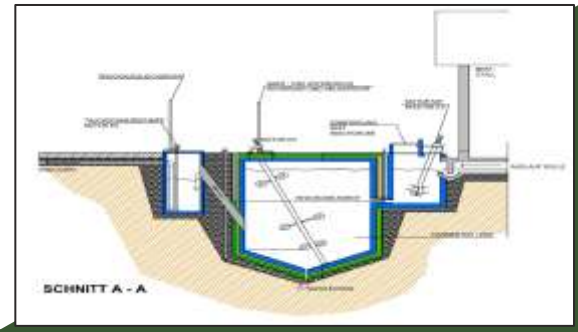

AUSTRIA

Frans Bernecker & Müller Abfallprojekte gmbh

Austria

Mr. Berneckers main motivation to build a biogas plant was to become self-sufficient on energy. Being an organic farmer the benefits of improving the fertiliser value of the cattle slurry and manure as well as reduced odour emissions and less weed seeds in the fertiliser (compared to raw slurry) were equally important for the investment decision.

This biogas plant is installed on an Austrian family farm. Several years ago Mr. Bernecker has invested in a wood chip boiler and a local district heating system to supply his farm, the residential house and several neighbours with renewable heat. In 2010 he has decided to build this small biogas plant to complement the renewable energy systems that he already operates on his farm.

The system is reliable and robust and the owner would build it again in the same way

The biogas plant is designed to cover the farms electricity demand and together with a solar thermal installation it covers the heat demand of the district heating grid during summer. The plant was mainly built by the owner himself.

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What lessons has been learned

The system is reliable and robust and the owner would build it again in the same way. Lessons learned don't concern the biogas plant itself, but rather the requirements regarding the approval process. During the approval process the owner was supported by an experienced engineering company.

A short description of the process

Cattle slurry flows by gravity from the stables into the biogas plant's reception pit. Through a hatch in the reception pit's concrete cover the cattle dung is added and mixed with the slurry using a strong stirrer. Using the principle of communicating tubes material from the reception pit is pushed into the digester when fresh feedstock flows or falls into the pit. At the same time digester slurry is displaced into the displacement pit. From there a pump transports the digestate into the storage tank.

Biogas is stored in a gasholder bag from where it is transported to the CHP. Alternatively a gas boiler consumes the gas. The CHP runs discontinuously during the time when electricity is needed on the farm.

Since its start-up the biogas plant runs reliably and without problems.

Key data:

Start of operation: 2011
Manufacturer: ..... Franz Bernecker & Müller Abfallprojekte GmbH
Type of plant: ..... Wet digestion
Location: ..... A-5122 Hochburg-Ach
Amount of gas produced (m3 per year): 50,.000
Amount of biomass treated (tonnes per year): 1.170
Investment costs (EUR): 100.000
Cost and benefit: .....
Payback period: ..... 6 years if accepted as green power plant, otherwise 12 years

Feedstock

Liquid pig manure (tonnes per year): 0
Liquid cattle manure (tonnes per year): 730
Leftovers (tonnes per year): 0
Other (tonnes per year): ..... 440(cattle dung)

Production data

Available area for the output of the biogas fertilizer (hectares): .....
Electric power of the gas engine (kW): ..... 6 kW
Generated thermal energy: ..... 148.000 kWh
Utilization of heat: ..... Digester heating + support of local district heating
Generated electric energy (kWh): ..... 52.000 kWh
Power consumption (electricity) of the plant itself (kWh): 7%

Technical plant description

Operating temperature (dg): 39
Average retention time in digester (days): 35-40
Average expenditure of human labor (persons): ..... 15 min
Size of reception facility (m3): 12
Size of fermentor (m3): 120
Size of end storage tanks (m3): 700
CHP (kWh): 45.000

The project BioEnergy Farm II wants to inform farmers about the benefits of micro scale digestion and give farmers a view on the feasibility of this technology for their business.

Are you curious about the feasibility of micro scale digestion on your farm?

From September 2015 we offer personal guidance at home! Our biogas experts have software tools to calculate the feasibility of micro scale digestion on your farm. Contact us!

www.BioEnergyFarm.eu

#BioEnergyFarm

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