Brief overview of policy development for biomass sustainability criteria

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The UK situation

- 60 million people, consuming 1,700 TWh (146 mtoe) per year
- 244,000 sq km – ½ size of France
- 245 people per sq km!
- 12,400 km of coastline
- 76% of land used for farming
- Just 12% forest cover....
- 1990 – UK energy market privatised
- Move from coal fired power gen to gas & decarbonises UK <u>electricity</u> supply to 430 kg CO_2 per MWh
- >80% of consumers on UK gas grid for <u>heating</u>
- So UK achieves CO_2 reductions *with* highly centralised energy supply but little renewable energy (39 TWh = 3.5 mtoe!)

Biomass demand & sources

- UK Roadmap shows that biomass *electricity* has huge potential – could deliver **6 GW of renewable capacity in 2020** – up from 2.5 GW in 2010
- *Conversion* of coal plant to biomass and *enhanced biomass co-firing* are key here
- This level of capacity will need **tens of millions of tonnes of biomass feedstocks**
- Essential that we use our domestic biomass better - e.g. straw, wood waste, manure, chicken litter, food waste etc., and bring more UK woody biomass to market with the many wider benefits this offers
- But recognise that **imports** have an important role
- Interested members of the public, NGOs and some planners have expressed concerns, particularly regarding large-scale wood imports from developing countries

UK Power Pipeline

European approach

- European Commission reported in February 2010 on the requirement for sustainability criteria for solid biomass & biogas used for heat, electricity & cooling
- EC did not mandate EU-wide sustainability criteria for solid and gaseous biomass, instead member states can choose whether – *or not* – to introduce criteria
- But where members states do introduce criteria – the Commission recommends that they: *"ensure that these in almost all respects are the same as those laid down in the* ***Renewable Energy Directive****. This would ensure greater consistency and avoid unwarranted discrimination in the use of raw materials."*
- Further report due on effectiveness at end of 2011

http://ec.europa.eu/energy/renewables/transparency_platform/transparency_platform_en.htm

UK progress so far (electricity)

- In April the UK introduced criteria under the Renewables Obligation for solid biomass & biogas used for electricity:
  - **Minimum 60% GHG lifecycle emission saving:** relative to EU fossil fuel electricity average (≤ 285.12 kg $CO2_{eq}$ per MWh)
  - **Land criteria:** General restrictions on use of raw materials from land important on carbon or biodiversity grounds e.g. primary forest, wetlands and peatlands (all meanings as in RED Directive)

- First reports on performance due with Ofgem (industry regulator) in May 2012 covering April 2011 - March 2012
- Biomass **GHG tool** launched on Ofgem website
- Consultation on Ofgem's Draft Biomass & Biogas Sustainability **Guidance** now underway

Now and from 2013

- Use of **wastes** is **excluded** from these sustainability criteria
- Waste is sewage gas, landfill gas and generally those materials considered to be waste under the EU Revised Waste Framework Directive (WFD), e.g. municipal solid waste
- We intend, ***from April 2013***, biomass & biogas generators of **1MWe** capacity or above, **must** meet the criteria to receive support (i.e. for the biomass power to be eligible for RO certificates)
- Generators **below** 1MWe will only need to continue to factually report on performance, they will not risk losing financial support should any biomass consignment fail to meet the criteria.

Why a 60% GHG saving target?

DEPARTMENT OF ENERGY & CLIMATE CHANGE

Biomass Electricity

Modelled lifecycle GHG emissions savings, with EU fossil fuel electricity average used as comparator. Assumes generating plant achieves 25% electrical conversion efficiency, – data source: EU http://ec.europa.eu/energy/renewables/transparency_platform/doc/2010_report/com_2010_0011_3_report.pdf

FR=Forestry Residues; SRF=Short Rotation Forestry]

EU wood chips & pellets & dry farming residues

Tropical wood chips & pellets & farming residues

Charcoal – EU & Tropical

Benefits

- ✓ To deliver against the UK's commitment that biomass used for energy in the UK will be sustainable
- ✓ To ensure that biomass electricity & heat generated in the UK will not only contribute to meeting our EU renewables target cost-effectively and support green growth, but also deliver against our climate goals
- ✓ To enable investments to be made in new UK biomass power & heat by providing clarity and confidence on our sustainability requirements
- ✓ To provide a standard UK-wide approach to address a very complex highest priority global issue, that can be applied to existing generation as well as new developments

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More benefits

- ✓ To provide a coherent, level playing field across the UK for bioenergy generators and their feedstock supply-chains, avoiding the complexity of many different procurement standards and GHG lifecycle approaches

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- ✓ To enable biomass generators to demonstrate publicly their delivery of GHG savings and protection of land important for carbon or biodiversity – such as primary forest and peatlands - and so protect/enhance their public reputation
- ✓ To demonstrate an approach that could potentially be rolled out across the EU so that benefits can be applied EU-wide as well as UK-wide

Issues

- Voluntary schemes covering sustainable forest practices (e.g. UK Forestry Standard) or the Energy Crops Scheme – are at best – only partial matches for the (RED-derived) Land Criteria?
- Could/would the EU change the comparator for EU-wide fossil electricity after 2015 (LCPD)?
- Will the criteria be ‘grandfathered’ like ROC levels from full accreditation?
- Are forest residues zero-rated at the point of collection?
- Waste and residue definitions?
- Mass balance?
- Monthly reporting?
- Verification?

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