OVERVIEW OF ISSUES RELEVANT TO POULTRY WASTE INCINERATOR DEVELOPMENTS

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This note, prepared for the Clerk of the Committee for Agriculture and Rural Development, provides a **brief overview of the major issues and policies** likely to be relevant to consideration of poultry waste incinerator developments, in order to inform Members of the Agriculture and Rural Development Committee prior to their visit to examples of such plants in the Netherlands.

POULTRY INDUSTRY ISSUES

NI poultry industry. In NI, the poultry stock was more than 17m birds in 2007[1], distributed as follows[2]:

- 39% in County Antrim, mainly in rural Ballymena.
- 33% in County Tyrone, mainly in rural Dungannon.
- 12% in County Down, mainly in rural South Down.
- 8% in County Armagh, mainly in rural Armagh.
- 5% in County Londonderry, mainly in rural Magherafelt and Coleraine.
- A negligible broiler farming industry in County Fermanagh.

Demand for poultry waste management. Poultry in NI produces around 485k tonnes of manure each year. Poultry, therefore, accounts for 5% of the NI annual total of almost 10m tonnes of manure from housed livestock; in comparison, cattle accounts for 88% of the NI total, and pigs account for 7%[3]. The proposed Glenavy plant has a claimed capacity of 300k tonnes, which could account for almost 60% of NI annual production of manure from housed poultry livestock[4].

POLICY ISSUES

Sustainable Development Strategy (SDS)[5]. SDS strategic objectives include:

- To reduce greenhouse gas emissions, principally by promoting energy efficiency and the use of renewable energy.

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[1] DARD: *The Agricultural Census in Northern Ireland Results for June 2007*
[2] http://www.actionrenewables.org/uploads_documents/6countiesReport.pdf
[3] NI Assembly Committee for Agriculture and Rural Development *Inquiry into Renewable Energy and Alternative Land Uses Written Submissions*
[4] Rose Energy Ltd presentation to Environment Committee 22 May 08
[5] http://www.ofmdfmni.gov.uk/sustain-develop.pdf

- To establish NI as a world class exemplar in the development and use of renewable energy.

The Regional Development Strategy for NI 2025 (RDS)[6]. RDS objectives include:

- Development of renewable energy resources (RNI 1.1).
- Wider choice of energy supply, including renewable energy (ENV 5).
- Exploitation of renewable sources of energy and alternative energy technology (ENV5.3).

Energy Policy[7]. UK policy highlights the potential for renewable forms of energy to enhance security and diversity of supply, and to minimise the environmental implications of electricity generation.

Waste Management Strategy (WMS)[8]. WMS principles of sustainable waste management include:

- The waste management hierarchy; waste minimisation tops the hierarchy.
- The proximity principle; treat and/or dispose of wastes in reasonable proximity to the point of generation.
- Regional self sufficiency; waste should be treated and managed within the region in which it is generated, provided no unacceptable adverse effects.
- Reduction in the amount of waste being landfilled.

DARD Nitrates and Phosphorus Regulations 2006[9]. These regulations, implemented in 2007, attempt to implement the terms of the EU Nitrates Directive. This Directive seeks to reduce or prevent the pollution of water caused by the application and storage of inorganic fertiliser and manure on farmland; it is designed both to safeguard drinking water supplies and to prevent wider ecological damage in the form of the eutrophication of freshwater and marine waters generally.[10]

LAND-USE PLANNING AND ENVIRONMENTAL ISSUES

Land-use planning and environmental issues include:

- Location.
- Access.
- Landscape and visual impact.
- Flood risk and drainage.

[6] http://www.planningni.gov.uk/AreaPlans_Policy/PPS/pps18/pps18_draft.pdf
[7] http://www.publications.parliament.uk/pa/ld200708/ldbills/052/en/index_052.htm
[8] http://www.ehsni.gov.uk/wms.17.pdf
[9] http://www.ruralni.gov.uk/zones
[10] http://www.ni-environment.gov.uk/water/agri_regs/nitrate.htm

- Air quality.
- Human health impact.
- Other emissions (including effluent and water, noise, odour, dust, lighting, and ash disposal).
- Archaeology.
- Ecological impact.

ALTERNATIVE OPTIONS

Site. The proposed development site was 1 of more than 40 possible sites identified by Rose Energy. The proposed development site was chosen for the following reasons:

- The principle of developing an energy from waste plant was established there.
- Bio-Security; it was distant from the main concentrations of poultry production.
- Availability of the land.
- Availability of water for cooling.
- It is of the right size, with sufficient space to facilitate construction.
- It is immediately adjacent to the single largest source of fuel.

A **map**, provided by Rose Energy, showing the **dispositions of its poultry suppliers and the proposed development site**, is at **Enclosure 1**.

A **map**, provided by Rose Energy, showing the **locations of alternative sites** identified by Rose Energy, is at **Enclosure 2**.

Technology. There are several potential alternatives to incineration of poultry waste[11] that could aid compliance with the requirements of the Nitrates Directive; each, however, has its own potential drawbacks. The EGUAM report describes other potential options, including gasification and pyrolysis[12]; the report indicates that these technologies are – to date - less proven than incineration. Alternatives include:

- **Pelletising.** Poultry manure is dried and made into pellets at high temperature and pressure. These pellets can then be used as a soil conditioner. The volume of poultry manure produced in NI each year would likely require 4 large plants to be established.

[11] \\assemblydb\dri_shapp\R&LS\Research_Output 2008\NIAR-642-2008

[12] These treatment processes are defined as 'incineration' under *Directive 2000/76/EC of the European Parliament and of the Council of 4th December 2000 on the incineration of waste*

- **Composting.** Composting is the aerobic decomposition of organic material in a controlled environment; the end result is a nutrient-rich soil conditioner. The 2 common methods for composting are: windrow (composting material in open rows); and in-vessel composting. Although the compost is biologically deactivated, the original litter will contain category III waste (animal by-products) which would have implications for the use of the compost. Composting may be at farm level or centralised. Markets for end-product are still not fully developed which may affect the feasibility of this option.

- **Anaerobic digestion/combined heat and power.** Anaerobic digestion is a well-established proven technology in which organic waste is converted to biogas in the absence of oxygen. It is widely used across a number of European countries at both farm and centralised level in by utilising a mixed waste stream. The EGUAM report states that at a technical level the development of Centralised Anaerobic Digestion (CAD) has potential in NI. Anaerobic digestion does not remove nitrogen or phosphate from the manure, although it could play a role in the collection and redistribution of nutrients that would assist in compliance with the Nitrates Directive.

A **diagram**, provided by BMC, showing **how the BMC Moerdijk plant works**, is at **Enclosure 3**.