

CZECH REPUBLIC

Diversification of the rural economy

Location

Jetřichovec

Programming period

2007 - 2013

Axis / Priority

Axis 3

Measure

M311 - Diversification into
non-agricultural activities

Funding (EUR)

Total budget 3 237 506
EAFRD 804 849
National/Regional 268 283
Private 2 164 374

Project duration

2007 – 2010

Project promoter

VOD Jetřichovec, družstvo

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EAFRD funding was used to install a biogas plant, covering the farms electricity needs and generating income from the sale of electricity to the national grid.

Summary

VOD Jetřichovec is a large farm in the Vysocina highlands of the Czech Republic. The farm needed to diversify to stabilise its income and help protect it from volatile agricultural prices. RDP funding helped the farm install in two phases a biogas plant with four digesters and two main generators. Today the farm's animals provide manure input and maize is grown for silage. The farm is now self-sufficient in renewable electricity and can sell surplus electricity to the grid.



Results

The 1 153 kwh-capacity biogas plant produces enough electricity to cover the farm's electricity needs, and surplus power is sold to the national electricity grid.

Biogas plant revenue is one third of the farm's total revenue.

The farm also resolved the ecological problem of dealing with slurry from pig production.

Lessons & Recommendations

- ❑ The best silage should be used to feed farm animals, while lower grade silage can be put into the biogas plant.
- ❑ Pig slurry should be transferred as quickly as possible into the biogas plant in order to minimise emissions.
- ❑ Biogas plants need maize silage so farmers should carefully consider where this will be produced or purchased.

Context

VOD Jetřichovec is a large agricultural company of mixed agricultural production in the Vysocina highland region, 120 km south-east of Prague. The company modernised its dairy pig production around the turn of the Millennium.

Objectives

The objective of this project was to improve the diversification of agricultural production.

Another goal was to stabilise the farm's income in the context of rather volatile agricultural prices in parallel to the production of crop, dairy and pigs.

Activities

VOD Jetřichovec opted for a biogas plant believing that it suited the farm's production structure. Animal production would provide manure input and this would also help to comply with the Nitrate Directive. Crop production was extended to the production of maize for silage. Because building a biogas plant represented an investment project too huge for the farm, the management decided to launch the project in two phases to reduce financial risks.

First, the station was built with half of the target capacity. At this phase the farmer was also able to test if it would bring the expected benefits, and afterwards to extend the investment to full capacity. The first phase did not require looking for external suppliers of maize as input for the biogas plant.

After the second phase was completed, it became a precondition to get a supplier of maize. The farmer could not produce more in this hilly area as it is strongly regulated to limit soil erosion. He also decided to invest in a tank for slurry from pig production.

Since, a biogas plant is a massive object and the cattle housing to which the plant would be attached is situated on a hill, the farm decided to embed the digesters deep in the soil, so that it does not disturb the view of the landscape. This of course increased investment costs.

The biogas plant in each final form has four digesters and two main generators.



Results

The installed capacity of the plant is 1 153 kwh. The rest of the gas is combusted in an additional small engine-generator which fully covers the electricity needs of the farm. The electric power produced by the main generators is sold to the national network.

The biogas plant revenue constitutes one third of the total revenue of the farm. The revenue is stable during the year and over the years due to the guaranteed price of electricity and thus it helps the farm to manage critical drops in agricultural prices. For example, interests from farm credits are fully covered by revenue from the plant. It also provides sufficient liquidity for the farm.

The farm also resolved the ecological problem of dealing with slurry from pig production. The digestate (solid remains of the process) is composted and then used as fertiliser.

“The biogas plant helped us to pass smoothly through the collapse of milk prices in 2015/16”

Economic Director of VOD Jetřichovec

Lessons

There are advantages of combining the use of silage for the biogas plant and silage for dairy production. The best silage is taken for feeding cows and the degraded or lower quality silage is put in the biogas plant digesters.

Emissions from pig slurry management are minimised if the slurry goes quickly to the digesters.

On the other hand there is high need for maize silage. Farmers have to consider seriously where it will be produced /taking into account environmental regulations/ or purchased or to have an adequate substitute (e.g. hay silage) which of course might have further requirements on land.