



Review of support levels for renewable electricity under Scotlands Renewable Obligation legislation

20 December 2011

CONSULTATION – ISSUES AND QUESTIONS

Other than the exceptions as set out in this document, do you agree that the Scottish Government should amend its bands and legislation in line with the proposals for the rest of the UK? If not, please explain where Scotland should differ and why (providing evidence as necessary).

No, further changes should be considered.

Community Energy

Given the Scottish Government's aim to share the benefits of Scotland's renewable energy revolution, and its targets for community-owned renewablesⁱ, a separate ROC band for community and non-profit renewables should be considered. While this would have to be feasible and practical, it could be set at 25% higher than the current bands, ensuring the broader additional benefits of community-owned renewables are properly incentivised. In Denmark, financial support for community-owned wind power has ensured that community renewables play a substantial role in overall renewable production, and has allayed community opposition to renewables more generally. If this is not feasible through ROCs then the Scottish Government should actively push the UK Government for a similar scheme through Feed-in-Tariffs.

Do you agree with our proposal to set enhanced band for both wave and tidal stream generation at 5 ROCs?

Yes, this seems sensible to encourage early deployment of these developing technologies.

What are your views on our proposal not to incentivise new large scale dedicated biomass electricity? Under which circumstances under would it be appropriate to set a threshold for electricity only generation? At what level should any threshold be set?

We support this proposal, although we would go further. Biomass is an inherently different type of technology than other renewable technologies, such as wind, solar or marine. Below we set out concerns that need to be addressed in subsidies for biomass.

1. Supply/demand

Unlike other renewable technologies that can rightly benefit from subsidies designed to increase demand, this approach to biomass risks the demand for fuel outstripping available supply. We believe any approach to biomass subsidy in Scotland should start with estimated Scottish supply of biomass. The Woodfuel Task Force estimates this as 432,000 tonnes, increasing to a potential 1,000,000 by 2020ⁱⁱ. There is a need to ensure that demand isn't allowed to outstrip this figure.

Some biomass developers, such as Forth Energy, are proposing that they will source their biomass from overseas; in Forth Energy's case North America and Scandinavia. Not only is this worrying from a carbon point of view, but there is no global overview of the impact that Scotland importing biomass could have on the world's forests. A range of organisations from North America have already raised concerns about this.ⁱⁱⁱ

If there is to be financial support for biomass through ROCs, there must be strict rules ensuring subsidies stop when it is apparent that Scottish demand for fuel is outstripping the sustainable availability of Scottish biomass supply.

2. Carbon neutrality

Unlike other renewable technologies that are genuinely carbon neutral, biomass releases carbon when burnt. While this can be offset if additional trees are planted to provide that resource, this payback period has been estimated to span decades if not centuries.^{iv}

In addition to this 'carbon debt' is the issue of 'indirect land-use change' (ILUC). This stems from the fact that use of biomass for energy necessitates that land cannot be used for alternative uses. As the European Environment Agency Scientific Committee has concluded:

"It is widely assumed that biomass combustion would be inherently "carbon neutral because it only releases carbon taken from the atmosphere during plant growth. However, this assumption is not correct and results in a form of double-counting, as it ignores the fact that using land to produce plants for energy typically means that this land *is not producing plants for other purposes*, including carbon otherwise sequestered."^v

ILUC remains unaccounted for in the international carbon accounting system for biomass, leading to serious climate change miscalculations and misdirected policy. In addition to the carbon impacts are the well-documented potential social impacts, including on indigenous communities and global food prices.^{vi}

A final complication around carbon is the transportation emissions associated with shipping and/or trucking biomass from where it is felled to where it is to be burnt.

