

Project Information

Subject: EuWaK II A - Operating stage

Applicant: Emschergenossenschaft
Kronprinzenstr. 24
45128 Essen



Project Duration: 01.04.2009 - 30.04.2011

Project Partners: bte (Beratungsteam Energie und Verfahrenstechnik)

- Tuttahs & Meyer Ingenieurgesellschaft mbH
- Ingenieurbüro Redlich und Partner GmbH
- Forschungsinstitut für Wasser- und Abfallwirtschaft an der RWTH Aachen Stadt Bottrop

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Project description / Status of work:

At the present time, H₂ production is mainly based on fossil energy sources. Most of the H₂ worldwide is produced by steam reforming of natural gas. However, the resources of natural gas decrease and will be depleted in the foreseeable future. Furthermore, the H₂ production from natural gas is not sustainable and contributes to the climate change by emitting carbon dioxide from fossil sources.

Digester gas is an alternative source for H₂ production. It results from the anaerobic digestion of sewage sludge and consists of the main components methane and carbon dioxide. At most wastewater treatment plants (WWTP) digester gas is used to produce electricity and thermal energy for self-supply. By treatment of digester gas to natural gas quality and H₂, WWTPs may develop from pure disposal sites to production sites of high-grade energy sources. The Emschergenossenschaft has realized a pilot plant for production of green H₂ and natural gas from digester gas at Bottrop WWTP.

A partial flow of the digester gas is upgraded to natural gas quality, and in a second step it is reformed to H₂. The natural gas is used as fuel for cars. The H₂ is transported via pipeline to provide a school centre with heat and electrical energy. The provision of H₂ cars by this high-quality H₂ made from digester gas is under construction.



Funded by
the State of North Rhine-Westphalia and the EU

