Waste to Energy in England

Success Story

Picture: BioCycle - MT-Energie

Operator

Swancote Energy Ltd.

Location of the project

Bridgnorth, Shropshire, England

Contact details

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Project results

Socio-environmental:

- Raised public awareness and acceptance on biogas and renewable energies
- Waste reduction

Project outline

The EU and the UK Government tightened the regulations for waste disposal, so that organic waste disposal on the landfill should be gradually lowered and no longer available after 2020. Due to this and also other reasons, the disposal costs for waste have increased in almost all Member States. There is overall increasing pressure, also public pressure, to make a better use of resources and to make the best possible use of the waste.

Facing this multiple background, companies are searching for alternatives regarding waste disposal or for an efficient and ideally profitable recycling.

MT-ENERGIE
Biogas-Technologie

Technical data

Year of plant construction:
2011

Year of performed service:
2011

Plant size: >2,000 kWe installed, 7,000,000 Nm^3/a , 850 Nm^3/h

Digester volume:
Digester 2 x 2,300 m^3,
Secondary digester 1 x 2,300 m^3

Gas storage: 4,500 m^3

HRT : 50 days

Process temperature: 40°C

Type of raw material:
Food waste, potato peel, yoghourt sludge, maize Silage, grass silage

Utilisation of biogas:
Electricity production

Heat utilisation:
Heat is used for running a pre-pasteurization system for the feed stock and is also used in a steam generator that turns the excess heat into electricity

Utilisation of digestate:
The digestate is spread out on the fields of the plant owner

Subsidy:
Plant didn't receive any subsidy, obtained electricity price is 15 p/ kWhel, (approx. 18 €c per kWhel))

Performed actions

The know-how established over many years in the development and construction of biogas plants, as well as research and diverse application of input materials (substrates), had an undeniable influence on this project. Biogas plant Swancote Energy Ltd has been designed to digeste organic material. Besides energy crops also food waste are used on site and a depacking system was installed to handle any kind of packed food waste. For the professional waste disposal a hygienisation unit (processing food waste at 70°C for 1 hour) was implemented by the plant operator which uses the exhaust heat of the CHP. This is an intelligent interconnection of different processes for an increased degree of efficiency. At the end of the process, digestate is separated from liquid and spread on the nearby fields.

Instead of cost intensive waste disposal, supermarkets or, food producers and processers can now deliver directly to the nearby biogas plant in Bridgnorth.

Results of performed service

Since the Swancote plant is operating, local food companies save both transportation costs and a part of the disposal costs. The plant operator, private households, the climate protection and the regional climate balance are benefitting from the sensible waste recycling for producing regenerative electricity as a substitution to fossil and nuclear energy. Furthermore, landfills are relieved.

Additionally, with the digestate a nutritious, almost odourless organic fertiliser is produced as a by-product which can be spread on the farmland. This fertiliser is less aggressive for the soil and plants compared to, for example, manure and an economical alternative for expensive artificial fertilizer.