National Assembly for Wales
Sustainability Committee

Inquiry into the Supply and Demand for Woody Biomass

July 2010
The National Assembly for Wales is the democratically elected body that represents the interests of Wales and its people, makes laws for Wales and holds the Welsh Government to account.
National Assembly for Wales
Sustainability Committee

Inquiry into the Supply and Demand for Woody Biomass

July 2010
**Sustainability Committee**
The Sustainability Committee is appointed by the National Assembly for Wales to consider and report on issues affecting Climate Change, Energy, Rural Affairs and Agriculture, Environment and Planning.

**Powers**
The Committee was established on 26 June 2007 as one of the Assembly's scrutiny committees. Its powers are set out in the National Assembly for Wales' Standing Orders, particularly SO 12. These are available at [www.assemblywales.org](http://www.assemblywales.org)

**Committee membership**

<table>
<thead>
<tr>
<th>Committee Member</th>
<th>Party</th>
<th>Constituency or Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kirsty Williams (Chair)</td>
<td>Welsh Liberal Democrats</td>
<td>Brecon and Radnorshire</td>
</tr>
<tr>
<td>Lorraine Barrett</td>
<td>Labour</td>
<td>Cardiff South and Penarth</td>
</tr>
<tr>
<td>Joyce Watson</td>
<td>Labour</td>
<td>Mid and West Wales</td>
</tr>
<tr>
<td>Irene James</td>
<td>Labour</td>
<td>Islwyn</td>
</tr>
<tr>
<td>Leanne Wood</td>
<td>Plaid Cymru</td>
<td>South Wales Central</td>
</tr>
<tr>
<td>Angela Burns</td>
<td>Welsh Conservative Party</td>
<td>Carmarthen West and South Pembrokeshire</td>
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<tr>
<td>Karen Sinclair</td>
<td>Labour</td>
<td>Clwyd South</td>
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<tr>
<td>Rhodri Glyn Thomas</td>
<td>Plaid Cymru</td>
<td>Carmarthen East and Dinefwr</td>
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<tr>
<td>Brynle Williams</td>
<td>Welsh Conservative Party</td>
<td>North Wales</td>
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</tbody>
</table>

The following Member(s) were / was also a member of the Committee during this inquiry:

| Michael German           | Welsh Liberal Democrats    | South Wales East                    |
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The Committee’s Recommendations

The Committee’s recommendations to the Welsh Government are listed below, in the order that they appear in this Report. Please refer to the relevant pages of the report to see the supporting evidence and conclusions:

**Recommendation 1.** The Committee recommends that the Welsh Government use the newly appointed powers conferred by *The National Assembly for Wales (Legislative Competence) (Environment) Order 2010* to introduce restrictions on sending wood to landfill.  
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**Recommendation 2.** The Committee recommends that all available biomass material from the Assembly Government Woodland Estate is recovered and that existing unmanaged privately owned woodlands are brought under management by utilising incentives.  
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**Recommendation 3.** The Committee recommends that the Welsh Government examines the problems associated with establishing and managing a woodland and assess whether the process can be simplified.  
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**Recommendation 4.** The Committee recommends that the Welsh Government take into account the affect the Renewable Obligation and the implementation of the Renewable Heat Incentive could have on the existing market when implementing their biomass and forestry policies.  
(Page 17)

**Recommendation 5.** The Committee recommends that the Welsh Government does its best to ensure that existing wood using industries in Wales are not excluded from the market by the wood being diverted exclusively for burning.  
(Page 17)

**Recommendation 6.** The Committee recommends that the Welsh Government only approves projects under 50MW which are compliant with the Waste Incineration Directive and ensures that any projects to be built in Wales over 50MW which are approved by the UK Government Infrastructure Planning Unit also comply.  
(Page 17)

**Recommendation 7.** The Committee recommends that the Welsh and UK Government establish minimum heat use efficiency standards
for plants and ensure that as a prerequisite to Government support the plant must meet these standards. (Page 18)

Recommendation 8. The Committee recommends that the Welsh Government, or an elected body, work with suppliers to ensure their individual support requirements are being adequately met i.e. through the Economic Renewal Programme. (Page 18)

Recommendation 9. The Committee recommends that the Welsh Government promotes the use of timber in new builds and provides assistance for developers using timber to ensure British and European Building Regulations are conformed to. (Page 18)
1. Introduction

1. The Sustainability Committee agreed to undertake a short inquiry into biomass in Wales.

2. The Committee agreed the following terms of reference for the inquiry:

   To explore the extent to which the supply of biomass fuel in Wales will be able to meet additional demand as a result of incentives such as the Community Scale Renewable Energy Generation scheme and Renewables Obligation Certificates.

