

## Biogas plant „Saaz“ RWP Bioenergy ltd. company

The “Saaz” biogas plant is a typical 500 kW<sub>el</sub> NAWARO (energy crop) plant, which is owned/operated by three farmers of Eastern Styria. They specialized in pig and poultry farming and the cultivation of maize.

The biogas plant has one main digester and one second digester, which are built of reinforced concrete and have a volumetric capacity of 1800 m<sup>3</sup> each.

Both digesters have two hydraulic agitating devices with propeller drive.

Additionally the main digester and the second one have a paddle agitator.

The gas storage tank is integrated in the second digester.

The different types of feedstock (grass, maize, corn-cob-mix, green pruning rye) are ensilaged for the gas production in a silo with a capacity of 8400 m<sup>3</sup>. In this silo the feedstock will be stored for the annual requirement. The transport from the silo to the proportioning tank is made through a front loader.

Only liquid pig manure is used for controlling the dry matter.

The daily load of 20 tons of energy crop feedstock requires an additional 15 tons of liquid manure in order to achieve the required dry matter content of 7%.

The proportioning tank is filled twice a day. The average expenditure of human labour is 2 hours per day.

The daily input of feedstock is 35 m<sup>3</sup> yielding 5000 m<sup>3</sup> of biogas production (mesophilic way - 38°C). The residence time of the substrate is 100 days altogether (main digester and second digester).

With a 500 kW<sub>el</sub> combined heat and power unit the biogas is transformed into electricity and heat. The regional electric grid company feeds in the produced electricity of the biogas plant. The power requirement of the plant (328,000 kWh per year) is bought back from the grid company. At present two blocks of flats and the stables of a farmer in the region are supplied with heat.

The output of the biogas fertilizer (digestate) is spread on an area of 300 ha.



Biogas Plant Saaz © LEA



# Biogas Regions Shining Example



## key data

Start of Operation .....	<b>2004</b>
Type of corporation .....	<b>Ltd. company</b>
Amount of gas produced .....	<b>5000 m<sup>3</sup> per day</b>
Investment costs .....	<b>1 585 000 €</b> <b>+ internal labour</b>

## feedstock

Liquid manure (pig) .....	<b>5000 tons per year</b>
Grass silage .....	<b>150 tons per year</b>
Maize silage .....	<b>6000 tons per year</b>
Corn-cob-mix .....	<b>800 tons per year</b>
Green pruning rye .....	<b>900 tons per year</b>

## production data

Available area for the output of the biogas fertilizer .....	<b>300 ha</b>
Thermal power rating of the gas engine .....	<b>568 kW</b>
Generated thermal energy .....	<b>4 897 000 kWh per year</b>
Utilisation of heat .....	<b>2 blocks of flats</b>
Electric power rating of the gas engine .....	<b>500 kW</b>
Generated electric energy .....	<b>4 197 000 kWh per year</b>
Power consumption (electricity) of the plant itself .....	<b>349 000 kWh per year</b>
Annual delivery of electricity to the (regional) electric grid company	<b>3 848 000 kWh per year</b>
District heating network (stables, blocks of flats) .....	<b>about 400 kW<sub>th</sub></b>

## technical plant description

Digester .....	<b>1800 m<sup>3</sup></b>
Second digester .....	<b>1800 m<sup>3</sup></b>
Gas storage tank .....	<b>800 m<sup>3</sup></b>
Residence time in the digesters .....	<b>~100 days</b>
Temperature of the anaerobic digestion (operational) .....	<b>38°C</b>
Average expenditure of human labour .....	<b>2 hours per day</b>

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



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