

Biogas plant „Hartberg-Habersdorf“ Biokraft Hartberg Energieproduktions GmbH

The biogas plant “Hartberg-Habersdorf” is one of 2 plants within the operating company of the Biokraft Hartberg Energieproduktions GmbH. The existing sewage plant and the produced sewage sludge as well as a system for collecting biogenous residues like organic waste and leftovers provided the basis for the development of the plant concept for the biogas plant. The resources (dairy sludge and fat) are mixed in the mixing pit (130 m³) and then pumped into the main digester (1500 m³).

The sewage sludge is directly added to the digester (approx. 27 t/d) and then pumped into the second digester (1500 m³) after a retention time of around 20 days (total retention time around 60 days). The temperature of the anaerobic digestion is 38°C (mesophilic operation), the contents of the digesters are agitated using angular agitators in order to prevent floating and bottom layers. The gas holder in the form of a “gas bag” (300 m³) is located in a separate room. The fermented substrate from the second digester is then pumped through a filter press and the liquid fraction returned to the sewage plant. The solid fraction is used as an agricultural fertiliser. The CHP (124 kW_{el}) is made up of a gas-engine. The generated electricity is used to power the power trains of the sewage plant as well as the processing plant for the biogenous residues; the rest of the electricity is fed into the public grid. The generated heat is used to heat the halls of the sewage plant Habersdorf, the processing plant and for hygienisation.

The pasteurised and processed substrates are also delivered to the other biogas plant in Hartberg – this way the expensive hygienisation unit is needed only once and bad smell nuisance is reduced. The transport containers for leftovers and organic waste can be cleaned in an automated washing plant and immediately reused.

Another special feature of this plant is the bio filter that is installed directly above the smell causing sources and filters 3500 m³ of air per hour (bark mulch and sodium hydroxide is used to neutralise the water). Another measure taken to prevent smell nuisance are the pits that operate using low pressure.



Biogas Plant Hartberg-Habersdorf © LEA

Mag. Hannes Köck (operator)

“The existing sewage plant as well as a collection system for biogenous residues like organic waste and leftovers provided the basis for the construction of the biogas plant. We developed a comprehensive concept with our project partners at Biokraft Hartberg that complies with legal regulations, optimally uses the available resources and reintroduces the nutrients into the natural cycle. Close attention was paid to the safe utilisation of the resources and ensuring a state of the art plant. This way we can generate electricity out of available residues and contribute to climate protection.”

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Biogas Regions Shining Example



key data

Start of Operation	2005
Type of corporation.....	Ltd. Company
Amount of gas produced	approx. 1032 m³ per day
Investment costs	1 800 000 €

feedstock

Fats/greases (dairy).....	1000 t per year
Dairy sludge	1460 t per year
Sewage sludge.....	10000 t per year

production data

Thermal power rating of the gas engine	190 kW
Generated thermal energy.....	1 200 MWh/a
Utilisation of heat	Hygienisation
	Digester
	Hall heating
Electric power rating of the gas engine	124 kW
Generated electric energy.....	800 MWh per year
Power consumption (electricity) of the plant itself	100 MWh/a
Annual delivery of electricity to the (regional) electric grid company	720 MWh per year

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technical plant description

Mixing vessel	130 m³
Digester	1500 m³
Second digester	1500 m³
Gas storage tank	300 m³
Residence time in the digester	~ 60 days (20/40)
Temperature of the anaerobic digestion (operational)	38°C
Average expenditure of human labour	4 hours per day

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