

PROGRESS REPORT ON IMPLEMENTATION OF THE GOVERNMENT RESPONSE TO THE BIOMASS TASK FORCE REPORT

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MINISTERIAL FOREWORD



It is 3 years since the Government issued its response to the Biomass Task Force report. Since then climate change and renewables have jumped to the top of the global agenda.

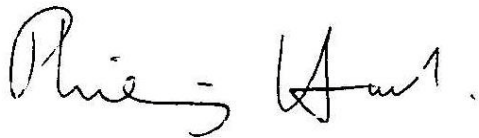
Renewable energy, including bio energy is key to a secure low-carbon energy future. We need radically to reduce greenhouse gas emissions, as well as diversify our energy sources. As part of this move to a low-carbon economy, we need a step change in renewable energy use in heat, electricity and transport. In December last year we agreed with other Member States to an EU-wide target of 20% renewable energy by 2020. The UK's share is to achieve 15% of the UK's energy from renewables. That is almost a seven-fold increase in renewable energy use from where we are now. It will involve all of us in a revolution in how we consume and generate energy.

Consequently, it is more important than ever that we maximise the potential of sustainable biomass heat and power. The Biomass Task Force showed us what needed to be done at a strategic level to develop a viable and sustainable biomass industry in England. Government responded by setting an ambitious cross-cutting programme of work, practical actions and incentives aimed at overcoming barriers and optimising biomass supply and use. This was incorporated in an overarching UK Biomass Strategy, published in May 2007.

This report sets out in detail achievements to date and explains how continuing and planned future activities will enable us to build on these successes. This has been a truly all-embracing agenda. Since 2006, we have worked closely with a wide range of stakeholders and partners from within Government, industry, and the regions to deliver. As a result we are seeing real changes on the ground. Increasing numbers of schools, hospitals, Government buildings and other public and private sector organisations are installing biomass heat systems, and large energy suppliers are using or planning to use biomass fuels in both dedicated biomass and conventional coal plants.

But there is still work to be done. The Biomass Task Force was pivotal in raising the profile of biomass, and our work to date means that we are now in a position where we can expect bioenergy, especially biomass heat and power, to make a significant contribution to meeting our challenging renewable energy target. We will be publishing a Renewable Energy Strategy later this year and this will explain further how we intend to achieve this goal.

I would like to thank Sir Ben Gill and the original members of the Biomass Task Force and all of those stakeholders and delivery partners who have helped us to reach this point, and look forward to their continuing involvement as we move to next stage of our vision for a truly sustainable and competitive biomass sector.

A handwritten signature in black ink, appearing to read "Philip Hunt". The signature is written in a cursive style with a large initial 'P' and a long horizontal stroke.

LORD HUNT OF KINGS HEATH OBE

PART I – BACKGROUND, OVERVIEW OF PROGRESS AND NEXT STEPS

BACKGROUND

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.
2. The Task Force focussed on biomass used to generate heat and combined heat and power (CHP) but also looked at the production of renewable electricity at dedicated biomass power plants or through co-firing with conventional fossil fuels.
3. Biomass was defined as including purpose grown energy crops, forestry and forestry products, agricultural residues and other organic waste such as municipal solid waste, food waste and industrial waste.
4. The Task Force reported to Government on the barriers to optimizing biomass use in England in October 2005. It concluded that the development of a 'biomass industry' was constrained by a lack of market confidence brought about by three main factors:
 - the lack of a mature, robust fuel supply chain;
 - lack of knowledge, interest or awareness of the potential of bioenergy; and
 - lack of strong market signals and the appreciation of the true costs and long-term benefits of bioenergy, due either to regulatory or structural issues, particularly in the heat market.
5. The report made 42 recommendations of actions to address these barriers. The full report is available via the following link:

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

Note: this report will be moved to the DECC website later this year (www.decc.gov.uk).

Government Response to the Biomass Task Force Report

6. In April 2006, the Department for Environment, Food and Rural Affairs (Defra), jointly with the then Department of Trade and Industry (DTI) (later the Department for Business and Regulatory Reform (BERR), now the Department for Business Innovation and Skills (BIS)), published on behalf of Government a detailed response to the Task Force recommendations:

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

Note: this document will be moved to the DECC website later this year (www.decc.gov.uk).

7. 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
 - 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.

Implementation

7. Responsibility for implementing the actions committed to in the Government's Response was originally jointly led by Defra and DTI (later BERR) and transferred to DECC when the new Department was established in October 2008.

8. The Biomass Implementation Advisory Group (BIAG) was set up to monitor and guide the work of the Implementation Team delivering the actions. The composition of the group offered a wealth of experience and expertise on biomass from within Government bodies and industry.

9. BIAG continued its work until mid 2007 when the Biomass Task Force implementation was incorporated within the UK Biomass Strategy and managed through a joint Defra/BERR (now DECC) National Climate Change and Energy programme.

'One year on' report

10. An interim progress report marking the first year's work was published in September 2007 and can be viewed via the following link:

<http://www.defra.gov.uk/ENVIRONMENT/climatechange/uk/energy/renewablefuel/pdf/btfgovresponse-oneyearon.pdf>

Note: this report will be moved to the DECC website later this year (www.decc.gov.uk).

OVERVIEW OF PROGRESS

11. **Annex A** lists progress against the 61 actions set out in the Government Response.