   To explore ways the Welsh Government can support and provide opportunities to stimulate the increased production of biomass within Wales.

Importance of biomass

3. The Committee agreed to undertake this inquiry, because we recognise that increasing the use of bio-energy has the potential to substitute for fossil fuels, reduce greenhouse gas (GHG) emissions, and contribute to other policy objectives such as rural development. We were also aware of the concerns held by the wood panel industry that the continued development of large power stations would lead to the diversion of timber from existing markets. According to the BIOMASS Energy Centre website, which is owned and managed by the UK Forestry Commission:

   “Biomass is a renewable, low carbon fuel that is already widely, and often economically available throughout the UK. Its production and use also brings additional environmental and social benefits. Correctly managed, biomass is a sustainable fuel that can deliver a significant reduction in net carbon emissions when compared with fossil fuels.”

The position in Wales


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1 BIOMASS Energy Centre, [Who are we?](#), website [accessed on 4 July 2010]
complemented the *Renewable Energy Route Map for Wales* which was issued for consultation in February 2008.

5. The *Bioenergy Action Plan for Wales* set out the future potential of bioenergy in Wales by aiming to generate at least 5 terawatt hours (TWh) of electricity from renewable biomass by 2020. It also aimed to have biomass provide 2.5 TWh of useable heat energy by 2020. It was estimated that this would result in a reduction of approximately 3 million tonnes of carbon dioxide emissions per year in comparison with generation based on fossil fuels. ²

6. These aims were taken forward in the Welsh Government’s *Energy Policy Statement*, published in March 2010, which stated the aim of delivering by 2020 up to 6 kilowatt hours per day per person (KWh/d/p) in Wales of electricity from biomass, 50 per cent indigenous and 50 per cent imported, and a heat potential of 2 – 2.5 kWh/d/p in Wales. ³

7. The *Bioenergy Action Plan for Wales* identified the following mix of biomass fuels that would need to be deployed annually to deliver its 2020 aspiration:

**Table 1: 2020 Bioenergy potential fuel requirements and current fuel availability within Wales.** ⁴

<table>
<thead>
<tr>
<th>Biomass fuel type</th>
<th>Quantities required to meet 2020 Wales Bioenergy estimated potential</th>
<th>Quantities currently available for energy generation in Wales</th>
<th>Difference between fuel requirements and current fuel availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forest woodfuel and non-contaminated waste wood</td>
<td>692,000</td>
<td>333,000</td>
<td>-359,000</td>
</tr>
<tr>
<td>Possibly contaminated waste wood</td>
<td>345,000</td>
<td>412,000</td>
<td>67,000</td>
</tr>
<tr>
<td>Woody energy crops for heat and power</td>
<td>267,000</td>
<td>1,200</td>
<td>-265,800</td>
</tr>
<tr>
<td>Municipal-type waste</td>
<td>846,000</td>
<td>1,050,000</td>
<td>204,000</td>
</tr>
<tr>
<td>Bio-waste (inc. Agricultural slurry and food waste) (Not oven-dry)</td>
<td>590,000</td>
<td>&gt;1,000,000</td>
<td>&gt;410,000</td>
</tr>
<tr>
<td>Sewer sludge (Not oven-dry)</td>
<td>93,000</td>
<td>&gt;100,000</td>
<td>&gt;7,000</td>
</tr>
<tr>
<td>Imported biomass for large stations</td>
<td>1,630,000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Key Issues

8. There were a number of key issues with regards to biomass in Wales which emerged from the evidence:

   - availability of raw materials;
   - financial and environmental issues;
   - market opportunities.

