IEA Task 37 – Biogas
UK Country Report – April 2012

Clare Lukehurst
## Status of the UK

<table>
<thead>
<tr>
<th>Type of plant</th>
<th>Number</th>
<th>Tonnes Capacity</th>
<th>Outputs (MWe)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm Waste</td>
<td>27</td>
<td>276,543tpa</td>
<td>9.7</td>
</tr>
<tr>
<td>Food Waste</td>
<td>46</td>
<td>3.7Mtpa*</td>
<td>58</td>
</tr>
<tr>
<td>Sewage</td>
<td>146</td>
<td>1.1Mtpa</td>
<td>110</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>219</strong></td>
<td><strong>5.07Mtpa</strong></td>
<td><strong>177.7</strong></td>
</tr>
</tbody>
</table>

Figures – WRAP March 2012

- The UK AD Baseline was published in February 2012, providing detail on the status of the AD in September 2011
  - Available via [www.biogas-info.co.uk](http://www.biogas-info.co.uk)
- Please note 1Mtpa is liquid-only volumes
What's going on in the UK?
PAS110 and ADQP Update

• The AD Quality Protocol was first published in 2009, to provide greater certainty about the point at which waste could be considered fully recovered.

• The ADQP is now under review focussing on:
  – Acceptable inputs
  – Digestate markets
  – Clarification of language (e.g. storage requirements)
PAS110 and ADQP Update

- PAS110 is the baseline quality specification for digestate that underpins the ADQP
- Technical projects are underway to examine key aspects:
  - Digestate stability (RBP) test
  - Digestate PTE limits
  - Pasteurisation requirement for non-ABP inputs
End of Waste

• Technical report from JRC / IPTS suggests pan-European criteria for digestate quality
• UK AD landscape is very different from that of the rest of Europe
• UK already has end of waste (ADQP) and suggested criteria are different
• Impact assessment is underway
Driving Innovation in AD (DIAD)

• Aims
  – To make AD quicker, faster and more viable at all scales
  – Reducing CAPEX and OPEX for small scale and on farm AD
  – Optimisation of all scales of AD to enhance the overall efficiencies

<table>
<thead>
<tr>
<th>Optimisation</th>
<th>Small Scale &amp; Farm AD</th>
</tr>
</thead>
<tbody>
<tr>
<td>14 projects feasibility</td>
<td>6 projects feasibility</td>
</tr>
<tr>
<td>All to be delivered by May 2012</td>
<td>Complete by Mid April 2012</td>
</tr>
</tbody>
</table>

• Next Steps
  • Investment Day – July 2012
  • Demonstration of successful projects August 2012
Agricultural experiments
• The joint WRAP/Defra *Digestate & Compost in Agriculture* field experiments are now in their third year.

• Results from second year show:
  – Nitrogen in digestate is readily available to crops (70-80%) 
  – Crops take up nitrogen well from spring applications of digestate (e.g., a nitrogen use efficiency of 64%), but badly from autumn applications.

• This year’s experiments will provide results on GHG and ammonia emissions from digestate applications.
Knowledge Exchange

• So far over 600 attendees at farmer events across GB. 30 lectures given for agricultural students across the country.
• Updated focus for 2012 expanded to include agri-businesses and farm contractors.

For further information, see [www.wrap.org.uk/dc-agri](http://www.wrap.org.uk/dc-agri)
Landscape and Regeneration Trials update

• 17 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
  – Soil manufacture
    • Sports turf
    • Allotments
    • Amenity use
Knowledge Exchange

• 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
Markets for Digestate

• Digestates from AD: A review of enhancement techniques and novel products which will report on:
  – Experience (UK and abroad) on enhancement options for digestate
  – Experience using wide range of feedstocks
  – Experience in all related industries

• The report and a series of case studies are due to report in spring 2012
Distribution Models for Digestate

- The benefits of different digestate distribution models
  - Purpose of the work is to:
    - Examine different supply/distribution models currently operating
    - Understand the opportunities and limitations for each model
    - Communicate the information to the industry to inform business planning
  - The work will also create a series of case studies to demonstrate these objectives, due spring 2012
• Part of the DIAD Small Scale programme investigating further development of their Agri-digestore system
• Work with Reaseheath College and Newcastle University:
  – Digesters build and maintained by Marches
• Exciting new AD company in the UK focussing on small scale AD
• Part of the DIAD small scale programme looking at small scale options for upgrading gas to vehicle fuel
• ADDS+UP
  – 50kW plant
  – Grass silage and cattle manure
  – Enough electricity for 120 homes
  – Surplus heat to be used in existing polytunnels to grow organic produce

www.evergreengas.co.uk
ADBA R & D Forum

• 1\textsuperscript{st} Forum in November 2011 disclosed many areas of current research including:
  – Maximising methane production
  – Value of digestate, and
  – Bacterial population optimisation

• The link between Academia and the AD industry will help advance the industry

• 2\textsuperscript{nd} (interim) forum to be held on the 25\textsuperscript{th} April 2012, focussing on:
  – Process and control
  – Digestate
Other Research

• CPI Catapult centres – Small scale and farm AD challenge
• On-going research in many of the UK’s leading universities including:
  – University of Glamorgan
  – University of Southampton
  – Cranfield University
  – University of Newcastle
  – AFBI – Northern Ireland
Thank you

AD@wrap.org.uk