

Position statement on Anaerobic Digestion production in North Devon Biosphere

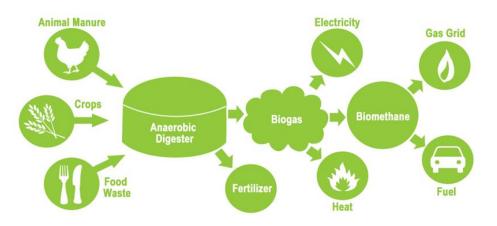
Purpose

This position statement is to support developers and planners on some of the considerations for AD plant installations that might take place in the Biosphere Reserve.

Background

Anaerobic Digestion (AD) is a rapidly growing renewable energy technology, which utilises a range of feedstocks such as food waste, sewage, agricultural slurry and purpose grown crops for example maize in order to create biogas.

This gas can be used for transport, heat and electricity, making biogas the only renewable energy source that can be directly used across all three energy sectors. The process also results in a solid waste (digestate) which makes an effective fertiliser with a number of benefits over the use of raw slurry. If the plant is delivering enhanced biomethane into the gas grid there are further waste products arising from the biogas to bio-methane upgrade depending on the process used.



The environmental and economic benefits and problems of the use of anaerobic digestion as a renewable energy source must be considered if further plants are to be established within the North Devon Biosphere Reserve.

Benefits:

- Can be used as a sustainable alternative to landfill, incineration or other waste management methods
- The gas released can be collected and used as a renewable replacement for natural gas
- The resulting solid waste (digestate) can be used as a natural fertiliser which has benefits over the use of raw slurry or inorganic fertilisers
- The net emission reductions are much higher when compared to composting.



GENeco Bio-Bus, powered by biogas generated from sewage and food waste

Problems:

- The landscape and local communities may be affected by the noise, odour and visual impact of the plant
- The land required to provide feedstocks can be large, especially when compared to the requirements for other renewable energy sources such as wind or solar. This can increase the cost of crops grown for food and of grassland
- Risk of nitrogen deposition from stockpile of feedstock
- The growing of purpose grown crops for feedstocks has significant impacts on soil quality, water quality and biodiversity



Andigestion Biogas Plant, Holsworthy

Within the North Devon Biosphere Reserve anaerobic digestion has an important role to play in reducing GHG emissions and is compatible with the area given certain key provisions:

- The location must be chosen carefully to make sure the community impacts of transporting feedstock and digestate to and from the plant are kept to a minimum and do not outweigh the environmental and economic benefits of the plant
- Protecting the landscape through careful planning and building regulations is vital, as well as choosing sites which have natural screening in order to reduce the visible impact
- The AD plant should be an adjunct to the farm business and not the main purpose; otherwise leads to skewing of local land and commodity process making traditional and environmentally friendly farming more of an economic challenge.
- Large scale commercial plants which use PGCs including maize and other intensively farmed energy crops should not be encouraged due to the negative impacts on the landscape, biodiversity, soil quality and water quality as well as the potential local economic impact of increased demand for land
- Provided appropriate measures are taken to reduce nuisance and health issues, food waste or other putrescible waste should be used as supplementary feedstock
- Keeping plant and storage lagoons away from sensitive biodiversity sites (culm grasslands and ancient woodlands especially) to reduce impacts of ammonia and nitrogen deposition.
- Self-contained farm unit systems would be considered more favourable and reduce transport impacts, especially if a pump delivery system is used.
- Digestate spreading plans need to be sensitive to the phosphate and nitrogen status of the soils and sub catchment.