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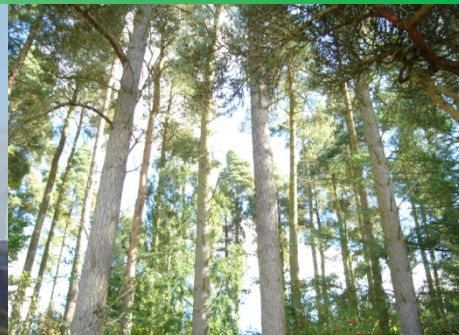
RENEWABLE ENERGY FOUNDATION

Biomass Supplies in Scotland

May 2010



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RENEWABLE ENERGY FOUNDATION

The Renewable Energy Foundation ***is publishing this paper on biomass supplies in Scotland as a contribution to the ongoing development of public policy in Scotland.***

We support electricity generation and heat production from biomass so long as it is cost effective and sustainable. There has been much very welcome development stimulated by the interest and commitment of the previous and present Scottish administrations and the industry itself.

However we perceive there to be some risks associated with the development of future projects that need to be understood and addressed. Much work is in place to do this. The Scottish Government needs to maintain the momentum.

There are two key points which need attention in our view. The first is that public policy ought to say something about the types of biomass developments which will better fit national objectives and possibly to rank them. The other is that measures to increase the supply of biomass material and wood fuel in particular must be implemented to head off the probability of a shortage of supply.

In the main we discuss the latter subject, future supplies, in this paper. However It would surely help if there was some guidance from the UK and Scottish Governments on the types of biomass plant that are more and less acceptable both planning terms and for the achievement of climate change targets . In other words is it preferable for plants to be developed that produce both electricity and heat rather or more than ones that do not make use of the heat? Setting aside carbon capture, is the thermal efficiency of co-firing plants preferable to electricity only generating plant reliant on biomass imports, or does this not matter? Should more small plants be developed closer to their fuel supply or fewer large plants on pre-existing transport routes.

There is an opportunity to address these issues in the context of the consultation from the Department of Energy and Climate Change on the grandfathering of support for biomass and anaerobic digestion and parallel Scottish consideration of that issue. The implications of grandfathering are discussed on page 14.

We would value any comments or response. Contact details are on page 4.

Conclusions and Recommendations

We conclude that

- **there is not enough indigenous wood fuel biomass supply available to meet possible future demand in Scotland**
- **if biomass supplies are limited there is a risk of significant levels of imports**
- **price rises are likely, and market casualties might occur amongst other users of wood such as chipboard manufacturers or the pulp milling industry – some companies may go offshore**
- **unless wood fuel supplies are increased the development of smaller combined heat and power schemes which make efficient use of biomass will be put at risk especially if large scale co-firing power stations draw supplies predominantly from within Scotland**
- **the environmental justification for new large thermal (even carbon capture ready) plant will be however undermined if co-firing is not included**
- **the achievement of Scottish Government targets could be put at some risk if wood fuel supplies are not increased.**

We recommend that

- **measures already identified to increase biomass supply are actively pursued**
- **local authorities devote resources to develop collection infrastructure for wood waste**
- **the Scottish Government and SEPA raise awareness of the opportunities to develop wood waste supply among private sector businesses**
- **the Scottish Government and SEPA look at the reclassification of biomass 'waste' to ensure its greater use**
- **the results of the Forestry Commission's research into creating a market trading structure in biomass supplies are implemented quickly and effectively**
- **any audit of harbour facilities should take into account and assess the prospects for the efficient and sustainable transportation of wood by sea from more remote and less accessible forests in Scotland.**
- **partnerships and joint ventures should be encouraged and developed whereby biomass suppliers can receive a share in the income from electricity generation and heat supply**
- **the Scottish Government promotes a skills' audit in the biomass industry**
- **the Wood Fuel Task Force is recalled to review these issues**

Table of Contents

Scope and Disclaimer

The Renewable Energy Foundation would like to thank the Forestry Commission Scotland and Forest Enterprise Scotland, Drax Group plc, Buccleuch Natural Fuels, Buccleuch Bio-Energy, Charlesfield First LLP and Viridor plc for their help with the background research. None of the aforementioned necessarily accepts or rejects any of the conclusions and recommendations.

A draft version of this paper was circulated to the afore-mentioned and various other colleagues, and this revised version responds to their observations and advice from which we continue to benefit.

