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Energy efficient use of domestic waste water

Urban district meets half of its energy requirement through local generation

The faeces contained in domestic sewage, so-called black water, can be used for producing biogas. Until now this has been mostly conducted at the end of the sewage channels at the waste water treatment plant. The BINE-Projektinfo brochure "Energy from waste water supplies urban district" (09/2014) presents an alternative concept for the new Jenfelder Au district in Hamburg. Here the individual domestic waste water flows are no longer mixed but are drained separately. This enables the concentrated black water to be utilised in a particularly efficient manner in a decentralised biogas plant. The separately discharged rainwater is used to fill a pond.

In the new urban quarter of Jenfelder Au, which is located in Hamburg's Wandsbek district, a total of 770 residential units for approximately 2,000 people are being created across 35 hectares of land. In addition to two restored former army barrack buildings, more than 80 per cent of the buildings will be new-build schemes. All homes will be equipped with vacuum toilets that require comparatively little flushing water. The waste water concept entails the separate capture and drainage of the three partial water flows consisting of grey water from the kitchen and bath, rainwater and black water. The biogas produced during the fermentation of the black water will be converted via a micro gas turbine into electricity and heat. This will enable about 40 per cent of the heating requirement and 50 per cent of the electricity requirement to be met by local production in the district. A new district is therefore being created in Jenfeld that combines waste water and energy generation on a large scale.

Construction work is currently underway and the first residents will move into the new district in 2015. HAMBURG WASSER is responsible for managing the scheme in collaboration with the municipal administration.

The BINE-Projektinfo brochure, which can be obtained free of charge from the BINE Information Service at FIZ Karlsruhe, is available online at www.bine.info or by calling +49 (0)228 92379-0. The brochure cover and one additional image are also available for download on this web portal in the press section.

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