Anaerobic Digestion and Biogas Association

Decarbonising the electricity and gas grid

# Call for Evidence Response
# Gas Generation Strategy

The Anaerobic Digestion and Biogas Association ("ADBA") is the trade association that represents the range of interests and matters related to the anaerobic digestion of organic materials ("AD") across the UK, including the collection of waste for use as feedstock. ADBA understands the complex range of skills required by developers of new AD plants, from feedstock management through technology to energy production, markets and resource to land.

The organisation has around 300 members from across the AD industry, including farmers, local authorities, waste management companies, supermarkets, food processors, plant operators, energy and water companies, equipment manufacturers and suppliers, consultants, financiers and supporting service companies. Anaerobic Digestion can make a significant contribution to Climate Change, renewable energy and critical resource preservation targets, subject to the right policies being in place.

ADBA is grateful for the chance to contribute to the government's Gas Generation Strategy and articulate the central role that we believe biogas has to play in decarbonising the electricity and gas grids, delivering energy security, and its use as a transport fuel.

**General Remarks**

As a renewable gas, biogas from the anaerobic digestion process offers a number of strategic uses. The biogas, which is approximately 60% methane and 40% carbon dioxide, can be used to heat or power existing operations on-site while abating carbon emissions, used in a combined heat and power (CHP) engine, or upgraded to biomethane which can then be injected into the gas grid or used as a transport fuel.

Assuming that potential feedstock is made available, the sector can meet over 10% of domestic gas demand, thus making a major contribution to Britain's energy security. With Britain becoming a net gas importer for the first time in 2011, dependence on volatile overseas supplies will mean that business and consumers bills will rise steeply. As a constantly generated and flexible domestic source of renewable energy, which can be stored, AD offers a fantastic opportunity to combat this long term strategic challenge.

The ability to decarbonise the gas and electricity grids and the transport sector is another reason why the production of biogas should be at the heart of the gas generation strategy. There are few alternative fuels in either of these sectors. With the Government's long term binding commitment to cut carbon emissions by 80% by 2050, while delivering 15% of all energy from renewable sources by 2020, the potential of AD needs to be recognised.

**Role of Biomethane**

Biomethane is upgraded from biogas from the anaerobic digestion process, and is close to pure methane. It can be injected into the gas grid, where it can be used or stored until needed. Didcot was the first AD site to inject gas into the grid in late 2010, and there are two more projects at Stockport and Poundbury which will become operational in the next few months.

Biomethane is a proven energy source which is widely injected into the gas grid in Germany, and used for vehicle fuel in Sweden. It offers a very low carbon alternative to natural gas for either of these options. Given the all-round effort required to meet our 2050 greenhouse gas and renewable energy targets, and the wide existing use of natural gas particularly for domestic heating, grasping this opportunity is critical.

Like domestic heating there are few short-medium term viable options for decarbonising the heavy goods transportation sector, and trial results have demonstrated the economic and carbon savings that can be delivered through the use of biomethane vehicles. For example, Coca-cola recently undertook a year-long trial of 14 gas vehicles, achieving 50% GHG emissions savings alongside reduced fuel costs of nearly 15%.

The Renewable Transport Fuels Obligation (RTFO) is the mechanism which supports the use of biomethane as a transport fuel, but at present this does not represent an effective incentive for biogas producers as it is not on parity with the RHI. If Government wants to realise the potential of domestic biomethane in the transport sector this should be remedied.

**Investment Barriers**

Uncertainty over the future direction of Government policy is one of the most important factors holding back investment in the AD sector. With the Feed-in-Tariff, Renewable Heat Incentive and Renewables Obligation all set to see significant change in the next 12 months, some investors are wary of becoming involved in the AD market. If financiers feel that a high rate of return cannot be guaranteed due to perceived risk over changing tariff levels, they will be reluctant to invest.

