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Government's response to the Biomass Task Force report — 1-year on report

September 2007

DEPARTMENT FOR BUSINESS
ENTERPRISE & REGULATORY REFORM



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Section A: Introduction

Biomass Task Force

1. The Biomass Task Force was established in October 2004 under the Chairmanship of Sir Ben Gill, to assist Government and industry in optimising the contribution of biomass energy to renewable energy targets and to sustainable forestry and farming and rural objectives. The Task Force reported to Government on the barriers to optimizing biomass use in England in October 2005. The report made 42 recommendations of actions to address these barriers. The full report is available via the following link:

www.defra.gov.uk/farm/crops/industrial/energy/biomass-taskforce/pdf/btf-finalreport.pdf

Government Response to the Biomass Task Force Report

2. In April 2006, the Department of Environment, Food and Rural Affairs (Defra), jointly with the Department of Trade and Industry (DTI) (now the Department for Business, Enterprise and Regulatory Reform (BERR)), published on behalf of the Government a detailed response to the recommendations within the Task Force report. The response included a series of wide ranging actions spanning 10 work strands, covering:

- biomass heat;
- waste & anaerobic digestion;
- dedicated biomass electricity;
- delivering the policy and message;
- public estate and procurement;
- planning;
- regulatory controls;
- fuel supply chain development;
- skills and accreditation; and,
- it also included a number of overarching issues, such as the EU Biomass Action Plan, Life Cycle Assessment, Energy Crops Environmental Impact Assessments, R&D and the production of a UK Biomass Strategy.

3. The Government's Response is available via the following link:

www.defra.gov.uk/farm/crops/industrial/energy/biomass-taskforce/pdf/btfreport-govresponse.pdf

Implementation

4. Responsibility for implementing the actions committed to in the Government's Response is being lead jointly by Defra and BERR. The Biomass Implementation Advisory Group (BIAG) was established to monitor and guide the work of the Implementation Team in their delivery of the actions. The composition of the group offers a wealth of experience and expertise on biomass from within both Government bodies and industry. A list of the current BIAG membership and the group's Terms of Reference can be found at Annexes A and B.

Section B: Progress made 1-year on

5. We have made good progress in taking forward what has been an ambitious programme of work that cuts across the responsibilities of a number of Government Departments and the Devolved Administrations, as well as being of relevance to a range of industry sectors and delivery partners.

Key achievements in Year 1

UK Biomass Strategy

6. The Government's UK Biomass Strategy was published in May 2007. The Strategy defines the Government's aspirations for the sustainable development of biomass for heat and power, transport fuels and industrial products. It sets out current UK Government policies and explains how these jointly operate for the development of biomass as a whole, and identifies the challenges to delivery and what we are doing to address them. A full copy of the Strategy can be accessed via the following link:

www.defra.gov.uk/environment/climatechange/uk/energy/renewablefuel/index.htm

7. The Strategy envisages a major expansion of biomass use and sustainable supply. Increases in biomass availability will be achieved through the more efficient utilization of agricultural land, wood fuels, unmanaged woodland, manures and slurries, and certain organic wastes. This could include expanding production of biofuel and energy crops on agricultural land and the development of new woodland. The European Environment Agency (EEA) recently concluded that the land available for environmentally compatible potential bioenergy production in the UK will be around 0.8m hectares in 2010, 1.1m hectares in 2020 and 1.6m hectares in 2030. Government is seeking to deliver an expansion of biomass production in a way which is consistent with an enhanced, sustainable approach to land use. In promoting the use of biomass we are aware that concerns are being voiced about the impact this policy will have on the environment, food supplies and developing countries. We acknowledge those concerns and we will seek to ensure that implementation of this

strategy does not lead to increased deforestation and to ensure biomass production does not reduce the production of essential developing countries' food supplies.

8. The further information below relates primarily to action on biomass for heat and electricity, which was the focus of the Biomass Task Force Report and the Government Response. The Biomass Strategy covers all uses of biomass including transport fuel and other industrial uses, and gives details of the actions being taken for those sectors. Information on current and planned activities within the Devolved Administrations is also outlined within the strategy.

