

GERMANY

Local development

Location

Blaichach / Gunzesried

Programming period

2014 – 2020

Priority

P6 – Social inclusion & local
development

Measure

M19 – LEADER/CLLD

Funding (EUR)

Total budget 300 300

RDP contr. 90 090

Private 36 000

Other 174 210

Project duration

2015 – 2015

Project promoter

Sennerei Gunzesried

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A dairy cooperative used LEADER support to set up a biorefinery plant for recovering energy from whey.

Summary

The Gunzesried dairy cooperative was founded in 1892. Today, the cooperative processes about 1.3 million litres of milk annually into 135 tonnes of hard, cut and soft cheese, as well as drinking milk and ice cream. The cooperative members were confronted with the issue of how to dispose their whey.



The solution they came up with was to use the whey for energy recovery by generating gas from anaerobic bacteria fermentation. Support from the LEADER measure was used to construct a whey biorefinery plant that is monitored automatically. The plant operates all year round, providing a long-term solution to the problem of disposing of whey.

Results

According to the manufacturer, approx. 30 000 m³ of gas with an energy of 6.7 kw/m³ are accrued, which is equivalent to an annual output of 200 000 kW. This is equivalent to the current consumption of 20 000 litres of fuel oil used each year.

Furthermore, it is also possible to cut CO₂ emissions by 5.6 tonnes per year. This massively reduces the cooperative's carbon footprint and at the same time its members are less affected by rising energy costs.

Context

The Gunzesried dairy cooperative was founded in 1892 and has been managed by farmers, all from the Gunzesried valley in Germany, ever since. The raw material production, refinement and marketing take place locally. The cooperative processes about 1.3 million litres of milk annually into 135 tons of hard, cut and soft cheese, as well as drinking milk and ice cream.

The cooperative members were confronted with the issue of how to dispose of their whey. The volumes were too large to dispose of themselves, and too small to market them. In the past, the whey was delivered to a pig fattener. However, the fattening farms were getting bigger, thus demanding bigger volumes of input, and the delivery routes were long, thus costly. The tipping point was the request to certify their whey according to DIN ISO 9001, which would have been a complex procedure for the cooperative. It was at that point that they decided to find a long-term solution for the 'whey problem'.

During their search for other uses of whey, the cooperative came across the possibility to recover energy from it; in other words, generating gas from anaerobic bacteria.

Objectives

The investment aimed to provide a long-term solution to the problem of disposing an unused by-product (whey) and also reduce the use of fossil fuels in the cooperative's production process. Utilising the unwanted whey would help the cooperative members reduce the use of fossil fuels and thus become less affected by its price fluctuations.

Activities

The plant consists of a pre-tank, in which the whey is stored and where the pH value is adjusted. It is then fed into a fermentation tank, where the methane is acquired

with the help of anaerobic bacteria. Wastewater comes out of the tank and is fed into the local sewage system. Solid substances, which largely result from the bacterial sludge are fed back into the fermentation tank.

The plant is monitored automatically and any error messages are sent to the operating team. The plant is in operation 365 days a year. In addition, the pre-tank has been designed to be large enough to store the whey for three days in case of a fault.

The main costs covered included setting up the system, (EUR 288 300), the gas storage facility (EUR 4 490) and the documentation (EUR 690).



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Main results

According to the manufacturer, approx. 30 000 m³ of gas with an energy of 6.7 kw/m³ are accrued, which is equivalent to an annual output of 200 000 kw. This is equivalent to the current consumption of 20 000 litres of fuel oil used each year. Furthermore, it is also possible to cut CO₂ emissions by 5.6 tonnes per year. This massively reduces the cooperative's carbon footprint and means that its members are less affected by rising energy costs.

The alpine dairy is participating in the LEADER project titled "Alpwirtschaft im Herzen des Naturparks" (Alpine farming in the heart of the nature reserve) that aims to protect agriculture and the surrounding natural environment. The whey fermentation plant makes a significant contribution in protecting the landscape of the Alpines.

Additional sources of information

n/a