Most damaging, though, are contradictions between Government policy in different areas. These desperately need resolving in order to realise the potential for renewable gas from anaerobic

digestion. Clearly the level of volume of gas which can ultimately be generated is entirely dependent on the quantity of feedstock which can be digested.

For the anaerobic digestion of wastes, organic waste needs to be available for AD plants, ideally from source segregated collection. This has wide ranging benefits, including reducing the volume of waste generated, removing contamination from other recyclable material, and improving the quality of the organic material for recycling back to land. Although the Waste Review (Defra, June 2011) recognised that AD is the technology which realises the 'greatest environmental benefit' of any treatment option for food waste, there is no clear direction for local authorities and businesses to adopt segregated collection schemes, or to direct their waste to available AD plants. This needs to change to maximise the potential gas which could be generated.

Similarly, contradictions in policy on the use of Purpose Grown Crops risk diminishing the contribution which biomethane could make to the UK's future energy mix. The Committee on Climate Change made clear in the Bioenergy Review (December 2011) that we need a significant contribution from bioenergy to meet climate change targets, and the Government's Bioenergy Strategy (April 2012) agreed, saying that:

> "bioenergy can be an important part of the energy mix which will allow the UK to meet its energy and climate change objectives, including the 2020 renewables targets and 2050 carbon reductions targets"

and committing to "supporting innovation in energy crops, biofuels and biomass for power and heat."

In that context we were surprised that the Strategy also referred to Government's desire "to limit the growth in crop-only AD in order to target support at increasing energy from waste". While we agree that bioenergy needs to make genuine carbon savings and policy needs to take account of effects such as land use change, this should be done across technologies and feedstocks, according to the framework of principles set out in the Bioenergy Strategy. Intentionally or otherwise, this sentence has separated purpose-grown bioenergy feedstocks for AD from other forms of bioenergy, which is unfair and inconsistent, and seriously risks damaging investment in the sector.

The biomethane to grid sector has been held back to date by various technical difficulties. ADBA has welcomed the recommendations from Ofgem's Energy Market Issues in Biomethane Group, around areas such as technology costs and GDN functional specifications. We hope that Government will encourage Ofgem to make timely decisions on areas for which they are responsible, for example setting out the mechanism for approving new gas monitoring equipment and making a clear decision on how they will treat network reinforcement. We also need to see HSE amend or provide a standard exemption to Gas Safety Management Regulations as soon as possible – this work has been underway for some time, and is causing cost and uncertainty for biomethane projects.

**Long term certainty needed**

We recognise that biomethane will only ever be a limited resource. This is particularly the case as biogas producers can choose between using the gas for electricity and heat generation or for upgrading to biomethane. Government therefore can choose either to let the market decide how biogas is used, or to offer strategic direction if a particular avenue better realises the UK's goals.

Given the range of low carbon alternatives for electricity production, ADBA believes that upgrade to biomethane will offer the greater medium-long term value as a form of renewable energy. The Carbon Trust considered this issue in 2010 (*Biogas from anaerobic digestion: CO2 savings and economics*), and concluded the following:

> "Biogas from anaerobic digestion offers worthwhile carbon savings if used for either transport, heat or electricity. Site specific factors such as ease of grid connection and availability of customers for heat and transport fuel will in practice have an important influence on the most appropriate use for the biogas. Based on the assumptions used in the modelling, using biomethane as a transport fuel enables the highest carbon savings, suggesting that this option should be encouraged."

If Government wants to see achieve the greatest impact from biomethane, this sort of assessment should be made. Given the other options for decarbonising the electricity grid, it is likely that upgrading biogas to biomethane will offer the greatest strategic value to the UK, which should be reflected in the financial incentives.

o0o

The Anaerobic Digestion and Biogas Association Limited
Canterbury Court, Kennington Park Business Centre, 1-3 Brixton Road, London SW9 6DE

Tel: +44 (0) 844 292 0874

Company No: 07015240
Registered in England and Wales