

Case Study...

Centralised Anaerobic Digestion in the UK Dairy Sector





"...opportunities exist for processors and the supply chain as a whole (to reduce greenhouse gases) through centralised AD which can process food wastes together with manures."

UK Milk Roadmap (2008)

Client...

Confidential Private Sector Clients

The Challenge...

To become more sustainable and to improve environmental performance the dairy sector has set itself challenging greenhouse gas reduction and renewable energy targets. Anaerobic digestion (AD), the breakdown of organic material to produce a methane rich gas, has been identified as an important technology in achieving these objectives. The methane gas produced by AD is a renewable resource that displaces the use of fossil fuel. There is also a clear driver for dairy processing companies to reduce operational costs and AD can provide financial benefits through reduced waste disposal and energy costs.

Ed Gmitrowicz (whilst employed by AEA Technology plc) led a detailed feasibility study of a Centralised Anaerobic Digestion (CAD) facility to be located at a dairy processing site. The purpose of the study was to rigorously define the operational parameters under which such schemes would be sustainable, both environmentally and economically.

The work...

Strategy - an important output of the project was a strategy describing the range of operational parameters for which CAD facilities would be viable in the UK. Ed ensured that the strategy took account of feedstock options, environmental constraints, transport costs, development costs and availability of Government subsidies.

Project management - Ed Gmitrowicz managed the entire project, which progressed from an initial concept to the development of fully costed options for a CAD plant which were presented to the client's Board.

Technical - The project required a wide range of knowledge and experience and included experts in anaerobic digestion, waste management, logistics, planning, environmental assessment, financial analysis, engineering, and tendering.

Communications - As a wide range of stakeholder needed to be involved in the project, face to face communications were essential at all stages. Stakeholders included those providing feedstock to the plant (farmers, the local authority waste department and the dairy processing site), those responsible for planning and licensing of the plant (the local authority planning and environment department and the Environment Agency), landowners, those benefiting from the heat and power to be generated at the AD plant, companies tendering to build and operate the plant, potential funders of the development and parties interested in the viability and replicability of such plants.

The Outcomes and Benefits...

For the environment - the proposed solution converted food wastes, dairy manures and cheese processing wastes to renewable energy and a valuable soil conditioner (digestate). The benefits to the environment included displacing fossil fuels with renewable energy, avoiding GHG emissions from waste processing and displacing fossil fuel use in fertiliser production.

For the bottom line - the CAD plant would result in reduced power and heat costs for the cheese plant, which would make cheese production in the area more sustainable. Farmers would receive a greater nutrient return than in the manures provided to the CAD plant, reducing the need for expensive mineral fertilisers.

For people - Jobs would be created in the development and operation of the CAD plant and the cheese plant jobs would be safeguarded.

If you'd like to know more get in touch with Ed Gmitrowicz on 07766 879774 or e-mail ed.gmitrowicz@eandsp.co.uk and visit our website at www.environmentandsustainability.co.uk