12. To date, 54 actions been successfully completed. The key achievements include:

- Firm proposals for a Renewable Heat Incentive to come into place by April 2011, as set out in the consultation on a Heat and Energy Saving Strategy launched in February 2009;
- Continued support for establishing energy crops under the Rural Development Programme for England, with £47 million available over the 2007-2013 period;
- New rounds of Bio-Energy Infrastructure and Bio-Energy Capital Grants schemes launched (funding 83 projects to develop the biomass fuel supply chain and 114 projects to install biomass electricity, heat and CHP plants, for a total of £26.6 million);
- Publication of UK Biomass Strategy in May 2007, defining the Government's aspirations for the sustainable development of biomass for heat and power, transport fuels and industrial products;
- Launch and implementation of the Woodfuel Strategy for England 2007, which aims to bring an additional 2 million green tonnes (1 million oven dried tonnes) of wood onto the market annually by 2020;
- Successful establishment of the Biomass Energy Centre to provide expert information and best-practice advice to industry and the public;
- Commitment of £10 million from Environmental Transformation Fund (ETF) to fund anaerobic digestion demonstration projects in England. Review of Government's approach to anaerobic technology leading to the publication of shared stakeholder goals statement and development of implementation plan;
- Launch of Department for Children, Families and Schools biomass evaluation tool and commitment to use when planning all school capital projects. So far around 50 schools have been deemed suitable for biomass heat
- Conclusion of mapping estate for biomass suitability by Defra, resulting in 3 boilers operational, and plans for 8 to be installed over the next 3 years;
- Mapping extended to total of 24 Departments and agencies across the wider Government estate;
- Launch of Biomass Environmental Assessment Tool (BEAT 2) by DECC and Environment Agency.

Actions continuing

13. Seven actions are still being progressed. Of these, 3 relate to amending **Building Regulations and accompanying technical documents** and this work is now being taken forward through the formal reviews of Parts J and L of the Regulations, due to be completed in 2010. A further 3 separate actions on **assessing regional biomass availability and supply chains, raising awareness of energy from waste, and developing specific biomass skills and training action plans** are partially complete. Details of further future work relevant to these areas are expected to be set out in the Renewable Energy Strategy which we plan to publish later this year. Our programme of **mapping the Government estate for biomass opportunities** has been extended beyond the main procuring Departments and now covers a total of 23 Departments and agencies. This is an extensive and complicated exercise, and individual Departments are working to different timescales to complete their assessments. We expect the majority of outstanding work to be completed by the end of 2009.

14. Further detailed information on progress against all of the actions is set out in **Part II**.

Current levels of biomass uptake and potential for growth

15. Currently bioenergy, including waste, accounts for the majority of renewable energy deployment in the UK. In 2006, about 2.3% of electricity generated in the UK was from biomass, including electricity generation from landfill gas (gas formed from the decomposition of organic material in landfill), sewage gas, the biodegradable portion of municipal solid waste, wood (either from virgin timber, forestry management wastes or recovered waste wood) and specially grown energy crops such as short rotation coppice or miscanthus grass. Sometimes this biomass is co-fired with fossil fuels.

16. Biomass heat is a proven technology and is one of the most cost-effective potential sources of renewable heat. The market share for all forms of renewable heat in the UK is low (<1.0%), although the biomass heat sector is growing. The recent consultation on the Heat and Energy Saving Strategy¹ highlights the important part that biomass can play in helping to decarbonise the generation and supply of heat in the UK.

17. Analysis undertaken in the Renewable Energy Strategy consultation document² issued in June 2008 suggested that the least cost delivery of our 2020 renewable energy goals might require approximately 30% of the UK's renewable energy to come from biomass heat and electricity. This would equate to approximately 4.5% of the UK's forecast energy consumption in 2020. However, as explained below, it is important that increase in biomass production is sustainable, and takes into account any wider potential impacts on the environment and public health.

¹ <http://hes.decc.gov.uk/>

² http://www.decc.gov.uk/en/content/cms/consultations/cons_res/cons_res.aspx

NEXT STEPS

18. The work of the Biomass Task Force, and the actions we have taken to implement their recommendations, have placed us in a good position to move towards the challenging targets outlined above. However, we cannot be complacent and must continue to work with stakeholders to drive forward the biomass agenda. In particular we will need to increase efforts to build **robust and sustainable biomass supply chains** and **raise awareness of biomass opportunities** at a national and regional level. Work on updating the **Building Regulations**, devising **biomass skills and training plans** and encouraging Government Departments to use **biomass on their estates** will also continue.

19. The forthcoming **Renewable Energy Strategy (RES)** will provide a framework for taking forward these activities and when launched later this year, the **Office for Renewable Energy Deployment (ORED)**³, will have an important overarching role to play in strengthening UK supply chain capacity, facilitating inward investment in partnership with RDAs, UKTI and others, and raising public awareness.

20. **Sustainability** will be key as we seek to increase biomass production in the UK. If biomass sourcing were to take place without sufficient regard to environmental, social and economic impacts, its continued production and expansion would not be possible.

