

Anaerobic Digestion Briefing

Appendix B

AD plants in the UK



A list of currently operational and planned AD plants within England is available from the AD Community website, but is not exhaustive.

http://www.anaerobic-digestion.com/html/ad_plants_in_the_uk.html

Some examples in more detail:

PDM Doncaster and Widnes

The PDM Group has been awarded planning permission for a state-of-the-art anaerobic digestion (AD) plant in Doncaster. The £12 million facility will provide an integrated solution for the recycling of food wastes diverted from landfill, as well as processing biodegradable wastes produced by the existing food factories on the site. The facility will include the latest depacking systems, digesters and a combined heat and power plant, the latter reportedly developing 2MW of renewable electrical power and up to 45 000 tpa waste throughput.

PDM Group has also been awarded planning permission for a new renewable energy plant at its site in Widnes, Cheshire.

The £25 million biomass-to-energy plant is the second to be installed at Widnes and will double renewable energy production at the site - enough 'green' energy to power 20,000 homes.

The new plant will use state-of-the-art technology to turn 150,000 tonnes of food and drink waste from every part of the supply chain into a positive resource, and avoid it ending up in landfill.

http://www.pdm-group.co.uk/news/2009_02_18.html

Biffa Waste Services, Leicester

This is a 35 000tpa plant with energy recovery through the capture of methane gas produced by the digestion process and its conversion into electricity (approximately 1.5 Megawatts - enough to power up to 1500 homes). The plant takes mixed organic household waste from a ball mill in which non biodegradable materials will have been removed.

<http://www.biffaleicester.co.uk/about/>

Biffa Cannock

Biffa has announced plans to build an anaerobic digestion facility in the West Midlands capable of processing 80,000 tonnes of organic waste a year.

The firm is set to submit a planning application to Staffordshire county council in the next few months to develop the facility at Cannock, in the South of the county.

The plant will manage commercial and industrial waste, although there are currently no waste contracts in place.

When the plant becomes operational in 2011, it is planned to create 4 megawatts (MW) of electricity and 2MW of thermal heat a year alongside a high quality fertiliser

for land restoration. It will also divert two million tonnes of waste from landfill over its 25-year operational life.

http://www.newenergyfocus.com/do/ecco.py/view_item?listid=1&listcatid=32&listitemid=2684

Summerleaze / Andigestion, Holsworthy

Andigestion Ltd is part of the Summerleaze Group, a leading investor and innovator in the renewable energy sector. Andigestion was established in 2004 to develop and commercialize anaerobic digestion (AD) as a viable waste-treatment technology. As of 2008, Andigestion's plants produce 70% of the electricity from AD of agricultural and commercial wastes in the UK.

Two 4,000m³ digesters can process 140,000m³ (135 000tonnes) per year of organic material. After pasteurisation and digestion this is returned to local farms as a soil fertiliser for use on both arable and grazing land. The plant has 2.7MW of installed generating capacity. The amount of electricity being generated at any one time depends on the quantity and nature of the feedstocks being supplied to the plant. Typically, the plant produces 800 - 1,000 MWhs per month. Around 90% of the electricity generated at the plant is exported to the National Grid, with the other 10% powering the plant itself.

The feedstocks for the plant come from various sources, including industrial bakeries and food processors, abattoirs, fish processors, cheese producers, biodiesel manufacturers and councils. Large producers may supply 50-100 tonnes per week of waste, whilst small businesses may only generate 1 tonne per week.

<http://www.andigestion.co.uk/content/holsworthy>
http://www.devon.gov.uk/plandoc_11_3214.pdf

Green Wolds Energy, Driffield

The Government is backing an East Yorkshire power plant that will run on waste from the food business –hoping it will show the way for many more.

The Department for the Environment, Food and Rural Affairs (Defra) has announced funding for five experiments in the "anaerobic digestion" of food and farm waste, including one at Eastburn Farm, near Driffield.

The company behind it, Green Wolds Energy (GWE), was given planning permission by East Riding Council last month, without a single objection and Defra has said the project will get a share of a £10m pot allocated to kick-start anaerobic digestion projects.

In the case of the Driffield complex, the gas will be burned to make electricity for the national grid, while spare heat from the process will be sold to businesses on the nearby Industrial Estate, and/or new houses proposed for a former RAF site.

Biocycle South Shropshire Ltd

Biocycle South Shropshire Ltd (Biocycle) was set up as a demonstration partnership project between Greenfinch Ltd, who later became a part of BiogenGreenfinch, and South Shropshire District Council.

The project concept was to collect 5 000 tonnes of garden and food waste from South Shropshire households and deliver the waste to the Biocycle AD plant for processing. The biofertiliser produced was to be pasteurised to remove pathogens prior to being spread on local agricultural land. Additionally, the biogas was to be burned in a combined heat and power unit, with surplus electricity exported to the National Grid and surplus heat to be used in a local district heating scheme.

The project was supported by DEFRA under the Waste Implementation Programme – New Technologies Demonstration.

It is understood that, for food waste, the project fully confirmed AD processing capabilities in respect of biogas and fertiliser outputs and that a full report will become available in due course.

BiogenGreenfinch

The BiogenGreenfinch plant at Twinwoods, Bedfordshire became operational in 2006. It accepts 42 000 tonnes annually, both food waste and animal waste, and produce 30 000 tonnes of fertiliser and, from the biogas, electricity at the rate of 1MW, sufficient for 1000 homes.

The plant plays an integral part in the farming operations of BiogenGreenfinch's parent company Bedfordia and the fertiliser production forms part of a sustainable closed loop in which the harvested food crops cycle through pigs and humans and the fertiliser from AD is returned to the fields to boost new crops.

A second generation plant close by, (Westwood), with a capacity of 45 000 tonnes per year and producing electricity for 2 000 homes, will accept food waste from 38 local Sainsbury's stores linked to its Northampton Distribution Centre. AD is now a key component of Sainsbury's strategy of no food waste to landfill and this joint venture allows roll out on a national scale to its stores and depots.

By agreement with West London Waste Authority this plant will also accept food waste from some 250 000 homes in Ealing, Hounslow and Richmond.

For further details of these plants and of BiogenGreenfinch's activities see

<http://www.envirotech-online.com/news/gas-detection/8/geotechnical-instruments/biogengreenfinchs-biogas-talks/5521/>
www.biogengreenfinch.co.uk