Only by taking these factors together - carbon debt, ILUC, and transportation emissions – is a proper analysis of lifecycle biomass emissions attained. The UK Committee on Climate Change (CCC) Bioenergy review published in December 2011, found:

“The current accounting system in the UK reflects these lifecycle emissions only for domestically produced bioenergy feedstocks. Imported bioenergy, which accounts for the majority of total UK bioenergy consumption, is regarded as zero carbon in the national inventory, and hence in carbon budgets.”^{vii}

Given these concerns, it is clear that subsidies for renewable technology should not be provided unless installers and operators can guarantee that the biomass resource they are using is genuinely carbon neutral (including over what timescale) and avoids other negative human rights and ethical impacts. Biomass imports, even under a Forestry Stewardship Council certification, cannot provide this guarantee.^{viii} In our view it would therefore be inappropriate for the Government, even inadvertently, to subsidise imported bioenergy.

3. Efficiency of use

Because biomass is a depletable resource, it must be used wisely. This means, when used for energy, it must be used in the most efficient way possible. Biomass for electricity-only generation is incredibly inefficient. While we welcome Scottish Government moves to withdraw funding for large-scale electricity-only biomass, we believe there is no justification for subsidy for biomass for electricity at any scale. The cap should therefore be set at 0 MW.

Good quality biomass combined heat and power (CHP) however, can deliver high efficiency levels. While there may therefore be a case for subsidising good quality CHP there are issues around (a) what qualifies as good quality CHP and (b) biomass supply and carbon neutrality.

a) Good quality CHP

The EU Renewable Energy Directive (2009) states “In the case of biomass, Member States shall promote conversion technologies that achieve a conversion efficiency of at least 85 % for residential and commercial applications and at least 70 % for industrial applications”.^{ix} Similarly, DEFRA’s ‘Quality Assurance for Combined Heat and Power: The CHPQA Standard: Issue 3’ recommends efficiency levels of 70%.^x

However, the DECC Guidance Note 44 which the Scottish Government decided in 2009 to apply in Scotland, too, explicitly provides that for the purpose of ROCs this efficiency standard will not apply to all size power stations. It stated that to qualify for ROCs, biomass CHP Schemes over 25MW must demonstrate only 35% overall efficiency (gross calorific value).^{xi}

As such, if developers were able to achieve efficiency levels as low as 35% and remain eligible for the enhanced ROC banding for biomass with CHP, such a band would effectively serve as a loophole and undermine the intentions made by the Scottish Government to ensure

that biomass is deployed in a way to make the best use of available heat and deliver greenhouse gas emissions savings.

b) Carbon Neutrality

The issues around carbon neutrality of biomass, and sustainability of supply, outlined previously in this response, remain valid even if a more efficient use of the feedstock were to be made.

There must therefore be a cap for biomass with CHP. We understand Scottish Government research is suggesting the cap should be 10 MW for dedicated biomass. We believe this cap (10MW) must be extended to biomass with CHP. Alongside this, there must be strict regulations ensuring that demand doesn't outstrip the total sustainable Scottish supply, is locally sourced and properly managed ensuring genuine carbon emissions savings.

While Friends of the Earth Scotland considers biomass to be a potentially beneficial renewable source of energy and support the development of localised use of sustainably sourced biomass for heat generation, unless the Scottish Government can reassure us how it intends to address these concerns, we cannot have faith that ROCs for biomass are appropriate.

What are your views on:

- **whether or not our incentives under the ROS in Scotland should mirror the UK Government's proposals on enhanced co-firing and conversion?**
- **whether a maximum threshold for biomass CHP plants is required?**
- **the continued appropriateness of the 90% biomass content threshold?**

Co-firing

The consultation document states: 'The UK Government's proposals for enhanced cofiring and conversion as outlined in the UK Renewable Energy Roadmap are very ambitious, and raise similar questions to the promotion of large scale dedicated biomass in terms of poor efficiency, limited carbon benefits, scale of supply required and impact on the existing wood industry and renewable heat target.'

We fully agree with this statement and would note the recent publication of a number of reports outlining concerns about the carbon benefits of biomass and the inherent risk of demand outstripping supply.^{xii} In addition, co-firing will typically involve inefficient, older, electricity-only plants leading to further pressures on a limited supply.

It is therefore extremely disappointing and somewhat contradictory for the Scottish Government to propose the same banding for co-firing as the UK consultation. This banding should be removed.

