

Wels, Upper Austria

Biogas Plant at Dairy in Wels

This dairy is part of the company “Berglandmilch” which is the biggest dairy company in Austria with 10 production sites and a market share of 37 % (1.010.000 t milk/year). A by-product from cheese production is whey which can be used in the food- and feed industry. However, in dairies large amounts of whey are produced and so biogas production/energy production can be a useful alternative.

Approximately 5,500 m³ of biogas are produced every day out of 180 t whey and 180 t of wastewater. The produced electricity is fed into the grid and the waste heat of the CHP is used for hot water production for the dairy. With the produced electricity (approx. 3,000 MWh/year) 1,500 households can be supplied with green electricity – this corresponds to approx. 2,000 tons of CO₂ savings. The digestate can be used as high quality fertilizer or disposed via the public wastewater treatment plant. A challenge during realisation phase was the limited space available in the urban area and the concerns from neighbours regarding odour emissions.

Technology at a glance

- Biogas production: 5,500 m³/day
- Modified fluidized bed reactor: 1,200 m³
- Gas storage: 500 m³
- Substrate: 180 t/day whey, 180 t/day wastewater
- Installed power: 500 kW_{el}, 550 kW_{th}
- Energy production: 7,900 kW_{el}/day; 9,900 kW_{th}/day



Information on financing

- Year of realisation: 2006
- Investment costs: € 2.0 million
- Operating costs: € 400,000/year
- Tariff for electricity sale: approx. 14 cent/kWh
- Tariff for heat sale: covering for own heat demand

Special features of the project

This was the first biogas plant only using whey and wastewater as substrate to produce biogas and there were no experiences from other projects. There were protests from local residents because they feared intensive odour emissions. So this biogas plant was originally only approved for one year of trial operation. Moreover there were fears because of possible risk of explosion. However, also after one year the biogas plant was working satisfactory and without problems. Compared to a conventional agricultural biogas plants the biogas plant at the dairy in Wels has low retention times and the special fluidized bed reactor guarantees that the bacteria biomass stays in the digester and is not washed out.

BEST-PRACTICE

BIOGAS PLANT WELS, UPPER AUSTRIA

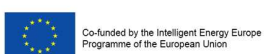
More information

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