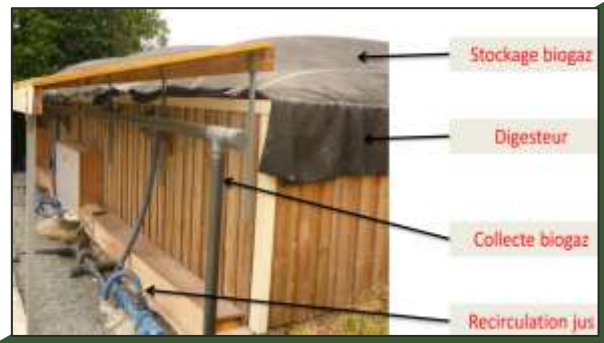
BioEnergy Farm 2



FRANCE

Aria Energies

Aria Energies

According to the statutory device "nitrate" (French answer to the European regulation), the farm located in vulnerable Zone is submitted to particular prescriptions which concern its storage capacity of effluents and its spreading capacity (maximun 170 kg N/ha/year) It is in this context, that in 2002 the farmers are obliged to make investments of storage.

Yet, the farmers are not owners of buidings and lands, because they are tenant farmers. So, they don't want to make very important and unproductive investments. It is in front of the obligation to invest that they turn towards a complementary productive investment in their agricultural basic (heat production for the rabbit breeding ...), being able to cover their expenses.

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What lessons has been learned

This is one of the first plants with **batch technology on manure** which has been installed in France.
It is underway since 2007 and it was the object of follow-up by the ADEME during 32 months.
Some general advantages for the farmer :

- Job creation : lightening of the workload for the farmers
- Improved fertilizer : stable carbon compounds still go to soil; no more purchase of mineral fertilizers.

A short description of the process

The digesters have a boat shape that facilitates the operations of load and unloading: 3,5 hours for the unloading and 4 hours for the load, every 18 days (on average).
The equipment used on the plant comes down to the charger, used on average 240 hours /year.
The cover of digesters is realized by means of a cover authorizing the temporary storage of the biogas.

Key data:

Start of operation: 2008
Manufacturer: ..... Aria Energies and part of auto-construction
Type of plant: ..... Batch technology on manure (four lane digester)
Location: .....La Touzinière, 85130 La Verrie, France (Vendée)
Amount of gas produced (m3 per year): 135.000
Amount of biomass treated (tonnes per year): 1.045
Investment costs (EUR): 269.700
Cost and benefit: .....yearly income : 43.000 €
..... Yearly maintenance : 3 545 €
Payback period (years): 7

Feedstock

Suckling herds manure: .....400 t /year
Fruit and vegetables: 3.....55 t /year
Dairy cattle manure: .....75 t /year
Rabbits manure: ..... 52 t /year
Poultry manure: .....35 t /year
Various manures: ..... 35 t /year
Damp grass: .....20 t /year
Cereal wastes: .....20 t /year

Production data

Available area for the output of the biogas fertilizer (hectares): 142
Electric power of the gas engine (kW): 30
Generated thermal energy: .....350.000 MWh
Utilization of heat: ..... 336 MWh (process 83%, breeding buildings 3%, house 14%
Generated electric energy (kWh): 190.000
Power consumption (electricity) of the plant itself (kWh): ..... Unknown

Technical plant description

Operating temperature (dg): 43
Average retention time in digester (days): 70
Average expenditure of human labor (persons): .....1 hour/day
Size of reception facility (m3): 1750
Size of fermentor (m3): ..... 740 m^3 (4 x 185 m3)
Size of end storage tanks (m3): ..37 + 150 m^3 slurry juice in tank and a supple pocket
Size of end storage area (m^2): ..... 550 m^2 for solid biogas fertilizer
CHP (kWh): ..... 89 kWh (33 kWh_{elec} + 56 kWh_{heat}

The project BioEnergy Farm II wants to inform farmers about the benefits of micro scale digestion and give farmers a view on the feasibility of this technology for their business.

Are you curious about the feasibility of micro scale digestion on your farm?

From September 2015 we offer personal guidance at home! Our biogas experts have software tools to calculate the feasibility of micro scale digestion on your farm. Contact us!

www.BioEnergyFarm.eu

#BioEnergyFarm

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