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1. Introduction

The Renewable Energy Foundation supports the development of power stations that generate electricity and produce heat from biomass fuel supplies. Such plants make efficient use of biomass material.

Biomass fuel supplies come in three basic forms namely wood fuel including willow coppice, waste and agricultural products and residues such as straw. A number of plants of varying sizes are either operating or are planned throughout Scotland and the rest of the UK. At the same time some co-firing takes place at large existing coal fuelled power stations in UK.

Renewable Energy Foundation Scotland's interest in biomass was stimulated by the proposal to construct a new coal power plant at Hunterston in Ayrshire and the requirement placed on Scottish Power in 2005 to bring into use a purpose built biomass plant at Longannet power station by 2010 to replace the burning of dried sewage sludge. The Ayrshire facility is planned to be adjacent to the deep water port and close to the Hunterston B nuclear power plant due to be decommissioned by 2016. The power plant is suggested to have a capacity of 1,600 MW and would be fired predominantly by coal but with a biomass co-firing element. Part of the proposal includes preparing the plant for carbon capture technology currently in development. It is not our purpose to discuss in this paper whether Hunterston should be built, nor the state of development of carbon capture technology[1]. We refer to it as an example of the type of plant that might conceivably be built in Scotland

REF Scotland's starting point was to assess whether the establishment of a supply route to Hunterston would permit the development of smaller combined heat and power units in the supply chain across the south, south west and west central parts of Scotland. A factor to be considered in any discussion of biomass for electricity generation is the relative thermal efficiency of co-firing versus dedicated biomass plants. Thermal efficiency is a measure which reflects the amount of energy extracted from the source materials. Co-firing generators can achieve thermal efficiencies of approximately 35% and newer plants may reach 47%. The thermal efficiency of dedicated biomass generators is lower at around 20-25%. However, smaller dedicated biomass units have the advantage of drawing supplies from a relatively local catchment area and thus may be considered to be more sustainable in terms of transportation.

[1] A consideration with the planning and building of all energy generators, including biomass plants, is that the latest UK Government guidance requires that all combustion generating stations of the types specified in the Large Combustion Plant Directive with a generating capacity at or over 300 MW must be carbon capture ready. NPS Draft National Policy Statement for Renewable Energy Infrastructure EN-3 , Nov 2009, 2.5.27 .

Section 1.4.3 states that in Scotland "the Infrastructure Planning Commission will not examine applications for nationally significant generating stations or electricity network infrastructure. However, energy policy is generally a matter reserved to UK Ministers and this NPS may therefore be a relevant consideration in planning decisions in Scotland."

However after just the initial stage of our investigations, it became clear that there are serious questions about the extent of the available supply of biomass material across Scotland, both with or without the development of Hunterston or indeed, any plant of a similar size. We concluded early on that potential difficulties may arise for smaller scale plants in successfully obtaining local supplies in competition with very large users in the same catchment area.

2. Biomass Supplies

Looking at the three main sources of biomass fuel, each has specific considerations or constraints which need to be addressed before supply can be assured on a continuous and sustainable basis. Companies operating biomass power plants look to secure long term contracts to ensure their ability to generate. In this paper we concentrate on wood supplies.

There are other major users of wood such as the paper industry, chipboard manufacturers and those in traditional forms of timber use in for example the construction and pallet and packaging and to a lesser extent the furniture industries. Waste needs to be sorted to ensure a consistent quality and agriculture requires to organise so as to ensure continuous supply over a confirmed period at a guaranteed price.

After studying the available papers and talking to participants, REF Scotland's concern is that there may be lack of new supplies to meet a growing demand from energy generators. If the total amount of biomass material available remains constant or does not increase significantly, there could be competition between the types of wood users mentioned above, leading to an increase in the price of biomass material.

Chipboard manufacturers have already expressed concern in this regard and clearly a rise in price in their products would be passed on to consumers, or they may seek to secure supplies from imports which would have balance of trade implications. The Chairman of the Wood Panel Industry Federation was quoted in the Times of 16th November 2009 as saying that UK timber prices will go "through the roof"and has concerns that large parts of his £1billion industry that rely on wood as its main raw material "will be forced offshore".

