

Cwm Harry Community Anaerobic Digestion Scheme

Development Plan Summary (Ludlow, Shropshire, UK)

Overview: Cwm Harry is an environmental research charity with over 10 years' experience of operating organic recycling operations. Operating across the Marches of England and Wales, Cwm Harry provides practical environmental services and innovative commercial solutions for sustainable communities across the UK. Cwm Harry received support from the BioenNW project for its Ludlow Community Anaerobic Digestion (AD) plant project. This project sought to restore an organic waste fed, continuously stirred tank reactor (CSTR), AD plant to operational order.

Commissioned in 2006 (developed by Greenfinch and funded by DEFRA and Advantage West Midlands), the AD plant was designed to be a demonstrator scale pilot plant utilising kitchen and garden waste collected from the surrounding area. The development plan produced by the European Bioenergy Research Institute (EBRI) at Aston University and Invigour supported Cwm Harry by providing a techno-economic model to determine the (5 kt/yr) feasibility for restoring the plant to working order or to double its existing capacity.



Project detail

There were two possible incentive funding regimes available to Cwm Harry: Renewable Obligation Certificate (ROC) + Renewable Heat Incentive (RHI) or Feed in Tariff (FIT) + RHI. Within the model there was the ability to interchangeably select the two possible funding mechanisms.

A customised techno-economic information model was produced and issued to Cwm Harry. It was recommended that Cwm Harry modelled the two options for the site to assist with the selection of the optimal strategy for proceeding with the Ludlow site. From discussions with Cwm Harry, it was recommended that the model should be utilised to support the economic case for continuing with the current capacity at the Ludlow site or to double the capacity to 10 ktpa. This decision would be based on several economic performance metrics including a cost benefit analysis.

Outcome

The development plan provided an initial analysis for both the 5 ktpa and 10 ktpa options based on a high level of assumed input data that require further research and validation by Cwm Harry. The initial indications showed healthy payback periods under the current capacity scenario for the FIT of 10.5 years. The current capacity project performed less well under the ROC mechanism as there were reduced production incentives and therefore a significantly lower gross profit margin per year. The increased capacity case performed well under both incentive mechanisms with 4.6 years (ROC) and 3.6 years (FIT) paybacks.

This development plan was produced through BioenNW – a €7.9m strategic initiative of the INTERREG IVB North West Europe Programme (2011-2015). BioenNW is led by the European Bioenergy Research Institute at Aston University, UK and sees 11 partners working together to deliver small-scale bioenergy schemes throughout North West Europe.



Report issued in June 2014

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