DEPARTMENT OF ENERGY & CLIMATE CHANGE

Biomass Electricity & Combined Heat & Power plants – ensuring sustainability and affordability

Consultation on proposals to enhance the sustainability criteria and to ensure affordability for the use of biomass feedstocks under the Renewables Obligation (RO)

Part A: Sustainability - closing 30th November

Part B: Value for money & affordability - closing 19th October

URN: 12D/015 07 September 2012

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The consultation and impact assessment can be found on DECC's website:
http://www.decc.gov.uk/en/content/cms/consultations/biomass_ro/biomass_ro.aspx

Published by the Department of Energy and Climate Change

Introduction

Biomass has an essential role to play in an energy supply that is secure, affordable and low carbon. It can also support significant employment and business opportunities, many in our rural areas, across the UK. Biomass suitable for electricity and heat generation can be drawn from a wide range of sources including forestry management, sawmill residues, perennial energy crops, agricultural residues such as straw, and wastes such as sewage. Imports, from our EU partners, North America and potentially from developing countries will also play a part alongside expanding homegrown supplies.

Therefore it is essential that we take action to ensure the biomass used in the UK is sustainable, delivers real carbon savings and protects valuable habitats at home and abroad. To support this goal, in April 2011, reporting against sustainability criteria for solid biomass and biogas was introduced under the Renewables Obligation (RO), the Government's main support mechanism for renewables.

The sustainability criteria include a minimum lifecycle greenhouse gas emissions (GHG) saving compared to the use of fossil fuel and restrictions on land use. Biomass power generators above 50kW are required to report to the regulator on their performance against these criteria.

We also made clear our intention to further improve the criteria through formal linkage of eligibility for RO support to meeting the criteria for larger generators from April 2013 and adding a sustainable forest management approach.

In addition, we asked as part of the 2011 RO Banding Review consultation[1] for your views on not grandfathering the sustainability criteria. We have used your feedback to help set out our policy proposals on this key issue. Similarly we have taken account of the conclusions of the UK Bioenergy Strategy, published in April 2012, which places sustainability at the heart of future bioenergy policy making.

In **Part A** of this consultation we set out our resulting proposals which are designed to provide the certainty that investors need and increased UK ambition looking to 2020, and out to 2050. These include formally linking the criteria with eligibility for support, adding sustainable forest management criteria for woodfuel use, tightening the GHG target for new dedicated biomass from 2013, and tightening the GHG targets for all biomass from 2020. These improved RO sustainability requirements would be fixed from October 2013 until April 2020 – i.e. we would provide 'limited grandfathering'.

[1] http://www.decc.gov.uk/en/content/cms/consultations/cons_ro_review/cons_ro_review.aspx

This is with the provision that the UK would need to meet any new EU or international requirements should that come forward.

The latest Renewable Energy data confirms that renewable electricity has become well established in the UK. In 2011 total electricity generation from renewable sources was approximately 34 TWh (12 GW capacity)[2], of which bioenergy accounted for around 13 TWh generation (3 GW capacity)[3]. Whilst the level of future bioenergy deployment in the electricity sector is subject to considerable uncertainty, the potential exists for current generation to increase significantly towards 2020. The large potential from biomass power does however mean there is a risk of exceeding the RO's budget, particularly in 2013/14 and 2014/15.

In addition we wanted the support provided by the RO to better reflect the UK Bioenergy Strategy's principles, including delivering real, cost-effective carbon reductions and considering economy-wide impacts, including those on other biomass using industries. Therefore, in **Part B** of this consultation, we are consulting on additional controls to ensure **value for money and affordability**.

We are consulting on a proposed cap on generation from new dedicated biomass (without CHP) that is accredited after 31 March 2013. This is intended to limit the long term growth of dedicated biomass as it is a relatively expensive form of carbon abatement compared to many alternative technologies.

There is a particular risk to be managed from the RO potentially exceeding its budgetary framework in 2013/14 and 2014/15. Standard (now referred to as 'low range') co-firing is not grandfathered, reflecting that this technology does not require large sunk investment and can be adjusted rapidly in response to changed market signals. This means it is a technology where support can be reduced without significant unintended impacts on generators. Therefore, we are consulting to reduce its support to March 2015.

Finally, in the Government Response to the RO Banding Review we confirmed that the energy crop uplift would not be extended to the new conversion and enhanced co-firing bands. This means the current eligibility of the standard co-firing band for an energy crop uplift conflicts with our intended goal to drive the move from standard to enhanced co-firing and then to full conversion. Therefore we are proposing to remove the energy crop uplift from standard co-firing, but also to take some transitional measures to recognise that some generators have long-term contracts for the use of energy crops.

We welcome your comments and feedback to the proposals set out in this consultation.

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[2] DUKES 2012 (Chapter 6) http://www.decc.gov.uk/en/content/cms/statistics/publications/dukes/dukes.aspx
[3] DUKES 2012 (Chapter 6) table 6.4. Total bioenergy figures include generation that falls outside the RO.

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General information

Purpose of this consultation

Government is proposing to enhance the sustainability criteria and reporting process for biomass feedstocks under the Renewables Obligation (RO). We are also proposing a cap for new dedicated biomass power, reducing support for standard co-firing and the removal of the energy crop uplift for standard co-firing to ensure affordability. We are seeking views and evidence from stakeholders including energy generators, biomass feedstocks suppliers, processors and distributors, environmental non-government organisations, community groups and members of the public.

Issued: **Friday 7th September 2012**

The closing date for responses for:

Part A: Sustainability is **Friday 30th November**

Part B: Value for money & Affordability is **Friday 19th October**

Responses can be made by downloading the proforma response form at:
http://www.decc.gov.uk/en/content/cms/consultations/biomass_ro/biomass_ro.aspx
and emailing the completed form to biomass@decc.gsi.gov.uk

We prefer email responses due to ease of handling and to help minimise the carbon footprint associated with this exercise. However hardcopies and handwritten responses may also be submitted using the postal address below.

Enquiries and hardcopy responses to:
Biomass Sustainability & Value-for-Money Consultation
Bioenergy Team, Department of Energy & Climate Change,
4th Floor Area A,
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Consultation reference: URN 12D/015 – Biomass Electricity & Combined Heat & Power plants – ensuring sustainability and managing costs

Territorial extent:
England and Wales. The Scottish Government and the Northern Ireland Executive are managing the separate consultations on the Scotland Renewables Obligation (SRO) and Northern Ireland on the Northern Ireland Renewables Obligation (NIRO).

How to respond:
Your response will be most useful if it is framed in direct response to the questions posed, though further comments are also welcome. Reasoning and evidence to support your answers will be particularly helpful. If including any lengthy reports as part of your evidence, please identify the relevant sections to us.

Additional copies:
You may make copies of this document without seeking permission. An electronic version can be found at http://www.decc.gov.uk/en/content/cms/consultations/biomass_ro/biomass_ro.aspx Other versions of the document in Braille, large print or audio-cassette will be available on request. Please contact us using the above details to request alternative versions.

Confidentiality and data protection:
Information provided in response to this consultation, including personal information, may be subject to publication or disclosure in accordance with the access to information legislation (primarily the Freedom of Information Act 2000, the Data Protection Act 1998 and the Environmental Information Regulations 2004).

If you want information that you provide to be treated as confidential please say so clearly in writing when you send your response to the consultation. It would be helpful if you could explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of the information we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded by us as a confidentiality request.

We will summarise all responses and place this summary on our website at www.decc.gov.uk/en/content/cms/consultations/. This summary will include a list of names or organisations that responded but not people's personal names, addresses or other contact details.

Quality assurance:
This consultation has been carried out in accordance with the Government's Consultation Principles, which can be found here:
http://www.cabinetoffice.gov.uk/sites/default/files/resources/Consultation-Principles.pdf

If you have any complaints about the consultation process (as opposed to comments about the issues which are the subject of the consultation) please address them to:

DECC Consultation Co-ordinator
3 Whitehall Place
London
SW1A 2AW
Email: consultation.coordinator@decc.gsi.gov.uk

Executive Summary

Biomass power has an important role in increasing our energy security and cost-effectively delivering our ambitions to diversify and decarbonise the UK's energy supply. By diversifying our energy supplies we improve our energy security and resilience to fossil fuel price spikes, while also decarbonising our power supply. By converting coal generation to sustainable biomass we help keep energy bills down and create new business opportunities, as well as securing the power our homes and business demand.

But it is not just about maximising its many benefits. As we set out in the UK Bioenergy Strategy and the Government Response to the Renewables Obligation Banding Review published on 25 July, there are important risks concerning value for money and ensuring sustainability to manage. Therefore, this consultation seeks views and evidence regarding the design and implementation of policy proposals to deliver these aims.

Part A of the Consultation covers our proposals to enhance the sustainability criteria that apply to the use of biomass for electricity generation under the RO. **Responses to Part A are due by 30th November**.

There are two main sustainability proposals we seek your comment on:

i: **Requiring power and CHP generators of 1MWe capacity and above to meet the sustainability criteria to receive support under the RO for solid biomass & biogas electricity from October 2013 and to provide a statement of independent verification**; and

ii: **Expanding the set of sustainability criteria for solid biomass and biogas from October 2013 to include:**

a. **sustainable forest management.** We propose solid wood-fuel will be required to meet the UK Government's public procurement policy for wood in order to demonstrate meeting the land criteria; and

b. **tightening the limits on carbon emissions while also enabling investment across the supply-chain by fixing the sustainability criteria from October 2013 to April 2020**, with the application of the proposed GHG trajectories of:

   - new dedicated biomass (with and without CHP) at **240 kg** CO2eq per MWh, potentially reducing **to 200 kg** CO2eq per MWh in 2020 subject to the ability of the supply chain to deliver this reduction;

   - existing dedicated biomass accredited before April 2013, at **285.12** kg CO2eq per MWh, potentially reducing to **200kg** CO2eq per MWh in 2020 subject to the ability of the supply chain to deliver this reduction, and

   - coal plant converting to or co-firing with biomass at **285.12kg** CO2eq per MWh reducing to **240kg** CO2eq per MWh in 2020 subject to the ability of the supply chain to deliver this reduction.

In addition we propose a set of other changes to improve how the sustainability criteria operate. These changes include improvements to the reporting and audit requirements, allowing the use of the mass balance approach to solid biomass supply-chains and better aligning our approach

with national schemes that address sustainability issues, such as the Energy Crops Scheme. In some cases in the interest of consistency specified proposals would apply to bioliquids as well as solid biomass and biogas.

Part B of the Consultation covers proposals to ensure that the support for biomass under the RO delivers value for money and affordability. **Responses to Part B are due by 19th October**. The earlier closing date reflects our aim to introduce these changes for 1 April 2013.

We are consulting on three proposals to help ensure biomass power delivers value-for-money and affordability for the bill payer:

i. **Introducing a cap on the percentage of their renewables obligation that suppliers can meet with power generated by new dedicated biomass plant** – i.e. plant accredited on or after 1 April 2013 and which are electricity only, i.e. excluding plants with good quality combined heat and power (CHP);

ii. **Reducing support for standard co-firing to 0.3 ROCs per MWh from 1 April 2013** until 1 April 2015, and

iii. Removing **eligibility for the energy crop uplift from standard co-firing.**

Consultation questions

Please respond Agree, Disagree or No Response to each of the 20 questions. **Whether you agree or disagree we would welcome comments and evidence in support of your chosen response.**

Please note that to support easy and timely replies the questionnaire is available as a word document which you can download or print, then complete and return by email or post to DECC. Please see our email and postal addresses on page 7.

PART A: Proposed changes to the sustainability criteria from October 2013 – closing for responses on 30th November 2012

Mandatory linkage of criteria with ROC support	
Q1.	**Do you agree power and CHP plants using solid biomass or biogas feedstocks, of 1MWe or above, should be required to meet the sustainability criteria from October 2013 in order to receive ROC support?**
Grandfathering, stability of system and long-term GHG trajectory	
Q2.	**Do you agree that subject to EU or international requirements the sustainability criteria for solid biomass and biogas should be** **i. fixed to 1 April 2020, and** **ii. follow the planned GHG emissions trajectories to 2020 set out above for (a) new dedicated biomass, (b) existing dedicated biomass and (c) other biomass plants ?**
Q3.	**Do you have data you would be willing to share on the potential improvements or changes to different elements of the GHG lifecycle for bioenergy to support setting the tighter target to apply from 1 April 2020 to 31 March 2025 for each of the 3 trajectories?** **We are particularly interested in data on:** • **Transport (e.g. GHG emissions associated with ship size/capacity);** • **Harvesting and processing technologies for feedstocks (e.g. more energy efficient pelletisation);** • **Energy used in producing feedstocks (e.g. change fossil to biomass CHP);** • **Innovation in feedstock types/performance (e.g. non-intensively produced algae, increased yields from energy crops);** • **Fertiliser use;** • **Generation efficiencies at power plant, and** • **Other.** Please enclose this data with your response.