There could be a significant effect in agriculture manifested by a drop in the production of other crops and changes in land use if on farm biomass demand grew and the sector sought to meet that demand. Some change in land use may have both commercial and environmental benefits, for example, where mixed woodland replaces mono-culture.

There is an appreciation among some key players that available wood biomass supplies have been overstated. All of those to whom we spoke were clear that the figure in the Wood Fuel Task Force Report of 5.4 million tonnes of waste available for biomass plants was unachievable in the short term. The figure was robust only in the sense of its being a theoretical maximum. Commentators say that a more realistic figure of what might in practice be available in the short and medium term is in the range of 500,000 to 750,000 tonnes.

Detailed references can be found in "Arisings of Waste Wood from the Scottish Waste Management Industry for the Development of the Biomass Industry" (Remade Scotland, 2009) and "Wood Waste Market in the UK" (Poyry Forest Industry Consulting Ltd and Oxford Economics Ltd, 2009). Clearly shortfalls in supplies could be made up by material either from the rest of the UK or from imports but it has to be of concern that the availability of the majority of the predicted, future increased supply from within Scotland is questionable.

3. Implications in electricity and heat generation

The recent report 'Renewable Heat in Scotland' published by the Sustainable Development Commission, Scotland comments that "68% of Scotland's renewable heat capacity and 74% of its renewable heat output comes from 15 plants of 1MW + size. All but one of these plants uses forestry derived biomass."

The "significant amount" of large scale renewable heat plant in development will use wood fuel.

> **"*Of the 77 GWh worth of plant currently under construction, 64 GWh comes from biomass CHP plants being built at two wood processing sites: UPM Caledonian Paper at Irvine, and Balcas' pellet plant at Invergordon. Another 390 GWh worth of woodchip CHP is either consented but not built, or in planning, including 200 GWh from the Tullis Russell CHP plant in Fife.***
>
> ***All these plants will have identified, and possibly forward-purchased, an available wood fuel supply. There seems, therefore, to be potential to at least double heat delivery from forestry-derived fuels in Scotland.***
>
> ***From discussions with the Forestry Commission Scotland, however, we understand there are limits to the supply of domestic woodchip for large plants. Future large scale plants may therefore find it more challenging to establish bulk woodfuel contracts (using domestic supply), as has been the case for pants in operation or construction*"**

The Commission notes a "projected" increase in supply from the private sector dependent upon market conditions and supply chain co-ordination but continues that

> **"*further bulk woodfuel contracts are likely to require a mix of materials including diversion of wood from established non energy markets (including export of low value wood, greater use of treated wood waste and or import of woodfuel*."**

The unstated dangers are that supply constraints put up prices or inhibit developments casting into doubt some of the Commission's predictions for desirable growth.

Furthermore if future growth in indigenous supplies is limited this could degrade the justification for large new plants. If supplies to such plants are curtailed and restrict

cofiring capability or have to be imported, their sustainability is less certain. In other words, if the case for a development is based on the efficiency of a new plant, carbon capture and storage and a given percentage of cofiring, the justification for the plant is reduced if the cofiring target cannot be achieved or can only be achieved by imports.

REF Scotland understands that the preferred model for biomass plants in Austria and Germany is for smaller scale units which source material from within a limited radius of the plant. That model would seem also to be appropriate to Scotland given that there is a diversity of forestry across the country. Both the Forestry Commission Scotland and the Sustainable Development Commission Scotland comment favourably on such a trend. Public policy is seeking to extend forest coverage into parts of Scotland which do not currently have large reserves which is all to the good. It is of course the case that new plants such as at say Hunterston or Leith could make use of the port facilities by bringing supplies either from more remote Scottish forests by sea or by importing from overseas supplies. That is indeed what appears to be proposed in the Forth Ports developments.

REF Scotland has tried to put figures in meaningful terms to some of these points of concern and we set them out below. They are rounded estimates which make available a basis for discussion but indicate to us a clear conclusion.

4. The current position of biomass supply

Tables 1 and 3 set out REF Scotland's understanding of the current and future position of biomass supply across the country. The figures show that there could be about 2.9 million oven dried tonnes of biomass material available based upon the Wood Fuel Task Force Report, 2008 and subsequent updated information.

