

BIOMASS TASK FORCE

SECOND PROGRESS COMMENTARY – MARCH 2005

Introduction

1. The Biomass Task Force was launched on 15 October to assist the Government and the biomass industry in optimising the contribution of biomass energy to renewable energy targets and to sustainable farming and forestry and rural objectives. The Task Force for this one-year study is led by Sir Ben Gill, working with John Roberts from United Utilities and Nick Hartley from Oxera Consulting.

2. The Task Force has so far undertaken around 80 meetings and visits. This second progress commentary (the first issued on 14 February) sets out further thoughts on strategic issues and on some detailed points. This note also points out the other areas which the Task Force intends to consider in the next phase of the work.

Summary of first commentary

3. The first progress commentary highlighted:

- The lack of and need for an effective supply chain.
- The conversion efficiency and potential of biomass heat.
- A lack of long-term, clear messages about what needs to be delivered.
- Complexity and bureaucracy in delivery arrangements.

Review of responses to first commentary

4. Responses to the first commentary support the Task Force's observations. It was suggested that biomass electricity is currently not viable within the Renewables Obligation but that, for electricity, heat and CHP, demand must pull through the supply chain. Biomass heating is seen as a commercial and important option although a shortage of trained engineers is evident. The linkage between the development of biomass energy and the use of newer technologies is seen by industry as a step too far. The potential to use biomass waste is seen as significant.

5. Respondents consider that national and regional structures are cumbersome, inefficient and lead to duplication. The need for a one-stop shop for biomass was raised. It was also noted that a significant shift in public thinking is needed to develop local engagement in the production of green energy with local fuels.

6. Other suggestions for further work include:

- Local air quality impacts of biomass heating.
- Diverse energy plantations, including single stem.
- Potential role of co-operatives.

- Use of demonstration projects.

Waste

7. Waste, using current legal definitions, falls into a number of classes from by-products of industrial processes to materials at the end of their useful life and include animal waste, food waste, horticultural waste and sewage sludge and cake. A variety of methodologies already exist for the transformation of these products into energy, either heat, or electricity or both.

8. At the same time, waste as defined by the Waste Framework Directive (WFD) has tended to become stigmatised into an unusable category. But in reality there appears to be a significant opportunity to be exploited following careful segregation and appropriate combustion procedures. We understand the use of waste for energy will be considered in the review of the Renewables Obligation.

9. We have met with senior representatives of the Environment Agency (EA) who have recognised the potential degree of confusion caused by the WFD and Waste Incineration Directive. They have agreed to produce a simple guide to the proper use of waste as a valuable energy source while still remaining within the scope of the relevant Directives.

10. The EA pointed out that on current performance records of waste combustion facilities there are no grounds for suggesting that emissions for these plants cause any deleterious effect on the environment. Indeed they were at pains to point out that current results showed lower emissions levels than other industrial sectors.

11. The Task Force will:

- Look at estimates of the volume of available waste.
- Consider impacts on sectors competing for feedstocks.
- Look at the potential for the recycling sector to become part of the biomass fuel supply chain.

International Comparisons

12. Our analysis of international comparisons is at an early stage but a report by the EU Renewable Energy Action (REACT) programme echoes comments in our first progress commentary. Successful policies are said to depend on a comprehensive and consistent approach over six to seven years. They can involve substantial financial resources and economic incentives have been a feature of every successful case of market development. Regulations can be an effective and cheap measure if the markets have grown to a sufficient size to serve the demand created by such regulations. We are following the development of the EU biomass action plan with interest.

13. Austria has successfully used capital grants to support installation of biomass heating systems with an emphasis on local sustainability in energy

infrastructure. Higher rates of grant have been available for primary producers which means revenue feeds back to those producers for added value products such as heat. The use of wood-fired domestic heating was significantly boosted after wood pellets were introduced in 1994. Although there is an energy cost in production pellets are said to give better combustion and handling properties and a quality label and tracking system guarantees quality.

14. Denmark took advantage of falls in fossil fuel prices to allow rises in taxation which made biomass energy financially attractive. Linked to high feed-in tariffs, this stimulated rapid development. Long-term government commitments gave confidence to the market but the election of a “tax reducing” Government introduced uncertainty about future commitments to support. The renewable energy market declined rapidly over the last two years.

15. Finland has an Action Plan for Renewable Energy which launched in 1999 and includes:

- Doubling renewable energy by 2050.
- Taxation of fossil fuels.
- By 2010, renewables to account for 30% of consumption.
- €31m support for renewables and energy conservation in 2003.

16. The development of woodchip is given priority and use was quadrupled from 1999-2003. Key issues are seen as:

- Reliable supply needed (quantity, quality, price).
- Integration with other supplies of woodfuel essential.
- Production logistics need to be developed.
- Supply chain framework needs to be developed by wood procurement organisations.
- Chipping is moving from the forest to woodfuel plants.
- Technology development needs to integrate manufacturers, producer groups, contractors and researchers.