21. In the case of biomass for heat and power generation, the recently agreed EU Renewable Energy Directive (RED) requires the EU Commission to present a report on sustainability requirements by 31 December 2009 at the latest. There is significant interest in the UK and internationally in developing such requirements and we will work closely with industry and non-governmental organisations to develop a UK view on what the sustainability requirements should include. On 1 April 2009 we introduced a sustainability reporting requirement to the Renewables Obligation for all generators over 50kW burning biomass, and this will allow us to build up a picture of the sustainability of the biomass being used.

22. Research has shown that uptake of biomass for heating purposes, could under certain circumstances have significant impacts on **air quality** and **public health**. As part of the development of the Renewable Energy Strategy, a Defra impact assessment shows that where certain conditions are met, impacts can be reduced to manageable levels. These are that all new biomass plant are high quality, corresponding to the best performing units on the market, that the majority of biomass heat uptake replace or displace existing coal and oil fired heating, and is located off the gas grid, away from densely populated areas, and that uptake in Air Quality Management Areas is significantly lower than elsewhere. Defra have recently written to local authorities in England to ensure these points are taken into account in the development of local policy for biomass installations. Further advice

³ The planned establishment of the Office for Renewable Energy Deployment (ORED) was announced by Government on 8 September 2008, as part of its new strategy for the UK's manufacturing sector - 'New Challenges, New Opportunities. For further details see: <http://nds.coi.gov.uk/environment/fullDetail.asp?ReleaseID=378308&NewsAreaID=2&NavigatedFromDepartment=True>

is also set out in Defra's latest Local Air Quality Management Policy Guidance, issued in January 2009⁴.

⁴ See: <http://defra/environment/airquality/local/guidance/pdf/laqm-policy-guidance-part4.pdf>

PART II- DETAILED PROGRESS AGAINST ACTIONS

ACTIONS COMPLETED SUCCESSFULLY

Actions 1 and 3 - further round of Bioenergy Capital Grants scheme in 2006 and development of new 5 year capital grants scheme

A new 2nd round of the Bio energy Capital Grants Scheme (BECGS) was run in April 2006 funded by the Big Lottery Fund. Round 3 was launched in December 2006 to support the installation of biomass heat and combined heat and power projects in the industrial, commercial and community sectors in England. Rounds 3 and 4 were funded by Defra during 2006 and 2007. The latest Round 5 was announced in December 2008 and applications are currently being assessed.

The Bio-energy Capital Grants Scheme is now part of the UK Environmental Transformation Fund (ETF) which aims to bring forward the demonstration and deployment of low carbon energy and energy efficiency technologies.

Early rounds of the scheme have produced the following highlights:

- Two major power plant projects in operation at Lockerbie and Middlesbrough.
- Three medium-scale electricity/CHP installations in operation located in South Wales, Northern Ireland, and Staffordshire.
- A core industry of nine suppliers installing biomass boilers with over 400 installations so far. The largest two suppliers have over 30 employees each.
- Parallel generation of local wood fuel suppliers extracting local woodlands and resources. Each region now has several suppliers.
- Nine projects with local authorities that demonstrate public sector leadership in developing carbon abatement strategies. For example, Nottingham is converting all their schools to wood heating.
- Started UK pellet fuel industry by supporting the Balcas sawmill CHP plant in Northern Ireland, producing 40k tonnes pellets per year. Balcas are now replicating this, at double the size, in Scotland based on the experience.
- Initiated a new industry in recovered wood fuel in the North East and North West by providing a market for over 200k tonnes per annum. E.ON and others are now planning further installations to use this resource.

In total there are over 300 MW of biomass capacity. Of this 96 MW was delivered by BECGS and is largely clean biomass wood fuels. Around 120 MW was delivered by the Non-Fossil Fuels Obligation, and is largely fired by agricultural residues. Just over 100 MW has been built without support and is largely fired by industrial and commercial wastes.

Action 2 - Launch of Low Carbon Buildings Programme (LCBP) and publication of Microgeneration Strategy

The **Low Carbon Buildings Programme** was launched on 1 April 2006 by the then DTI and provides grants for the installation of microgeneration technologies including wood-fuelled and pellet boilers, for households, community and commercial projects across the UK.

The scheme is now funded by DECC through the Environmental Transformation Fund (ETF) and is managed by the Energy Savings Trust (EST). Phase 1 of the scheme has been extended to 2010 for household applications and a new Phase 2 has been opened for community sector grants.

The **Microgeneration Strategy**⁵ was launched on March 2006, with the objective of creating the conditions for microgeneration to become a realistic alternative or supplementary source of energy generation. It contains 25 actions to tackle the barriers to widespread uptake of microgeneration including a raft of financial and non-financial support measures. **A progress report on the Strategy's implementation** was issued in June 2008⁶.

Action 4 - Examine longer-term mechanisms for supporting renewable heat, taking account of conclusions from the Energy Review and EU developments, and report on this work within 12 months.

The 2007 Energy White Paper committed Government to “conduct further work into the policy options available to reduce the carbon impact of heat and its use in order to determine a strategy for heat”. Separate analyses into the heat market were subsequently carried out during 2007 by consultants Ernst and Young and the Office of Climate Change (OCC), an independent, cross-departmental strategy unit within Government. The OCC study was used as the basis for a call for evidence issued in January 2008, seeking public views on the most cost effective technologies for renewable heat production in the UK, and the need for, and possible format of any further incentives required to increase production. Results from the call for evidence were used to compile the chapter on heat in the Renewable Energy Strategy consultation document issued in June 2008, which sought views on two possible structures for providing financial support to the renewable heat sector through either a renewable heat incentive or renewable heat obligation.