Table 1

Type of Material	Potential Resource Oven Dry (t)	Committed Material Oven Dry (t)	Available Resource Oven Dry (t)
Hardwood - Logs	112,519	25,000	87,519
Softwood - Logs/SRW	3,446,500	3,206,500	240,000
Sawmill chips+	844,393	844,393	0
Softwood Brash / Branch wood	382,695	1000	381,695
Softwood Stumps/roots*	35,000	0	35,000
Small & Neglected woods++	50,000	0	50,000
Arboricultural arisings	268,000	0	268,000
Short rotation coppice	2,400	0	2,400
Short rotation forestry	600,000	0**	0**
Landscaping	98,000	0	98,000
Commercial and Industrial+++	602,234	208,000	394,234
Wood processing	244,000	0	244,000
Similar to agricultural waste	531,000	0	531,000
Total	7,216,741	4,284,893	2,331,848

+ Calculation of volumes based on 35% of softwood sawlog volume
++ Very rough estimate based on area and conservative volume production
+++ Remade Scotland (May 2009), "Arisings of Waste Wood from the Scottish waste Management Industry for the Development of the Biomass Industry", Glasgow Caledonian University, Glasgow http://remade.org.uk/media/13348/woodwastefromscottishwastemanagementsector_may2009.pdf
* Rough estimate for FCS land only
** The figures for both committed and available resources are set at zero but should become available over time

Table 1 is basically a combination of the main parts of Tables 1 and 2 in the Wood Fuel Task Force report in section 10 entitled 'Overall Potential Resource Availability'.

The figure in the WFTF report of up to 5.4 million tonnes per annum under Commercial and Industrial biomass waste +++ has been replaced with Remade Scotland's more realistic assessment of what is said to be available. The figure of 2.9 million for additional supplies of oven dried tonnes per annum may satisfy some of the demand for biomass fuels for medium sized and smaller plants that are envisaged and in the planning application process, in the latter category for example, the proposed CHP plant at Charlesfield near St Boswells in the Scottish Borders.

Co-firing requirements at Hunterston, suggests that up to 800,000 oven dried tonnes per annum may be required. The figure for Longannet will be approximately 140,000 oven dried tonnes per annum.

Scottish biomass supplies are of course available to the UK electricity generation market. Power plants in the north of England are clearly interested in obtaining biomass supplies from within the UK. The south of Scotland in particular is within a sustainable and cost effective transport range particularly if delivery can be achieved by rail. For example, MGT Power is to put a planning application to North Tyneside Council for a "green energy plant that will power 600,000 homes" (Hunt, A. 2009). This would have a capacity of 295 MWe. A similar plant on Teesside is already proposed by the company.

Further south in Yorkshire, Drax Group plc wishes to build two biomass plants, named Heron and Ouse, which combined, will have a total capacity of just under 600 MWe. A third 300 MWe plant is actively being considered. In addition, Drax proposes to increase the co-firing element at its coal fired facility, the eventual capacity of which will be up to 500 MWe. (Drax Group plc, 2008)

Drax will use up to 2 million oven dried tonnes per annum of oven dried biomass material per annum after construction of a 400 MWe direct injection biomass facility is in place at its main power station and up to 4.5 million oven dried tonnes per annum at the three dedicated biomass plant. Not all of the biomass material will be wood as the power station is sited in an arable farming area and a purpose built straw pelleting plant has recently been completed on site (Drax Group plc, 2008).

A recent UK Parliamentary Written Answer on 23rd February made clear that the amount of biomass material required to supply the combined total of consented and in planning dedicated biomass applications for England and Wales is 20.85million tonnes per annum. The full text of the Answer is set out in Appendix One. This is to enable the reader to see both how the figure has been calculated and the assessed supply needs of plant above and below 50 MWs, the former requiring the approval of

the Secretary of State and the latter the approval of the local authority in which the plant is proposed to be located.

The Times **on 18th November, 2009 reported that "the Forestry Commission has predicted a 150 per cent surge in British wood imports from 20 million tonnes today to 50 million tonnes by 2015."**

It follows that there could and surely will be demand for Scottish biomass supplies from plants in other parts of the UK

Table 2 below gives a rough approximation of the scale of some of the new demand that is likely to occur in Scotland and the north of England. There may well be other sources of new demand.

It would seem highly likely from this evidence that there will be greater competition for Scottish biomass supplies and potential shortages. Nevertheless on this rough and ready calculation of identified plant, those in Scotland alone appear to require 700,000 tonnes more than the available resource in the end column of Table 1 above.