Maximum threshold for biomass CHP plants

As outlined in the previous section we believe there should be a cap of 10MW for biomass with CHP plants, provided this is accompanied by strict rules ensuring it is highly efficient, the resource supply doesn't outstrip supply, is locally sourced and properly managed and ensures genuine carbon emissions savings.

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- i See: <http://scotland.gov.uk/Topics/Business-Industry/Energy/Energy-sources/19185/Communities> and <http://www.scotland.gov.uk/Publications/2010/11/26094907/6>
- ii Woodfuel Taskforce (March 2011) 'Update report to Scottish Ministers', available at: <http://www.forestry.gov.uk/forestry/INFD-7APFXA>
- iii Open letter of objection to Forth Energy's plans for construction and operation of four biomass power stations from American groups (March 2011: Biomass Accountability Project, Center for Biological Diversity, Dogwood Alliance, Friends of the Earth US, and Save Americas Forests. http://www.foe-scotland.org.uk/sites/files/foes_leithbiomass_objection.pdf
- iv Manomet Study of Woody Biomass Energy (June 2010) and subsequent responses to critiques, available at: <http://www.manomet.org/node/322> and Giuliana Zanchi Naomi Pena Neil Bird (May 2010) 'The upfront carbon debt of bioenergy', Joanneum Research, available at: http://www.birdlife.org/eu/EU_policy/Biofuels/carbon_bomb.html
- v European Environment Agency, Scientific Committee (September 2011) 'Opinion on Greenhouse Gas Accounting in relation to Bioenergy': <http://www.eea.europa.eu/about-us/governance/scientific-committee/sc-opinions/opinions-on-scientific-issues>
- vi Friends of the Earth International report (December 2011) 'In the REDD: Australia's carbon offset project in Central Kalimantan': <http://www.foei.org/en/resources/publications/pdfs/2011/in-the-redd-australias-carbon-offset-project-in-central-kalimantan/view>; and Molnar et al, (March, 2011) "Large acquisition of rights on forest lands for tropical timber concessions and commercial wood plantations". Rights and Resources Initiative (RRI) contribution to ILC Collaborative Research Project on Commercial Pressures on Land, Rome: http://www.rightsandresources.org/publication_details.php?publicationID=2242
- vii Committee on Climate Change (December 2011), 'Bioenergy Strategy Review', page 23: http://downloads.theccc.org.uk.s3.amazonaws.com/Bioenergy/1463%20CCC_Bioenergy%20review_bookmarked_1.pdf
- viii There are a number of reports that some FSC certificates are not guaranteeing rigorous social and environmental safeguards. In recent years founder members, Friends of the Earth England, Wales and Northern Ireland and FERN have withdrew support: <http://www.fern.org/leavingFSC> and http://www.foe.co.uk/resource/faqs/sustainable_timber_fsc.html. Moreover, by definition certification systems can only address sustainability on the level of individual plantations, not wider knock-on effects resulting from the increase in demand for wood and energy crops: e.g. the macro-effects of diverting land away from food production towards energy crops.
- ix See article 13, available at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:140:0016:0062:en:PDF>
- x Quality Assurance for Combined Heat and Power: The CHPQA Standard: Issue 3' (January 2009), available at https://www.chpqa.com/guidance_notes/documents/CHPQA_Standard_Issue3.pdf
- xi DECC Guidance Note 44, 'Use Of CHPQA To Obtain Renewables Obligation Certificates (ROCs) Including Under A Banded Obligation (Expected To Apply From April 2009)' Paragraph 10, page 9, available at https://www.chpqa.com/guidance_notes/GUIDANCE_NOTE_44.pdf
- xii Client Earth and NGO report (April 2011) 'Woody Biomass for Energy' available at: http://www.foe-scotland.org.uk/woodybiomass_report and Institute for European Environmental Policy (2010, November) 'Anticipated Indirect Land Use Change Associated with Expanded Use of Biofuels and Bioliquids in the EU – An Analysis of the National Renewable Energy Action Plans' – IEEP Launches Analysis of EU Nations Projected Use of Biofuels and their Consequences'