Availability of raw materials

9. According to a report published in March 2010 on behalf of the Confederation of Forest Industries, UK Forest Products Association and the Wood Panel Industries Federation, the potential availability and demand for wood fibre in Britain is shaped by past and present policies, strategies and incentives initiated by a number of Government departments and organisations. The demand for British sourced wood fibre of all types has been rising rapidly in recent years. The report forecasts that:

   “The total potential availability of wood fibre will exceed potential demand up to 2012 at which point demand will start exceeding potential availability as it is forecast to more than double to 50 million tonnes per annum in the following 5 years up to 2017.”

10. We heard evidence in support of this statement regarding the increase in demand over recent years. The Forestry Commission Wales commented that they anticipated an increase in demand for wood heating schemes and that the supply chain faces challenges in scaling up. In their evidence they also stated that estimations of the availability of woody material for energy from local sources in Wales had been made and it suggests:

   “... a current available volume of woody biomass, in the absence of existing timber processing markets of between 400,000 and 450,000 oven dried tonnes per annum. However, if we take existing timber processing markets into account - primarily the panelboard, animal bedding and paper markets - a figure of about 180,000 oven dried tonnes per annum is

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1 John Clegg Consulting Ltd, *Wood fibre availability and demand in Britain 2007 to 2025*, March 2010
more realistic. This represents a shortfall of approximately 510,000 oven dried tonnes against the potential demand identified within the Bioenergy Action Plan Consultation.”

**Diversion of material from existing markets**

11. We heard how the continued development of large power stations risks there not being enough timber in Britain to supply them and that this would lead to the diversion of timber from existing markets.

12. When asked about the diversion of timber from existing markets the Wood Panel Industries Federation stated:

   “We are really concerned about the support given to large-scale electricity-only generation. We believe that there is a place in the market for small-scale, localised heat, and for combined heat and power generation, where there is a good fit, but we are concerned about the 50 MW-plus electricity-only generation plants that are getting largescale support from the renewable obligation certificates.”

13. In addition they commented that:

   “Given the capacity that is talked about in Wales with the two very large-scale plants in Anglesey and Port Talbot, no, you cannot plant enough trees in Wales to manage that. That is the simple answer.”

**Importing materials**

14. We also heard evidence that consideration would have to be given to importing large amounts of timber. According to the written evidence from the Wood Panel Industries Federation:

   “The scale of imports identified – an estimated 27-30 million tonnes in the next few years – is almost equal to current world trade in biomass and would make the UK the biggest importer of fibre in the world.”

15. In addition written evidence from the Confederation of Forest Industries states:

   “As demand for wood is set to significantly exceed domestic supply, building large-scale wood power stations will mean that
one or other of Wales’ objectives for energy policy will be compromised - either energy security or carbon reduction.”

Financial and environmental Issues

16. We heard evidence with regards to the price of materials and that it is actually the price which determines the materials destination. With the raw material cost to the fuel suppliers creeping up and increases in fossil fuel costs, these increases are being passed on to the customers.

17. Oral evidence from the Forestry Commission Wales stated:

“The market that ultimately secures the raw material is the one that has the greatest ability to pay for it. There is a likelihood that the energy sector would be able to bid for more of the raw material, depending on the level of support for that sector. In the absence of any new material coming into the market, there is a risk of some level of displacement.”

18. This was reiterated by the Wood Panel Industries Federation which stated:

“Our greatest fear is that if you look at the market forces and the dominance of large-scale electricity generation, the signs are that UK-wide large-scale electricity generation will be predominantly fired by wood and that those plants will have a disproportionate impact on the wood market throughout the UK. The economics are such that, ultimately, you could get what we refer to as a ‘Tescoisation’ of the wood market.”

Carbon impact and employment

19. We are concerned about materials not being used in the most carbon efficient manner and the added carbon impact the transportation process could have with regards to importing material. We are also concerned about the effects on employment if displacement of the markets were to occur.

20. In its written evidence the Confederation of Forest Industries states:

“In terms of carbon and jobs the most efficient way to use wood is in its solid form. This means the carbon in harvested
wood should remain locked up as long as possible and be reused and recycled, all the time substituting for materials such as brick, concrete, steel and plastics which use more carbon in their production. At the end of its useful life, wood can be burnt for energy.”

“Large-scale biomass for electricity provides the lowest carbon and jobs benefit. Local heat and CHP installations are typically 80-90% efficient in converting wood to energy, whereas large-scale, biomass-for-electricity plants are only about 30% efficient.”