It is only if the Forth Ports and Hunterston developments are served by imports that there is room for supply to new and as yet unidentified plants from Scottish sources.

Table 2

Proposed Operations	MW Installed Capacity	Oven Dried Tonnes per annum
Drax Power Station*	500	2,000,000
Hunterston*	240	800,000
Forth Ports and SSE	400	2,000,000
Ouse	300	1,500,000
Heron	300	1,500,000
Unnamed (Drax)	300	1,500,000
Tullis Russell Markinch	45	225,000
Longannet	25	125,000
Charlesfield	7	35,000
MGT Power Tyneside	295	1,475,000
MGT Power Teeside	295	1,475,000
(Scottish plant)	(717)	(3,185,000)
Total	2262	12,635,000

***co-firing**

Both the Forth Ports and Hunterston developments will take time to come on line presuming that they receive planning permission and are built.

Table 3 looks at the longer term picture. It is an adapted version of Table 3 in the WFTF report where 5.4 million tonnes is again replaced by more realistic figures and shows the potential growth in supply over the period up to 2021.

Here we have included estimated figures for short rotation forestry which are perhaps optimistic at least initially. The conclusion is the same that indigenous supplies to Scottish plants remain tight until at least five years' time. Unless the big new users import and the rest of the UK ignores Scottish sources, the challenge is clear.

Table 3

Potential available material additional to existing market consumption

Type of material	Volume	2007/11 Oven Dry (t)	2012/16 Oven Dry (t)	2017/21 Oven Dry (t)
Hardwood – Logs	New	87,519	85,701	78,395
Softwood – Logs/SRW	Existing	240,000	868,500	1,264,500
Sawmill chips+	Existing	0	153,982	251,002
Softwood Brash / Branch wood	New	381,695	394,001	394,000
Softwood Stumps/roots*	New	35,000	35,000	35,000
Small & Neglected woods++	New	50,000	50,000	50,000
Arboricultural arisings	New	268,000	268,000	268,000
Short rotation coppice	New	2,400	2,400	2,400
Short rotation forestry	New	117,600	297,600	597,600
Landscaping	New	98,000	98,000	98,000
Commercial and Industrial+++	New	394,234	602,234	602,234
Wood processing	New	244,000	244,000	244,000
Similar to agricultural waste	New	531,000	531,000	531,000
Total		2,449,448	3,630,418	4,416,131

+ Calculation of volumes based on 35% of softwood sawlog volume
++ Very rough estimate based on area and conservative volume production
+++ Remade Scotland (May 2009), "Arisings of Waste Wood from the Scottish waste Management Industry for the Development of the Biomass Industry", Glasgow Caledonian University, Glasgow
http://remade.org.uk/media/13348/woodwastefromscottishwastemanagementsector_may2009.pdf
* Rough estimate for FCS land only

5. Prospects for additional supplies

Below we look at certain areas for additional supply which are incorporated in Table 1 above. There is still a lot to be done to achieve these levels of supplies.

Discussion with Forestry Commission and Forest Enterprise in Scotland confirmed the overall picture of rising demand for wood fuel biomass. Much of the product from

Forestry Commission land is tied up in long term contracts. The Scottish Government's Climate Change Plan (2009) has, however, set a higher target of 15,000 hectares per annum for planting against the previous 10,000 hectares per annum. Whilst important this does not particularly assist the supply situation in the short and medium term unless the additional 5,000 hectares per annum is planted on a short rotation basis.

The Forestry Commission has indicated that it is possible to obtain greater levels of production by improved planting and thinning techniques and the better use of brash and branch wood material, and that this could contribute to some of the increased demand. This would be in the region of 400,000 oven dried tonnes per annum. As previously commented this is best used closer to source than transported over long distances as it is more difficult to transport before being chipped.

Buccleuch Natural Fuels advised in discussion that additional wood biomass material would be available from the private sector however owners of plantations look to secure long term contracts when the price is at the top of the market for the best return on their assets. Also private owners may not necessarily reinvest in forestry and could look to other land uses unless there were economic incentives to drive such an investment.

Nevertheless Buccleuch Natural Fuels suggest that there could be up to one million green tonnes to supply the market place but this would require the efforts of a brokering agency to identify the tonnage, negotiate the contracts and ensure delivery. Most of this deliverable tonnage would come from over-burden, thinning, brash and stumps with a limited amount from the main part of the tree.

