Biogas Regions
Shining Example

Biogas plant „Azienda Agricola La baita del Latte“
Limena (PD) - Italy

The biogas plant in Limena (North Eastern Italy) started his operation in April 2006 in the farm company Azienda Agricola La Baita del Latte with the latest “UTS Italia” technology. This plant is set up with:

1. Liquid manure collecting tank
2. Hopper and Solid biomass dosage utilities
3. Pumping room
4. Liquid distribution utilities
5. 2 Digester warmed by dipping agitators
6. Warmed storage tank
7. Gas pipelines provided by desulphurization system
8. Co-generator

The amount of feedstock utilized is about 50 tons per days of energy crops, including silage maize and other cereals silage, and 20 m$^3$/d of cattle manure. The plant works with two digesters, each one of 1,900 m$^3$ of volume, the residence time is 42 days, and the operational temperature range is 42°-48°C. The amount of gas produced per day is 10,000 m$^3$. The costs for the plant amounted to 2,500,000 Euro.

The electrical power rating of the cogenerator is 999 kW and the plant produces about 8,75 MWh of electricity per year, which is mainly supplied to the public grid, as the 6.75% of the total amount is the annual power consumption of the plant itself. The produced thermal energy is used for the owner houses and the farm buildings heating. Because of the production of nitrogen fertilizer (residue of the fermentation of the feedstock) it is possible to substitute the acquisition of commercial fertilizer. The available area for spreading the fertilizer is 50 ha of farm property, other areas are rent.

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key data
Start of Operation .................................................................2006
Type of corporation ..........................................................farm company
Amount of gas produced ......................................................10.000 m³ per day
Investment costs ..............................................................2 500 000 €

feedstock
Liquid manure .................................................................20 m³ per day
Silage (mais, sorghum, rye and corn) .....................50tons per day

production data
Available area for the output of the biogas fertilizer (own fields) ...50 ha
Thermal power rating of the gas engine ....................................614 kW
Generated thermal energy ..................................................5,38MWh per year
Electric power rating of the gas engine .................................999 kW
Generated electric energy ....................................................8,05 MWh per year
Power consumption (electricity) of the plant itself ..............0,51 MWh per year
Annual delivery of electricity to the (regional) electric grid company
7,51 MWh per year

technical plant description
Bunker silo ..........................................................15000 m³
Existing manure sump ....................................................150 m³
Sumps .................................................................350 m³
Digester ...............................................................1900 m³
Digested manure storage tank ...........................................4700 m³
Residence time in the digester .......................................42 days
Temperature of the anaerobic digestion (operational) .........41-42 °C
Average expenditure of human labour ...............................3 hours per day
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Plan of the Biogas plant + Cowbarns

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