Sustainable Forest Management, Land Criteria and role of voluntary & government schemes	
Q4.	**Do you agree that wood when used for a solid or a gaseous fuel, should be required to meet the UK Government's public procurement policy for wood, and that this should replace the land criteria for solid and gaseous biomass in the particular case of wood?**
Q5.	**Do you agree that energy crops which have been assessed as meeting the Energy Crops Scheme for England, or its equivalent, should be deemed to meet the land criteria for solid and gaseous biomass?**
Q6.	**Do you agree that (i) generators using energy crops for solid or gaseous fuel should be required to provide detail on the previous use of the land and (ii) generators using virgin wood for solid and gaseous fuel should be required to provide detail on quality and species?**
Land Use Change	
Q7.	**Do you agree that the introduction of sustainable forest management criteria based on the UK Government's public procurement policy for wood will help address the key land use change issues of:** **i. sustainable harvest rates and carbon stocks;** **ii. deforestation;** **iii. biodiversity, and** **iv. social concerns?**
Reporting to Ofgem - Independent verification and mass balance approach	
Q8.	**Do you agree with our proposed changes to the article 54 profiling report, and the circumstances in which it must be provided?**
Q9.	**Do you agree with our approach to:** **i. Allow the use of a mass balance approach for the purpose of demonstrating compliance with the sustainability criteria for solid and gaseous biomass, except where that biomass is woodfuel using category B evidence to demonstrate meeting the UK Government public procurement policy for wood, and** **ii. Require biomass power plants of 1MWe and above to provide a sustainability audit report from an independent verifier, operating to ISAE 3000 standard or equivalent?**

UK Biomass & Biogas Carbon Calculator (The B2C2 tool) & Default values	
Q10.	**Do you agree that that power plants of 1MWe or above should use:** **i. the greenhouse gas lifecycle tool provided by the UK Government and available from the Ofgem website or an alternative lifecycle tool that an independent verifier operating to ISAE 3000 standard, or equivalent, has confirmed is compliant with the recommendations made by European Commission** , and **ii. use actual rather than standard inputs for those elements that the GHG lifecycle result is most sensitive to, namely: (a) fertiliser use, (b) type and amount of energy used in processing and (c) transport distances?**
Q11.	**Do you agree that only power plants below 1MWe,will be able to choose to use high-level default values covering whole feedstock lifecycles as specified within the Renewables Obligation, and are therefore not required to use a GHG modelling tool?**
Anaerobic Digestion	
Q12.	**Do you agree that the use of animal manure and animal slurry should be exempt from the GHG emissions and land criteria for solid biomass and biogas and exempt from the requirement to report on the mass/volume used?** - If you consider other specific types of non-waste biomass also offer low risks and high benefits and should be considered exempt, please provide reasons for your answer.
Definitions and Clarification	
Q13.	**Do you agree with our proposals for clarification and consistency across the renewables incentives?**
Q14.	**Do you agree that solid biomass pellets may contain up to 2% by weight of another solid biomass material for the purpose of binding, without needing to report separately on the sustainability of the binding additive in order to be eligible for ROCs on 100% of the resulting biomass generation from the pellet?**

PART B: Value-for-Money and Affordability – closing 19th October

Cap on dedicated biomass	
Q15.	**Do you agree that the proportion of their renewables obligation that suppliers can meet using new dedicated biomass generation should be capped at 19% in 2013/14, 17% in 2014/15, 14% in 2015/16 and 12% in 2016/17 (equivalent to approximately 1GW of new dedicated biomass generating capacity). Please provide evidence to support your arguments.**
Q16.	**Do you agree that new dedicated biomass with good quality combined heat and power (CHP) should be outside the cap?**
Q17.	**What are your views on the notification process set out at paragraphs 12.25-12.28? Are there other notification or pre-accreditation options you think would work? Please set these out as fully as possible in your reply.**
Standard Co-firing	
Q18.	**Do you agree that support levels for standard co-firing and co-firing of regular bioliquids should be reduced to 0.3 ROCs/MWh in 2013/14 and 2014/15, and that support levels for standard co-firing with CHP should be reduced to 0.8 ROCs in 2013/14 and 2014/15?** **If not what levels would you recommend and why? Please provide evidence of the impacts of your proposal.**
Energy Crops	
Q19.	**Do you agree with our preferred option for the removal of the energy crop uplift for standard co-firing?**
Q20.	**Do you agree that where stations are able to benefit from the transitional arrangements, the energy crop uplift for standard co-firing should be 0.5 ROCs?**

Biomass power

1. Brief background

1.1 Biomass refers to plant and animal matter of recent origin. Biomass suitable for electricity and heat production comes from a wide range of sources, Dry biomass sources can be simply combusted to generate heat for industrial processes or space heating. Alternatively this heat can be used to drive a steam turbine which generates electricity. Combined heat and power (CHP) is the highly energy efficient process where the waste heat from the power turbine is captured and used locally. Readily biodegradable biomass can be treated in an anaerobic digestion (AD) plant to produce biogas. The biogas is a highly flammable mixture of biomethane and carbon dioxide. Biogas can be combusted for heat, electricity or CHP generation in the same manner as dry biomass. However, it can also be further refined and injected in the gas grid.

1.2 The 3 main sources of biomass used for power and CHP are:

- Forestry – by-products and residues from forest management and the timber industry, such as branches, small roundwood, sawdust and timber offcuts;
- Farming – perennial energy crops such as miscanthus grass and short rotation coppice willow, and farming residues such as straw, husks and shells, and
- Wastes – plant/animal such as manure, chicken litter, food waste and landfill gas.

1.3 Biomass can deliver a wide range of economic, social and environmental benefits. It can deliver business and job opportunities across the bioenergy supply-chain. These encompass farmers, foresters and waste collectors, for those processing and distributing feedstocks and finally at the bioenergy plant itself where work will be needed both in construction and ongoing management and maintenance.

1.4 Biomass used in power and CHP can be both renewable and deliver significant carbon savings compared to fossil fuel use. However, to ensure that these benefits are realised the biomass feedstock needs to be cultivated, processed and transported with due consideration of sustainability. For example, the use of fertiliser will result in NO_2 emissions, and the transport of the feedstock will have carbon emissions associated with the shipping or road transport. Therefore a robust and credible GHG lifecycle analysis that looks at emissions from field or forest to flame is a critical part of an effective sustainability scheme.

1.5 The UK has a high population density at 246 people per square kilometre, over twice the EU-27 average of 112. In comparison France has 111/km^2; Spain has 87/km^2 and Sweden just 20/km^2. This is combined with a low level of UK forest cover at 12% of the total land area compared to an EU-27 average of around 40%. Our twin challenges of meeting the energy needs of a high population relative to our total land area, combined with low levels of UK wood production, means that biomass imports will be needed together with our package of actions to increase domestic feedstock supplies from forestry, farming and the capture and use of suitable residual wastes. The capture and use of domestic biomass wastes are a priority area as the diversion of waste from landfill also offers the considerable benefit of avoiding methane emissions from its decay.

1.6 The UK Bioenergy Strategy[4], published in April, highlighted the important role of biomass as a transitional fuel in replacing coal in the UK power generation mix as well as its longer term role alongside carbon capture and storage. The Strategy also addressed in detail the importance of a robust approach to sustainability to ensure that the resulting bioenergy supports the delivery of a wide range of economic, social and environmental benefits, including carbon savings. In addition it highlighted the role of Government policies in creating the right conditions that will allow biomass supply chains and processes to become less carbon intensive.

1.7 Informed by the findings of the Bioenergy Strategy the Government Response on the Banding Review of the Renewables Obligation, published on 25 July 2012 set out decisions on the support levels to be provided for different renewable electricity technologies from April 2013. This confirmed our primary focus for biomass electricity in the shorter term towards removing coal from the current UK power generation mix as well as supporting CHP, energy from waste and advanced conversion technologies, while taking a cautious approach on new dedicated biomass.

1.8 Therefore in the Government Response we detailed a stepped approach to RO support levels which means as a coal-station moves beyond 50% and then 85% biomass use the support per megawatt hour of biomass electricity generated increases. This encourages stations to move to full conversion, and reflects that co-firing at lower percentages involves lower risk and lower investment requirements than co-firing at higher percentages or full conversion.

1.9 We retained a cautious approach to new build dedicated biomass by setting the support levels for dedicated biomass at 1.5 ROCs/MWh, degressing to 1.4 ROCs/MWh for new accreditations and additional capacity added after 31 March 2016. The primary reason is that carbon abatement from dedicated biomass at these support levels is relatively expensive in terms of the UK's carbon reduction targets though it does offer value for money in terms of the UK's renewables targets. Responses to consultation indicated that a larger volume of new dedicated biomass deployment could come forward than projected through DECC's modelling for the RO banding review, even though this support rate is at the bottom of the supply curve

1.10 Tightening the limits on emissions in the RO sustainability standards will improve value-for-money. Nevertheless, as indicated in the Bioenergy Strategy at levels proposed in this document for 2020 (200kg CO2eq per MWh electricity) carbon abatement from new dedicated biomass electricity can still be more costly for energy consumers than from offshore wind or nuclear. In order to maintain value for money from new dedicated biomass and ensure that new dedicated biomass is affordable within the RO budget we propose to set a cap on new dedicated biomass (without CHP). We have retained 2 ROCs/MWh support for dedicated biomass with CHP, reflecting its higher costs and higher energy conversion efficiency, and this band will close to new generating capacity on 31 March 2015.

[4] DECC, Defra & DfT (April 2012) UK Bioenergy Strategy
http://www.decc.gov.uk/en/content/cms/meeting_energy/bioenergy/strategy/strategy.aspx

1.11 This consultation focuses on four follow up policy areas required for the implementation of the direction set out in the RO Banding Review:

- The need for tighter GHG trajectory to 2020 and beyond and the introduction of a sustainable forest management approach to the sustainability criteria for solid biomass and biogas;
- The setting of a cap on new dedicated biomass (without CHP);
- The reduction of ROC support levels for standard co-firing to 0.3 ROCs in 2013/14 and 2014/15; and
- The removal of the energy crop uplift from standard co-firing.

Part A: Our Sustainability Proposals

Closing date for responses is 30th November

Part A: Our Sustainability Proposals

2. Overview of current sustainability requirements

2.1 In April 2009, under the terms of the Renewables Obligation (RO), the UK introduced a requirement for biomass power generators of above 50kWe capacity using biomass (liquid, solid or gaseous) to provide an annual sustainability report to the Regulator, Ofgem. This report set out a range of profiling information on the different consignments of feedstocks used by a particular generator– such as biomass type and country of origin - used in a particular year.

2.2 The Renewable Energy Directive (RED) was officially published in June 2009. This mandated the introduction of sustainability criteria for financial support for the use of transport biofuels and bioliquids for heat and electricity. The criteria consisted of (i) a greenhouse gas (GHG) saving target compared to fossil fuel and (ii) land criteria to protect land with high carbon stock or biodiversity value. The UK introduced these mandatory criteria for the use of bioliquids under the RO. Generators can only receive ROC support for bioliquids that meet these criteria.

2.3 However the RED did not mandate criteria for solid biomass or biogas, Instead the European Commission committed to considering the issue and publishing a future report. This report was published in 2010, and set out the Commission's initial recommendations on sustainability requirements for solid and gaseous biomass sources[5]. The Commission considered that EU-wide mandatory criteria for solid biomass and biogas were not needed, but that member states could choose to introduce criteria voluntarily. However, for consistency and simplicity those member states that chose to introduce sustainability criteria for solid biomass and biogas the Commission recommended that these should be similar in most aspects to the criteria mandated for transport biofuels and bioliquids under the RED.

2.4 The UK Government considered the European Commission's initial recommendations and used the sustainability data provided under the RO to further refine its approach for solid biomass and biogas. Following a formal consultation, in April 2011, the UK widened the annual sustainability reporting requirement to include a greenhouse gas lifecycle assessment for the resulting biomass electricity – the 'GHG criteria' and also requested additional information on the type of land where the biomass was sourced – the 'Land Criteria'. The Land Criteria for solid biomass and biogas were the same as those set under the RED for transport biofuels and bioliquids. Wastes are exempted from the scope of the criteria due to their typically low sustainability concerns and very high GHG savings. We also took this approach to further encourage the use of wastes within anaerobic digestion (AD) plants in particular.

2.5 Table 1 shows the current requested content for solid biomass & biogas sustainability reports under the RO. The first set of these reports were due for submission to Ofgem by 31 May 2012, covering the biomass feedstocks used between April 2011-March 2012[6].

[5] EC (February 2010) http://ec.europa.eu/energy/renewables/bioenergy/sustainability_criteria_en.htm
[6] Ofgem (August 2012) Annual Sustainability Report for Solid Biomass and Biogas for the Renewables Obligation http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=366&refer=Sustainability/Environment/RenewablObl/FuelledStations

Content of Solid Biomass & Biogas Sustainability Report	
GHG Lifecycle Criteria	• An assessment of the lifecycle GHG emissions associated with the biomass electricity produced, including its cultivation, processing, transport and any direct land use change. • Confirmation of whether the biomass met the 60% reduction target of 285.12 kg CO_2eq per MWh or lower
Land Criteria (as set under the EU Renewables Directive – see Annex A for full details.)	• Confirmation that biomass was not sourced from land with high biodiversity value – including primary forest or areas designated by law for nature or environmental protection purposes. • Confirmation that biomass was not sourced from land with high carbon stock value, including wetlands, continuously forested areas or peatlands.
Profiling Criteria	• Material type; form, mass/volume used • Country of origin; • Whether a by-product of a process or an energy crop? • Details of the use of the land since November 2005 • If an environmental quality assurance scheme has been met, and if so the name of the scheme?

Table 1: Sustainability criteria under the Renewables Obligation as April 2011

3. Formal linkage of criteria with eligibility for support

3.1 When UK proposals for GHG and Land Criteria for solid biomass and biogas were first put forward in 2010, the Government stated its intention to allow a short introductory phase then formally link meeting the criteria with eligibility for support under the RO for larger generators. We considered this would enable the industry to familiarise themselves with the new scheme, and adjust their procurement practices where necessary.

3.2 The formal linkage of support requires notification to the European Commission of our sustainability criteria as a 'technical standard'. Therefore, to allow for the typical time needed for the standstill period that accompanies notification, we intend to bring the formal linkage in force from 1st October 2013. The proposal is that power or CHP plants of 1MWe capacity and above using solid biomass and/or biogas will be required from October 2013 to meet the sustainability criteria to be eligible for support under the RO. Our intention is that this would apply to the claiming of ROCs under any of the biomass bands, so would include AD, gasification and pyrolysis plants, as well as dedicated biomass, conversions and co-firing, where the plant is 1MW electrical capacity or above. It would not apply to the use of biomass that is waste, wholly derived from waste, landfill gas or sewage gas.

3.3 Our view is that setting the threshold at the 1MWe total installed capacity level will capture the large majority of biomass power plant capacity, but avoids placing an undue burden on community-sized plants. Data provided in the Ofgem RO Annual Report[7] covering the 2010-2011 period show 109 generators with a total capacity of 1.8 GWe claiming ROCs for biomass electricity or CHP generation in the UK. A 1MWe threshold captures over 99% of this total generating capacity.

Biomass Generating Capacity accredited under the RO	Number of individual stations	Generating Capacity/MW	% of total Generating Capacity
• **50 kWe capacity**	11	0.1	0.0005%
>50kWe but <1MWe	51	16.5	0.054%
• **1MWe**	79	1784.4	99.939%

Table 2: Biomass Generating Capacity covering the 2010-2011 period

3.4 We are not expecting the relative proportion of capacity below 1MWe to change significantly in the period to 1 April 2017, when we expect to close the RO to new generating capacity. Though significant new biomass power capacity is likely to come forward our analysis shows this will be largely at the 50MW plus scale. Conversion from coal and advanced co-firing are expected to be the main technologies, with a limited amount of the most attractive dedicated biomass or biomass CHP schemes also coming forward. Below 1MWe total installed capacity we see new capacity being largely community-scale CHP.

3.5 Community CHP schemes are considered low risk in terms of sustainability as these are likely to use locally-sourced feedstocks in relatively modest quantities. Therefore we are content that plants below the 1MWe threshold would continue to be required to report on their performance against the sustainability criteria to Ofgem, but their eligibility for support will not be formally linked to meeting the criteria. In this way we do not increase the costs and risks placed on this small but beneficial bioenergy sector.

Mandatory linkage of sustainability criteria with ROC support	
Q1.	**Do you agree power and CHP plants using solid biomass or biogas feedstocks, of 1MWe or above, should be required to meet the sustainability criteria from October 2013 in order to receive ROC support?**

[7] http://www.ofgem.gov.uk/Sustainability/Environment/RenewablObl/Documents1/Renewables%20Obligation%20Annual%20Report%202010-11.pdf

4. Grandfathering and long-term GHG trajectory

4.1 In the recent consultation on the banding review of the Renewables Obligation (published in October 2011) we asked for comments on the Government's intention to not grandfather the sustainability criteria for biomass and biogas. We received a diverse range of responses, many of which contained opposing but valid arguments. 41 respondents supported not grandfathering while 35 considered the UK should grandfather sustainability criteria at the point of full accreditation in the same manner as ROC levels of support are usually grandfathered at this time. These numbers represent a 54% (yes) and 46% (no) split. However, many replies were heavily qualified making their treatment as a yes or no too simplistic.

