

Biogas plant „Mureck“ Ökostrom Mureck GmbH

The idea of building a biogas plant in addition to the already existing biomass district heating plant and the bio diesel plant in Eichfeld near Mureck arose in 2001. The plant owned by the Ökostrom GmbH Mureck started its trial run in November 2004.

The biogas plant consists of the mixing pit (300 m³), the hydrolysis tank (230 m³), four liquid tanks (1000 m³ each), four digesters (1000 m³ each), the digester drain tank and two repositories (3600 m³ each).

The liquid manure, silage- and grain maize are mixed in the mixing pit and directly added to the hydrolysis tank in order to speed up the fermentation process. The fermentation substrate is subsequently pumped into the four digesters and gasified. After a retention time of around 60 days, the substrate is pumped into a digester drain tank and from there into the repositories. There are plans to separate the solid matter in the digester drain tank using a separator and sell it as a valuable fertiliser (e.g. for gardening). The by-product glycerine from the bio diesel production is added directly to the digesters. Liquid pig and cattle manure, grass silage, milled corn cobs and draff (brewer grains) are also used. The system mashes the grain maize, pastes and stores it.

The combination of the green energy plants in the region (biomass district heating, bio diesel and biogas plants) allows for an efficient use of the energy, since the CHP of the biogas plant for example is located at the biomass district heating plant which leads to the thermal energy being used in an optimal way.



Biogas Plant Mureck © LEA

The Ökostrom GmbH Mureck is made up of 7 partners that provide around one third of the resources. A further third is provided by external agreements with regional farmers and the rest of the substrate comes from the glycerine phase from the bio diesel production which has a yearly output of around 6 million litres of bio diesel.

Ing. Breitenhuber / Ing. Totter (operators)

“The motivation for the erection of the biogas plant was the goal to make Mureck an energy self-sufficient region solely using renewable resources in order to ensure a sustainable and liveable future. The farmers of the region take up a role as energy farmers giving them an additional income source next to agriculture. The location of Eichfeld combines different types of bio energy systems allowing for the energy to be used efficiently.”

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Biogas Regions Shining Example



key data

Start of Operation	2004
Type of corporation.....	Ltd. Company
Amount of gas produced	3 333 000 m³ per year
Investment costs	5 400 000 €

feedstock

Liquid manure (pig).....	6000 m³ per year
Liquid manure (cattle).....	2000 m³ per year
Glycerine phase.....	2000 m³ per year
Maize silage	3000 m³ per year
Milled corn cobs	2000 m³ per year
Draff.....	2000 m³ per year

production data

Available area for the output of the biogas fertilizer	500 ha
Thermal power rating of the gas engine	1 165 kW
Generated thermal energy.....	6 000 000 kWh/a
Utilisation of heat	Supply of the plant 80% for district heating
Electric power rating of the gas engine	999kW
Generated electric energy.....	8 000 MWh per year
Annual delivery of electricity to the (regional) electric grid company	8 000 MWh per year

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technical plant description

Clamp silo	4x6000 m³
Ligivator.....	4x1000 m³
Digester	4x1000 m³
Mixing vessel.....	300 m³
Slurry tank	2x300 m³
Repository	2x3600 m³
Gas holder	4x300 m³
Residence time in the digester	~ 60 days
Temperature of the anaerobic digestion (operational)	38 - 40°C
Average expenditure of human labour	8 hours per day

For further Information, please visit [the plant's webpage](#) or contact:



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