

Session 1 – **Biomass & Biogas Carbon Calculator Tool**

**Thursday 27th October, BIS Conference Centre, 1 Victoria
Street, London, SW1H 0ET**

Morning agenda

10.00	Experts Surgery with policymakers and developers <i>(Optional)</i>
11.00	Introductions and welcome
11.05	I. Overview of project, and setting out plans to manage Biomass GHG calculator going forward - DECC
11.15	II. Q&A - Panel of DECC, Environment Agency, Ofgem, NNFFCC & Consultants
11.30	III. Breakout in teams to identify and prioritise enhancements to the tool - All
12.30	IV. Each team to feedback their top 5 – Team facilitators
12.50	V: Next steps
13.00	<i>Close.</i>

Brief overview of project & setting out plans to manage the Tool going forward

Redacted

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Rationale

- Government's commitment for the biomass used for energy in the UK to be **sustainable**
- Modelling showed biomass electricity, heat & CHP could deliver 4.5% of the UK's energy needs in 2020 = **30%** of the UK's RED target
- Can - and will - do much more with domestic biomass sources, but imports also v. significant
- In April, Govt brings in sustainability criteria under the Renewables Obligation – requiring generators to annually report on lifecycle GHG emissions for their biomass & biogas electricity
- Broad stakeholder agreement that Govt should develop a tool to support generators in reporting and for greater industry clarity & credibility



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EU's (RED) lifecycle model



1.
$$E_{\text{fuel}} = e_e + e_l + e_p + e_{td} + e_u - e_{sca}$$

E = total GHG emissions from the use of the fuel;

e_{ec} = emissions from the extraction or cultivation of raw materials;

e_l = annualised emissions from carbon stock change caused by land-use change;

e_p = emissions from processing; e_{td} = emissions from transport and distribution;

e_u = emissions from the fuel in use; e_{sca} = emission saving from soil carbon accum.

[NB: For CHP, Biomass & biogas takes an approach based on 'exergy' i.e. High temperature CHP heat is assigned more carbon than lower temperature heat.]

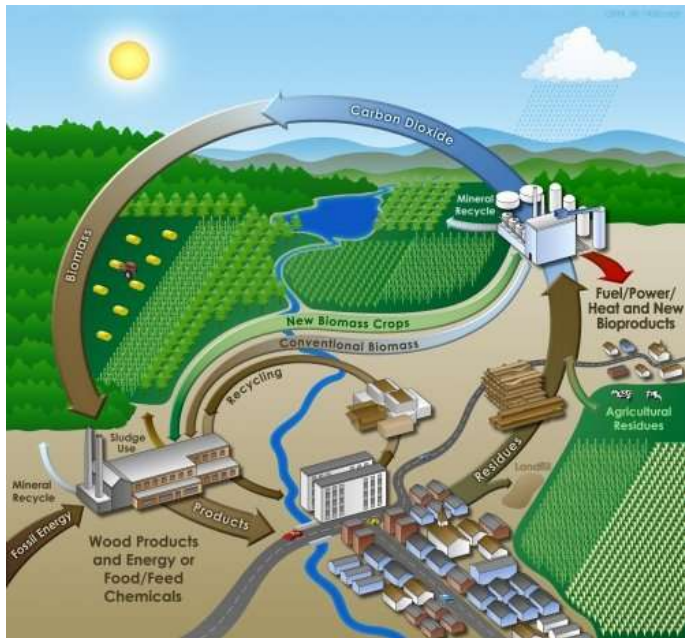
2. Use actual generation conversion efficiency to obtain $E_{\text{heat,elec}}$

3. **GHG emissions savings** = $\left[1 - \frac{E_{\text{heat,elec}}}{E_{\text{comparator}}} \right]$ as a %

e.g. $E_{\text{elec}} = 82.5 \text{ kg CO}_2\text{eq per MWh}$

Saving = $1 - (82.5/285.12) = 1 - 0.29 = 71\% \text{ saving.}$

Project overview



- *December 2010*: Government response to the Renewables Obligation Order 2011 confirms GHG tool will be developed & launched in 2011
- *March 2011*: E4Tech selected following a competitive tender to develop tool based on their existing Biofuels Carbon Calculator
- *Mid-March – early September 2011*: Series of short informal consultations with BABSIG members to gain their invaluable help and advice to agree (i) scope, (ii) source good quality default values and (iii) beta-test the tools & user-guide
- *27 September 2011* – Calculator and User-guide available on the Ofgem website

Project going forward

- Agreeing a **practical schedule for improvements and updates** that delivers timely benefits without unpleasant surprises:
 - Addition of default values for cultivation and harvesting for *long* rotation forestry
 - Updating of default values when (i) EU issues revisions and (ii) improved data is available from non-EC sources
 - Functional improvements (e.g. new reports)
- And setting a **prioritised wish-list** for enhancements:
 - New/more feedstocks / greater granularity?
 - Optional GHG figure for wastes that includes avoided emissions?
 - Ability to merge multiple supply-chains into a single module (e.g. pelletisation plant)?



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