These extensive studies and consultations on the renewable heat sector have culminated in the publication on 12 February 2009 of a proposed Heat and Energy Saving Strategy⁷. This discusses Government's plans for new financial incentives aimed at promoting renewable heat generation in the form of a Renewable Heat Incentive and feed in tariffs (FITs) for small-scale low carbon electricity generation.

⁵ <http://www.berr.gov.uk/files/file27575.pdf>

⁶ <http://www.berr.gov.uk/files/file46372.pdf>

Note: these documents will be moved to the DECC website later this year (www.decc.gov.uk).

⁷ <http://hes.decc.gov.uk/>

These measures will help overcome some of the up-front costs of these installations. FITs are due to come into place by April 2010 and the RHI by April 2011. A further consultation on the operation of all of the incentive schemes is expected later during 2009.

Action 5 - Publish outcomes of the Energy Review and Waste Strategy Review on energy from waste.

A report on the **Energy Review** was published on 11 July 2006:

<http://www.dti.gov.uk/files/file31890.pdf>

The revised **Waste Strategy for England** was published on 24 May 2007:

<http://www.defra.gov.uk/environment/waste/strategy/strategy07/pdf/waste07-strategy.pdf>

These documents make clear that **recovering energy from waste** which cannot sensibly be reused or recycled is an essential component of a well-balanced energy policy.

Food and wood have been identified as two of seven priority material streams for which better waste management options must be sought. Minimising food waste; separating and collecting that food which is wasted for anaerobic digestion to create biogas; and the combustion of wood waste for either electricity or heat, are the leading waste management options. All would contribute to increasing renewable energy in the UK.

Action 6 - Identify possible end users of RDF and SRF, and quantify the likely demand for these fuels.

RDF and SRF comprise a wide range of outputs from Mechanical Biological Treatment (MBT) plants and other waste management processes. End users of Refuse Derived Fuel (RDF) and Solid Recovered Fuel (SRF) were identified through the June 2008 consultation on proposals for banding the Renewables Obligation.

This showed that there is an expanding range of outlets for RDF/SRF including industrial intensive energy users with an existing heat load/ CHP; public sector installations like MoD estates, prisons, hospitals etc.; cement kilns; purpose built RDF/SRF disposal plants with or without CHP; and co-firing SRF with coal or biomass.

Defra is aiming to stimulate the markets for these waste fuels and a minimum standard for SRF has been developed that differentiates this product from chopped up black bag MSW. This minimum SRF standard was included in the statutory consultation for the Renewables Obligation Banding Review and forms part of the Renewables Obligation Order ("ROO") which came into effect on 1 April 2009.

The ROO also incentivises biomass Combined Heat and Power (CHP). An Information Note on CHP and SRF in the context of the Banding of the Renewables Obligation has been published by the Waste Infrastructure Delivery Programme (WIDP) to coincide with the SRF seminar held in Birmingham on 28 January 2009.

Further information is set out in Defra's guidance to Local Authorities on PFI for waste management technologies, updated in February 2009:

<http://defra/environment/waste/localauth/funding/pfi/pdf/faq-pfi.pdf>

Action 7 - Government to continue to consider the potential for an enhanced capital allowance scheme to encourage investment in markets

Provision for an Enhanced Capital Allowance (ECA) for SRF combustion equipment was announced in Budget 2007. The ECA scheme came into effect from October 2008 and further details on criteria and eligibility requirements are provided by the Government sponsored Quality Assurance for Combined Heat & Power (CHPQA) programme. For further details see Guidance Note 42 and Energy Technology Criteria List at:

<http://www.chpqa.com/index.htm>

Action 8 - Continue to provide input to the discussions in Europe on the Waste Thematic Strategy and the revision of the Waste Framework Directive.

The Environment Council adopted conclusions of the **Waste Thematic Strategy** on 27 June 2006 and this has been implemented in part through revisions to Waste Framework Document.

The revised **Waste Framework Document** (Directive 2008/98/EC) was adopted by European Parliament and Council on 19 November 2008 and is due to come into force by the end of 2010. The Directive includes a provision to exclude from the Directive's controls, a number of types of biomass based wastes, such as faecal matter, straw and other natural non-hazardous agricultural or forestry materials used in the production of energy from such biomass through processes or methods which do not harm the environment or endanger human health.

Action 10 - Develop markets for wood waste as a primary fuel source, through the Defra Waste Infrastructure Delivery Programme team.

The 2007 Waste Strategy for England states that the best use of waste wood is to burn it in the form of a solid recovered fuel, or in other Waste Incineration Directive (WID)-compliant Combined Heat and Power facilities

DEFRA published a market report into waste wood, 'Waste Wood as a Biomass Fuel' to enable industry to understand the issues and begin to build supply chains:

<http://defra/environment/waste/topics/pdf/wastewood-biomass.pdf>

This concludes that the 10 million or so tonnes of waste wood currently being produced in the UK each year is a much underused resource - in part due to it often arising as part of a mixed waste stream, with limited availability of facilities for its segregation, and also as a result of its predominantly contaminated nature, which often makes recycling impractical.