4.2 The collective view from the majority of biomass electricity generators, supported by some of the large biomass feedstock suppliers, is that if Government does not provide greater certainty on sustainability criteria large-scale investment in biomass power and biomass supply-chains cannot happen. With the proposed policy of not grandfathering, investors are alert to the risk that future changes to sustainability criteria could impact generators' future income; they risk losing ROC support if feedstocks that are tied in long term contracts are not able to meet the new tougher criteria. This is coupled with investors and finance providers wanting evidence of long-term biomass supply contracts to show that the feedstocks will be available to power the plant, for example during the term of the loan.

4.3 Some commented that the new banding ROC levels would be considered by investors as offering modest – far from excessive - returns, and this combined with additional sustainability compliance risks can make similar investments in other member states look more attractive. Their widespread preference was, correspondingly, for full grandfathering of the sustainability standards over a 20-year period, and changes to the criteria only applying to new generation. Other options put forward included grandfathering specific contracts over their contractual lifetime, rather than applying grandfathering at the whole generator level.

4.4 In contrast, responses from those outside the bioenergy and feedstock industry were broadly supportive of the proposal that any future changes to the sustainability criteria would apply to all generators, not just to new capacity or new plant. Arguments put forward included the need for the criteria to be tightened over time to reflect Government's carbon reduction ambitions for the UK Power Grid out to 2030 and 2050; full grandfathering would lock large amounts of bioenergy to the lower initial criteria and hence lower performance. Several responses specifically highlighted the 200 kg CO_2eq/MWh figure recommended by the Commission on Climate Change (CCC) in its 2011 Bioenergy Review.

4.5 Others pointed out that by not grandfathering we benefit from keeping the playing field for generators level, coherent and transparent, and avoid 'tilting' it in favour of the large, early movers in the market. Several replies indicated that grandfathering or not grandfathering was irrelevant as the key issue was making the sustainability criteria wider and tougher in their scope and application, most notably with regards to carbon debt, preventing deforestation, and including social as well as environmental issues.

4.6 Our view is that both sides of the argument have merit. Government is committed to the use of sustainable biomass for energy and considers that biomass electricity has a key role in delivering our carbon and energy goals to 2020 and beyond. Therefore, we propose, that once the changes arising from this consultation are made to the RO sustainability criteria for solid biomass and biogas, the criteria will not change again before April 2020. This is of course with the proviso that the UK would need to meet any new EU or international legislation should that come forward. It is worth noting that the UK's approach is tougher than that recommended by the Commission in its 2010 report on solid biomass and biogas.

4.7 Conventional grandfathering is for 20 years, applied on a per plant basis, with the 20 year clock starting at the point of full accreditation. Our 'limited grandfathering' of the sustainability criteria differs from conventional grandfathering as it will end in April 2020 irrespective of the point of full accreditation of an individual plant. So a plant already generating in 2013, would benefit from 7 year grandfathering of the sustainability criteria up to 2020. However, a new dedicated biomass plant which receives full accreditation in 2015, would benefit from 5 years grandfathering of the sustainability criteria to 2020. During the 'limited grandfathering' period, generators can be confident that the sustainability controls applied to their solid biomass and biogas feedstocks will not be changed by the UK Government unless required by EU law or international agreements. This approach balances the need for investor certainty against the need to maintain a flexible approach to sustainability post-2020. It should allow generators to sign feedstock contracts and support investment across the supply-chain.

4.8 The only two exceptions to this grandfathering principle besides the need to meet EU or international requirements, would be if the EU is able to define the term 'highly biodiverse grassland' as used within the land criteria for transport biofuels and bioliquids, or makes specific recommendations to member states regarding indirect land use criteria (ILUC) with respect to solid biomass and biogas, If so we would, for consistency, wish to update the land criteria as it applies to solid biomass and biogas following a statutory consultation.

4.9 During the period to 2020 we will also continue to improve our understanding of bioenergy lifecycle carbon impacts on areas such as ILUC and potential carbon sequestration of counterfactual land uses. This is in order to allow for a more holistic approach to bioenergy sustainability standards post 2020 if justified by the evidence. We will engage closely with stakeholders in the development of this evidence as well as its methodological application to sustainability criteria.

Proposed GHG trajectories

4.10 We expect that new dedicated biomass power, including biomass CHP, will have higher conversion efficiencies than enhanced or converted coal plants, and are expected to generate into the 2030s and beyond. As new generating plant, the most appropriate comparator when assessing GHG savings would be the marginal technology of Gas CCGT. In contrast conversion and co-firing are substituting for coal, and are expected to have significantly shorter lifetimes unless they are able to meet tightening efficiency and emission standards going forward. For these reasons, we consider that new build dedicated biomass plant, with or without CHP, should be tasked with delivering better carbon savings and hence tougher standards than conversion or co-firing.

4.11 Reflecting these factors, we are proposing that

(i) dedicated biomass power – including with CHP – accredited on or after 1 April 2013 is placed on an 'accelerated trajectory' of **240 kg CO_2eq/MWh,** to apply from October 2013 until April 2020;

(ii) dedicated biomass power – including with CHP – accredited before 1 April 2013 remains on the standard trajectory of **285.12 kg CO_2eq/MWh** to April 2020, and

(iii) all other plant using biomass, including coal to biomass conversion/co-firing plant remains on the standard trajectory of **285.12 kg CO_2eq/MWh** to April 2020.

4.12 Looking post 2020 and out to 2037 the Government expects that GHG targets for biomass plants on the standard and the accelerated trajectories would be further tightened to reflect our pathway to 2050. Therefore target setting would need to occur in a clear and stepwise manner set out in good time for stakeholders to build into their future procurement and biomass production plans. As an example a plant that converts fully to coal in 2015, would be on the standard trajectory and would need to meet 285.12 kg CO_2eq/MWh to 2020 and be ready to meet tighter targets from 2020, 2025 and 2030.

4.13 However, the Government also recognises that targets will need to be grounded in what the market can realistically deliver. Therefore we are seeking evidence to inform the setting of the target to apply from April 2020 to April 2025 for the (i) standard and (ii) accelerated trajectories. Depending on the quality of the evidence, we would also look to set the targets which would be introduced in April 2025.

4.14 Importantly, we recognise that generators will manage risk by planning to overachieve against the target by a safety margin. We understand that this safety margin is typically 10%-20% below the minimum levels required by the target. As a result, a 285kg target would mean generators would plan to deliver 230kg to 250kg. A 240kg target would mean generators in practice deliver 190kg to 220kg. Reflecting this, and the need to ensure a level playing field across the same technology bands we believe that the following levels for the GHG standards over the period 2020 to 2025 could represent an ambitious yet realistic trajectory :

(i) dedicated biomass power – including with CHP accredited on or after 1 April 2013 moves to **200kg CO_2eq/MWh** from April 2020 to April 2025;

(ii) dedicated biomass power – including with CHP – accredited before 1 April 2013 moves to **200kg CO_2eq/MWh** from April 2020 to April 2025, and

(iii) All coal to biomass conversion/co-firing plants moves to **240kg CO_2eq/MWh** from April 2020 to April 2025.

4.15 This approach should allow power generators and suppliers to sign long-term contracts with confidence. It would also encourage a level playing field as the biomass plants on a particular trajectory would move to tighter targets set out in a challenging yet realistic timetable, and avoiding large-scale lock-in at lower performance. It would also set out our intent for the biomass power industry - through shared learning, good practice and innovation - to increase its contribution to clean, secure and affordable energy supplies which deliver economic, social and environmental benefits to the UK.

4.16 There is the potential situation of a dedicated solid & gaseous biomass plant accredited before April 2013, then adding new capacity after 1 April 2013 and being subject to meeting two different GHG targets for its pre-existing and new capacity. We recognise this would add significant operational, legislative and administrative complexity. Our records show only around 350 MWe total capacity of dedicated biomass (including CHP) is currently operational. In addition, we are proposing existing and new dedicated biomass will both be on a target of 200 $kgCO_2eq/MWh$ in April 2020. Reflecting all of these considerations we propose that where a dedicated biomass plant (with or without CHP) which was accredited before 1 April 2013 adds new capacity that this should also be subject to the proposed standard target of 285.12 $kgCO_2eq/MWh$ and moving to the tighter target of 200 $kgCO_2eq/MWh$ in April 2020.

Grandfathering, stability of system and long-term GHG trajectory	
Q2.	**Do you agree that subject to EU or international requirements the sustainability criteria for solid biomass and biogas should be** **iii. fixed to 1 April 2020, and** **iv. follow the planned GHG emissions trajectories to 2020 set out above for (a) new dedicated biomass, (b) existing dedicated biomass and (c) other biomass plants ?**
Q3.	**Do you have data you would be willing to share on the potential improvements or changes to different elements of the GHG lifecycle for bioenergy to support setting the tighter target to apply from 1 April 2020 to 31 March 2025 for each of the 3 trajectories?** **We are particularly interested in data on:** • **Transport (e.g. GHG emissions associated with ship size/capacity);** • **Harvesting and processing technologies for feedstocks (e.g. more energy efficient pelletisation);** • **Energy used in producing feedstocks (e.g. change fossil to biomass CHP);** • **Innovation in feedstock types/performance (e.g. non-intensively produced algae, increased yields from energy crops);** • **Fertiliser use;** • **Generation efficiencies at power plant, and** • **Other.** Please enclose this data with your response.

5. Sustainable Forest Management, Land Criteria and role of voluntary & government schemes

5.1 Forests play a key role in policies related to the protection of ecosystems, biodiversity, the sustainable use of natural resources, carbon sequestration and climate change. In the past few decades, there has been growing concern over the state of the world's forests, and over the trade in illegal timber. Recognition of the need to ensure sustainable management of forests has been reflected through UK action both internationally and domestically.

5.2 At the 1992 Rio Summit, a series of principles for sustainable forest use were developed under the title, 'The Statement on Forest Principles'. These principles are non-legally binding, though they represent the first global consensus on forests. In 1998, as a result of a G8 foreign ministers meeting in Birmingham, the Action Plan for Forests was launched. It determined five key areas that needed to be addressed in order to achieve sustainable forest management: 1) monitoring and assessment; 2) national forest programmes; 3) protected areas; 4) private sector; and 5) illegal logging.

UK Government's public procurement policy for wood

5.3 One of the UK's responses to these concerns was the development and launch of a public procurement policy on wood and wood products, such as furniture, paper and woodfuel, announced in July 2000. The policy to purchase supplies that are legal and sustainable is mandatory for all Central Government Departments, Executive Agencies and Non Departmental Public Bodies. Local authorities, other public bodies and the private sector are also encouraged to adopt sustainable timber procurement policies. The policy was enhanced with the launch of a supporting website[8] in 2005, and with the inclusion of social criteria in 2010.

5.4 This approach requires that suppliers and contractors to Government should have available documentary evidence demonstrating the wood supplied is from legal and sustainable sources. This evidence should include chain of custody from the forest source(s) to the end user. The evidence that will be accepted is either Category A (meets an approved Forest Certification Scheme such as Forest Stewardship Council (FSC) and PEFC (Programme for the Endorsement of Forest Certification (PEFC)) or Category B (other suitable evidence that demonstrates compliance). The Central Point of Expertise for Timber procurement by the public sector (CPET) website gives further details on category A and B evidence.

5.5 Our view is that for clarity, consistency and to control costs that the RO uses the approach set out by UK Government's public procurement policy for wood. This approach is established, draws upon existing schemes where possible, and sets out what the UK Government considers is good practice for its own departments' purchasing. Its extended application to the private procurement of woodfuel that receives support through the Renewables Obligation seems both sensible and proportionate. An overview of the scheme is available in Annex B.

[8] http://www.cpet.org.uk = UK Government's Central point of expertise for timber procurement by the public sector

5.6 The scope of the UK Government's public procurement policy is much wider than that of the Land Criteria currently set under the RO. The RO Land Criteria take the approach set under the Renewable Energy Directive ('RED') for transport biofuels and bioliquids, so can be met with evidence showing that the biomass has not been sourced from certain specified land types that have high biodiversity or carbon stock value in January 2008. The RED land criteria are highly relevant for annual agricultural crops such as oilseed rape or sugar beet, and the required data should be readily available if the land is managed sustainably.

5.7 In contrast the feedback from forest managers is that the required evidence to demonstrate they are meeting the RED Land Criteria is difficult and costly to obtain, and has little relevance for ensuring forests and woodlands are managed sustainably. In the industry's view established global schemes such as FSC or PEFC would meet the 'spirit' of the RED, that is to ensure that the biomass is sustainable, including consideration of social issues such as land rights and employment conditions; though it would not meet the 'letter of the law' as these schemes do not use a January 2008 reference date.

Proposed approach based on UK Government Public Procurement policy for Wood and the Energy Crops Scheme

5.8 We propose that wood, when used to provide a solid or gaseous fuel, should not be required to meet the RED Land Criteria[9]. Instead we propose that the wood should be required to meet the UK Government's public procurement policy for wood. This will avoid unnecessary regulation, as the additional burden is offset by the removal of the need to demonstrate compliance with the RED Land Criteria, where the necessary evidence can be difficult and costly to obtain. However, we are keen to receive evidence and comments on the protection this approach offers biodiversity and carbon stocks relative to the approach of the RED Land Criteria – which are set out in detail in Annex A.

5.9 Similarly the Energy Crops Scheme (for England) sets out the Government's view for responsible and sustainable farming practices when growing perennial energy crops such as miscanthus grass or short rotation coppice (SRC) willow. Feedback from the farming industry is that the Scheme provides a robust approach to ensuring that the resulting crop is sustainable as applications are subject to an environmental appraisal including a site visit, and the scheme sets out what types of land cannot be used such as protected areas. Full details are available from the Natural England website[10]. However, as with UK Public Procurement Policy for Wood – it does not use the January 2008 date set under the RED Land Criteria.

5.10 We propose that under the RO that energy crops which (i) meet the narrower definition of energy crops as set out in the Government Response to the RO Banding Review, when used as a solid and gaseous fuel, and (ii) have been assessed as meeting the requirements of the Energy Crops Scheme that applied at the time of the assessment, should not be required to meet the RED Land Criteria. However, as with woodfuel and the UK Public Procurement Policy for wood, we wish to receive evidence and comments on the protection the Energy Crops Scheme offers biodiversity and carbon stocks relative to the approach of the RED Land Criteria.

[9] Where wood is used as a raw material for producing advanced transport biofuels or bioliquids the sustainability criteria for bioliquids or transport biofuels apply respectively, not the RO sustainability criteria for solid biomass and biogas. For bioliquids produced from wood the RED land criteria will still apply.

