

POULTRY WASTE

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9 JUNE 2008

INTRODUCTION

This paper was produced for the Committee for the Environment.

This paper provides information on issues relating to the proposed poultry waste disposal plant at Glenavy, namely:

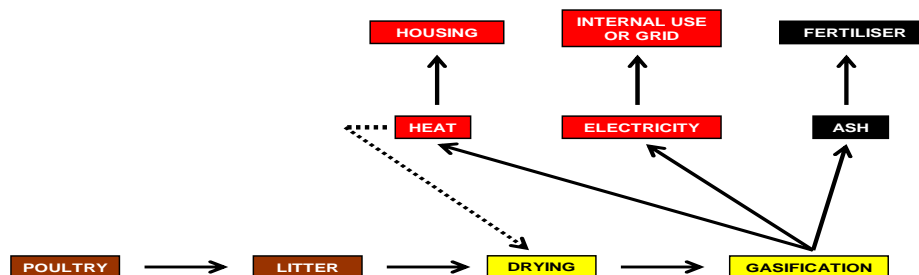
- Examples of existing poultry litter power stations, UK and worldwide.
- A basic comparison of existing plants with the Glenavy proposal.

BASIC COMPARISON OF EXISTING POULTRY LITTER POWER STATIONS

Most poultry litter power stations operate on a version of the following simplified process:

- Poultry litter is produced and delivered to the plant and stored in a vessel and dried to a specified degree.
- The poultry litter is then heated (incinerated) in a boiler and turned into gas.
- The gas is cleaned and purified before powering a steam turbine, for example, producing heat and power and an ash by-product useful as fertiliser.

The basic process is illustrated in the following simplified diagram:



SIMPLIFIED DIAGRAM OF POULTRY LITTER POWER STATION PROCESS

A basic comparison of some example existing poultry litter power stations is **Annex A**.

EXAMPLES OF EXISTING POULTRY LITTER POWER STATIONS

- **EYE, SUFFOLK**

The Energy Power Resources Limited power station in Suffolk was claimed to be the world's first poultry litter fuelled generating plant.

It is claimed to have a capacity of 12.7MW, provide consumption of 140k tonnes per annum of poultry litter, and produce high quality fertiliser for subsequent sale.

It operates using a conventional moving grate boiler and steam cycle.

Further details, as provided by the company, are at **Enclosure 1** and at <http://www.epri.co.uk/assets/eye/overview.html>

- **GLANFORD, NORTH LINCOLNSHIRE**

The Energy Power Resources Limited power station in North Lincolnshire was claimed to be the world's second poultry litter fired renewable energy power station.

It is claimed to have a capacity of 13.5MW and provide consumption of 89k tonnes per annum of meat and bone-meal. It could be converted to consume poultry litter.

It operates using a conventional moving grate boiler and steam cycle.

Further details, as provided by the company, are at **Enclosure 2** and at <http://www.epri.co.uk/assets/glanford/overview.html>

- **WESTFIELD, FIFE**

The Energy Power Resources Limited power station in Fife was claimed to be the first poultry litter fuelled plant in the world to use advanced fluidised bed combustion, and to be the first biomass fuelled generator in Scotland.

It is claimed to have a capacity of 9.8MW, provide consumption of 110k tonnes per annum of poultry litter and have successfully trialled the burning of poultry feathers.

It operates using a bubbling fluidised bed combustion system.

Further details, as provided by the company, are at **Enclosure 3** and at <http://www.epri.co.uk/assets/westfield/overview.html>

- **THETFORD, NORFOLK**

The Energy Power Resources Limited power station in Norfolk was claimed to be the largest poultry litter fuelled plant in the world, and to be the largest biomass fuelled electricity generator in Europe.

It is claimed to have a capacity of 38,5MW, provide consumption of 420k tonnes per annum of poultry litter, and produce high quality fertiliser for subsequent sale.

It operates using a conventional moving grate boiler and steam cycle.

Further details, as provided by the company, are at **Enclosure 4** and at <http://www.epri.co.uk/assets/thetford/overview.html>

- **MOERDIJK, THE NETHERLANDS**

The BMC Moerdijk power plant in the Netherlands has just started production.

It is claimed to have a capacity of 36MW, provide consumption of 400k tonnes per annum of poultry litter, and produce high quality fertiliser for subsequent sale.

It operates using a fluidised bed boiler and steam cycle.

Further details, as provided by the company, are at **Enclosure 5** and at <http://www.bmcmoerdijk.nl/index.php>

- **MINNESOTA, USA**

The Fibrowatt power station in the USA was claimed to be the first poultry litter fuelled power plant in the USA.

It is claimed to have a capacity of 55MW, provide consumption of more than 500k tonnes per annum of poultry litter, as well as other biomass, and produce high quality fertiliser for subsequent sale.

It operates using a boiler and steam cycle.

Further detail, as provided by the company, is at **Enclosure 6** and at <http://www.fibrowattusa.com/us-projects.cfm?id=16>

BASIC COMPARISON

A basic comparison of the plants outlined above and the proposed plant at Glenavy is at **Annex A**.

ANNEX:

A. Basic comparison of examples of existing power stations with the Glenavy proposal.

ENCLOSURES

1. Energy Power Resources Limited information on its Eye, Suffolk power station.
2. Energy Power Resources Limited information on its Glanford, North Lincolnshire power station.
3. Energy Power Resources Limited information on its Westfield, Fife power station.
4. Energy Power Resources Limited information on its Thetford, Norfolk power station.
5. BMC Moerdijk information on its South Netherlands power station.
6. Fibrowatt USA information on its Benson, Minnesota power station.