With the majority of waste wood arisings being contaminated, the key to realising potential is greater Waste Incineration Directive (WID) compliant combustion facilities. A number of economic measures exist, and are being strengthened, to divert waste from landfill and, in the case of waste wood, into renewable energy markets. While aggregation points and supply chains for waste wood are in their infancy, these are expected to continue to grow with better market knowledge, greater WID compliant combustion capacity with better geographical distribution, and stronger incentives for renewable energy.

The banding of the Renewables Obligation will increase support for electricity generated from certain biomass feedstocks, such as waste wood and energy crops. With the introduction of the proposed Renewable Heat Incentive, we also expect to see an increase in the use of biomass for heat.

Action is also being taken at a local level. In the Renewable Energy Strategy consultation document, the Government committed to considering whether we should adapt the PFI scheme to encourage Local Authorities to offer long term contracts for the supply of waste wood. Following this consultation, we asked Local Authorities to take waste wood into consideration when applying for waste PFI credits in the outline businesses cases submitted at the end of 2008. The result was that many of these bids included plans for a CHP plant using waste as the main fuel. Local Authorities choosing this waste solution will direct their waste wood to these facilities, away from landfill and generating renewable energy.

A national project is currently being developed to further define policies and possible regulatory options to promote optimal management of different types of waste wood and increase their diversion from landfill. The forthcoming Renewable Energy Strategy is expected to set out further details of how we plan to help develop waste wood as a renewable fuel.

Action 11 - Continue to fund the Environment Agency's Waste Technology Data Centre, subject to budget provision and to satisfactory outcomes within the existing MOU with Defra.

The Environment Agency has continued to progress the work of the Waste Technology Data Centre.

The Waste Technology Data Centre provided facts on how waste treatment technologies work, as well as how much they cost to build and maintain. Its web pages gave details of how to find out what types of waste the technologies accept and recycle, and what effect they have on the local community. There were also

case studies from equipment suppliers and users of the technology explaining how specific instances of the technologies have been implemented.

Some 40 waste treatment technologies were covered. Part of the information provided on the website is a simple Life Cycle Assessment (LCA) profile for each waste technology type.

The processes available through the Waste Technology Data Centre website have now been fully incorporated in the Environment Agency's new LCA tool for waste, which is called WRATE:

<http://www.environment-agency.gov.uk/research/commercial/102922.aspx>

Action 12 - Clarification of the regulatory requirements of the use of biomass for energy recovery by the Environment Agency by April 2006

The EA published Guidance on 'Regulation of Energy from Solid Biomass Plants' in May 2006:

http://www.environment-agency.gov.uk/static/documents/biomassregulation_1765355.pdf

Action 13 - A review of the Government's approach to anaerobic digestion will be undertaken within 12 months of the publication of the response.

Anaerobic digestion (AD) 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. This technology can contribute to a range of climate change and wider environmental objectives by producing renewable fuel for heat /power or transport, helping mitigate methane emissions from agriculture and helping divert organic waste such as food waste from landfill.

During 2007/08 Government reviewed its approach to anaerobic digestion, including investigating different types of anaerobic digestion technologies and assessing the economics.

Further work has resulted in a document setting out shared goals for AD for all stakeholders was published by Defra in February 2009:

<http://defra/environment/waste/ad/pdf/ad-sharedgoals-090217.pdf>

A new Task Group was established to lead the development of an implementation plan setting out the practical measures that Government and stakeholders will take individually and collectively to achieve these shared goals:

<http://defra/news/latest/2009/energy-0218.htm>

Note: this content will be moved to the DECC website later this year (www.decc.gov.uk).

To demonstrate how anaerobic digestion can work in practice in a range of different applications, DEFRA announced in 2008 that it would make £10 million available from the Environmental Transformation Fund to contribute towards the construction of new anaerobic digestion demonstration plants in England. A 3-year scheme was launched in September 2008, administered by WRAP and Carbon Trust and in June 2009 DEFRA announced the award of grants to 5 successful applications.

For further information see: <http://defra/news/2009/090608a.htm>

Action 14 – A quality protocol for waste composting - such as AD digestate - will be published by the Environment Agency and Waste & Resources Action Programme (WRAP)

A quality Protocol for Anaerobic Digestate was published by the Environment Agency on 2 January 2009. This aims to make it easier to collect, store, transport and re-use this biodegradable waste. The Protocol will now be notified before the European Commission's Technical Standards committee, in accordance with the Technical Standards and Regulations Directive 98/34/EC. The protocol can be found here:

<http://www.environment-agency.gov.uk/business/topics/waste/39005.aspx>

Action 15 - Government will continue to consider how best to integrate biogas into the Renewable Transport Fuel Obligation (RTFO) that is being introduced on 1 April 2008.

The Renewable Transport Fuel Obligation (RTFO) came into effect on 15 April 2008 (SI 2007 No 3072) and includes biogas as an eligible fuel. Sustainability criteria issued in January 2008, include details for use of manure and organic solid waste to produce biogas. For the period April – December 2008, a total of 0.1million kg of biogas has been supplied through the RTFO.

Action 16 - Undertake a review of co-firing as part of the Energy Review.

When the Renewables Obligation (RO) was introduced, co-firing – the burning of biomass alongside fossil fuels – was included as a transitional technology to encourage the establishment of biomass supply chains, particularly energy crops. Co-firing was permitted up to a specified cap and, from a specified date, co-firers would need to use a certain minimum amount of energy crops to be eligible for ROCs.