Study to examine the issue of longer-term support for renewable heat

9. Defra and BERR jointly commissioned Ernst & Young LLB to undertake analyses to assess the business case for providing longer-term support for renewable heat. A copy of the report prepared by Ernst & Young LLB entitled 'Renewable heat initial business case' will shortly be available via the following link:

www.defra.gov.uk/environment/climatechange/uk/energy/renewablefuel/index.htm

10. The report provides an evaluation of the issues that affect the cost and uptake of biomass heat and the complexity of biomass energy. Further analysis of this policy issue is currently underway within BERR, Defra and the Office of Climate Change, an independent, cross-departmental strategy unit within Government.

Energy for Waste (EfW)

11. Government published the Waste Strategy for England in May 2007. The Waste Strategy defines the Government's vision for sustainable waste management and sets out a policy framework aimed at achieving the optimal balance between material recovery for re-use and recycling and energy recovery from waste biomass. The main elements of waste biomass are green garden waste, paper, card, food and waste wood, elements of which are to be found in the Solid Recovered Refuse (SRF) waste stream. A full copy of the Strategy is available via the following link:

www.defra.gov.uk/environment/waste/strategy

12. As part of the Waste Infrastructure Delivery Programme (WIDP), Government is also taking forward work to support the timely and cost effective delivery of the major waste infrastructure (including energy from waste facilities) needed to meet Landfill Directive targets. Government has also produced a report entitled 'Waste Wood as a Biomass Fuel' which identifies the measures that Defra and the Waste Implementation Programme (WIP) can implement to progress the development of wood waste as an energy. Implementation hinges on a range of measures currently under consideration by departments within Defra and wider Government. The report contains a number of specific initiatives the progress of which will be actively monitored.

Anaerobic Digestion (AD)

13. Over the past year, Government has undertaken a review of the current approach to anaerobic digestion, including investigation of anaerobic digestion technologies and the economics. Anaerobic digestion is a well-proven renewable energy technology which is currently underdeveloped in the UK but has the potential to provide a significant contribution to our climate change and wider environmental objectives by:

- producing more renewable energy in the form of biogas for biomass heat and/or power or for transport fuel;
- helping to mitigate methane emissions from agriculture; and,
- helping to divert other kinds of organic waste, especially food waste, from landfill or incineration.

14. Anaerobic digestion can reduce greenhouse gas emissions by capturing methane from the decomposition of organic material, such as livestock manures and slurries, sewage sludge and food wastes. The digestate (treated liquid) from anaerobic digestion contains useful nutrients and can be used as a fertiliser and soil conditioner. The Environment Agency and WRAP aim to develop a standard and protocol for digestate by Spring 2008.

15. The Government will work with stakeholders to drive a faster growth in the use of this technology by local authorities, businesses and farmers. A cross-cutting project team will co-ordinate delivery within Defra. It will also work with other key Government Departments and stakeholders to identify and further address barriers and maximise the synergies between the different markets in which anaerobic digestion has a contribution to make.

England Wood Fuel Strategy

16. The Forestry Commission published the 'Woodfuel Strategy for England' in March 2007. The Woodfuel Strategy aims to bring an additional 2m tonnes of wood to market annually by 2020 (saving 400,000 tonnes of carbon every year – the equivalent of 3.6 million barrels of crude oil and enough to supply 250,000 homes with energy). This represents some 50% of the unharvested available material in English woodlands. The Strategy recommends a combination of capital investment and technical advice and support for the supply chain, and highlights the need to engage with the estimated 50-80,000 owners of woodland in England. This will bring more woods into productive and sustainable management, and improve conditions for wildlife. The Forestry Commission is working with delivery partners, including Regional Development Agencies, local authorities and private companies to produce a detailed implementation plan to support the strategy. This will build on the many successful projects and initiatives already happening around England. A full copy of the Woodfuel Strategy is available via the following link:

[www.forestry.gov.uk/pdf/fce-woodfuel-strategy.pdf/\\$FILE/fce-woodfuel-strategy.pdf](http://www.forestry.gov.uk/pdf/fce-woodfuel-strategy.pdf/$FILE/fce-woodfuel-strategy.pdf)

Bio-energy Capital Grants Scheme (BCGS)

17. A second round of the BCGS was run and funded by BERR/Big Lottery in 2006 to promote the efficient use of biomass for energy. The objective was to stimulate the deployment of biomass-fuelled heat and combined heat and power (CHP) projects by awarding capital grants towards the cost of equipment in complete installations. Bioenergy projects funded under the BCGS at Lockerbie, Wilton and Eccleshall are shortly to be commissioned, in addition to some 40MWth of heat/CHP which has already been installed.

18. A five-year extension to the BCGS is being funded by Defra to support the installation of biomass heat and combined heat and power projects in the industrial, commercial and community sectors in England. Round 3 of the scheme was launched in December 2006 and grants totalling nearly £7.3 million have been offered to more than 50 projects to install over 140 biomass boilers. Government expects to allocate further grants over the remainder of the financial year.

Energy Crops Scheme

19. Government has confirmed that a new Energy Crops Scheme (ECS) is included within the proposed Rural Development Programme for England for 2007-13. Natural England will be delivering the new ECS which offers grants for the establishment of perennial energy crops. The new scheme will open for applications on 1 October 2007. Payment rates are expected to be in the region of £1,000 per hectare for short rotation coppice and £800 per hectare for miscanthus. However, these rates cannot be confirmed until European Commission approval for the RDPE is obtained, and may be subject to downward revision.

20. Agreements under the new scheme can only be offered once formal European Commission approval has been given for the RDPE – it is hoped that this will be before the end of the year. However, applications may be submitted and will be processed up to agreement stage in readiness. Further information about the scheme can be found on Natural England's website at: <http://naturalengland.org.uk>

Opportunity Maps

21. A set of regional maps identifying opportunities and optimum sitings for energy crops (short rotation coppice (SRC) and miscanthus) were published on the Defra website in May 2007 (www.defra.gov.uk/farm/crops/industrial/energy/opportunities/index.htm). These maps are a tool to provide guidance to those seeking to develop energy crops. They show the best areas for growing the crops as well as the areas where this is not appropriate or where specific care would be needed from an environmental point of view.

Mapping of Defra Estate

22. Defra has mapped the suitability of its core estate for conversion to biomass heating and has developed a methodology to support the wider mapping process across other Government Departments.

Case Study – Alnwick

Defra recently undertook a rebuild of its former office accommodation at Alnwick, which encompasses Information Management (IMD), Shared Services (SSD) and the Rural Payments Agency (RPA). The new building is a two storey development containing 3 wind turbines, rain water harvesting, PV panels, solar thermal collectors and a biomass boiler. The biomass boiler is appropriately sized for the building, to ensure that it is running as efficiently as possible and that it does not have to be switched on and off if demand is not constant.

The expected benefits from the installation will include the building's heating requirements being minimised through passive solar design, insulation, mechanical ventilation with heat recovery and air tightness to reduce the building's annual heating demand to a minimum. At the design stage the biomass boiler will meet more than 90% of the expected annual heating load as well as contributing to the building's hot water load in winter when the solar thermal hot water system will not meet the demand.

The Alnwick project aims are:

- To save carbon - the savings from the Biomass boiler are estimated to be in the region of 0.8 tonnes of carbon per annum (3t CO₂/a)
- That the fuel for the biomass boiler is to be sourced locally and with the certification of a sustainable supply chain
- To raise awareness among staff with a wider impact onto the construction industry and the local community

- To build an exemplar building that demonstrates the Government's and Defra's commitment to Sustainability and the Environment.

