

BIOELECTRIC MICRO AD PLANNING DOCUMENT

For Fishes & Peggy Lee Farm – Mar 2021



Bioelectric[®]



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Planning Support Document

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Bioelectric Micro Anaerobic Digestion Systems

This award winning Belgian micro AD system. This system is designed to run off the farms own slurry and does not require any other feedstocks. For further information and images please visit www.dairyenergy.co.uk

Bioelectric Micro Scale AD Plants - How does it work

- The Bioelectric biogas installation daily pumps a fixed quantity of dairy slurry from the reactor to the digestate storage and replaces the discharged volume with fresh manure from the manure pit. This process is fully automated.
- Biogas is formed in the reactor through anaerobic fermentation. The gas is then purified and in the combustion engine it converts to green energy. This energy can be used in the form of electricity and heat on the farm.
- Bioelectric systems are classed as micro AD because of the size of energy output i.e. 11-44kw and the benefit of installing these smaller micro sizes is that we can match the power usage of the farm to gain maximum efficiency and therefore greater benefit. Larger AD plants export a great percentage of their electricity which is only worth around 50% value and cannot use all the available heat. Matching the size of plant to the farms usage is not only the most efficient but is the most environmentally conscious option.

The digestate that has been used in the process becomes more of a liquid slurry which enable easier spreading and the ability to be absorbed deeper into the land to increase fertility. The nitrate uptake values can also be increased adding additional benefits. It has been noted that there can be less associated slurry smell when spreading after digestion and reduction of the use of fertilizer.



Example Bioelectric Installation

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OVERVIEW

Bioelectric is pleased to submit this planning proposal for Fishes & Peggy Lee Farm for a Bioelectric Micro AD plant

It is hoped that this Micro AD plant can utilize the slurry from the cows to create biogas which in turn will generate renewable electricity and hot water for the farm. The Bioelectric micro AD plant will use only slurry and burn the methane to create renewable energy, the heat generated from the engines will be captured and used for hot water requirements around the farm, this will then reduce the need to heat water by fossil fuel.

Planning Background

The local planning authority that is competent in determining planning applications is Ribble Valley. The Authority has a local plan which forms the principal material consideration against which planning permission applications are assessed.

Context- Policy on Renewable Energy Development

The proposal to construct an AD plant for the purposes of combined heat and power would meet the definition of renewable energy set out in the National Planning Policy Framework (NPPF) and the National Planning Practice Guidance (NPPG).

At an overarching level the NPPF on which local policy is based has a presumption in favour of sustainable development. The NPPF states that there are three dimensions to this, economic, social and environmental, each arising relates to the planning system having to perform a number of roles. The environmental theme includes objectives to:

- Protect and enhance our natural, built and historic environment;
- Use natural resources prudently;
- Minimise waste and pollution; and,
- Mitigate and adapt to climate change including moving to a low carbon economy.

Support for renewable generation that will contribute towards these targets is reflected in national land use policy.

Planning Policy Statement 7: Sustainable Development within Rural Communities states that local planning policies

should support development proposals that will enable farming and farmers to become more competitive, sustainable and environmentally friendly, adapt to new and changing markets and diversify into new agricultural opportunities such as renewable energy generation.

Planning Policy Statement 1: Delivering Sustainable Development also lends support to the development of renewable energy installations stating that the planning system:

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Should provide a framework that promotes and encourages renewable and low carbon energy generation. Policies should be designed to promote and not restrict renewable and low-carbon energy and supporting infrastructure; and,

Should not require applicants for energy development to demonstrate the overall need for renewable energy and its distribution, nor question the energy justification for why a proposal for such development must be sited in a particular location.

The 2018 National Planning Policy Framework's chapter 14 states that plans "should take a proactive approach to mitigating and adapting to climate change, taking into account the long-term implications for flood risk, coastal change, water supply, biodiversity and landscapes, and the risk of overheating from rising temperatures". this approach is in line with the objectives and provisions of the Climate Change Act 2008

Further to national planning policy, the Climate Change Act 2008 requires an 80% reduction in greenhouse gas emissions by 2050 (upon 1990 levels)

Planning Policy: Renewable Energy and Planning, states that a planning application for an anaerobic digestion plant could usefully include the following:

1. Site plan and elevation drawings to help determine visual impact;
 - a. *Site plans and elevations have been supplied to support this application*
2. Photomontage of digester, plant building(s) and chimney stack with clear indication of Building material;
 - a. *Please see appendix A*
3. Information on grid connection works, including transformer and transmission lines;
 - a. *The local DNO will be approached*
4. Details of emissions to air and an assessment of their impact;
 - a. *The development does not reside within an AQMA and therefore in regards to the release of NOx are likely to be unfounded.*
5. Details of vehicular access and vehicular movement;
 - a. *The system will be fitted before the slurry tank and the digestate will be automatically pumped into the tank after energy has been released. The only vehicular access will be for maintenance once a quarter.*
6. Landscaping provisions;
 - a. *The site is next to existing slurry tower and is well screened by either buildings or topography.*
7. Site management measures during the construction phase;
 - a. *The AD plant can be constructed within 2 weeks and all H/S measures will be documented*

The site does not reside within an AQMA.

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Furthermore, a review of local planning suggests that small scale AD plant would be supported by local planning policies.

RENEWABLE ENERGY POLICY ENV24

In view of the general environmental benefits associated with harnessing renewable energy sources, the Borough Council will support the development of renewable energy schemes provided it can be shown that such developments would not cause unacceptable harm to interests of acknowledged importance in the local environment.

4.11.2 The Government's policy is to stimulate the development of new and renewable energy sources wherever they have prospects of being economically attractive and environmentally acceptable in order to contribute to:- diverse, secure and sustainable energy supplies; reduction in the emission of pollutants; and encouragement of internationally competitive industries. National planning policy guidance is set out in PPG22 together with technical annexes.

4.11.3 The Borough Council acknowledge that new and renewable energy sources can potentially contribute to energy needs in a significant and sustainable way. Renewable energy sources offer the hope of increasing diversity and security of supply, and of reducing harmful emissions to the environment. 3

Environment & Protection Agency

The farm will complete a Paragraph 51 - Form to register or renew an exemption

(Anaerobic Digestion) before any digestion takes place on the farm

No movement of traffic

Design & Access statements

Process & Use

The farm is choosing a micro scale Bioelectric AD plant because it can utilize the waste slurry and convert it to energy efficiently. There are no other financially viable slurry only AD systems on the market

Amount

The size is appropriate to the amount of waste slurry available to maximize uptake and benefit.

Layout

The area was chosen as it is directly located next to the existing buildings and therefore reduce the amount of ground works , trenching ,pipework and pumps.

Scale

As previously mentioned the scale was determined by the available slurry

Landscaping & Appearance

The AD plant will be located next to existing farm buildings inc slurry tank and is screened by existing buildings on all sides

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Access

The system is remotely operated and automatic so there is no need for additional vehicle access although emergency vehicles can use existing farm track.



The systems are manufactured by Bioelectric based in Belgium and they have experience of building over 200 plants

www.bioelectric.be

Appendix



33kw small AD system in Wales