Within the context of the Energy Review, the Government conducted a review of co-firing. This review led to a broad consensus that co-firing should be encouraged to play a long-term role in reducing carbon emissions. However, co-firing is one of the

most economic forms of renewable energy and does not need full support of the RO. If the price of carbon were sufficiently high, it might be possible that co-firing would require no support from the RO – although this is an option for the long term.

At the moment, and probably for the next decade or so, co-firing is likely to continue to require the support of the RO and there is a case to continue to support energy crops. Under the new ROO (see above) from 1 April 2009 co-firing will continue to be included in the RO, and ROCs will be rewarded as follows:

- Co-firing with regular biomass will receive 0.5 ROCs/MWh.
- Co-firing with energy crops will receive 1 ROC/MWh.
- Co-firing with regular biomass and CHP will receive 1 ROC/MWh.
- Co-firing with energy crops and CHP will receive 1.5 ROCs/MWh.

In addition, the cap on suppliers meeting more than 10% of their obligation from co-fired with regular biomass ROCs will be increased to 12.5% from 2010/11.

For further information see the Government's response to statutory consultation on Renewables Order 2009 at:

<http://www.berr.gov.uk/files/file49342.pdf>

Note: this content will be moved to the DECC website later this year (www.decc.gov.uk).

Action 17 (relating to legislative changes to ease burdens on small scale generators)

“The Government is seeking legislative amendments to achieve these changes through the Climate Change and Sustainable Energy Bill. Subject to the successful passage of the Bill through Parliament, the Government will consult on the details of implementing the changes later in 2006”.

Government agreed to two main amendments to the Renewables Obligation (RO) for smaller electricity generators, to remove the sale and buy back agreements and to allow agents to act on behalf of small generators and amalgamate the output from a number of different generating stations.

These changes required amendment to primary legislation which was achieved through the successful adoption of the Climate Change and Sustainable Energy Act on 1 April 2007 (which directly removed sale and buyback requirements for small generators) and through subsequent changes to the RO to implement the changes in relation to agents (see 'The Renewables Obligation Order 2006 (Amendment) Order 2007' SI 2007 (no 1078).

Action 18 - Work with RDAs to develop regional carbon saving targets

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

RDAs have previously included carbon targets in their Regional Economic Strategies and many are also working with regional partners to develop and deliver these region-wide targets. Regional Planning Bodies are developing carbon trajectories and these will be included in Single Regional Strategies which will bring together Regional Economic and Regional Spatial Strategies.

Action 19 - Government to work with RDAs to develop an overview of the delivery structures across the English regions, including the examination of the delivery of local and regional energy projects

This action has been taken forward with support from the DECC-funded National Non Food Crops Centre (NNFCC), whose programme of work for Government includes identifying and supporting regional opportunities and means of delivering the benefits of biomass and non-food crops.

During 2006/07, NNFCC held meetings with all Regional Development Agencies (RDA) and Government Offices (GO) to share best practice and disseminate developments in biomass and non- food crop technology. Following on from this, NNFCC has formed alliances with a range of organisations through the regional network and continues to work closely with regional contacts.

Officials from the DECC (previously Defra) Bioenergy team completed a programme of visits to each of 9 GOs in England during first quarter of 2008 , to gather evidence on work being undertaken at regional level on biomass and disseminate information amongst the GOs on recent policy developments.

Action 20 - Launch of Biomass Energy Centre (BEC) in April 2006; and

Action 21 - review the further steps required to develop a clear customer-focused structure of advice and information on biomass, and to work with the renewables industry in taking this forward as part of the Biomass Strategy.

The Biomass Energy Centre (BEC) was established on 27 April 2006 and is owned and managed by the UK Forestry Commission, via Forest Research, its research agency.

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 that provide information on biomass at a regional and national basis (Energy Saving Trust, Carbon Trust, National Non-Food Crops Centre and Regional Development Agencies).

Since its launch BEC has responded to around 3,700 enquires on the production and use of fuels derived from biomass. Enquiries are received from members of the public, small businesses, consultants, farmers, foresters and growers, waste

managers, councils and local authorities, government departments, researchers and students. The majority of these enquiries are based on fuels produced from woodland management, wood processing industries and from perennial energy crops. Many requests for information are from those looking to use small scale systems to replace oil fired boilers. A small number of enquiries focus on anaerobic digestion and liquid fuels. Commonly asked about topics include contact details for fuel suppliers and boiler installers, grants for boilers or fuel production infrastructure, establishing or managing perennial energy crops, using wood recovered from the waste stream as a fuel and life cycle carbon emissions from biomass systems. There is considerable interest in all scales of biomass-fired combined heat and power systems (CHP).

The BEC has also exhibited at around 40 national and regional shows and events throughout Great Britain over the last three years and has responded to many hundreds of enquiries at these events as well as distributing thousands of publications on biomass systems. The BEC hosted the annual conference of the two International Energy Association Bioenergy task groups in autumn 2008. BEC has also been asked to contribute to articles on biomass published in a national news paper, trade journals, magazines and local radio.

The establishment of BEC has been warmly welcomed by industry representatives. The Biomass Energy Centre Steering Group, established in June 2006 plays an important role in helping to formulate BEC's priorities and identify communication needs. Its members are drawn from the biomass industry and related sectors as well as Government.

