

IEA Task 37 – Biogas

UK Country Report – April 2013

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Department
for Environment
Food & Rural Affairs

Status of the UK industry

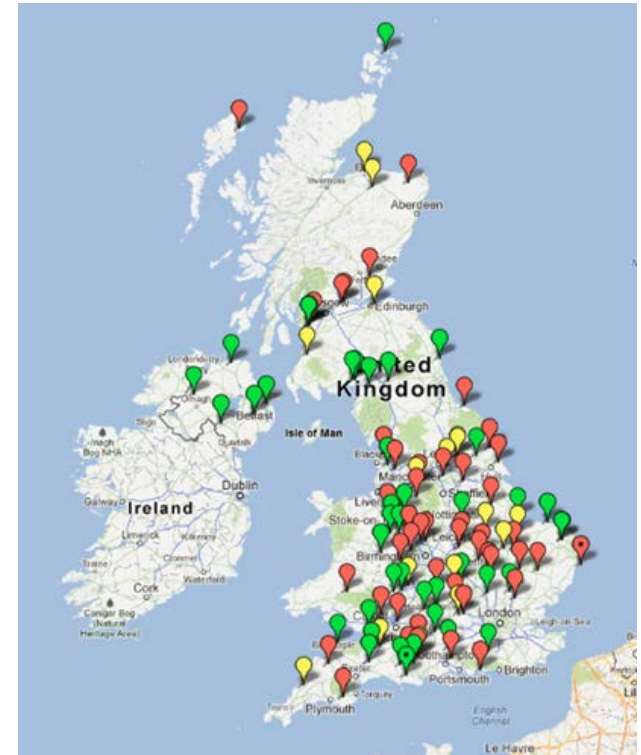
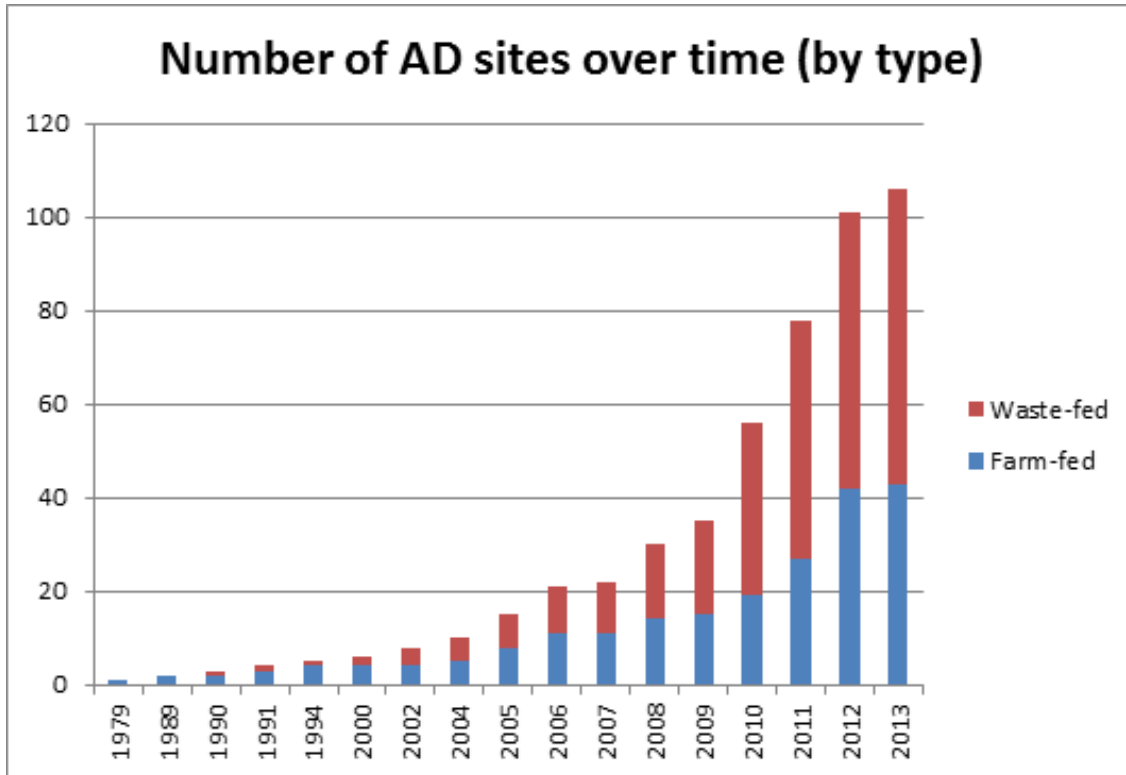
Type of plant	Number	Tonnes Capacity	Outputs (MWe)
Farm Waste	43	602,259tpa	21.6
Food Waste	63	4.8Mtpa*	70.75
Total	106	5.4Mtpa	92.35