[10] http://www.naturalengland.org.uk/Images/ECShandbook3ed_tcm6-12242.pdf

5.11 Moreover, Government wishes to be able to monitor the impact of growth in the use of energy crops whether grown in the UK or imported. Therefore where the solid biomass or biogas contains or is produced from an energy crop – e.g. short rotation coppice (SRC) willow - we propose to ask as part of the profiling report that the generator provides details of the previous use of the land, including what, if anything, was produced on it. The profiling report is the report that generators must provide under article 54 of the RO Order 2009 (as amended) in respect of each consignment of biomass that they use.

Role of other voluntary & government schemes

5.12 Other voluntary and government schemes may provide evidence of meeting the GHG target or land criteria – either fully or partially.

Wood quality

5.13 A concern raised with the increased use of wood for energy is that high quality wood will be diverted from sawmills and other wood processing businesses with impacts on the resulting carbon benefits provided by locking up carbon in wood products and on the competitiveness of the timber industry. The Bioenergy Strategy sets out that carbon benefits are typically highest when the good quality wood is used for products and low quality virgin wood is used for energy.

5.14 We expect the price premium that saw-logs command in the market will prevent their use in power generation. The main woody biomass sources for power and CHP are considered to be sawmill processing residues (e.g. off-cuts and sawdust), lower quality wood from forestry management (e.g. branch-wood and small round-wood) and waste wood (e.g. construction and demolition waste wood.). Wood panel producers use a proportion of these available feedstocks and may be affected by increased demand for biomass heat and power. However, a large proportion of woodland in the UK is unmanaged and could be used to supply fuel and other timber products to the market. There is also a key role for UK farmers to provide feedstocks such as straw where there is a local surplus, and through the establishment of perennial energy crops such as miscanthus grass on land unsuitable for food crop production.

5.15 To avoid costly and possibly unnecessary intervention, we consider Government should monitor the situation to ensure that significant amounts of suitable UK wood is not being diverted from wood processing businesses to energy markets. Therefore we propose that where a generator uses solid biomass or biogas containing or produced from a virgin wood feedstock (wood that has not been first used for another purpose and then recovered) the generator will be asked, as part of the profiling report, to provide additional information on wood quality, such as whether the wood is whole trees or includes saw-logs, and its species. Virgin wood includes wood supplies from the management of forests and woodlands, from arboriculture (managing trees in parks and urban areas) and from timber processing (sawmill residues including off-cuts and sawdust).

5.16 If the reported data reveals significant use of high quality wood the Government will consider measures to mitigate the adverse impacts, e.g. a code of practice for generators.

Sustainable Forest Management, Land Criteria, role of voluntary & government schemes and monitoring use of high quality wood	
Q4.	**Do you agree that wood when used for a solid or a gaseous fuel, should be required to meet the UK Government's public procurement policy for wood, and that this should replace the land criteria for solid and gaseous biomass in the particular case of wood?**
Q5.	**Do you agree that energy crops which have been assessed as meeting the Energy Crops Scheme for England, or its equivalent, should be deemed to meet the land criteria for solid and gaseous biomass?**
Q6.	**Do you agree that (i) generators using energy crops for solid or gaseous fuel should be required to provide detail on the previous use of the land and (ii) generators using virgin wood for solid and gaseous fuel should be required to provide detail on quality and species?**

6. Land Use Change

6.1 The European Commission report on indirect land use (ILUC) with regards to transport biofuels and bioliquids is delayed while evidence is gathered on this complex and important issue. Therefore we are unable at this point to consider the application of their recommended approach to solid biomass and biogas.

6.2 We consider the risk of ILUC with respect to the use of woody biomass, residues and wastes for power generation is lower than that of the use of crops for first generation bioliquids and transport biofuels. The primary concern of ILUC regarding bioliquids and transport fuel production is that the use of high quality farmland for dedicated energy crops such as wheat and sugar-beet, could indirectly result in deforestation due to the creation elsewhere of new cropland from forest. The driver would be the market seeking to meet the resulting unmet demand for human food.

6.3 In contrast, the main sources of biomass for heat and power are lower value waste and residues from farming and forest management; not the valuable parts of a food crop. So their use for energy does not present the same risk of driving demand for new cropland and hence possible deforestation. The value place low value placed on farm residues and wastes, such as straw relative to the grain prices, or cow manure relative to beef and milk prices, means that their use for energy is unlikely in itself to result in new farmland. Similarly the value placed on wood residues suitable for energy, such as off-cuts, sawdust and small round-wood is much lower than the value placed on saw-logs.

6.4 However, the increased demand for woodfuel could encourage undermanaged forests being brought under active management which would provide additional timber and woodfuel supplies for manufacturing and construction as well as for energy uses. This could deliver significant biodiversity benefits as well as new business opportunities in rural areas. It would also mean no formal land use change as the forest would remain a forest. However, we recognise that bringing forests back into productive use can have carbon impacts so the associate risks will need to be managed.

6.5 Therefore, the most important issues for forests and woodlands relate to good management practices - sustainable harvest rates, maintaining carbon stocks, encouraging biodiversity, protecting indigenous people and preventing deforestation. By introducing sustainable forest management criteria based on the UK Government's public procurement policy for wood we would be taking robust action to ensure that a sustainably managed forest remains as such, address environmental issues and bring in consideration of social concerns such as land rights and safe working conditions.

6.6 Regarding perennial energy crops, the price differential is expected to prevent change in land use from food production except where the land is lower quality. A number of reports[11] show that perennial energy crops, such as short rotation coppice (SRC) willow and miscanthus, if cultivated in the right place and in the right way, can be better for biodiversity and water quality than arable crops such as wheat and maize. Direct land use change is reflected in the GHG lifecycle assessment for bioenergy, and we will monitor the profiling information provided on previous use of land on which energy crops are grown. Moreover, deployment of energy crops under the RO is expected to be limited given the tightening of the definition of energy crop under the RO as well as the decisions to not provide an energy crop uplift to conversion and enhanced co-firing and to consult on the removal of the uplift for standard co-firing (section 14).

6.7 As the main aim of Government support for bioenergy is to reduce carbon, it is crucial that looking post-2020, that our policies take account of the best available evidence on indirect land use change, and that we prevent deforestation and protect food production. We are working with our European partners on this issue and have called for the European Commission to amend the sustainability standards applied across the EU to address the risk from ILUC.

Interactive land use and bioenergy tool

6.8 Building on the evidence gathered for our Bioenergy Strategy and 2050 Pathways Analysis[12], DECC's Science and Innovation Group (SIG) are developing an interactive land use and bioenergy tool that could help inform future discussions on this area. For example, the tool will provide more information on overall carbon savings or emissions related to bioenergy pathways using biomass sourced from different land types, so could help inform discussions around carbon accounting methodologies. It is also expected to inform the development of the sustainability standards for bioenergy that would apply to future incentive schemes such as those introduced as part of Electricity Market Reform.

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[11] Karp, A. et al: Social, Economic and Environmental Implications of Increasing Rural Land Use under Energy Crops, 2010; Fry, Slater et al: The biodiversity of short rotation willow coppice in the Welsh landscape, 2009

[12] DECC's 2050 Pathways Analysis and Calculator http://www.decc.gov.uk/en/content/cms/tackling/2050/2050.aspx and engagement wiki http://2050-calculator-tool-wiki.decc.gov.uk/pages/1

6.9 There will be opportunities separate to this consultation for stakeholders to engage with the development of this valuable tool for policymaking; we aim to publish the tool for comment around the end of the year. In particular, SIG wishes to receive predictions of future bioenergy feedstocks sourcing from industry for anonymous use within the tool. Ideally this would project 5 years forward, cover tonnage, feedstocks types, country/region of origin, and, and be updated annually. However, we recognise that there are sensitive issues of commercial confidentiality regarding this level of detail of future intent. Therefore, we want to develop an approach to collect this data which would greatly improve the usefulness of the tool, while respecting the need for businesses to protect the details of their existing contracts and future negotiations on feedstock sourcing.

Land Use Change	
Q7.	**Do you agree that the introduction of sustainable forest management criteria based on the UK Government's public procurement policy for wood will help address the key land use change issues of:** **i. sustainable harvest rates and carbon stocks;** **ii. deforestation;** **iii. biodiversity, and** **iv. social concerns?**

7. Reporting to Ofgem – ensuring reports are streamlined, useful and credible –including independent verification and mass balance

7.1 The data set out in Article 54 of the Renewables Obligation Order 2009 were designed to gather information to help inform the development of sustainability standards. In this consultation document we refer to the report required under article 54 as the 'profiling report'. Some of the data required by article 54 is no longer useful, so we propose that the information requested covers the following:

General Profiling Data

7.2 To be provided by all stations over 50kW which use biomass except landfill gas, sewage gas, municipal solid waste and bioliquids:

- **material** from which the biomass was composed (e.g. wood);
- where the biomass can take different forms the **form** of the biomass; (e.g. pellet);
- its **mass/volume**;
- whether the biomass was **waste** or wholly derived from waste;
- whether the biomass is an **energy crop**, and if so the previous land use prior to the first cultivation of an energy crop;
- where the biomass is **virgin wood** information on its quality and species;
- where the biomass was plant matter or derived from plant matter, the **country where the plant matter was grown and its region**, and

- where the information specified in the above bullet is not known or where the biomass was not plant matter or derived from plant matter, the **country from which the operator obtained the biomass**.

GHG Criteria & Land Criteria

7.3 To be provided by all stations over 50kW and under 1MW which use biomass except landfill gas, sewage gas, bioliquids, waste or biomass wholly derived from waste:

- the **greenhouse gas lifecycle emissions** from the use of the biomass to generate one mega joule of electricity and whether it meets the GHG target
- if the GHG target has not been met the reasons why not
- whether it meets the **land criteria**.
- if the land criteria are not met, the reasons why not.

7.4 This means removing the requirements to provide information on whether the biomass is a by-product, and the details on land use since 30th November 2005. Change in land use will continue to be considered within the GHG lifecycle assessment, averaged across a 20 year period. In the case of solid biomass and biogas we would also be removing the requirement to provide information on environmental quality assurance schemes.

7.5 Currently biomass that is waste or wholly derived from waste is exempted from the requirement to provide this information, and is excluded from reporting on the sustainability criteria for solid biomass and biogas. This reflects its low sustainability concerns, and typically very high GHG savings. However this means that generators are only reporting on the mass or volume of the non-waste biomass feedstocks they use. As a consequence the Ofgem reports are not showing the full picture, so those generators that are using large volumes of waste feedstocks are not being properly recognised.

7.6 Therefore, we are proposing for biomass that is waste or wholly derived from waste, that the general data should be required – that of mass/volume, material, form and country of origin. The requirements to report on GHG lifecycle emissions and land criteria would not apply to consignments of wastes or biomass wholly derived from waste. We would also reinstate the requirement for the profiling report to state whether the biomass was waste or wholly derived from waste.

7.7 We propose to retain the exemption from the requirement to complete a profiling report for landfill gas, sewage gas, municipal solid waste (MSW) and for microgenerators. We propose to exempt bioliquids from the requirement to complete a profiling report because generators using bioliquids must provide a sustainability audit report under article 58A of the RO Order 2009 (as amended) which is likely to contain the relevant information and which must be independently verified. We propose to exempt stations at or above 1MW from having to complete the GHG criteria and land criteria section of the profiling report because we are proposing that they must also submit a sustainability audit report which is independently verified why they use solid biomass or biogas, other than landfill gas or sewage gas.

Independent verification

7.8 In the case of stations of 1MW and above which use solid biomass or biogas, we propose to require a sustainability audit report from an independent verifier. To ensure verification is carried out to a good standard we consider that the sustainability report should meet an ISAE 3000 standard or its equivalent. This would align our policy for solid biomass and biogas to that of bioliquids and transport biofuels where a corresponding requirement for independent verification to ISAE 3000 standard already exists. Although we propose to exempt wastes and biomass wholly derived from waste from the GHG criteria and land criteria for solid biomass and biogas, we do not propose to exempt them from the requirement to submit a sustainability audit report. This is to ensure that their claim to be waste or wholly derived from waste is covered by the independent verification. We propose to exempt all sizes of stations wholly using landfill gas or sewage gas from the requirement to submit a sustainability audit report.

Mass balance

7.9 We propose allowing generators of all sizes to use the mass balance 'chain of custody' system. A mass balance system enables different consignments of biomass to be physically mixed at any point in the chain, which keeps costs down, yet allows reporting to remain straightforward. In a nutshell, it requires, at each step in the chain, parties can only use/sell biomass with the same sustainability characteristics and in the same volume as the biomass they took in originally less any biomass they have recorded as being used or sold previously.

7.10 Mass balance recognises that when different types of biomass are stored together in a single bunker these will mix. It would no longer be possible to remove biomass and say with 100% certainty that this is only drawn from one type. However, mass balance recognises that for accounting purposes over a reasonable timescale this will self-correct, as the contents of the bunker are used and replaced.

7.11 A simple example would be a storage bunker with a mix of 100 tonnes of Canadian wood pellets and 50 tonnes of UK wood pellets. During the month the generator combusts 80 tonnes of biomass taken from the bunker. If the generator records that the 80 tonnes combusted were 50 tonnes of UK wood pellets and 30 tonnes of Canadian wood pellet; the remaining fuel in the bunker is consider to be 70 tonnes of Canadian wood pellets. Alternatively the generator could report using 40 tonnes of Canadian wood pellets and 40 tonnes of UK wood pellets, in that case 60 tonnes if Canadian wood pellets and 10 tonnes of UK wood pellets would be recorded as remaining in the bunker.

7.12 So providing that the volumes recorded as used for each feedstock in a period, corresponds to the amount in the bunker at the beginning of the period (plus any added during the time considered) less the amount that was reported as remaining, then the mass balance approach is met. This approach does not, of course, allow attributes, e.g. country of origin, to be switched between different feedstocks.

7.13 Independent verification and the application of the mass balance approach could offer important benefits to the generator and supply-chain. Several of the campaigns that addressed the RO Banding Review aimed to highlight concerns on bioenergy, and whether its expansion could be sustainable in practice. One of the success criteria for the policies set out in this consultation will be to increase public support for new bioenergy plants, and make the consideration within the planning process more predictable and transparent. Demonstrating that the sustainability reports provided to Ofgem are reliable and credible will be an important part of this.

7.14 To avoid unnecessary regulation or undue costs burden the requirement for independent verification would not apply to plants using solid biomass or biogas below the 1MWe capacity threshold. Collectively these will represent only a very small percentage of total biomass power.

7.15 One important exception to allowing the application of the mass balance approach relates to woodfuel that uses Category B evidence to demonstrate sustainability. This is because the UK Government Procurement Policy for Wood specifically does not permit the use of a mass balance approach when using Category B evidence[13]. This means up to the point that the consignment of Category B woodfuel is delivered to the power plant, mixing with other different biomass is not permitted. When the woodfuel is using Category A evidence then the mass balance approach would be permitted across the feedstock supply-chain as well as within the fuel storage bunkers at the power plant.