Communication and dissemination of information on biomass fuels, technologies at national and regional levels was identified as a key area in the RES consultation, and we working with BEC and other delivery partners such as the Carbon Trust, to consider how best to enhance these activities, building on the excellent progress to date by BEC.

Action 22 - Aim to collate and publish technical, economic and best practice information on the Biomass Energy Centre website by end of June 2006.

BEC launched its website at the Renewable Energy Association (REA) Bioenergy Conference on 6 September 2006.

BEC website: www.biomassenergycentre.org.uk

This contains a wide range of technical information on fuels, conversion technologies and research together with practical advice on producing and supplying fuels, installing equipment, fuel standards and grant schemes. The site has direct links to the websites of a number of other relevant national delivery partners such as NNFCC, Carbon Trust, REA and Forestry Commission. It also links through to the renewable energy bodies operated through the Regional Development Agencies.

Since its launch, the site has recorded 1.1 million page views. March 2009 has been the busiest month to date with over 60,000 page views recorded. The BEC website

is often the first or second suggested website when the term 'biomass' is entered into commonly used internet search engines. Material is constantly being added to the site and recent work has focused on improving the accessibility of the information it contains. The draft CEN TC335 standards documents, applicable to all forms of solid biofuel, have been available for free download on the BEC website for since spring 2008 and around 1800 downloads have been made to date. The Biomass Environmental Assessment Tool (BEAT 2) has been hosted on the website since its launch by DECC and Environment Agency in autumn 2008. Current work on the website includes the development of a woodfuel suppliers database and the creation of a library of cases studies of some of the biomass systems currently in use. Both of these tasks should be completed in summer 2009.

Action 23 - Publication of best practice biomass guidance to builders within the next 12 months

BEC provides, via its website, basic general information suitable for the building sector on installation of biomass. This covers information on issues to consider i.e. type of system, fuel supply storage space as well regulatory requirements, details of installers and how to go about obtaining training.

DECC have commissioned BEC to develop, through partnering with key industry associations, further updated and detailed information and guidance on biomass installation aimed at architects, planners, developers and M&E engineers. This is due to be made freely available via the BEC website during spring/summer 2009. Work has also begun on developing a biomass training course aimed at improving awareness amongst architects and building services engineers (see also action 36).

Action 24 - Launch of Biomass Heat Accelerator Project (BHAP) during summer 2006

The BHAP was launched by the Carbon Trust in April 2006. This is a 5 year £5 million project aimed at accelerating the commercial development of biomass heat in the UK. It involves the Carbon Trust working in partnership with both new and existing biomass sites and their supply chains to develop case studies looking at how best to deploy biomass technology in the most economical and effective way. The initial work with existing sites has allowed the Carbon Trust to develop economic and performance benchmarks as well as to assess potential cost reductions. The project will also analyse successful and unsuccessful supply models and risk mitigation strategies before moving on to look at the design, installation and operation of new sites. Although the project will initially focus on small heat applications off the gas grid and selective on-gas applications, the project results will be shared and used to help understand the potential for much broader market uptake.

Action 25 - Review of Carbon and Energy Savings Trusts' websites and literature and publication of updated material by end of July 2006

Both organisations' websites were updated in 2006 and a rolling programme of work agreed to continue the updating of these two websites, with relevant details on biomass.

Action 26 - Review of implementing a specific logo for biomass heating over the coming year.

The question of a logo for biomass heat was considered during 2006/07 as part of BERR's work with Building Research Establishment (BRE) and industry to develop a brand for the UK's Microgeneration Certification Scheme (MSC). The MSC was launched in 2007 and was originally administered by BRE Global and is now administered by Gemserv for and on behalf of DECC, industry and wider stakeholders. MSC has established standards for most of the renewable and low carbon technologies and a number of companies have achieved their certification through a UKAS accreditation process for solar collectors, solar photovoltaic panels, micro and small wind turbines, heat pumps and biomass. At present a number of certification bodies are going through their UKAS accreditation to ensure there is choice and competition for installer and product manufacturers. The Scheme's single mark is currently registered in the UK for use by installers and manufacturers.

Action 27 - The Department for Education & Skills (DfES) will develop a requirement for its delivery partners to evaluate the feasibility of the use of biomass for all capital projects, including PFI contracts. The DfES will investigate the development of a methodology for evaluating the feasibility of the use of biomass in capital projects.

The Department for Children Families and Schools (DCFS) has produced a guide and calculator tool providing a simple methodology to evaluate the feasibility of biomass for school buildings. The evaluation methodology, which is spreadsheet-based, provides design teams with an initial assessment of biomass boiler size, cost, energy savings, etc. Details were published on the DCFS website on 2 October 2007:

<http://www.teachernet.gov.uk/management/resourcesfinanceandbuilding/schoolbuildings/sustainability/renewableenergy/biomass/>

At same time DCFS announced its commitment to evaluate biomass for all projects within its capital programme (See above web link). So far around 50 schools have installed biomass heat systems with many more projects in the pipeline.

Action 28 - Government will set new sustainable operations targets for its land and buildings by summer 2006.

