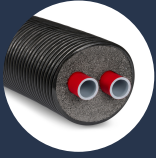


COMMUNAL BIOGAS AT THE MOULIN GUÉRIN FARM

Circularity at its finest



Flexalen 600



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PROJECT INTRODUCTION

Located in the heart of the Normandie-Maine natural, the small town of la Chapelle d'Andaine (1500 inhabitants) hosts a very ingenious milk farm. Run by the Sidler family already since 1986, the Moulin Guérin farm, 100 cows strong, produces milk for the famous Camembert cheese production. Facing an important drop in milk prices in the last years, the Sidler family decided to strengthen the farm by diversifying its activities. Seeking to become a sustainable and cheap local heat supplier, a biogas plant project with Thermaflex followed.

In France, the biogas market is rapidly expanding. Methanation, the process of recycling organic wastes, is widely recognized for its potential. Methanation projects like Moulin Guérin are subsidized by the French public entity ADEME, the region as well as the European Union. But what are the advantages of this process for the rural communities? A deep dive on the Moulin Guérin project reveals a strong added value for the entire local community both on social, economic and ecological levels.

GOALS

The primary goal of the biogas plant was to produce affordable electricity and heat in a CHP plant, at minimal maintenance to secure a stable supply for all users. The Sidler family's plant produces 250 kWh of electricity per day, which is sold directly to the grid. Annually, that comes down 2,190 mWh, enough to power 138 households.

From the 2,300 mWh of heat produced every year, 90% runs would run through a heating network, while the other 10% is used to heat up the digesters of the biogas plant. This heat was to supply both the dairy, the farm and the neighboring houses.

Calculated from the electric power only, the biomass plant will be paid back in 7 years. Combined with the heat, that can be reduced to 4. As the community hopes to benefit from this important asset for many years to come, securing a heat network with a high, stable and sustainable performances was key.

DETAILS

Local waste management

Annually, 10,500 tons of substrate (manure and organic matter) are necessary to keep the plant continuously working. That's just over 28 tons a day! The Moulin Guérin flock itself supplies already 5,500 tons of manure per year, in addition to the 5,000 tons supplied by the local farmers. This allows them to avoid long journeys to waste sites or costly facilities on their own farm – saving time, money but also CO2 emissions. On top of that, they are welcome to dispose of any organic matter they choose.

PROJECT INFORMATION

- 📍 La Chapelle d'Andaine, France
- Duration: 2,5 Days
- Installer: DTI
- Biogas plant supplier: Novatech

APPLICATIONS

- Heating Networks

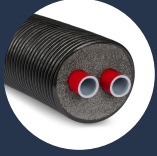
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DETAILS

Benefit for all

By bringing manure to the biogas plant, the farmers are entitled to take an equivalent quantity of digestate – the residue left over from the methanation process. Thanks to the degradation of Carbon during the digestion, minerals are formed making the digestate's fertilizing power highly superior. This makes that the need for chemical fertilizers is cut by half, enabling the farms to switch to biological production. The Sidler family can have its plant run non-stop, the local farmers add value to their business, while the consumer gets to enjoy wholesome products.

Intercrops to (re)serve the environment

The use of organic matter guarantees higher soil quality by preventing the need for constant ploughing and chemical fertilizers. This brings 2 major benefits: Economically, mechanization costs can be cut by 20% to 40%, combined with an increase in crop production. Ecologically, the crops are grown in a much more sustainable way in respect to land and environment, especially considering the lower need for herbicides, fungicides and pesticides.

Now what exactly is the link with the farm's biogas plant? Remember, organic wastes do not have any direct added value for the consumer, nor the flock. They are therefore considered valueless waste, usually at the farmers cost. However, when combined with manure, it offers the Moulin Guérin farm interesting outlets for their energy production, while the local farmers can add value by disposing their otherwise worthless wastes.

RESULTS

Flexalen answered perfectly to that challenge, securing affordable and headache-free energy for the Sidler farm and its neighbors to this day, and for decades to come. For the 2 houses only, a 6,000L of fuel oil is saved annually, slashing close to 30 tons CO₂ emissions. Calculated from the electric power only, the biomass plant will be paid back in 7 years. Combined with the heat, that can be reduced to 4. In taking care of the plant and the new diversified activities, the farm has also secured employment for 2 inhabitants of the region.

Thanks to the flexibility of the system and its homogeneous weldability with electrofusion, the complete installation, carried out by DTI, was realized in just 2.5 days. In no time, the Sidler farm and its community enjoy sustainable, yet affordable comfort from a Cradle to Cradle Certified® Silver solution, while securing ecological capital for generations to come.