Avoiding duplication of work to reduce burden on generator and regulator

7.16 We wish to benefit from the experience gained from the earlier introduction of a sustainability audit report requirement for the use of bioliquids under the RO. The first set of bioliquid sustainability audit reports – and separate profiling reports - were due with Ofgem by 31 May 2012 covering the bioliquids used between 1 April 2011 to 31 March 2012. Our expectation was that the reports would reinforce one each other, but with limited direct overlap. The profiling report would set out the data and results for the different biomass consignments. The sustainability audit report would deal with the underpinning methodology and robustness of process at getting to the results presented. However, we understand that in the majority of cases there was significant duplication of the detailed content between the bioliquid operator's sustainability audit report and their profiling report on the bioliquid feedstock consignments. Similarly several profiling and sustainability audit reports included lengthy background information on the organisation which were not needed.

7.17 Therefore, Government welcomes Ofgem's intention to develop a simple integrated template covering the key requirements of the profiling report and the sustainability audit report for (i) solid biomass and biogas and (ii) bioliquids. This would be an example which focuses on the outcome we want – sustainable bioenergy generation – but keeps bureaucracy and paperwork to the minimum needed to meet this goal. Use of the template would be voluntary, however, we would hope that it will be widely used. The intention of these templates is to help generators to be confident that they are providing the information to Ofgem needed to meet the RO profiling and sustainability audit report requirements, but avoiding unnecessary work, and its associated costs and burdens

[13] CPET (2010) Practical Guides - Category B evidence Supply chain information http://www.cpet.org.uk/uk-government-timber-procurement-policy/files/Practical%20guide%20%20Supply%20chain.pdf

Reporting to Ofgem - Independent verification and mass balance approach	
Q8.	**Do you agree with our proposed changes to the article 54 profiling report, and the circumstances in which it must be provided?**
Q9.	**Do you agree with our approach to:** **i. Allow the use of a mass balance approach for the purpose of demonstrating compliance with the sustainability criteria for solid and gaseous biomass, except where that biomass is woodfuel using category B evidence to demonstrate meeting the UK Government public procurement policy for wood, and** **ii. Require biomass power plants of 1MWe and above to provide a sustainability audit report from an independent verifier, operating to ISAE 3000 standard or equivalent?**

8. UK Biomass & Biogas Carbon Calculator (The B2C2 tool) & Default values

8.1 A further goal of the sustainability scheme is for its results and impact to be transparent and accessible to those outside of technical experts within the biomass and energy sector. One of the key elements for this will be ensuring that the numbers reported by different generators are being produced on a comparable basis. This is particularly important when looking at relative performance against the GHG lifecycle target of 285.12 kg CO2eq per MWh.

8.2 Therefore we propose that generators of 1MWe or above should use a GHG tool when reporting on their GHG lifecycle emissions from different feedstocks. We encourage generators to use the tool available for free download and use from the Ofgem website, or one of similar verified quality. We are keen that the data they report includes 'real' figures where possible, to better drive improvements year on year. Therefore we propose that generators of 1MWe and above will not be permitted to use the set of simple default values that cover the whole lifecycle for certain feedstocks set out in Schedule 3B of the ROO Part 2.

8.3 The Government's Carbon Calculator has been developed to be (i) compliant with the approach to lifecycle modelling recommended by the European Commission in its 2010 report on sustainability requirements for the use of solid and gaseous biomass[14], which is based on the methodology set under the EU Renewable Energy Directive (RED) and (ii) is built on a large number of standard input values covering different elements within the lifecycle that draw upon robust, credible and referenced data sources. We recognise that some generators have invested in the development of their own calculator so it seems reasonable to allow these to be used instead where an independent verifier can confirm that their tool is also compliant with the EC's recommendations and uses credible data sources.

[14] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:0011:FIN:EN:PDF

8.4 Our analysis shows that the results from the modelling can change significantly according the (i) amount of fertiliser used, if any, (ii) the amount of energy used in processing and (iii) the transport distance. We wish to encourage and reward good practice and innovation in these areas – which would mean reduced fertiliser used with perennial energy crops, a preference for shipping, water and rail above road transport and an increased use of renewable energy, ideally CHP, when chipping or pelleting. Therefore, we consider that this data should be entered as 'real' figures, rather than using the high-level default values set out in Schedule 3B Part 2 of the Renewables Obligation Order 2009 (as amended by the 2010 and 2011 Amendment Orders).

8.5 In contrast, smaller schemes are likely to be managed and operated by a non-energy professional who may find using the tool difficult. Therefore we propose that for power and CHP plants below 1MWe that the GHG lifecycle can be evaluated using the method based on a combination of a high level default value set out in the ROO for the whole feedstock lifecycle in combination with the plant's actual energy conversion efficiency.

UK Biomass & Biogas Carbon Calculator (The B2C2 tool) & Default values	
Q10.	**Do you agree that that power plants of 1MWe or above should use :** **(i) the greenhouse gas lifecycle tool provided by the UK Government and available from the Ofgem website or an alternative lifecycle tool that an independent verifier operating to ISAE 3000 standard, or equivalent, has confirmed is compliant with the recommendations made by European Commission** , and **(ii) use actual rather than standard inputs for those elements that the GHG lifecycle result is most sensitive to, namely: (a) fertiliser use, (b) type and amount of energy used in processing and (c) transport distances?**
Q11.	**Do you agree that only power plants below 1MWe,will be able to choose to use high-level default values covering whole feedstock lifecycles as specified within the Renewables Obligation, and are therefore not required to use a GHG modelling tool?**

9. Anaerobic Digestion

9.1 Government wishes to promote the expanding use of waste in anaerobic digestion (AD). We want to see the majority of UK AD plants being primarily waste based, with the use of crops kept to the level needed to maintain the operational performance and efficiency of the plant. We welcome the work being taken by trade bodies to develop a voluntary Code of Practice to support this endeavour. So we need a reporting system under the RO that will allow both Government and industry to monitor the situation, so we can take action if necessary, but which does not place unnecessary barriers to the use of those feedstocks we want to encourage.

9.2 Animal manure and slurry are associated with low sustainability risks, and high potential benefits through the avoided methane emissions. Therefore we are proposing that animal slurry and animal manure should be excluded from the requirement to report on, or comply with, the GHG emissions and land criteria[15] for solid biomass and biogas.

9.3 In addition, we understand that some AD plants would find it burdensome to record the tonnage or volume of the wastes used. In the case of farm-based AD plants, manure and animal slurry is typically taken from the field or buildings to the AD plant, on an ad hoc basis. Requiring weighing and record taking for each transfer could be both difficult and costly. So we propose to also exclude the use of manure and animal slurry from the requirement to provide mass or volume consumed as part of the profiling report.

9.4 In contrast, we propose the use of other non-waste biomass by AD plants, such as dedicated crops or crop residues, would not be exempt from the requirement to report on the GHG emissions and land criteria. Use of this non-waste biomass, whether this comprises all or part of the feedstocks used, would fall within the scope of the requirement to report on the GHG emissions, land criteria and the general profiling data.

Monitoring the waste and non-waste feedstock proportions

9.5 Government considers it important to monitor the relative proportion of feedstocks that each AD Plant uses between wastes such as manure and animal slurry, relative to the other biomass feedstocks. In order to allow us to do this, without requiring operators to provide the tonnage of wastes used, we propose to use the total electricity reported as generated by a plant together with the profiling data for the non-waste biomass feedstocks over the same period. This will allow the assessment of the relevant percentage split between (i) energy generated from waste and (ii) non-waste biomass, by using standard conversion data for the non-waste content.

9.6 So in summary if you are an operator of an AD plant using only solid/gaseous biomass feedstocks that are wastes or wholly derived from waste, animal manure or slurry, we propose that against these consignments you will be required to report on the different types used, its country of origin, format (if appropriate) and confirm that the biomass is a waste. You would not be required to report on the mass/volumes used, the GHG lifecycle or the land criteria.

9.7 However, an AD operator using only non-waste biomass feedstocks (other than animal manure or slurry) will be required to report on a per consignment basis against the full set of sustainability criteria for these non-waste materials, including GHG, land criteria and the general profiling information including mass/volume. A mixed waste and non-waste fuelled AD plant would be required provide a simplified report set out in paragraph 9.6 for the use of feedstocks that are either waste, wholly derived from waste, animal manure or slurry. The full report set out in paragraph 9.7 would be required for the use of the remaining non-waste biomass feedstocks on a per consignment basis. AD stations at or above 1MWe would also need to provide a sustainability audit report for the use of solid biomass or biogas

[15] Manure is specified as a processing 'residue' within the 2010 Communication from the European Commission on the practical implementation of the EU biofuels and bioliquids sustainability scheme and on counting rules for biofuels. Therefore this exemption would not apply with respect of the sustainability criteria for bioliquids: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2010:160:0008:0016:EN:PDF

Anaerobic Digestion	
Q12.	**Do you agree that the use of animal manure and animal slurry should be exempt from the GHG emissions and land criteria for solid biomass and biogas and exempt from the requirement to report on the mass/volume used?** If you consider other specific types of non-waste biomass also offer low risks and high benefits and should be considered exempt, please provide reasons for your answer.

10. Definitions, Clarification and Consistency across incentives

10.1 We are also taking this opportunity to address some issues raised by stakeholders, and provide greater clarity when generators prepare and submit their sustainability reports to Ofgem.

10.2 We have sought to develop a UK policy for sustainability that is consistent wherever possible across different biomass types and different energy uses, whether heat, electricity or transport, and reflects the approach set out in the EU Renewable Energy Directive. This is particularly important for the issue of life cycle assessment, where the use of different approaches could cause confusion, increased costs and unintended consequences for generators and their feedstock suppliers. Therefore, where specifically stated these clarifications apply to the use of bioliquids as well as solid biomass and biogas.

10.3 On 20 July 2012, we set out proposals to improve the performance and manage the future budget of the Renewable Heat Incentive (RHI), including sustainability. The proposed sustainability criteria set out in the RHI consultation[16] are complementary to those set out in this document, including the proposals on forest management criteria and the GHG methodology.

Wastes and residues

10.4 Our aim is not only to provide the coherent, level playing field needed for a robust feedstock market, but also to 'future-proof' our criteria. Longer term, we expect to see ligno-cellulosic production methods mean increasing volume of forestry and agricultural residues are used for advanced biofuels and bioliquids, as well as in combustion and digestion technologies. Therefore we wanted to set sustainability criteria closely aligned across the heat, electricity and transport sectors in readiness for this and other innovations.

10.5 The RO Order 2009 sets out that "waste" has the meaning given to it in section 75(2) of the Environmental Protection Act 1990 (EPA), which is now embedded in the 2008 Waste Framework Directive (WFD) 2008/98/EC). Article 3(1) of the WFD defines "waste" as "…any substance or object which the holder discards or intends or is required to discard…". In August this year, Defra published 'Guidance on the legal definition of waste and its application'[17]. Therefore this is the primary definition of waste to be used.

[16] Renewable Heat Incentive: providing certainty and improving performance – consultation (2012) http://www.decc.gov.uk/en/content/cms/consultations/rhi_cert_perf/rhi_cert_perf.aspx (closes 14 September).
[17] http://www.defra.gov.uk/publications/files/pb13813-waste-legal-def-guide.pdf

10.6 In addition, the broad intentions in the Renewable Energy Directive as to how different types of wastes are treated should also be factored into deliberations with respect to sustainability criteria. For consistency the Government is keen that a particular type of biomass should be treated the same with respect to bioliquids and transport biofuels[18] as it is treated for solid biomass and biogas, wherever it is practical. Ofgem has published online guidance with respect to bioliquids and solid biomass & biogas and sustainability reporting which will be updated following this consultation.

10.7 The RO Order 2009 does not define "residues". The European Commission Communication 1020/C 160/02 defines a "processing residue" as "a substance that is not the end product(s) that a production process directly seeks to produce. It is not a primary aim of the production process and the process has not been deliberately modified to produce it." Although EC Communications are not binding on Member States, and this definition will not be transposed into the ROO, we consider this as a suitable definition for the purpose of applying the sustainability criteria for solid biomass and biogas.

10.8 We consider it appropriate that Ofgem, as the administrators of the RO, develop and publish a clear and transparent process to support generators in making informed decisions on fuel classification. This process should aim to be consistent across bioliquids, solid biomass and biogas when used under the Renewables Obligation. Generators should follow this process to classify fuels and use the process to support their decisions when submitting data to auditors and Ofgem.

10.9 We propose to make clear that residues from forestry (e.g. tree tops, branches, brash, clippings, trimmings, leaves, bark, shavings from felling), aquaculture and fisheries (e.g. surplus fish food removed from tanks) should be considered as zero-rated at the process of their collection for solid biomass, biogas and bioliquids. This would mean these residues would be treated in the same way as residues from agriculture and processing.

Use of binding agents

10.10 Some solid biomass material does not compact readily into pellets so is difficult to manufacture, transport and handle, and could reduce combustion performance. Issues in these areas could result in higher associated emissions e.g. if the pellet is bulkier fewer can be carried within a fixed cargo space. A small amount of a binding agent can help address this, but it may be challenging to gather the data required by the sustainability criteria. On balance we propose the use of up to 2% by weight of solid biomass material for binding purposes would be considered sustainable. i.e. We would not require a separate sustainability report for the binding agent in order to be eligible for ROCs for generation from the whole pellet. Use of 2% or lower binding additives is in line with the CEN/TS 14961-2 Grade A1 standard for wood pellets.

10.11 Where the additive is a bioliquid, or the total additives (whether solid or liquid or a mixture) exceed 2% by weight, that generators will need to report separately on the additive/s to receive ROCs on the generation from the whole pellet. Otherwise ROCs can only be claimed for the use of that % of the pellet that is both biomass and is sustainable.

[18] DfT has published Guidance for Renewable Transport Fuel Obligation (RTFO) http://www.dft.gov.uk/publications/rtfo-guidance/

10.12 We cannot under the terms of the EU RED provide support for the use of bioliquid content, such as vegetable oil, for energy generation unless this meets the RED criteria.

Greater transparency

10.13 We see value in Ofgem publishing the annual biomass report, i.e. the general profiling information, GHG emission savings and land criteria, that it receives for each generator's set of biomass feedstock consignments. This would provide welcome transparency, further reward the best performers, and allow each generator to review their performance against similar plant operators.

Sustainability audit report

10.14 We propose to bring the requirements for the sustainability audit report more closely into line with the requirements for renewable transport fuels. This would involve:

- making clear that the sustainability audit report is to be done to ISAE 3000 limited assurance standard;
- replacing the requirement to identify systems and confirm that measures have been taken to protect those systems against fraud and to ensure information is accurate and reliable, with a requirement to consider whether the systems used to produce the relevant sustainability information are likely to produce information which is reasonably accurate and reliable and whether there are controls in place to help protect against material misstatements due to fraud or error;
- replacing the requirement to evaluate the adequacy of the frequency and methodology of the sampling, with a requirement to consider the frequency and methodology of the sampling;
- replacing the requirement to evaluate the robustness of the data, with a requirement to consider the robustness of the data, and
- imposing a new requirement for the report to state whether anything has come to the attention of the person preparing the report to indicate that the relevant sustainability information is not accurate.

