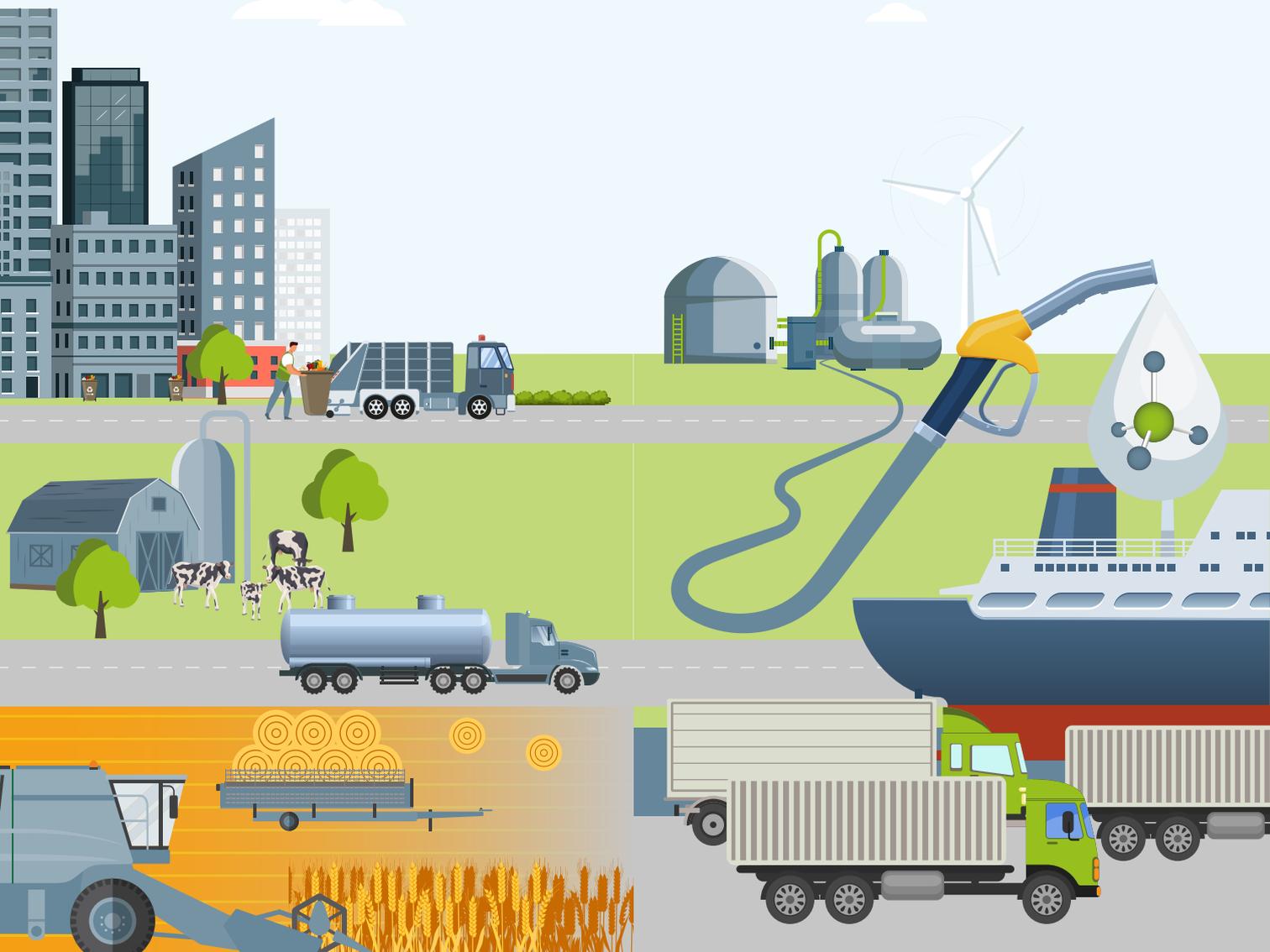




**BIOGENIC
RESIDUES**

**TO RENEWABLE
METHANE**



Bioresources and hydrogen to methane as fuel

Renewable methane offers the opportunity to make a major contribution to reducing greenhouse gas emissions. Based on biogenic residues and waste with green hydrogen, a sustainable and regional energy carrier can be provided. It can be used for transport sectors difficult or impossible to electrify as well as other energy applications.

The project focusses on further development of advanced renewable methane as a fuel in Germany. Previously, a pilot plant was planned and constructed and preliminary tests and feasibility analyses have already been carried out.

The innovative approach aims to increase the methane yield from the biogas process. Therefore, utilising the biogenic CO₂ with green hydrogen is key. The technological focus of the project is on successful piloting all involved processes and further optimisation. Conclusions will also be drawn for module-specific and conceptual optimisation approaches and success on a commercial scale. The major drivers for optimisation are resource efficiency and the closing of material cycles as well as greenhouse gas abatement costs.



Agricultural and urban residues and waste

Pilot plant for the production of renewable methane

Simulation and assessment
Digitally supported assessment of technological processes and interfaces
Modular assessment

The Pilot-SBG project

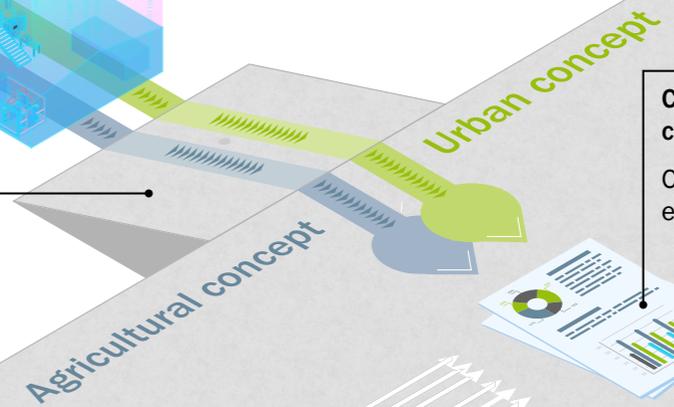
Practical research trials on the one hand and their evaluation on a conceptual level on the other are realised. The pilot plant will be run on agricultural (straw and cattle manure) and urban resources (organic and green waste). Continuously operated anaerobic fermentation and methanation as the central processes will be complemented by hydrothermal processes and a flexible separation cascade to emphasize the modular plant concept. In addition to routine operation of the pilot plant, technology- and interface-specific test series are also carried out. Based on modelling and scaling of the results and extending to the entire supply chain, ecological assessments as well as cost and revenue structures are considered. Following the Pilot-SBG project, the pilot plant itself will be offered as an R&D technology platform for further research and development projects with partners from industry and science.

Upscaling
Mass and energy balance
Scaling

Regulatory framework and market mechanisms of renewable methane as a fuel

Project goals

- Reduction in greenhouse gas abatement costs for renewable LNG
- Optimisation of resource efficiency, especially with regard to maximising specific methane yield and utilising fermentation residues
- Development of optimised exemplary concepts on commercial scale and sensitivity analysis
- Identification of criteria for long-term viable plant concepts producing renewable methane



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More information about the research project, the pilot plant,
renewable methane and our publications:



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**RENEWABLE
FUELS**

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