Figures – WRAP April 2013

This represents an overall increase of 19 plants operating in the UK since November 2012

* Please note that 1 million tonnes is liquid wastes

Industry Growth



www.biogas-info.co.uk



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Electricity production in the UK from Gas (GWh)

	2010	2011	2012	% change
Animal Biomass (1)	627r	614	620	+1.0
Anaerobic digestion	92	239	330	+38
Plant Biomass (2)	1,624r	1,683	4,206	++

Source: DECC, March 2013

1) Includes the use of farm waste digestion, poultry litter combustion and meat and bone combustion.

(2) Includes the use of straw and energy crops.

AD Strategy and Action Plan

- Recent highlights:
 - The UK's first food waste AD plant supplying Biomethane to the grid was launched
 - Green Investment Bank investing in 2 AD plants
 - Quality Protocol for Biomethane in development
 - Field trials for digestate use in horticulture contracted
 - Second round of Driving Innovation launched



Food Waste Resources Portal

- The portal will be release in April 2013 via www.wrap.org.uk/FWRP

Food Waste Resources Portal

A collection of food waste reports from across the UK



All sectors
Food waste from all sectors



Commercial and Industrial (C&I)
Reports - food waste from the C&I sector



Hospitality
Reports - food waste from the hospitality sector



Households
Reports - food waste from households



Local authorities
Reports - food waste from local authorities



Supply chain
Reports - food waste from the supply chain

About the portal

The Food Waste Resources Portal is a signposting tool which provides links to the most up to date and relevant sources of data on the different sources of food waste which could be used as feedstock for anaerobic digestion.

Read the guidance note for more information

Statistical resources

National Statistics Publications Hub
School population statistics by local authority area

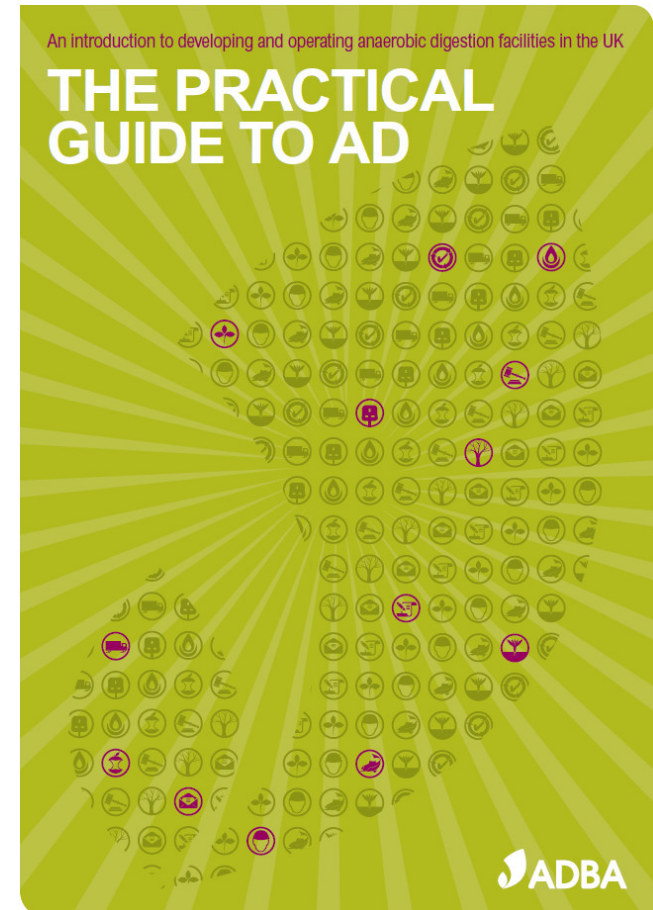
Other links and resources

NISP
WasteNet
Environment Agency
The Food Waste Network

Practical Guide to AD

The Practical Guide to AD has been driven by ADBA:

- Available to members and non-members in both PDF and print formats
- Provides an introduction to developing and operating AD facilities in the UK
- Aimed at a wide audience from those with a basic understanding to greater technical knowledge.
- Answer questions such as:
 - What financial incentives exist for AD and how to claim them
 - What legal aspects must be considered
 - What to bear in mind when applying for a permit
 - Which AD training requirements exist
 - What to consider before spreading digestate
- <http://www.adbiogas.co.uk/resources/the-practical-guide-to-ad-2/>

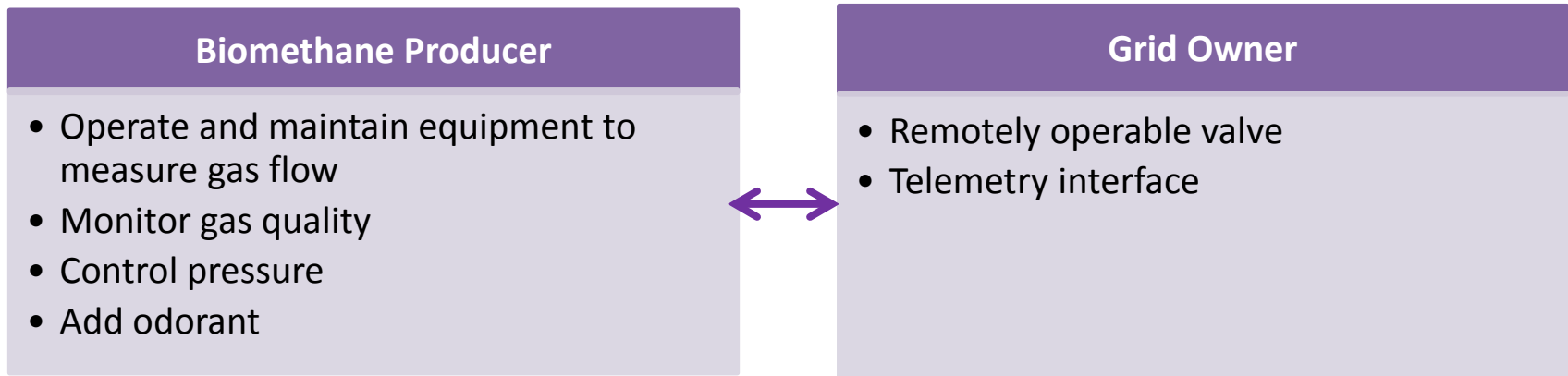


Gas Injection

UK Gas Quality

- The major outstanding issue relates to the specification for Oxygen for grid injection. The existing spec is 0.2% but HSE are now willing to grant an exemption to Biomethane projects to a level of 1%

Ownership of Gas Quality Monitoring and Associated Equipment



- Wales and West Utilities have adopted this model for the Vale Green project which is due for completion by June 2013. WWU also allow the Biomethane producer to install their equipment, giving a saving of around £100K compared to biomethane connections in other areas and reducing the time to provide this equipment to 20 weeks.

Gas Injection Projects

- **Current Biomethane Projects in the UK**
 - Operational Plants:
 - Didcot – 2010 – Water Wash (Chesterfield Biogas)
 - Poundbury – 2012 – 3 Stage Membrane (DMT)
 - In build
 - Vale Green – June 2013 – 1 stage membrane with cryogenic CO₂ (Haffmans)
 - Doncaster – Aug 2013 – 2 stage membrane (Air Liquide)
 - Stockpot – June 2013 – Water Wash (Chesterfield Biogas)
 - Crouchlands – Q4 2013 – Chemical Wash (Purac)
 - Minworth – Q2 2014 – Water Wash

Driving Innovation in AD (DIAD)

- DIAD-I Demonstrations are taking place now and will be reporting over the next 9 months
 - Evergreen Gas Ltd
 - Aardvark EM Ltd
 - Cranfield University
- DIAD-II is under way with 11 feasibility projects currently on-going for delivery in June 2013
 - Launched in November 2012, DIAD-II had 4 work streams:
 - Scaling of AD technology
 - Processing and enhancing digestate
 - Using heat in AD
 - Proof of market, AD technologies