Definitions and Clarification	
Q13.	**Do you agree with our proposals for clarification and consistency across the renewables incentives?**
Q14.	**Do you agree that solid biomass pellets may contain up to 2% by weight of another solid biomass material for the purpose of binding, without needing to report separately on the sustainability of the binding additive in order to be eligible for ROCs on 100% of the resulting biomass generation from the pellet?**

11. Proposed sustainability reporting requirement from October 2013

11.1 Table 3 shows the proposed content for RO sustainability reports covering the use of solid biomass & biogas feedstocks from October 2013.

Content of Solid Biomass & Biogas Sustainability Report	
GHG Lifecycle Criteria	**For solid & gaseous biomass consignments other than waste, biomass wholly derived from waste, landfill gas, sewage gas, animal manure or animal slurry:** • An assessment of the lifecycle GHG emissions associated with the biomass electricity produced on a per consignment basis, including its cultivation, processing, transport and any direct land use change. • For biomass plants – including dedicated biomass and CHP- accredited before 1 April 2013, confirmation of whether the biomass met the 60% reduction target of 285.12 kg CO2eq per MWh or lower OR • For dedicated biomass power – including CHP – accredited on or after April 2013, confirmation of whether the biomass met the 66% reduction target of 240 kg CO2eq per MWh or lower OR • For all coal to biomass conversion/co-firing plants, confirmation of whether the biomass met the 60% reduction target of 285.12 kg CO2eq per MWh or lower
Land Criteria	**For solid & gaseous biomass consignments other than waste, biomass wholly derived from waste, landfill gas, sewage gas, animal manure or animal slurry:** • If feedstock is **wood** confirmation that this met the UK Public Procurement Policy for Wood standard (Annex B for overview); OR • If feedstock is a **perennial energy crop** confirmation that this met **Energy Crops Scheme (ECS) or** equivalent or alternatively confirmation that it met the RED land criteria, OR • If feedstock is **solid biomass or biogas**, but not solid

	woodfuel or perennial energy crop that was assessed as meeting the appropriate Energy Crop Scheme, confirmation that the feedstock met the RED land criteria (i.e. biomass was not sourced from land with high biodiversity value – such as primary forest or protected areas; AND confirmation that biomass was not sourced from land with high carbon stock value – such as peatland or wetland). See Annex A for an overview of the RED land criteria.
Profiling Criteria	**For all solid & gaseous biomass consignments including feedstocks that are waste or wholly derived from waste, but excluding municipal solid waste, landfill gas and sewage gas:** Profiling criteria is to be supplied to the best of the generator's knowledge and belief on a per consignment basis. This data is: • Biomass material; • Whether solid or gas; • Its format (e.g. pellet/chip) • Mass/volume used (in standard metric units) – information does not need to be provided for animal manure or animal slurry • Whether it is a waste or wholly derived from waste • Country of origin or purchase, with region • Whether the biomass is an energy crop, and if so what the land was previously used for? • If the biomass is virgin wood, details of the quality of the wood e.g. sawdust, sawmill offcuts, small roundwood (SRW), saw-logs, diseased whole trees, branch and bark and species.
Independent Verification	Generators of 1MWe and above to provide a sustainability audit report by an independent verifier to ISAE 3000 standard or equivalent. Exemption for landfill gas and sewage gas generators.

Table 3: Sustainability criteria proposals to apply from October 2013

Part B: Value for money and affordability

Closing date for responses is 19th October

Part B: Value for money and affordability

This section outlines the consultation proposals and expected impacts for measures intended to ensure that we deliver value for money under the RO, ensuring the RO remains within its agreed budget, and that it delivers cost-effective carbon reductions. It includes the following proposals:

- A cap on the number of ROCs which suppliers can access for new Dedicated Biomass;
- Reduction in support for standard co-firing in 2013/14 and 2014/15; and
- Removal of the energy crop uplift for standard co-firing.

We will consult separately on proposals for a pre-notification and triggered review process for biomass co-firing and conversion.

12 Cap on new dedicated biomass (without CHP) generation

Introduction

12.1 As set out in the Government Response to the RO Banding Review[19], the government's intention is to focus the deployment of biomass electricity over the banding review period (2013-2017) on the cheaper and transitional technologies of conversion and co-firing (i.e. coal replacement). Coal replacement is lower cost compared to other renewables (since it involves use of existing assets) with significant carbon savings as it replaces high carbon coal. Its shorter operating lifespan compared to new build dedicated biomass also makes it attractive in terms of avoiding significant feedstock lock in beyond the late 2020's.

12.2 As highlighted in the Bioenergy Strategy, new dedicated biomass can be more expensive in terms of cost of carbon abatement compared to other renewables. While a small amount of it is affordable and cost-effective within the framework of the overall RO package, it becomes increasingly less attractive in the longer term and at larger volumes, even taking account the ambition for higher sustainability standards set out in Part A of this consultation. In order to safeguard against significant expansion of new dedicated biomass we propose to cap the number of ROCs which suppliers can access for new dedicated biomass after March 2013.

Proposed approach

[19] DECC (2012) Government Response on Renewables Obligation Banding Review
http://www.decc.gov.uk/en/content/cms/consultations/cons_ro_review/cons_ro_review.aspx

12.3 Given the intended cautious approach to dedicated biomass deployment in the future energy mix, an upper limit to the total generation supported will provide a safety net for RO spend in this band. The intention in setting a cap is to maintain value for money for consumer subsidies while also maintaining investor confidence. We recognise that a number of developers have committed significant expenditure in bringing projects towards financial close. We want these projects to come forward as soon as possible if they are able to complete the necessary financial arrangements. In particular it is not our intention to stop shovel-ready projects that can reach financial close by March 2013.

12.4 Modelling undertaken for the RO Banding Review government response document estimated that, in the lead scenario, approximately 250 MW of new dedicated biomass deployment would be incentivised over the Banding Review period at the proposed level of subsidy[20]. However, this is a central estimate and there are significant uncertainties surrounding the modelling assumptions and deployment estimates - deployment much higher or lower than this estimate may be possible. The precise technology mix that will come in under the RO is very uncertain, and evidence from the pipeline data suggest there is potential for other projects to come forward which would have implications for substantially increased RO spend.

12.5 For example, based on information provided as part of the consultation, together with analysis of the DECC Renewable Energy Planning Database (REPD), it is considered possible that higher levels of deployment could be achieved. Currently, there are some 2,220MW of projects which have received planning consent and are either awaiting construction or are under construction and a further 380MW of projects which have applied for planning. There is also an additional 500MW of projects currently being scoped out. While it is highly unlikely that all these projects will materialise or be built within the banding review period, it demonstrates the high level of interest that exists in dedicated biomass. We therefore have estimated the impact on spend and generation of higher levels of dedicated biomass uptake, to better understand the risks.

12.6 Our preferred approach is to set a cap on electricity suppliers under the RO broadly equivalent to 1 GW of new capacity. Our view is that a supplier cap set at this level will provide sufficient headroom for generators to ensure that far advanced projects are able to come forward over the banding review period at the support level provided, whilst limiting overall deployment potential and the associated financial risk to the RO budget, and mitigating the uncertainty that setting a cap can impose on the RO market. The cap would apply to new dedicated biomass generation, irrespective of feedstock used. This would include not only new dedicated biomass stations accredited on or after 1 April 2013, but also additional capacity added on or after that date to stations that were accredited before that date.

12.7 The cap would not apply to dedicated biomass generating capacity accredited, or additional capacity added, before April 2013. We also propose to exempt qualifying combined heat and power generating stations from the cap. These are CHP stations that are registered under the CHPQA. CHP is excluded from the cap as it is identified in the Bioenergy Strategy as one of our low risk, priority pathways for biomass. Biomass CHP offers more cost-effective carbon abatement than electricity only. Furthermore, the number and capacity of the CHP plants that could come forward is already limited by the need for a site with a suitable heat load.

[20] Government response sets support for new dedicated biomass power at 1.5 ROCs per MWh until 31 March 2016, reducing to 1.4 ROCs per MWh for new accreditations (and additional capacity added) after 31 March 2016.

12.8 As set out in the Government Response to the RO Banding Review, CHP stations will still need to be annually certified as Good Quality under the CHPQA programme in order to qualify for the CHP uplift. This will therefore be a requirement in order to be exempt from the dedicated biomass cap. The CHPQA qualification criteria will be examined as part of the consultation on the review of CHPQA that the Government intends to publish later this year. It is the Government's intention that the CHPQA criteria will continue to allow for the support of highly efficient CHP plants whilst ensuring value for money to the consumer.

12.9 We considered alternate ways of limiting deployment; such as a cap on the total amount of generating capacity in MW that could be accredited under the RO, a cap on the total amount of generation in MWh awarded ROCs in a year and a cap on size of individual projects allowed to be built. In the case of a cap on the total amount of generation awarded ROCs in a year, this could risk plants becoming idle for all or part of a year if new generation out-competed existing suppliers or if there was more capacity on the system than could be supported by the available ROCs. This would have a particular negative impact on the value of the Power Purchase Agreement (PPA) of smaller plants who would find it increasingly difficult to compete with larger plants. Such a cap would also be difficult to monitor and enforce.

12.10 A cap on total generation accredited under the RO provides a simpler solution. However, in the case of a cap on either the total capacity accredited or total generation, a process would need to be created for allocating the last spaces within the cap, with the risk that developers try to accredit capacity or generation that they do not then use. There are no specific powers or processes for caps on accreditations or generation under the existing legislation for the renewables obligation, so this type of cap would also take longer to implement, so delaying introduction of the cap.

12.11 While we have powers to cap the size of projects supported under the RO, we do not consider that this approach offers value for money for the consumer. Small plants are more expensive per MWh than large plants at generating electricity. Where local feedstocks are being used, it can also prevent plant size from being optimised to match both local need and the local supply chain.

How the cap will work

12.12 The type of cap we are proposing is known as a supplier cap or a compliance cap. It is based on powers in s.32A(2)(c) of the Electricity Act 1989 (as amended by s.37 of the Energy Act 2008) which enable us to impose a limit on the percentage of their renewables obligation which electricity suppliers can meet using ROCs issued for new dedicated biomass generation. The Government response to the banding review set out our decision to adopt this type of cap for bioliquid generation, and this type of cap is currently used to limit the amount of co-firing under the RO.

12.13 We propose to set the cap at a level which is broadly equivalent to the amount of electricity we estimate would be generated in a year by 1GW of new dedicated biomass generating capacity. However, the legislation for the RO requires the cap to be expressed as a percentage of each suppliers renewables obligation. Furthermore, the level of the cap must be fixed in advance in the legislation, whereas the size of each suppliers renewables obligation will vary from year to year. Therefore, we propose to set the cap at the following percentages of a suppliers renewables obligation in each year of the banding review period.

Obligation Period	Maximum % of suppliers obligation using new dedicated biomass ROCs
2013/14	19%
2014/15	17%
2015/16	14%
2016/17	12%

Table 4: Proposed percentage levels from 2013-2017

12.14 This is based on the assumption that a maximum of 1GW capacity operates annually with a load factor of 90%, implying maximum annual generation of approximately 8TWh. Depending on the actual size of the renewables obligation each year, the percentages we propose for the cap could result in a cap which is lower or higher than 8TWh of generation.

12.15 The legislation for the RO includes an alternative way of setting the supplier cap, where the limit is expressed as a maximum number of dedicated biomass ROCs that a supplier can use each year to meet their renewables obligation. We do not propose to set the cap in this way, as changes in the number of suppliers could lead to large falls or increases in the size of the cap.

12.16 In addition to the cap, new dedicated biomass generation by stations above 1MWe will also need to meet our minimum sustainability criteria, including the GHG threshold (see Part A of this consultation).

12.17 The cap will apply to suppliers in England and Wales and will apply in respect of renewables obligation certificates issued for new dedicated biomass generation in England and Wales only Our intention is for it to come into effect from 1 April 2013, so that it will apply to suppliers when meeting their renewables obligation for periods from 1 April 2013.

12.18 The cap will not apply to electricity generated by bioliquids. This is because the use of bioliquids will be subject to a separate supplier cap on the use of ROCs issued in respect of electricity generated from bioliquids.

Impact of options

12.19 The impacts are likely to be highly dependent on the level at which the cap is set. Given the long lead times between final investment decisions and the point at which dedicated biomass plants are commissioned (approx 3 to 4 years), a cap that genuinely bites on the planned projects will create uncertainty in the market. This uncertainty is expected to be greater for larger plants which will require greater headroom to have the confidence the gap will not impact demand for their ROCs This could lead to under deployment relative to the maximum limit imposed by any cap. A cap could also affect the ability of plants to access finance as it may raise concerns over the risk of the cap being breached, especially for plants which start generating later in the RO banding review period, so undermining the value of the new dedicated biomass ROC. The magnitude of this impact will depend on the level at which the cap is set.

12.20 In addition we recognise that a cap could create a constrained market for selling new dedicated biomass ROCs, depressing their value and affecting the economics of dedicated biomass projects. The level of discounting will depend on the amount of headroom provided above the level of deployment as well as the total amount of deployment in the wider renewables market; the less total deployment, the lower the impact on the value of a biomass ROC. At the same time a cap could lead to a reduced Power Purchase Agreement (PPA) market demand for the ROCs associated with the plants that could fall under the cap, also affecting the economics of projects. As the cap is approached, there is the increased risk that a project could breach the cap, so causing a crash in the value of the new dedicated biomass ROC. This uncertainty will act as a constraint particularly on larger, longer build projects in the 100 - 300MW size range and particularly as deployment reaches within 200-300MW of the cap.

12.21 Based on the available market information, and the potential impacts outlined above, a cap of 800MW or below is considered to be too restrictive to deployment, leading to the loss of shovel-ready projects and to small projects whose PPAs for electricity supply would be adversely affected.

12.22 As mentioned in paragraph 12.6 the proposal to cap dedicated biomass at broadly equivalent to1 GW new build capacity is considered to provide sufficient headroom to minimise adverse impacts, in addition notification or pre-accreditation process might help to further mitigate this.

Reducing the impact of the proposal; notification process

12.23 Given the uncertainties that the market will face as the cap is approached, we wish to explore ways to make the process more transparent and hence more certain. One issue is that it may not be clear to developers who will be engaged in the market and when. A notification process for financially committed projects is one way in which we can have greater foresight over the level of deployment. A register could be published, perhaps on a monthly basis, listing the notified projects and their expected capacity and their expected commissioning dates, together with a list of projects already accredited since the introduction of the cap. This would give some extra clarity to developers as to whether to proceed further with their project and the timeline for doing so.