23. Due to the size of the core Defra estate, the mapping exercise was rolled out in two tranches, completed in November 2006 and March 2007 respectively. 50 sites were surveyed in the first tranche, 21 of which were identified as being potentially suitable for biomass boilers. Feasibility studies to assess the actual suitability of these sites commenced in January 2007 and were completed in May 2007. These are currently being peer reviewed. 23 sites were surveyed in the second tranche, 7 of which were identified as being potentially suitable. Feasibility studies are to be undertaken on these sites shortly.

24. The mapping exercise and feasibility studies have identified that there are viable opportunities in the Defra estate for biomass use to contribute to the Government's target of its estate becoming carbon neutral by 2012.

Case Study – Wilton Park Conference Centre

Wilton Park Conference Centre, an Executive Agency of the Foreign and Commonwealth Office (FCO), installed a biomass boiler in July 2007, which is to be fuelled by wood from the surrounding estate. Wilton Park worked closely with the Estate Manager and the Forestry Commission's Research Agency to develop this integrated and sustainable project.

The expected benefits from the installation will include:

- carbon savings of 120 – 160 tonnes per annum;
- the management of 300 hectares of currently unmanaged woodland leading to increased conservation of wildlife (biodiversity);
- cost savings, as a result of switching from gas/oil to wood chip fuel;
- stimulation of the local markets and economy from establishing an integrated infrastructure of local fuel supply and heating system;

demonstration potential for raising awareness about the benefits of bioenergy with both overseas and UK visitors to the Centre.

25. The mapping exercise is currently being rolled-out to other Government Departments, with action already being seen on the ground. We will continue to promote the use of biomass on the Government Estate, through mapping by the end of 2008, the estate's suitability for biomass boiler use and fuel supply issues.

Department for Children Schools and Families (DCSF) - Biomass Evaluation Tool

26. As part of Building for Schools for the Future (BSF) and the Primary Programme, the DCSF is encouraging design of sustainable schools that meet criteria for an exciting and eco-friendly learning environment. As recommended by the Biomass Task Force they have developed a Biomass Evaluation Tool for use in school refurbishments and new builds when considering the use of biomass boilers for heating.

Case Study – Weobley Primary School, Herefordshire

Weobley Primary School has installed a wood-fired boiler that uses 150-300 tonnes/year of wood-chips. These are locally sourced woodland thinnings and short rotation coppiced popular and willow. All the wood is grown within a 12 mile radius of the school and a local company ensures the supply of wood chips from a local co-operative of local farmers. The small amount of ash produced by the process of combustion is used to fertilise the school garden. Highly insulated floors, walls and roof ensure that heat is not lost through the fabric of the building. It is estimated that as a result of these design improvements and the installation of the wood-fired boiler, carbon savings of 21 tonnes per annum will be achieved.



27. The Biomass Energy Centre (BEC) was established on 27th April 2006 and launched their website at the Renewable Energy Association (REA) Bioenergy Conference on 6th September 2006 (www.biomassenergycentre.org.uk). The BEC acts as a 'one stop shop' for information and advice on biomass fuels, their sustainable production and their use. It also works closely with other delivery bodies who provide information on biomass at a regional and national basis (Energy Saving Trust, Carbon Trust, National Non-Food Crops Centre and Regional Development Agencies).

28. One year on:

- the BEC has answered over 1,370 enquiries to date;
- 274,450 to date hits were recorded by the BEC website;
- the BEC has attended and provided advice at many exhibitions and events.

29. Development and expansion of the BEC and its website is continuing. Information collated from other specialist and regional organisations is displayed directly on the BEC website, suitably acknowledged, or via links to the website of the original source. The work of the BEC has been warmly welcomed by industry representatives.

Working with Regional Development Agencies (RDAs)

30. RDAs have committed to set carbon reduction targets in their corporate plans, publish an estimate of the carbon they expect to save from their policies and programmes by 2010 and 2020, and update these estimates at least annually as they develop new programmes.

31. All RDAs have reviewed, or are reviewing, their biomass capacity and biomass fuel supply chains. Regional Partnership structures have been formed, or are under development, to assist with sector development, including Biomass Strategies and Action Plans. This will facilitate the development of supply chains best suited to local needs and resources.