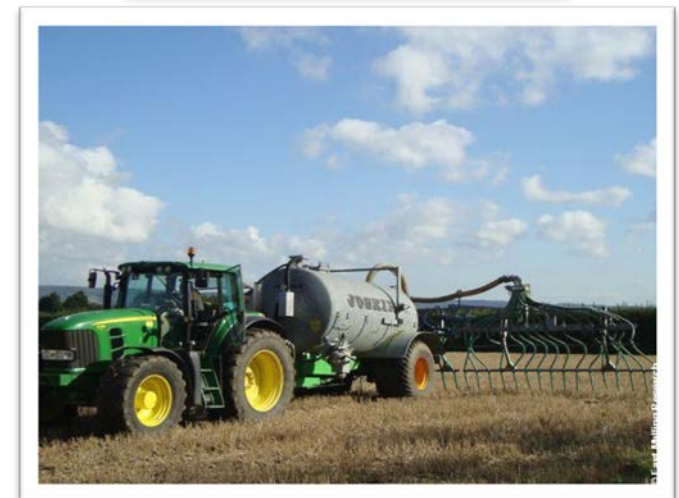
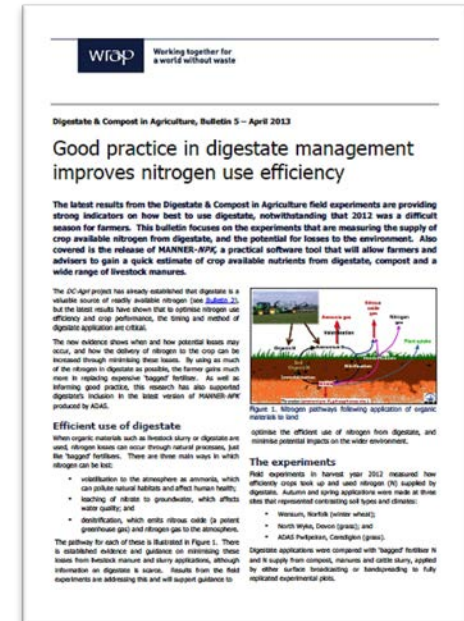
DIAD-II Feasibility Projects

Company	Project
BRE	Small scale heat Distribution Networks
CNG Services Ltd	Low cost biomethane enrichment
Community By Design	Micro-urban community digester system
Cwm Harry Land Trust	Efficient use of AD by-products – profitable phosphate recycling
Farm Gas Power	De-gritting and SIDCOM
Fiberight	Cellulosic Fibre cleaning for high throughput AD
Methanogen	Dry AD for farm yard manures
NNFCC	Biogas networks
Perceptive Engineering	Optimisation of small scale AD
Safe Training Systems	Siloxane testing in Biogas

www.wrap.org.uk/diadii

Agriculture Update

- Latest bulletin on *DC-Agri* project:
 - <http://www.wrap.org.uk/content/digestate-compost-agriculture>
- The Update focuses on how better digestate management can improve nitrogen use
- Manner-NPK now includes food-based digestate as a material type
 - www.planet4farmers.co.uk/manner



Markets for Digestate

- **‘Enhancement and treatment of digestates from anaerobic digestion’.** The study reviewed both well established and novel or emerging enhancement technologies and treatment processes for all digestates produced from the anaerobic digestion from a variety of feedstocks, whether or not they are compliant with PAS110 or the Anaerobic Digestion Quality Protocol (ADQP). <http://www.wrap.org.uk/node/13207>
- **‘Market expectations and requirements for digestate’** Aim - to investigate what users of digestate products require in terms of product characteristics and what expectations they have of quality. <http://www.wrap.org.uk/content/market-expectations-and-requirements-digestate>



