

BIOMASTER
UK Biomethane Day
26th June 2012

James Thorpe
Climate Change Project Officer
Norfolk County Council

Who are we?

UK Partners...

Norfolk County Council

Norse Group

National Grid Gas

TTR

European Partners...

Italy

Poland

Austria

Sweden

What are we hoping to achieve...

- Is a Norfolk County Council AD plant feasible and if so can it be of a size to inject biomethane to the grid?
- Is it feasible to invest in gas powered vehicles?
- What needs to happen to encourage biomethane production in the future?
- Supporting other AD developers to overcome problems using lessons learnt from Europe

Why are we interested?

- Norfolk County Council is the strategic waste disposal authority
- Could be an astute financial investment
- Build upon lessons learnt from previous projects

Timescales

- Project began May 2011 and runs until May 2014.
- Throughout there are numerous deliverables
- Focus in year one has been mainly setting the scene work however we have began working on the more technical deliverables

What have we produced so far...

Anaerobic digestion of farm wastes produces biogas which can be upgraded to biomethane and used as a valuable renewable resource for fuelling Norfolk and the rest of the UK. This is a guide to the options and benefits for farmers producing biomethane.

Background to Biomethane

Anaerobic digestion is the breakdown of organic matter by bacteria to produce biogas and digestate. Biogas is a mixture of methane, carbon dioxide and other components such as hydrogen sulphide and nitrogen. Biogas can be cleaned up to remove everything except the methane; this is biomethane.



Natural gas in the UK gas grid contains around 90 per cent methane so biomethane provides a readily available renewable replacement for fossil fuel in the grid. In addition, biomethane can be used as a vehicle fuel, significantly reducing carbon emissions from the transport sector.

Benefits

Biomethane can provide an additional income stream, reduce the environmental impact of some farming practices and provide an economical use for agricultural wastes. Biomethane production generates local and regional jobs that will benefit the rural economy in the long term. Furthermore, the digestate produced as a by-product of the anaerobic digestion process makes a good replacement for chemical

fertilisers and may even enhance productivity by blending in trace elements.

Challenges

There are challenges which must be addressed when building an AD plant. These can include traffic issues, planning and noise and odor emissions. More information on these can be found in the further guidance document.

Organic Waste in Norfolk

Farms in Norfolk produce over 1.9 million tonnes of agricultural waste every year and 99 per cent of this is organic. Common types of organic waste in Norfolk are:

- Manure
- Slurry
- Unbaled straw
- Vegetable waste
- Crop residues



Different organic wastes produce different amounts of biogas when processed in an anaerobic digester. Typical biogas yields for organic waste feedstocks are shown in table 1. A number of different feedstocks may be mixed in the same anaerobic digester. For example, slurry can be mixed with break crops to increase biogas yield.

Further Guidance for Farmers interested in anaerobic digestion

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Grid Injection

- Produced a detailed feasibility into whether we would be able to inject into the National Grid for a site we are interested in



A Detailed Analysis Study for Biomethane Injection into the National Grid Gas Distribution Network

DAS Ref No: NG/UKD/DAS/010

Prepared by	Gary Bateman Planning Supervisor
National Grid Contacts	Technical Nathan Turner Sustainable Gas Connections Specialist Tel: 07769 887 360 Commercial Andrea Godden Sustainable Gas Contract Manager Tel: 07790 039 502

This study has been prepared for:

**Alison Cartwright, Biomaster Project Officer,
Norfolk County Council**

Transport

D5.2 | Report on technical assessment of different vehicle storage options



- Technical report produced looking at options for gas storage on board vehicles

DELIVERABLE: D5.2 REPORT ON TECHNICAL ASSESSMENT OF DIFFERENT VEHICLE STORAGE OPTIONS

AUTHOR(s): ,

VERSION:

INTERNAL QUALITY CONTROL: STEFANO PROIETTI, ISIS

DATE:

CONTRACT N°: IEE/10/351/SI2.591136

STARTING DATE: 01 MAY 2011

DURATION: 36 MONTHS

COORDINATOR: STEFANO PROIETTI (ISIS)

TEL.: +39 063212655

FAX: +39 063213049

The BIOMASTER Regional Networks...

- Aim to collect and disseminate information
- Meet regularly with different topics for discussion at each
- Draws together experts from across the country to share information

Key Issues...

- Not enough feedstock
- Transportation of feedstock a contentious issue
- Energy Crops unlikely to be supported

Be a part of something special...

James Thorpe
james.thorpe@norfolk.gov.uk
01603 224425