

Agricultural Biogas Plant 716 kW_{el} - Renewables



WOGAS GmbH & Co. KG

This Biogas Plant was designed and planned in cooperation with our North-German partner energie + konzept, Hamburg.

The WOGAS plant was built on a field at the outskirts of the village Wohlsdorf, district Rotenburg (Wuemme) in Lower-Saxony. Therefore a project based local plan for development and zoning plan has been created. The location was elected in a way that the fields for crop growing of the input material are very close to the Biogas plant.



The Biogas is converted to electricity by a co-generation unit. The heat energy which accrues at the same time is used for self consumption and the surplus is utilized in a container for the drying of fire wood.

Because of the utilization of the heat energy the total efficiency is increased and additional a "KWK" Bonus will be paid which will make the Biogas plant achieve sustained success.

With this Biogas plant the involved farmers have established a second business which safeguards their economic existence for the next 20 years.

The plant consists of three Fermentors with ca. 2,000 m³ each. The Biogas collection is made with a double membrane roof which is containing the Biogas storage. The input material is only manure and renewable raw material in the sense of the German EEG law. Therefore the supplied electricity gets additional the "renewable bonus".



The digested substrate would be delivered back to the own fields as a high quality fertilizer.

Technical Data

Substrates for digestion:

Corn silage	ca. 11,000 t/a
TPS (total plant silage)	ca. 3,000 t/a
Cattle manure	ca. 2,000 t/a
Pig manure	ca. 2,000 t/a

Fermentor volume:

Main Fermentor	2 x 2,000 m ³
Post Fermentor	2,000 m ³
Substrate final storage	4,500 m ³

Biogas yield

ca. 7,600 m³/d
ca. 2,775,000 m³/a

Methane content

50 - 60 % CH₄

CHP-Unit, made by comp. HAASE:

Electric Power installed:	716 kW
Thermal Power installed	733 kW
Producible electricity (at $\eta_{el} = 40.3\%$)	ca. 5.7 GWh/a
Producible heat (at $\eta_{th} = 41.6\%$)	ca. 3.6 GWh/a
(available heat, reduced by self consumption)	



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