Undoubtedly there is potential to collect more wood waste but this would infer the development of waste collection infrastructure, particularly by local authorities. There have to be doubts as to the scale that such infrastructure could be put in place given the current state of public finances in Scotland. Viridor plc confirmed that the wood waste that it processes at its west of Scotland plant is from supermarket pallets and agreed that recovery of other wood waste should be achievable. The Tullis Russell plant at Markinch is reported to be looking to burn mostly wood fuel waste.

Infrastructure costs could be reduced if wood waste was sorted by those disposing of it rather than by the local authority. The Scottish Government may wish to consider a pump priming scheme to stimulate this market. The market may see joint ventures or incentive schemes which could perhaps give the waste provider a share in the profits of generation to secure their interest and long term commitment.

There is some concern about regulations defining wood waste and in particular what is and what is not fit for combustion. Many in the sector believe that it is time to review and relax the criteria so that more material is made available. Such detailed consideration is for specialists but ultimately the Scottish Government should consider the nature and balance of risks in burning more wood waste. Some may suggest that the carbon account benefits of greater wood fuel supply will outweigh additional local atmospheric pollution and attendant health risks of greater quantities of certain pollutants. This view is contentious but a better balance might be achievable. It is probable that some waste wood can be made available to the market with insignificant local pollution impacts, and the Scottish Government ought to instruct SEPA to report on the questions raised and commission independent opinion. It would be a pity to lose an opportunity to increase supply.

Many of those to whom we spoke identified a further constraint on development of wood biomass supplies in the availability of skilled labour throughout the supply chain. This is an area which the Scottish Government and Scottish Enterprise are said to be addressing. A skills' audit would clearly establish the type of skills shortages which could then be addressed in further and higher education and employment training.

6. Wood Fuel Task Force

Public policy makers have given considerable impetus to the development of biomass as a form of electricity and heat generation in the last ten years. It is important in our view to maintain that momentum.

REF Scotland believes that there are enough live issues to justify the reconvening of the Wood Fuel Task Force to give them detailed consideration. Apart from any new matters the WFTF could usefully consider what has happened since it reported on the various recommendations and proposals that it set out.

The Wood Fuel Task Force (WFTF) reported in January 2008. The Scottish Government responded in May 2008. The first eight recommendations of the Wood Fuel Task Force Report (WFTFR) were grouped under the general title of improving knowledge. None of these could be considered as other than sensible, but two years on, the progress on implementation remains unclear. Recommendations 9 and 10 address efficient markets and REF Scotland recognises that these were matters for the industry to pursue.

Six recommendations in the original report addressed the question of an effective supply chain. Recommendation 13 on skills in the industry is particularly important if there is to be increased production. The Scottish Government's response effectively put the onus on the industry rather than confirming its own involvement in skills promotion. As mentioned above, there are actions that the Scottish Government and Scottish Enterprise can take in this area.

Recommendation 14 seeks to ensure better source segregation to reduce clean wood going to landfill. The Scottish Government undertook to have further detailed discussion with Scottish Environmental Protection Agency (SEPA) and Convention of Scottish Local Authorities (CoSLA). Parliament needs to enquire urgently into progress in this area. Local authorities' waste collection would seem an obvious way to increase wood fuel supply as discussed in comments on recommendation 25 below.

Recommendations 15 and 16 talk about utilising arboriculture arising as a wood fuel, keeping it out of the waste stream and the increase in wood recycling initiatives. Their pursuit has been largely been passed to the industry but given that there is doubt about the 5.4 million tonnes, the least the Scottish Government ought to do must be to monitor progress on these recommendations.

Recommendations 17 to 21 discuss support and incentives. REF Scotland has no quarrel with any of the recommendations or the Scottish Government's responses but is keen to see the Forestry Commission develop the "properly targeted grant" that will encourage growers to bring branch wood and brash to market.

Recommendations 23 to 25 cover planning and regulation. REF Scotland endorses recommendation 23 that new wood fuel developments should be "in areas where timber is readily available and energy facilities located where heat use is viable".

REF Scotland considers recommendation 25 to be of particular importance. Scottish councils should operate recycling centres that offer waste biomass recovery services. Assistance to do so should come in the form of capital and revenue support grants from central government to facilitate a comprehensive infrastructure.