Case Study – BioREGen

Renewables East's BioREGen project is being funded by EEDA, under the BREW programme, to establish a coherent initiative to identify and evaluate opportunities, and seek to stimulate the best options for energy recovery from waste streams within the East of England.

The BioREGen project provides support for the deployment of technologies recovering energy from wood and organic residues, thus diverting material to landfill. It also offers expert support to address critical issues and barriers to development, supporting projects from inception to delivery.

BioREGen is currently working on a number of projects covering a range of areas including anaerobic digestion and gasification.

32. The Regional Development Agencies (RDAs) have an important role to play in tackling climate change and contributing to the development of the bioenergy market. Government will continue to develop an understanding of, and report on, progress within each of the regions on the current use of biomass and the systems in place within the regions for its appropriate promotion and utilisation.

Bioenergy Funders Forum (BFF) Research Priorities Report

33. Defra published the Bioenergy R&D Funders Forum Research Priorities report in April 2007. The reports sets out the aims and objectives of Government funded bioenergy R&D in the near term and up to 2020.

34. In summary, led by or associated with Government policy, the Forum members have developed the following broad aims for bioenergy R&D:

- To optimise bioenergy crop production to reduce carbon emissions;

- To maximise the environmental performance of bioenergy supply chains, and to further stabilise production;
- To understand the land use impacts of bioenergy and other non-foods crops.

35. A full copy of the report is available via the following link:
<http://aims.defra.gov.uk/homepage/documents/44.pdf>

Assessing biomass potential of varieties of Miscanthus and of short rotation coppice willow and poplar

36. Defra contracted the National Institute of Agricultural Botany (NIAB) to carry out a research project looking at variety evaluation with biomass crops. The research reviewed the currently available data on the performance of varieties of crops grown for biomass and examined the scope for, and feasibility of, a central varietal assessment system for Miscanthus and Short Rotation Coppice (SRC) willow and poplar crops. The report concluded that the information available on varieties that can be grown commercially in the UK is too disparate and incomplete to provide more than the basic advice to growers. This has resulted in a barrier to the uptake of growing perennial biomass crops in the UK. Next steps will be to convene a meeting with breeders, stakeholders and Government to present findings of the project, and to consider whether suitable mechanisms can be found for taking the recommendations forward.

Life Cycle Assessment (LCA) Tool for Bioenergy

37. Defra have also contributed to funding a Life Cycle Assessment (LCA) Tool for Bioenergy. The development of this tool, which will be available online for public use, is almost complete, and we are expecting this to be a valuable and important resource. It is due to be launched formally in Spring 2008, following peer review.

Section C: Way Forward

38. There have been some important achievements made one-year on and there is still much to do. Defra and BERR will continue to progress the work, with input from stakeholders on those areas where it is still too early to measure any outputs.

39. We will also continue to work in collaboration with other Government Departments, Devolved Administrations, industry and environmental interests, regional and local bodies and planners, to improve our knowledge of the role biomass currently plays in delivering the UK's requirements.

'Climate change is both a long-term and urgent challenge and delivering policy to tackle climate change is a priority'.

40. The policies we set out in our Biomass Strategy together with the actions described in this report form an integral part of our climate change and energy goals, helping to deliver:

- the new EU 20% renewables target, although the precise details will not be known until the EU target applicable to the UK is agreed;
- the proposed UK target of at least 60% cuts in carbon dioxide emissions by 2050, as set out in the Climate Change Bill (published in draft in March 2007) and,
- cleaner, competitive and sustainable energy supplies of heat and electricity at local, community and industry scale.

41. In many cases biomass energy can provide a cost-effective way of reducing carbon emissions and providing energy and we will continue to explore its potential, both for the short and the medium to long-term.