12.24 We wish to understand what options there might be for a notification process based on a point when contractual and financial commitments have been made, such as sign off of the Engineering Procurement and Construction contract (EPC) or finance contract, or grid connection. We invite respondents to contribute ideas. Any such notification point would have to be based on a clearly identifiable set of criteria that is capable of being administered by Ofgem.

12.25 We could set the point of notification earlier, but the lower the threshold of proof, the greater the risk of gaming or that projects will fail to materialise, for example, there is already a preliminary accreditation process under the RO which is linked to the point at which planning permission has been obtained. However, not all projects do this. There is therefore the risk that a notification process could have the opposite of the intended effect by actually introducing greater uncertainty.

12.26 We also invite respondents to comment on whether the notification process should be voluntary or compulsory. If we make the process compulsory, should there be a penalty for non-notification or a notification which can be construed as gaming the system and if so, what form

should this take? One way of making the notification process compulsory could be to prevent ROCs from being issued to a new dedicated biomass station or to new additional capacity, unless a minimum period of time (such as a year) has passed since the station or the additional capacity was notified. Another could be to require the clock to start again and re-notification to take place if the commissioning date or the generating capacity varies by more than say 6.months or 1MW from the original notification or for failing to notify at the required point.

Cap on dedicated biomass	
Q15.	**Do you agree that the proportion of their renewables obligation that suppliers can meet using new dedicated biomass generation should be capped at 19% in 2013/14, 17% in 2014/15, 14% in 2015/16 and 12% in 2016/17 (equivalent to approximately 1GW of new dedicated biomass generating capacity). Please provide evidence to support your arguments.**
Q16.	**Do you agree that new dedicated biomass with good quality combined heat and power (CHP) should be outside the cap?**
Q17.	**What are your views on the notification process set out at paragraphs 12.25-12.28? Are there other notification or pre-accreditation options you think would work? Please set these out as fully as possible in your reply.**

13 Standard co-firing of biomass

13.1 Following the introduction of new bands for conversion and enhanced co-firing in the Government Response to the Banding Review Consultation, standard co-firing now refers to the combustion of less than 50% biomass by energy content in a fossil fuel-powered generating unit. A typical coal plant can be upgraded at a relatively modest cost to co-combust low volumes of biomass. The amount of biomass used – ranging from zero up to an operating maximum of typically between 10% and 20% biomass content – can be quickly adjusted in response to changing prices for electricity, coal and biomass feedstocks, with feedstocks such as food-processing residues purchased on the spot market or through short term contracts

13.2 While we estimate that the potential for standard co-firing under these new bands is limited; at 0.3 ROCs we do not predict any standard co-firing will take place in 2013/14 and 2014/15, and only rising to approximately 3.5 TWh in 2015/16 when support rises to 0.5 ROCs, we recognise that such estimates are very much dependent on future prices. Co-firing is the most uncertain and unpredictable of renewable technologies. Under the Levy Control Framework, we have a responsibility to ensure that we remain within budget and deliver our renewable energy targets, including interim targets. The transient nature of co-firing does not provide us with that surety.

13.3 In order to introduce greater certainty that we remain within budget, particularly over the first two years of the banding review period where the budget is most tight, we therefore propose, as a cost control measure, to limit deployment of standard co-firing through a reduction in the support rate. As standard co-firing, in comparison to other renewable technologies,

requires little by way of capital and operational investment, we consider this approach provides the least impact on the future development of and investment in renewable energy.

Co-firing with bioliquids, CHP and energy crops

13.4 Changes in the level of support for standard co-firing will also affect the levels of support for co-firing of bioliquids and for standard co-firing with CHP. As set out in our Government Response to the Banding Review, co-firing with regular bioliquids will receive one level of support, whatever the proportion of biomass combusted in the unit; whether standard or enhanced (up to 99% biomass). Regular bioliquids will not be eligible for support under the enhanced co-firing bands. Therefore, under our proposals, co-firing of regular bioliquids will also see its support fall in line with the proposed reduction in support for standard co-firing; i.e. lowering to 0.3ROCs/MWh in 2013/14 and 2014/15, increasing back to 0.5ROCs/MWh from 2015/16.

13.5 Under our proposals, standard co-firing with CHP will also receive a lower level of support with 0.8ROCs/MWh in 2013/14 and 2014/15 or 0.3ROCs/MWh plus the RHI. The standard co-firing with CHP band is intended to be closed to new entrants from 1 April 2015. The proposed reduction in the support level for standard co-firing will also have an impact on the level of support for standard co-firing of energy crops, as set out in the following chapter.

13.6 We recognise that this proposal could impact some standard co-firing where long term contracts are in place for feedstocks and where the contracts do not provide for flexibility in the amounts of biomass to be supplied. However, we do not believe this is the norm. Furthermore, in some cases, it might be possible for feedstocks provided for standard co-firing to be diverted instead to enhanced co-firing or conversion.

Consideration of the statutory factors

13.7 When considering RO support levels for renewable electricity technologies the Government must take into consideration all the statutory factors set out in Section 32D(4) of the Electricity Act 1989 (as amended by s.37 of the Energy Act 2008). The reduction in support rate for standard co-firing was considered as part of the Government response to the banding review, which took the statutory factors into account. The estimated impact on standard co-firing generation and RO spend are outlined in the accompanying Impact Assessment[21].

13.8 Based on the modelling analysis very limited deployment of standard co-firing with CHP or bioliquids are expected to come forward during 2013-2017 at current support levels. Therefore, the proposal to reduce support levels for these technologies is not expected to have significant impact on the deployment of standard co-firing with CHP or bioliquids, or on the associated cost to the RO budget from these technologies. However, it should be noted that accurately forecasting deployment under the RO support bands is very challenging and estimates are subject to considerable uncertainty.

[21] Impact Assessment available from http://www.decc.gov.uk/en/content/cms/consultations/biomass_ro/biomass_ro.aspx

Standard Co-firing	
Q18.	**Do you agree that support levels for standard co-firing and co-firing of regular bioliquids should be reduced to 0.3 ROCs/MWh in 2013/14 and 2014/15, and that support levels for standard co-firing with CHP should be reduced to 0.8 ROCs in 2013/14 and 2014/15?** **If not what levels would you recommend and why? Please provide evidence of the impacts of your proposal.**

14 Removal of energy crop uplift for standard co-firing

Introduction

14.1 The energy crop uplift was introduced in 2009 to provide sufficient support to overcome the initial higher costs of growing and processing perennial crops compared to other forms of biomass, and to increase the total biomass resource available for energy. Analysis by AEA[22] of future potential global biomass resource indicated that energy crops could provide the UK with a primary energy store equivalent to an additional 30 TWh in 2020 and up to 180 TWh in 2030 without impacting on food production, if all barriers to its production are removed. If this potential is realised, it is possible that a high volume of energy crops could be used to generate electricity in the next two decades.

14.2 The Government Response to the RO Banding Review set out the following decisions on the energy crop uplift:

- a change in the eligibility of energy crops to a defined list of species;
- to continue support for the use of energy crops with dedicated biomass at a support rate of 2 ROCs/MWh from 1 April 2013, degressing to 1.9 ROCs/MWh for new accreditations and additional capacity added in 2015/16 and 1.8 ROCs/MWh for new accreditations and additional capacity added in 2016/17;
- to grandfather the energy crop uplift with dedicated biomass, and
- to not extend the energy crop uplift to enhanced co-firing and biomass conversion bands.

14.3 The Government response also set out our proposal to consult on removing the energy crop uplift from the standard co-firing band (also referred to as the low-range co-firing band).

14.4 The decisions set out in the Government Response aim to support the continued use of energy crops while providing predictability on the RO spend with a low risk of exceeding this

[22] UK and Global Bioenergy Resource – Final Report (AEA, 2010), http://www.decc.gov.uk/assets/decc/What%20we%20do/UK%20energy%20supply/Energy%20mix/Renewable%20energy/policy/1464-aea-2010-uk-and-global-bioenergy-report.pdf

budget. The energy crop uplift has been grandfathered in the dedicated biomass band so as to provide surety to growers and generators going forward and to allow long term contracts to be established for energy crop supply chain investment. The cost risk is mitigated by the proposed dedicated biomass supplier cap on which we are also consulting.

14.5 Co-firing with energy crops is currently supported at 1 ROC/MWh, which represents an energy crops uplift of 0.5 ROCs compared to the support provided to regular biomass. In order to take a consistent approach to all co-firing bands, and limit the future potential costs to energy consumers, we propose to bring the uplift for the standard co-firing band to an end. We recognise that ending the uplift for co-firers could have an impact on feedstock contracts already in place with the potential to impact negatively on growers who have made up-front investment in the supply chain. Therefore, our aim is to bring the uplift to an end in a way which mitigates these impacts while remaining cost effective and practicable.

14.6 We also recognise that the decision to not extend the energy crop uplift to the enhanced co- firing bands creates a potential anomaly whereby standard co-firing may be eligible for the uplift but not to co-firing at levels above this. This could lead to a situation where standard co-firing with energy crops could be rewarded with a higher level of support than mid-range and co-firing (enhanced co-firing is rewarded with 0.6 – 0.9 ROCs). In order to ensure policy consistency, our preferred approach on removing the energy crop uplift from standard co-firing aims to limit the potential anomaly to as few generators and as limited an energy crop volume as possible.

15 Proposed approach for removal of energy crop uplift for standard co-firing

Preferred option: Maintain the energy crop uplift until April 2019 for existing energy crop contracts only

15.1 This option would bring the energy crop uplift for co-firing to an end on 1 April 2013, except for those generators who could demonstrate to Ofgem that they have in place existing contracts for the supply of energy crops for co-firing. Existing contract means a contract which has been signed and which has come into legal effect before 7th September 2012.

15.2 Generators with existing contracts would continue to be able to claim the 0.5 ROC uplift until 31 March 2019 for standard co-firing of energy crops supplied under those contracts. Once the energy crop uplift is brought to an end on 1 April 2013 (or 1 April 2019 in the case of existing contracts) standard co-firing of energy crops would receive the same level of support as standard co-firing of regular biomass.

15.3 In order to benefit from the continuation of the uplift until 31 March 2019 for existing contracts, generators would need to provide a copy of the contract to Ofgem and would need to provide information about the start date, duration and volume of energy crops that each contract is expected to supply. The generator would also need to be able to demonstrate to Ofgem's satisfaction that the electricity in respect of which the uplift is claimed was generated using energy crops which were supplied under the existing contract.

15.4 We consider that once the additional costs of planting and processing (typically 3-7 years) are overcome, energy crops could become cost competitive with other solid biomass feedstocks such as wood[23]. For example, the proposed end date of 2019 would allow one cycle of energy crop planting with 4 years of harvesting for Miscanthus, during which time all specialist investment in the supply chain should have been made.

15.5 It is possible that some existing contracts may be longer than 7 years, but we expect such contracts to be the exception rather than the norm. Therefore, we recognise that a 31 March 2019 cut off date for the uplift for existing contracts may have an impact on some planting and processing arrangements and on some contracts, but this option would provide over 6 years of transitional arrangements even though the energy crop uplift was not covered by our grandfathering policy.

15.6 However we recognise that this option could have a higher administrative burden for generators and Ofgem than other options, and potential difficulties in monitoring and enforcement. For example Ofgem would have to set up a system to check the various contracts, and monitor that the electricity in respect of which the uplift is being claimed was in fact generated using energy crops supplied in accordance with the existing contracts. Monitoring difficulties and gaming risks could be caused by complex contracts, difficulties in interpreting the contracts and by contracts with in-built flexibility or variability on the length or the quantities they cover. Requiring the contracts to have been signed and to have come into effect before 7th September should help reduce the risk of contracts being entered into specifically to take advantage of these transitional arrangements. The cut off date of 31 March 2019 also ensures that these transitional arrangements do not continue indefinitely.

15.7 This is Government's preferred option for bringing the energy crop uplift for standard co-firing to an end because the transitional arrangements are targeted at existing contracts with a clear cut off date, and so this option should deliver a high degree of certainty to the Government over the future cost of the uplift.

15.8 Where stations are able to benefit from the transitional arrangements outlined above, we propose to set the energy crop uplift for standard co-firing at 0.5 ROCs. As we are aiming to provide transitional arrangements for existing contracts it seems appropriate to keep the uplift in line with the current 0.5 ROC uplift for co-firing of energy crops. This does mean that the overall level of support will fall in 2013/14 and 2014/15 in line with the fall in support for standard co-firing of biomass, but it is not our intention with these transitional arrangements to insulate existing users of energy crops from changes in support levels that will apply to all standard co-firers.

[23] Domestic Energy Crops; Potential and Constraints Review, Project Number: 12-021, NNFCC, April 2012, http://www.decc.gov.uk/assets/decc/11/meeting-energy-demand/bio-energy/5138-domestic-energy-crops-potential-and-constraints-r.pdf

Generation type	Electricity NOT generated under existing contracts	Electricity generated under existing contracts until 31 March 2019
Low-range co-firing of energy crops	Same as low-range co-firing of regular biomass (i.e. 0.3 in 2013/14 and 2014/15, 0.5 in 2015/16 and 2016/17)	0.5 ROCs above prevailing low-range co-firing of regular biomass (i.e. 0.8 in 2013/14 and 2014/15, 1 in 2015/16 and 2016/17)
Low-range co-firing of energy crops with CHP	Same as low-range co-firing of regular biomass with CHP (i.e. 0.8 in 2013/14 and 2014/15 (or 0.3ROC/MWh plus RHI)). Band to be closed to new entrants from 1 April 2015.	0.5 ROCs above prevailing low-range co-firing of regular biomass with CHP (i.e. 1.3 in 2013/14 and 2014/15 (or 0.8ROC/MWh plus RHI)). Band to be closed to new entrants from 1 April 2015.

Table 5: Proposed support levels for low range co-firing under existing and new contracts

15.9 Where energy crops have been converted into a liquid fuel (i.e. a second generation bioliquid) for use in standard co-firing, the proposed support levels set out in the table above will apply.

Consideration of the statutory factors

15.10 In considering RO support levels for renewable electricity technologies the Government must take into consideration all the statutory factors set out in Section 32D(4) of the Electricity Act 1989 (as amended by the Energy Act 2008).

15.11 Analysis undertaken for the RO indicates that some deployment of standard co-firing with energy crops could come forward without the energy crop uplift (it is estimated that by the end of the RO Banding Review period SCF with energy crops would require ROCs in the range of 0.4-1.2[24]). According to DECC analysis maintaining the energy crop uplift of 0.5 ROCs for standard co-firing could result to a potential RO spend of up to £23m annually to 2016/17[25] for around 460-500GWh of standard co-firing generation from energy crops. Leading up to 2030 this is expected to reduce to zero as the overall level of co-firing falls. The estimated impact on standard co-firing with energy crops generation and RO spend are outlined in the accompanying Impact Assessment[26].