21. With regards to employment the Wood Panel Industries Federation’s written evidence states:

“In a study commissioned by the European Panel Federation, Jaakko Pöyry consultants compared the employment provided by wood use in the pulp & paper industry, the wood products industry and the energy industry. For every tonne of dry wood, pulp & paper provided 124 man-hours, wood products provided 54 man-hours, while energy generation provided only 2 man-hours.”

**Renewable Obligation (RO)**

22. As already touched upon there was great concern regarding the support given to the energy sector and the effect this sector could have with regards to carbon emissions, employment, market displacement and prices.

23. In its written evidence the Wood Panel Industries Federation states:

“Since 2002, the RO has rewarded energy companies that burn wood for electricity generation, allowing them to outbid existing wood users. Once a critical mass of biomass plant is reached, the wood panel industry will no longer be able to compete with the subsidised energy sector.”

24. They reiterated their concerns during their oral evidence to the Committee stating:
“The perverse thing in this respect is that a subsidy and strategy that are designed to reduce net carbon emissions will have the opposite effect. In producing wood panels, you emit about 380 kg of carbon dioxide per tonne of timber processed, whereas in burning it you emit 1,900 kg of carbon dioxide per tonne of timber processed. So you would be replacing a low-carbon economy with one that emits a higher amount of carbon.”

25. These concerns were also echoed by the Confederation of Forest Industries which stated:

“If there is displacement and businesses are driven out, that would leave just the big energy companies that have Government support, which will be able to take the domestic supply, and, because they will have driven out all the other businesses, they will be able to dictate the prices. So, what might appear initially to be quite good for growers will in the long term be a disincentive.”

**Renewable Heat Incentive**

26. The Wood Panel Industries Federation also expressed a concern with regards to the Renewable Heat Incentive:

“At present, DECC is proposing to exclude all renewable heat generation plant that was installed before July 2009 – this would exclude the entire wood panel industry. By providing RHI support to new installations and excluding the existing contribution by the wood panel industry, the Government would in effect be denying this industry the opportunity to compete for its basic feedstock. In short, it is highly unlikely that the wood panel industry could survive in the UK under these circumstances. Not only is this an egregious economic and social outcome; it would also be a significant loss to carbon abatement and renewable heat generation.”

**Market opportunities**

**Unmanaged woodland**

27. We heard evidence with regards to unmanaged woodland and the potential this untapped resource holds.
28. In its written evidence the Forestry Commission Wales states:

“FC Wales estimates that realistically, an additional 90,000 oven dried tonnes of suitable woodfuel could be made available for biomass from currently unmanaged private woodlands.”

29. They expanded on this during their oral evidence and stated:

“We would like to see [the establishment of wood heating schemes that draw supplies] from privately owned woodlands in Wales with the owners being incentivised to bring those woodlands into management, because they would get a fair return on the products from those woodlands.”

30. Although the Wood Panel Industries Federation agreed with the Forestry Commission Wales with regards to utilising unmanaged woodland they stated:

“... we have to think about what drives each person to hold timber, as it may not be down to production or realising the value of the timber when it is harvested. They may be looking at a resource that is going up in value, because the unit cost of timber is increasing. As it is left to grow—wood grows on wood—they get a greater volume for greater value. Up to a certain point, people hold timber as a capital asset rather than as revenue.”

Waste wood

31. We also heard evidence with regards to the amount of waste wood being sent to landfill and the need for a more environmentally friendly and optimal resource utilising system to be established. It was suggested that this could be done through the newly appointed powers conferred by The National Assembly for Wales (Legislative Competence) (Environment) Order 2010.

Information and support

32. The evidence highlighted the need for small businesses to have access to market information and opportunities to ensure that they are reasonably confident about their investments.

33. Although the Wood Energy Business Scheme (WEBS) provides capital grant support the Forestry Commission Wales is keen to ensure
that the suppliers support needs are understood. They believe it is important to ensure that the sort of small business support offered is tailored to the specific needs of these particular sorts of businesses. They also stated that they were keen to work with the Flexible Support for Business to ensure this.

