Wärme to go
Energie an Bord

The project

„Wärme to go“ (translation: Heat to go) is a model project funded by the Federal Ministry for the Environment within the framework of the National Climate Initiative. The project tests how waste heat from the fermentation of biomass technically can be utilised without a pipeline by using storage containers.

Project partners are the municipal waste management (Zweckverband Abfallwirtschaft Region Hannover) as funding applicant, the municipality of Isernhagen as partner for the use of the heat, and the Climate Protection Agency Region Hannover as consultant and partner for public relations.

At the controlled landfill Hannover-Lahe methane gas is produced when treating residual waste in the mechanical-biological residual waste treatment plant. The gas is utilised in several combined heat and power plants (CHP) for the production of heat and electricity. The heat is stored in latent heat shipping containers. An electric truck, which operates with the climate-neutral electricity generated at the landfill, delivers it from the landfill Hannover-Lahe to the school centre Isernhagen, only seven kilometres away.

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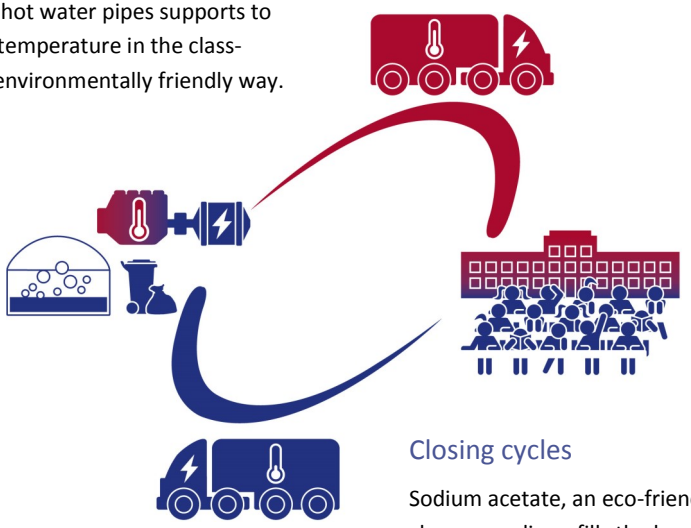
The cycle

Heating classrooms

The school centre Isernhagen needs heat to warm the classrooms. The federal funding of the model project "Wärme to go" enables to harness previously unused heat from the landfill Hannover-Lahe. The waste heat is stored in a heat container and delivered to the school centre. Releasing heat into hot water pipes supports to increase the temperature in the classrooms in an environmentally friendly way.

Treating residual waste

The municipal waste management handles up to 200,000 t of residual waste a year in the mechanical-biological waste treatment plant at the landfill Hannover-Lahe. Bacteria decomposes the organic part of the residual waste creating methane gas (CH4). Energetically used in a combined heat and power plant (CHP) it produces heat and electricity.



Producing electricity and heat

Several combined heat and power plants (CHP) at the landfill use methane gas for the production of heat and electricity. The municipal waste management uses parts of the produced electricity on the grounds of the landfill and feeds it into the public power grid. In addition, the electricity fuels an electric truck. The truck delivers filled heat containers to the school centre in Isernhagen.

The heat produced in the CHP is stored in the heat containers. Only an excess of heat is not yet usable and released to the environment.

Closing cycles

Sodium acetate, an eco-friendly phase change medium, fills the heat containers. When supplied with heat the phase change medium liquefies and crystallizes when releasing heat. The mode of operation of the container is similar to a big pocket warmer. The cycle of charging and releasing heat is repeatable as often as you like. It is a benefit called latent heat storage.

Stored in containers and transferred by an electric truck from the landfill to the school centre in Isernhagen the heat increases the temperature of the classrooms.

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Gemeinde Isernhagen

KLIMASCHUTZ AGENTUR REGION HANNOVER

Gefördert durch: Bundesministerium für Umwelt, Naturschutz, Bau und Reaktorsicherheit aufgrund eines Beschlusses des Deutschen Bundestages

NATIONALE KLIMASCHUTZ INITIATIVE