15.12 It is recognised that removing the energy crop uplift for standard co-firing could impact on the development of the energy crop supply sector and supply contracts already in place,

[24] Renewables Obligation Government Response Final Impact Assessment, DECC 2012, http://www.decc.gov.uk/en/content/cms/consultations/cons_ro_review/cons_ro_review.aspx
[25] To note, this assumes deployment prior to reduction in support for SCF in 2013/14 and 2014/15. Deployment (and therefore RO spend) is zero in 2013/14 and 2014/15 if SCF with energy crops is supported at 0.8 ROCs/MWh (instead of 1ROC/MWh).
[26] Impact Assessment available from http://www.decc.gov.uk/en/content/cms/consultations/biomass_ro/biomass_ro.aspx

although the extent of these impacts are very uncertain. The proposed approach - maintaining the energy crop uplift until April 2019 for existing energy crop contracts – is considered to provide sufficient time to allow most existing contracts to be honoured and for the supply chain to adapt to alternative markets, therefore mitigating any adverse impacts from the removal of the energy crops uplift. Further, the Government Response to the RO Banding Review set out the intention to grandfather the energy crop uplift in the dedicated biomass band so as to provide surety to growers and generators going forward and to allow long term contracts to be established for energy crop supply chain investment.

16 Other options considered to manage the removal

Retain the energy crop uplift in standard co-firing until 2019 only for generating stations who are already claiming the energy crop uplift

16.1 This option would entail a policy commitment to maintain the energy crop uplift for standard co-firing at 0.5 ROCs for any generating station which has previously or currently is claiming the energy crop uplift for co-firing of energy crops. Any generating station who has claimed the energy crop uplift between April 2009 and 31 March 2013 would be able to claim the uplift for standard (low range) co-firing of energy crops until 31 March 2019. Generating stations would not be eligible if they have not claimed the energy crop uplift for co-firing by 31 March 2013, and the band would be closed to any co-firing generating stations accrediting after 31 March 2013.

16.2 This option provides a way in which generators already using energy crops and having existing contracts in place can continue to live out these contracts until 2019, but without the administrative burden of the preferred option. This option carries little additional administration burden beyond business as usual. This option however could have higher spend risk compared to the preferred option as it allows new contracts to be put in place by existing or past users of energy crops, thereby allowing a future increase in the volume of energy crops. It can also be seen as providing a differential advantage across generators operating in the same market, beyond that required to provide transitional arrangements for existing contracts. It is therefore not put forward as our preferred option.

Retain the Energy Crop uplift for use with standard co-firing band across all generators until 2019

16.3 This option would be a policy commitment to retain the 0.5 ROC energy crop uplift for standard co-firing for both existing and new generating stations until 31st March 2019. After this date, any energy crops which are burnt by new, or by existing stations, in a standard co-firing unit will be offered the same rate as regular biomass feedstocks.

16.4 This proposal carries little administration burden beyond business as usual but does pose a risk that unexpectedly high volumes of energy crops could be supplied in the period to 2019, thereby having an impact on the cost of the RO to consumers. Although we expect this risk to be limited to the equivalent of a few 10s of thousands of hectares of new planting in the UK, and international energy crops markets to remain limited until 2019, the uncertain nature of the market and the potential implications for RO spend mean that this is not our preferred option.

Energy Crops	
Q19.	**Do you agree with our preferred option for the removal of the energy crop uplift for standard co-firing?**
Q20.	**Do you agree that where stations are able to benefit from the transitional arrangements, the energy crop uplift for standard co-firing should be 0.5 ROCs?**

Devolved Administrations

17 Scotland and Northern Ireland

17.1 The changes proposed would be applied to the Renewables Obligation (RO) which covers installations in England and Wales. Northern Ireland and Scotland are considering the applicability of these proposals to their Obligations and will consult in due course.

ANNEX A – Land Criteria as applied to solid biomass & biogas from April 2011

Operators of a generating station must provide information to Ofgem against the land criteria set out under Article 54(3) of the Renewables Obligation Orders.

The requirement to provide information on the land criteria only applies to a generating station which generates electricity from biomass (excludes waste, biomass wholly derived from waste, landfill gas or sewage) and has a declared net capacity greater than 50kW.

To comply with the land criteria, the biomass cannot be obtained from land that:

- at any time during or after January 2008 was primary forest;
- at any time during or after January 2008 was land designated for nature protection purposes (unless production of that biomaterial did not interfere with purposes for which this land was designated);
- at any time during January 2008 was peatland (unless the cultivation and harvesting of biomaterial did not involve the drainage of previously undrained soil);
- was a continuously forested area at any time during January 2008 and was not a continuously forested area when the biomaterial was obtained from it;
- was a lightly forested area at any time during January 2008 and was not a lightly forested area or a continuously forested area when the biomaterial was obtained from it, except where the fuel made from the biomaterial was not a bioliquid and the greenhouse gas emissions from the use of the fuel to generate one mega joule of electricity did not exceed 79.2 grams; or
- at any time during January 2008 was a wetland area and was not a wetland area when the biomaterial was obtained from it.

ANNEX B – UK Government's public procurement policy for wood

The following text is drawn from the "Timber Procurement Advice Note April 2010". The full 17-page document – which includes model text for specification and contract - is available from the CPET website: http://www.cpet.org.uk/files/TPAN%20April%2010.pdf

1. Timber Procurement Policy

The UK UK Government's public procurement policy for wood requires that:

From 1st April 2009, only timber and wood-derived products originating either from independently verifiable Legal and Sustainable sources or from a licensed Forest Law Enforcement, Governance and Trade (FLEGT) partner will be demanded for use on the Government estate – appropriate documentation will be required to prove it. From 1 April 2015 only legal and sustainable timber would be demanded.

By licensed 'FLEGT partner' is meant a timber-producing country that has signed up to a bilateral Voluntary Partnership Agreement with the European Union concerning the EU‟s Forest Law Enforcement, Governance and Trade scheme and whose timber and wood-derived products have been licensed for export by that country's government.

From April 2010, application of the timber procurement policy includes certain social criteria.

1.1 Scope of application of the policy

The policy applies to all central government departments, executive agencies and non-departmental public bodies (NDPBs) in England. Any such body receiving government funds is mandated to follow the timber procurement policy.

The policy applies to all timber and wood-derived products used on the government estate including temporary site works and material supplied by contractors.

The policy applies to virgin timber. As an alternative to demanding (i) either Legal and Sustainable timber or FLEGT-licensed or equivalent timber, Contracting Authorities can demand (ii) Recycled timber. Documentary evidence and independent verification will also apply to recycled timber and wood-derived products but will focus on the use to which the timber was previously put rather than the forest source.

Short-rotation coppice is exempt from the requirements of the timber procurement policy and falls under agricultural regulation and supervision rather than forestry. It should be noted that the European Commission is considering the development of sustainability criteria applicable to renewable sources of energy, including woody biomass.

1.2 Model specification text and model contract condition

Model specification text and a model contract is available from the full version of the Advice Note[27].

The model specification text should be included in specifications for all contracts and funding mechanisms involving the supply of timber or wood-derived products. Similarly, the model contract condition should be used as a supplementary condition to general conditions of contract for all contracts and funding mechanisms including the supply of timber or wood–derived products.

The model specification text in the full advice note requires contractors to ensure that any timber or wood-derived products supplied to the Government are from either Legal and Sustainable or FLEGT-licensed or equivalent sources and the model contract condition in the full advice note requires contractors to provide timber and wood-derived products as outlined in the specification. Bidders shall be required to indicate their acceptance of the contract conditions as a requirement of submitting a compliant bid. This can be achieved by bidders signing a statement to this effect as part of their ITT response. If they do not agree to abide by the contract conditions, their bid can be marked as non-compliant.

Public procurement law does not permit contracting authorities to include social criteria at the specification stage of a procurement unless these are, amongst other things, related to the subject matter of the contract. The social criteria now included in the UK Government's public procurement policy for wood are demonstrably linked to the performance of contracts and there is therefore scope to include them in contract conditions, hence they are set out in the full advice note. However, the social criteria should not be included in timber procurement specifications.

2. Implementing the policy

2.1 Practical support for implementation

The Central Point of Expertise on Timber (CPET) is Defra's technical advisory body. It was set up with Ministerial support in 2005 in response to an Environment Audit Committee report. CPET provides free advice and guidance to all public sector buyers and their suppliers.

CPET also publishes the UK government procurement criteria for legality and sustainability, assesses timber certification schemes and makes recommendations to government.

2.2 Evidence of legal and sustainable origin

If requested by Contracting Authorities, contractors are required to provide evidence that their timber or wood-derived products comply with the technical specifications. Where a Contracting Authority has doubts as to the credibility of the evidence, it may request that the contractor has the evidence independently verified. In order to demonstrate that timber is from a Legal and Sustainable source it is necessary to prove: The source of the timber (chain of custody): In general, timber and wood-derived products go through a number of stages between the forest and the final product. Since the policy applies to legality and sustainability in the forest, it is

[27] http://www.cpet.org.uk/files/TPAN%20April%2010.pdf

necessary to know the area of the forest the timber originated from. That the forest source was legally and sustainably managed: Once the source of the timber is known, then it is necessary to show that the forest was managed legally and sustainably. (See “UK Government timber procurement policy: Definition of Legal and Sustainable for timber procurement” which is available on the CPET website for further details).

Therefore, evidence related to both management of the forest and the chain of custody is required.

Two types of evidence are accepted:

2.2.1 Category A evidence

Category A evidence is independent certification under a scheme recognised by the UK government as meeting the criteria set out in the document entitled ‘UK Government Timber Procurement Policy: Criteria for Evaluating Certification Schemes (Category A Evidence)’ (available from Contracting Authorities on request and the CPET website). A list of assessed certification schemes that currently meet the government‟s requirements can also be found on the CPET website at http://www.cpet.org.uk/evidence-of-compliance/category-a-evidence/approved-schemes . Certification schemes include both forest management certification and chain custody certification.

2.2.2 Category B evidence

Category B evidence is documentary evidence (other than Category A evidence) that provides assurance that the source is legal and sustainable. Further information on collecting and evaluating Category B evidence is set out in the document titled “UK Government Timber Procurement Policy: Framework for Evaluating Category B Evidence” (available from Contracting Authorities on request and the CPET website). Category B evidence can be combined with Category A evidence (for example a certified forest of origin combined with non-certified evidence of chain of custody).

Government-defined standards for ‘legal and sustainable’ may be acceptable as part of Category B evidence; the definition of sustainable requires that a local definition of ‘sustainable is developed through an inclusive, multi-stakeholder process. Standards defined by governments or other groups constituting a single stakeholder group (e.g. an industry standard or an NGO standard) do not meet this requirement. However, if a single-stakeholder standard can be evaluated against a relevant multi-stakeholder standard which does meet the UK government requirements and which has been developed for the same geographical area, and can be shown to be broadly equivalent in terms of outputs, then it may be acceptable.

2.2.3 Evidence of FLEGT-licensed origin or equivalent

The Forest Law Enforcement, Governance and Trade (FLEGT) Action Plan is the foundation of the European Union’s efforts to support improvements to forest governance around the world. A key part of the FLEGT Action Plan is the negotiation of bilateral Voluntary Partnership Agreements (VPAs) between the European Union and timber-producing countries. Under the terms of a VPA a country agrees with the EU to implement a timber licensing system. From that country, the EU will only accept licensed products, and unlicensed products will be refused customs clearance with the aim of preventing illegal products from entering the EU market.

FLEGT-licensed timber: Once a licensing scheme has been established in a VPA partner country, licensed timber products arriving in the EU from that country should be accompanied by

appropriate licence documentation (effectively, the „FLEGT licence‟) which will be checked at import. It will then be necessary to have adequate supply chain controls in place from the point of import to the point of delivery to Contracting Authorities to demonstrate that the material being delivered was FLEGT-licensed. This is exactly the same as for any Category B-based evidence and could take the form of: A certified generic chain of custody system; or Adequate documented evidence of supply chain control.

Once a FLEGT-licensing system is fully operational the FLEGT licence will apply to relevant products from the partner country.

Currently there is no FLEGT-licensed timber available in the market and therefore further detailed guidance from CPET will follow as FLEGT-licensed timber become available. The CPET website will contain up-to-date information on which countries have signed VPAs, whether the licensing scheme in each country is operational, and what products are included in the scope of the scheme. Other information such as what licences look like in practice will also be provided by CPET.

Where a VPA between the EU and a timber-producing country has been entered into but the licensing system is not yet in operation, timber from that country may be accepted. After a VPA has been entered into, it is expected that there will be an interim period before a licensing system becomes fully functional. However, an individual timber producer in a country that has entered into a

Each VPA will specify which categories of product will be included in the scope of the licensing scheme. This will always include logs, sawn timber and plywood, but may not always apply to processed products such as mouldings, furniture or paper.

VPA may have put in place all the requirements for the licensing system prior to its official implementation (which would then make the licensing applicable to all exporters to the EU). In such cases, timber exported by that individual timber producer will be considered to meet the requirements of the UK Government‟s timber procurement policy where it meets all of the FLEGT requirements. The timber must also meet requirements for independently-verified compliance and supply chain controls that would apply if the licensing system were in place. In respect of timber from a particular origin, this option will be applicable only for an agreed period, reflecting the timetable agreed between the EU and the timber-producing country. Further advice on this is available from CPET.

FLEGT-licensed timber which has been processed in a third country may also be acceptable. Where FLEGT-licensed timber is exported from a country that has entered into a VPA to a country outside the EU for further processing prior to import into the EU, there must be adequate chain of custody controls in place to ensure that the material used in a product was covered by a FLEGT licence immediately prior to processing, and that no other timber other than acceptable legal and sustainable timber was used in the product. Further advice on this is available from CPET.

Equivalent evidence from countries that have not entered into a VPA and that demonstrates that all of the stringent FLEGT requirements have been met will be acceptable (as with all Category B evidence). These stringent requirements for equivalent evidence currently include criteria such as: a broad definition of legality developed through a multi-stakeholder process, application of the definition at the national level and to all exports within a product range, independent monitoring of the system and strengthening the capacity of forest law enforcement agencies to eliminate illegal timber production in the country or region. The guidance on equivalence to

FLEGT requirements will be refined as VPAs are developed and signed. All queries concerning FLEGT equivalence should be referred to CPET.

2.3 Evaluating evidence

Requesting copies of evidence: It is recommended that evidence of compliance should be requested using a risk-based approach. Thus, where timber is from a high-risk source, that is, where the record of forest governance is poor and forest management not always responsible, then proof should be routinely requested and, if found to be inadequate, independent verification required. Further information on risk assessment of sources is available from CPET.

Independent verification: The model contract condition set out in the full Advice Note reserves the right for a Contracting Authority to require independent verification of the evidence. Such independent verification must be provided and paid for by the contractor and must result in a report that (a) verifies the forest source of the timber or wood and (b) assesses whether the source meets the criteria for legal and sustainable or compliance with FLEGT-licensed requirements.

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URN: 12D/015