Biogas Regions
Shining Example

Kmetijski inštitut Slovenije
Agricultural Institute of Slovenia

Biogas plant „Bioplinarna Farma Ihan“

Ihan - Slovenia

Ltd company

On the pig farm Ihan a plant for anaerobic mesophilic purification of liquid manure has been operating since 1993. The liquid manure from the farm flows daily to the biogas plant Praja. After the liquid manure flows in from the farm it is directed to decomposition tank where it is separated into the solid and liquid fraction. The solid fraction is transported to mechanical separators which separate the solid particles. The liquid manure is pumped into four reinforced concrete digesters with the total volume of 5000 m^3. In the reactors with completely steered tank reach (CSTR) liquid manure is kept about 20 days at operating temperature from 35℃ to 40℃. After the completed anaerobic purification about 70 % of the daily quantity of liquid manure is centrifuged and, prior to that, flocculant is added which binds the solid particles in the processed manure. This solid phase is qualitative organic manure which is applied on neighbouring fields.

Biogas is used for the production of electrical energy on two engines of the power of 526 kW which produce about 20000 kWh of electrical energy daily. The degree of reduction of pollution measured according to KPK reaches more than 80 %. Since the outflow after the completed anaerobic purification remains polluted with nitrogen, the biogas plant will be expanded by the system of nutrient elimination.

Jože Jurkovič, Marko Verbič and Simon Guštin (operators)

“Biogas plant purifies the pig manure from the farm Ihan and reduces the pollution of the farm. At the same time, it generates heat used for anaerobic process and »green« electricity which is an important source of income. A quality organic manure of increasing value is also a product of the anaerobic process.”

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key data

Start of Operation **1993**

Type of corporation..... **Ltd company**

Amount of gas produced ..... **7000 m³** per day

Investment costs ..... **3 000 000 €**

feedstock

Liquid manure (pig)..... **90 000 m³** per year

Waste from slaughterhouse industry..... **1200 tons** per year

All of the feedstock is provided by the owners of the plant.

production data

Available area for the output of the biogas fertilizer ..... **No**

Thermal power rating of the gas engine ..... **1120 kW**

Generated thermal energy..... **5 475 000 kWh** per year

Utilisation of heat ..... **heating of digesters rooms of biogas plant thermal treatment**

Electric power rating of the gas engine ..... **1052 kW**

Generated electric energy ..... **4 500 000 kWh** per year

Power consumption (electricity) of the plant itself ..... **700 000 kWh** per year

Annual delivery of electricity to the (regional) electric grid company **4 500 000 kWh** per year

District heating network ..... **No**

technical plant description

Digester ..... **2 x 1250 m³**

Second digester ..... **2 x 1250 m³**

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Gas storage tank ..... **5000 m³**

Residence time in the digester ..... **18 days**

Temperature of the anaerobic digestion (operational) .....**38,5 °C**

Average expenditure of human labour ..... **40 hours** per day

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