42. Any enquiries or further information about this report should be addressed to:
industrialcrops@defra.gsi.gov.uk.

Annex A

Biomass Implementation Advisory Group (BIAG) Membership

Industry

Graham Meeks - Renewable Energy Association (has since moved to the Combined Heat and Power Association)

Michael King - Combined Heat and Power Association

Oliver Harwood - Country Land and Business Association

Dr Jonathan Scurlock - National Farmers Union

Keiran Allen - The Carbon Trust

Nick Barker - AEAT

Simon Roberts - Centre for Sustainable Energy

David Williams – Eco2

Other stakeholders, Other Government Departments, etc

Andy Hall/Ian Tubby - Biomass Energy Centre (BEC)

Graham Tubb - South East England Development Agency (SEEDA)

James Beal - Renewables East

Caroline Season - Defra, Climate and Energy Household and Markets

Helen Sweeney - Government Office North West

Mike Johnson - Department for Communities & Local Government (DCLG)

Ian Jones – Department for Transport (DfT)

Rod Leslie -Forestry Commission

Andrew Thorne - Department for Children Schools and Families (DCSF)

Johanna Cowan - HM Treasury (HMT)

Amanda Barratt - Environment Agency

Alun James - Welsh Assembly Government (WAG)

Martin McKendry - DARDNI

Christine McKay - SEERAD

Katherine Bass - Defra, SFF Science

Tim Williamson - Defra, Air Quality

George Marsh - BERR

Secretariat

Sarah Rhodes BERR } Co-chairs

Andrew Perrins Defra }

Gary Shanahan BERR

Rebecca Cowburn Defra

Lorraine Derrick Defra

Biomass Implementation Advisory Group (BIAG) – Terms of Reference

Purpose

1. The Advisory Group will provide advice and direction on how the actions within the Government's Response to the Biomass Task Force Report should be implemented. The make-up of the group should be such that it will offer a wealth of experience and expertise on biomass from across Government and industry.

Context

2. The Biomass Task Force (BTF) was established to assist Government and the biomass industry in optimising the contribution of biomass energy to renewable energy targets and to sustainable farming and forestry and rural economy objectives. In setting out their assessment of biomass for energy, the BTF took account of findings from other reviews, strategies and any studies running in parallel to its work. In particular, they noted the findings of the Energy White Paper 2003 (EWP). Progress against the goals set out within the EWP are monitored through the Sustainable Energy Policy Network (SEPN), which was set up to aid in the delivery of the EWP. The BTF in turn recommended that the proposed response to the Biomass Task Force's Report be reported to Government via the SEPN, which is chaired by the Secretaries of State for Trade and Industry and for Environment, Food & Rural Affairs.

3. The Government's Response to the Biomass Task Force Report, published in April 2006, included a series of actions to address Task Force recommendations. Achieving the goals and actions set out in the response will require close integration across departments and beyond. An action plan has been drawn up of the actions promised by Government in its Response. Their delivery will be managed by the Biomass Implementation Team, under the guidance of the Advisory Group.

4. The work of the Biomass Implementation Team is overseen by a small Project Board of 2 senior officials, with ongoing reporting on progress with implementation to SEPN.

Specific responsibilities

- To take an overview of the breadth of work being undertaken in delivering the action plan and provide guidance on gaps, the focussing of effort, linkages and overall impact of actions.
- Individually, to provide expert knowledge and advice on specific work areas within the project.

- To alert the Project Board and Biomass Implementation Team members to emerging policies, reports, reviews and legislation which could potentially impact on current and future work in relation to the action plan and English Regions.
- To provide guidance on the management of the project and, where appropriate, supply details of alternative approaches.
- To act as an advisory/sounding board for proposed courses of action presented by the Project Board and Biomass Implementation Team, ensuring that actions proposed will achieve the desired outcomes and are underpinned by robust evidence and fully costed.
- To provide advice on the format and content of the annual progress reports.
- To ensure that the work undertaken by the Project Board and Biomass Implementation Team is informed by, and informs, work planned or being carried out in the Devolved Administrations and English Regions.
- Where possible, the Advisory Group will help to mitigate risks identified within the risk register.
- Advisory Group members will seek to attend the regular bi-monthly meetings (or provide a qualified substitute) and supply feedback to written communications from the Project Board and Implementation Team.