34. The Confederation of Forest Industries also highlighted that red tape and the environmental impact assessments that have to be prepared make it unattractive to create forest and woodland in comparison to agriculture. They believe a simplification of the process and a presumption in favour of planting is needed.
3. Conclusions and Recommendation

35. In our view the following recommendations offer a set of workable solutions for now, in the near future and the long term.

*Availability of raw materials*

36. We are aware that in March the Welsh Government and Defra launched a consultation on the introduction of restrictions on the landfilling of certain wastes, including wood. We support the introduction of restrictions on landfilling wood and eagerly await the Welsh Government’s decision.

37. We are very concerned regarding the amount of materials it is envisaged will have to be imported to serve the needs of Wales and the knock-on carbon effect this will have. We are keen for Wales to source as much of the material as possible from local sources and utilise land which is at present unproductive or unmanaged. We welcome the Minister for Rural Affairs’ commitment to increase the area of woodland in Wales by 100,000 ha over the next 20 years but believe more could be done to encourage new planting.

The Committee recommends that the Welsh Government use the newly appointed powers conferred by *The National Assembly for Wales (Legislative Competence) (Environment) Order 2010* to introduce restrictions on sending wood to landfill.

The Committee recommends that all available biomass material from the Assembly Government Woodland Estate is recovered and that existing unmanaged privately owned woodlands are brought under management by utilising incentives.

The Committee recommends that the Welsh Government examines the problems associated with establishing and managing a woodland and assess whether the process can be simplified.

*Financial and environmental issues*

38. We are keen to ensure that employment and carbon abatement are not adversely affected by changes in the market. We believe wood should be utilised for as long as possible to ensure the carbon is stored and only at the end of its useful life be burnt for energy in
markets, local to the supply, to ensure carbon emissions are kept to a minimum.

39. We received a lot of evidence regarding the Renewable Obligation and the adverse affect this could have on the existing wood users. We are concerned that large-scale energy generation plants will monopolise the market by outbidding the smaller businesses and manufacturing industry for materials and that this will result in their displacement.

40. We also heard evidence regarding the proposed Renewable Heat Incentive and how, if it is implemented in its current form and excludes all renewable heat generation plants that were installed before July 2009, the Wood Panel Industries Federation believe this would exclude the entire wood panel industry and could jeopardise its survival.

The Committee recommends that the Welsh Government take into account the affect the Renewable Obligation and the implementation of the Renewable Heat Incentive could have on the existing market when implementing their biomass and forestry policies.

The Committee recommends that the Welsh Government does its best to ensure that existing wood using industries in Wales are not excluded from the market by the wood being diverted exclusively for burning.

41. We are concerned that some plants are not being developed to their full potential i.e. compliant with the Waste Incineration Directive, being able to take waste wood and are not utilising combined heat and power (CHP).

42. With very obvious differences in the efficiency of heat and CHP plants compared to electricity only plants we are keen that the most effective options are utilised and that minimum heat use efficiency standards similar to those in Europe are implemented.

The Committee recommends that the Welsh Government only approves projects under 50MW which are compliant with the Waste Incineration Directive and ensures that any projects to be built in Wales over 50MW which are approved by the UK Government Infrastructure Planning Unit also comply.
The Committee recommends that the Welsh and UK Government establish minimum heat use efficiency standards for plants and ensure that as a prerequisite to Government support the plant must meet these standards.

**Market opportunities**

43. We are keen to ensure that small businesses and the manufacturing industry are given every opportunity to compete in this competitive market. We also recognise the true value of timber and timber products and are keen that this value is not undermined by the Renewable Obligation subsidy.

The Committee recommends that the Welsh Government, or an elected body, work with suppliers to ensure their individual support requirements are being adequately met i.e. through the Economic Renewal Programme.

The Committee recommends that the Welsh Government promotes the use of timber in new builds and provides assistance for developers using timber to ensure British and European Building Regulations are conformed to.
Witnesses

The following witnesses provided written and oral evidence to the Committee on 5 May 2010. All written evidence and a transcript of the oral evidence session can be viewed in full at: http://www.assemblywales.org/bus-home/bus-committees/bus-committees-scrutiny-committees/bus-committees-third-sc-home/bus-committees-third-sc-agendas.htm?ds=5%2F2010&submit=Submit

5 May 2010

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Mike Pitcher Forestry Commission Wales
Gavin Adkins Wood Panel Industries Federation
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