17. Canada has more biomass potential than any other country except Russia and Brazil. Its largest practical source of biomass energy is waste from pulp and paper mills and sawmills. There are initiatives to promote the development of renewables but no specific targets. In the future, co-firing is seen as a potential way to develop supply chains and infrastructure. Low energy prices mean that biomass energy finds it difficult to compete. Canada has national climate change targets but there are no provincial targets. A significant amount of policy making is devolved to the provincial level.

18. In summary, international studies so far show that keys to success include long-term messages, consistent support for implementation through capital grants or revenue support and appropriate use of regulation.

Quality, standards and certification

19. It is clear from visits to Finland and particularly Canada that there is increasing emphasis being placed on the role of life cycle assessment to evidence carbon savings. We are aware of the ISO standards for life cycle assessment, work by the Environment Agency and the current Defra work on publishing tools and cases studies. There is potential for significant international co-operation to develop standardised methodologies further. The Task Force intends to look further at how this might be taken forward.

20. Our first progress commentary noted the lack of established supply chains in the biomass sector. A key to development is the supply of woodchip or pellets which meet consistent quality standards. That suggests a need to adopt clear technical specifications which can be incorporated into supply contracts. We understand that trials are in place with a view to developing a European standard. We will consider how best this could be taken forward and the linkages needed with building regulations to raise awareness and facilitate adoption.

21. Both Government and industry are investing heavily in the development of new varieties of energy crops, particularly short rotation willow coppice. The use of high yielding varieties with low susceptibility to pests and diseases links directly to the economic return to the grower. It is important that there is a full programme of dissemination of the information emerging from breeding work.

Co-firing

22. Co-firing has significant potential to promote the use of biomass and, in the longer-term, is intended to expand the supply chain and cultivation and production of energy crops in particular. End uses inevitably deliver relatively low efficiency of conversion and significant planting of energy crops has yet to begin. Although there are some positive signs, progress by power generators is patchy and those wishing to benefit from the co-firing arrangements need to act urgently given the relatively short window remaining in which they can begin to develop supplies of energy crops.

23. Industry has reported to the Task Force delays in actioning applications to the Energy Crops Scheme. We are investigating this with Defra. We are also concerned that applications appear to be facing disproportionate demands in respect of archaeological surveys. We intend to raise this with English Heritage.

Risk, reward and project finance

24. Perception of risks and rewards impacts on project developers and energy managers. The Task Force is aware of two developers who have needed to source project finance from overseas where finance communities are said to have a greater awareness of renewable energy. We intend to

examine with UK finance institutions how they perceive and deal with financing of renewable energy projects.

25. A potential support option raised with us is a loan guarantee fund for renewables projects, similar to export credit guarantees. This would enable developers to reduce the level of risk to which they are exposed. Such a fund would benefit from fee income from developers accessing the fund and, in line with normal insurance arrangements, there may be potential to lodge such a scheme in the private sector. The Task Force will examine the potential for a guarantee fund.

Scope and potential

26. The Task Force is in the process of looking in detail at likely land availability for planting energy crops and the volumes of forest material and waste biomass. It will take account of the work of the Royal Commission on Environmental Pollution during its biomass study and the Innovation Review.

27. The Task Force will also look at crop yields, measures of energy content and potential to deliver carbon savings.

28. Having established the levels of carbon savings which biomass can deliver the Task Force will consider whether the value of support can and should be directly linked to the delivery of carbon savings. This may help demonstrate more targeted and cost effective ways for government to deliver climate change and other targets.

Research and development

29. Government investment in R&D in the biomass and energy crops sector has been at a significant level for a number of years. Work covers the spectrum from basic research to near-market commercial activity and includes:

- Research councils
- Universities
- Defra and its equivalents in Scotland, Wales and Northern Ireland
- Research organisations
- RDAs
- Forestry Commission
- Industry

30. The Task Force was impressed by the structure of biomass research in Finland where work was carefully co-ordinated through Tekes and VTT in order to link academia with industry and avoid duplication and secure value for money. We are aware of the work of the Interdepartmental Funders Group on Bioenergy Research Committee which has sought to bring similar discipline to biomass R&D funded directly by Government. We intend to examine the scope to co-ordinate more effectively the full spectrum of research and invite views on how this could be achieved.

31. The Task Force has identified conversion efficiencies as an important issue. For electricity generation there has been a degree of emphasis on new technologies with potential to deliver more efficient conversion. But the Arbre experience has a real and serious impact on confidence. At this early stage in the development of a new industry there is a need to use the sound foundation of proven technology to establish supply chains and proceed by evolution rather than by trying to provoke revolution. At the same time it is important, in parallel, to put in place the R&D which will help demonstrate and deliver the new technologies.

Future reporting arrangements

32. The future reporting timetable for 2005 is:

- End May – Interim report
- End July – draft final report
- October – Final report

33. Recipients are invited to send views on this progress commentary by 30 April 2005 to:

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Biomass Task Force
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