonisation strategy. For the SMS Group, a world leader in plant engineering for the steel industry, this new technological field represents an addition to the electricity-based production of hydrogen as an energy source and reducing agent in steel production which it currently offers in its core markets.

All in all, thermochemical syngas production is an extremely promising technology, with significant potential to become a key element in tomorrow's "Green Economy"— especially in densely-wooded areas, like for example Austria, California and Canada but also in waste treatment in general, swapping landfills for renewable, upcycled energy carriers.

### Project coordination (Story)

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### Project partners

- Wien Energie GmbH
- Wiener Netze GmbH
- Luleå University of Technology
- SMS Group
- Österreichischen Bundesforste
- TU Wien
- Heinzl Paper
- Wiener Linien GmbH

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