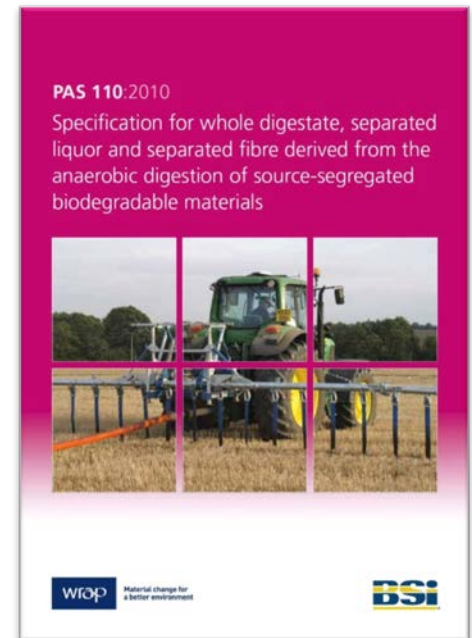
Landscape and Regeneration update

- 15 field trials including digestate use in landscape and regeneration projects across the UK 2012-2014
 - Energy crops on brownfield/ marginal land
 - Sports turf fertiliser and turf production
- All projects will have an associated knowledge exchange programme
 - Dedicated WRAP site with links to project websites
 - Course materials for higher education
 - Journal and trade magazine articles
 - Project updates and bulletins
 - Events and site visits
 - Sector body engagement
 - Third party conferences



PAS110 Update – April 2013

- Technical projects out for consultation – close 16th April 2013:
 - Digestate stability (RBP) test
 - Digestate PTE limits
 - Pasteurisation requirement for non-ABP inputs
- The results will feed into the PAS110 review
- BSI process due to begin in May with updated PAS expected late 2013



Rural Communities Renewable Energy Fund

- The Government launched the Rural Community Renewable Energy Fund in May 2013 to provide finance to rural communities to help them undertake the initial development work for local renewable energy schemes.
- How the fund will work:
 - The Fund will provide up to approximately £150,000 of funding for rural community renewable energy projects in two stages:
 - Stage 1 will provide a grant of up to approximately £20,000 to pay for an initial feasibility report.
 - Stage 2 will provide an unsecured loan of up to approximately £130,000 to pay for detailed business planning and planning applications (actual amounts will vary).
 - Loans are repayable when investment to develop the physical infrastructure of the project is secured.
 - So that other communities can benefit from the fund a premium will be payable on repayment of the loan.
- The fund will be open in Spring 2013, and will be open to many renewable technologies including AD
- The project needs to benefit rural communities in England



Northern Ireland Update – Growth in the sector

- There are currently 8 operational plants in NI with 4 in the pipeline
 - Various commercial, on-farm and manufacturing based plants
 - Current operational output of c. 3.5 Mw
- Training days have been held covering:
 - Technology
 - Business Management – including use of the Andersons Calculator and information on tax obligations



Northern Ireland cont.

- Research projects currently on-going at AFBINI - Hilsborough
 - Performance and economics of running plants in NI with 6 objectives of the programme
 - Determine the baseline performance of on-farm digestion utilising, in the first instance, dairy cow slurry. **Delivered**
 - Research methods for enhancing digester performance. **On-going**
 - Research post digestion treatments of digestate. **Progressing**
 - Research methods for efficient use of energy produced. **Progressing**
 - Determine the contribution of AD to plant nutrient management. **Progressing**
 - Determine lifecycle benefits of AD
- Reports and updates are available here:
<http://www.afbini.gov.uk/index/services/services-specialist-advice/renewable-energy-2012/re-anaerobic-digestion.htm>

Scotland Update – Community AD

- Feasibility Support for community Scale AD
 - Waste (Scotland) Regulations 2012 – Requirement for Local Authorities to collect food waste separately
 - Aims to ‘plug’ the geographical gaps in AD in Scotland
 - Up to £10,000 support
 - <http://www.zerowastescotland.org.uk/content/application-form-funding-support-feasibility-studies-community-scale-ad-ori005-100>



Wales Update

- There are currently 6 plants operating in Wales:
 - 3 Waste fed processing 34,500 tpa
 - 3 Farm Fed processing 88,680 tpa
- Research
 - A WRAP Cymru project; ***“Assessing the Costs and Benefits for Production and Beneficial Application of Anaerobic Digestate to Agricultural Land in Wales”*** is due to complete in summer 2013



Lodge Farm Digester, Wrexham

With Thanks



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