7. Other considerations

Energy generators receive Renewables Obligation Certificates (ROCs) for energy generated from renewable sources. Electricity generation and thus indirectly heat production, are effectively subsidised by the energy user through the Renewables Obligation mechanism.

In April 2009 revisions to the Renewables Obligation in both Scotland and the rest of the UK led to the introduction of banding whereby less established technologies now receive more ROCs per MWh than older, more established renewable technologies. Biomass falls into the latter category.

Unlike other renewable technologies, biomass generators do not have 'grandfathered' rights. They are not entitled to stay in the particular ROC band if subsequent RO revisions result in changes to that technology's banding structure. The biomass renewables industry has expressed concern about this issue and a Department of Energy and Climate Change consultation on grandfathering in relation to biomass and anaerobic digestion technologies is open for submissions until 28th May 2010.

It would be unwise in our view for there to be a different approach to grandfathering for these technologies in the different UK jurisdictions as this could lead to market complications and inefficiency. If, for example, Scotland was judged to have a support regime more advantageous than in England and Wales, plant development could subsequently put huge pressure on Scottish biomass supplies.

The outcome of the DECC consultation will raise important issues and the industry will look for clarity from both the Scottish and UK governments on their future approach. It seems to us that this is the moment to address the issues of supply of biomass material and priority for types of biomass plant.

Moreover some will argue that in view of the ability of energy generators to receive ROCs at all, they could be said to have an unfair advantage in competition for supplies over other users of wood in so far as a mechanism exists to support the price at which they sell their commodity.

In a more extreme situation there could be a public policy conflict between the desirability of giving incentives to generating renewable and sustainable sources from renewable sources and competition policy.

Nevertheless, government will doubtless see no alternative to the present incentive structure given that it has formed the basis of investment decisions by companies and others. Practically speaking, then amendments to the ROC structure in Scotland should concentrate on promoting technologies in their earliest stage of development and rewarding higher load factor and dispatchability. The former has of course been the case hitherto but not the latter.

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Appendix 1

Hansard - 23rd February, 2010

Paddy Tipping: To ask the Secretary of State for Energy and Climate Change what estimate he has made of the amount of biomass needed to fuel proposed new wood-burning power stations; and what proportion of it he expects will be from UK sources. [317107]

Mr. Kidney: Power stations of over 50 MW in England and Wales are subject to consent by the Secretary of State under section 36 of the Electricity Act 1989.

Biomass capacity of up to 849 MWe has been approved under the Section 36 consenting regime since 2007, which is expected to use up to 6.77 million tonnes of biomass per year when all plants are operational. There is also 1,289 MWe biomass capacity currently under consideration by the Secretary of State, which if consented would use up to a further 10.56 million tonnes of biomass per annum. Therefore, the combined total of consented and in planning biomass applications for England and Wales, of plants over 50MW, is 2,138 MWe potentially using up to 17.33 million tonnes of biomass per annum. This capacity includes both dedicated biomass power plants and combined biomass and energy-from-waste power plants.

Power stations of 50MW and under, in England and Wales, are considered by the local planning authority in the normal planning regime.

According to the UK RESTATS database, which has collected renewable energy data since 1989, dedicated biomass power capacity of up to 349.6 MWe has been consented by local planning authorities in England and Wales. This consented capacity, assuming a typical 25MW plant will use up to 0.2 million tonnes per annum, would use up to 2.80 million tonnes of biomass per year when all plants are operational. There is also a further 90.1 MWe dedicated biomass capacity under consideration, which is expected to use up to 0.72 million tonnes of biomass per annum. Therefore, the combined total of consented and in planning dedicated biomass applications for England and Wales, of plants 50MW and under, is 439.7 MWe using up to 3.52 million tonnes of biomass per annum.

It is not possible to separately identify the wood-burning capacity as most plants will have the flexibility to use a range of biomass fuels according to cost, availability and other considerations.

Robust biomass supply chains are only now becoming established across the UK and biomass fuels are increasingly traded as a global commodity. Therefore, we expect, in the short term at least, that these plants will use a significant volume of imported biomass, together with wood fuel sourced from managed UK forests and woodlands and from other sources such as the by-products of our timber industry, home grown perennial energy crops such as miscanthus grass and short rotation coppice (SRC) willow, and a range of biomass fuels derived from waste as defined under the renewables obligation