Biogas plant „Abbey de Tamié“

The Abbey of Tamié is in Savoie, in Alps massif. The community of monks produces a specific cheese, “Tome de Tamié”, approximately 400 kilograms a day.

History:
- **1990**: installation of a tank to stock and to cold the whey 12km far from the Abbey. The valorisation is 2 c€ per whey litre (15 cts French Francs).
- **2000**: more transport expanses, and the decrease of valorisation.
- **2001**: difficulties with the society that developed whey treatment.
- **2002**: whey become a expense with a cost for the clearing (until 2 c€/l)

Therefore, the Abbey decided to run a study with ITFF (French technique institute for cheese) to find another solution.

The anaerobic digestion has many advantages like for instance the treatment of a little sludge production (30g of dry substances of DCO (chemical request for oxygen) per kilogram).
Milking waters are also used in anaerobic digestion to decrease ingoing load, and therefore reduce the load that is rejected.
key data
Start of Operation ......................................................... 2002
Type of corporation........................................... Simplified joint stock company
Amount of gas produced .............................................. 125 m³ per day
Investment costs .............................................................. 255 000 €

feedstock
Whey................................................................. 960 m³ per year with 60g of DCO
Milking waters .............................................................. 4 300 m³ per year with 2-3 g of DCO

After the anaerobic digestion, the biogas fertilizer follows this way: infiltration drain in natural soil after an oxygenation and a time in decanting place.

production data
Thermal power boiler ................................. 60 kW
Generated thermal energy................................. 268 800 kWh per year
Utilisation of heat ............................... The biogas is burnt in a gas-fired boiler, to produce warm water for the houses (abbey).
Power consumption (electricity) of the plant itself ............... 90 000 kWh per year

3 360 € per year
technical plant description

Bunker silo ................................................................. 24 m³
Digester ................................................................. 43 m³
Gas storage tank ...................................................... 2-3 m³
Residence time in the digester ................................. 3 days
Temperature of the anaerobic digestion (operational) ......25°C
Average expenditure of human labour ........................14 hours per months