In June 2006 the then Prime Minister launched targets for sustainable operations on the Government estate. These included targets for climate change and energy efficiency, in particular for the Government estate to be carbon neutral by 2012 and achieve 30% carbon emissions reduction by 2020 (to add to that previously set for 10 % renewable electricity by 2008).

Performance against targets is reported on annually by the Sustainable Development Commission. Data from the latest report 'Sustainable Development in Government 2007' shows that although Departments were on track collectively to achieve the 10% renewable electricity target there is still much to be done to improve performance on carbon emissions from offices in a number of Departments:

<http://www.sd-commission.org.uk/publications.php?id=700>

The use of biomass heat could in some cases help to meet this target, and we have been working with Departments to map the wider Government estate for biomass suitability (see action 31).

Action 29 - Government will publish its response to the report of the Sustainable Procurement Task Force.

The Government issued its response to the work of the Sustainable Procurement Task Force in an Action Plan launched on 5 March 2007:

<http://www.defra.gov.uk/sustainable/government/documents/SustainableProcurementActionPlan.pdf>

This details the action to be taken by Government collectively, and Departments individually, to harness public sector purchasing power to transform the market for goods and services with lower environmental and social impacts. The Plan makes clear that low carbon fuels such as biomass, will have an important part to play in helping Departments reduce the carbon intensity of the energy demand in their buildings.

Action 30 - Defra will map the suitability of its estate for conversion to biomass heating and will develop a methodology and toolkit to support the mapping process.

Following the mapping of its estate, Defra will undertake a lessons learned exercise and implement the conclusions.

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. The exercise was covered in 3 tranches and a total of 238 sites were mapped. A 'lessons learned' exercise was completed in December

2006 and the improvements identified from this process implemented within the second and third tranches of mapping.

By the end of March 2009 Defra had installed 3 biomass boilers across its estate at Worcester, Alnwick and Calthwaite and has firm plans to install biomass heat at a further 8 sites over the next 3 years. Several other sites have been identified as possibly suitable for biomass in the future and these will be considered in more detail when existing heating systems are due for replacement.

Action 32 - Government will continue to monitor compliance with national planning guidance and provide guidance to regional Government Offices to assist in appraisal of planning documents.

The Department for Communities and Local Government (CLG) has systems in place to ensure that Government Offices continue to check compliance of emerging regional spatial strategies with national planning guidance. CLG continues to provide specialist advice on issues of compliance to Government Offices as and when required.

Action 33 - Following the review of local plans to check compliance with PPS22, ODPM [now CLG] will act on any problems identified.

Government announced outcome of review on compliance with Planning Policy Statement (PPS) 22 on renewable energy on 8 June 2006:

<http://www.communities.gov.uk/planningandbuilding/planning/planningpolicyguidance/planningpolicystatements/planningpolicystatements/pps22/reviewpps22/>

The findings suggested that there was a strong take-up of the policies set out in PPS22 including the recommendation that local authorities and developers should consider the opportunity for incorporating renewable energy in all new developments.

CLG has written to all chief planning officers to draw attention to the importance of such policies in tackling climate change and continues to monitor performance at a local level.

Action 34 - Government will prepare and consult on a new PPS on use of the planning system to reduce carbon emissions in new development.

A new Planning Policy Statement (PPS) on climate change, to supplement PPS 1 (on sustainable development) was published on 17 December 2007 and makes clear that tackling climate change is central to what is expected from good planning policy.

CLG have worked with Homes and Communities Academy and the Planning Advisory Service to provide web-based practice guidance to enable planners, developers and local authorities to gain a better insight into how the policies set out

in the PPS can be translated into real life scenarios. This guidance includes a detailed case study on how to assess regional suitability for biomass energy and cross refers to relevant technical guidance on PPS 22 (renewable energy) which also covers biomass.

For further information see:

<http://www.communities.gov.uk/planningandbuilding/planning/planningpolicyguidance/planningpolicystatements/planningpolicystatements/ppsclimatechange/practiceguidance/>

Action 35 - Regional Sustainability Checklists for Developments are being produced to improve information and awareness of renewables, to ensure that benefits are fully considered in planning.

RDAs have developed sustainability check lists which are intended for use at the design and planning application stages of a new development. They usually focus on the sustainability issues pertinent to spatial planning, although also may address those construction and "in-use" issues that can be anticipated or influenced at the design phase. The checklists include biomass as an option for renewable energy and climate change mitigation. Checklists are available as web based tools and can be used by public and private sector decision makers (i.e. developers, Local Authority Planners and Local Authority Planning Committees).

Representatives from each region meet regularly to share experience and learning, to coordinate the future direction of the Checklists and to maintain consistency.

Action 36 - Government will explore further training options for planners on renewable energy by December 2006

This action was progressed initially at a regional level. Government Office London, through its partner London Renewables has produced some generic guidance on renewable energy issues for planners including biomass:

http://www.gos.gov.uk/gol/Environment_rural/Energy/Renewable_energy/

In August 2008, this package was supplemented by an update from Government Office North West looking more specifically at forestry and biomass and One NE have also produced guidance for planners through their partner 'ONE HEAT'. Documents are available on the Biomass Energy Centre (BEC) website.

DECC have recently commissioned BEC to carry out gap analysis and produce specific information on biomass technologies, including training packages for architects, planners, developers and M&E engineers. This information is expected to be available on the BEC website later this year.

DECC, with support from CLG, have contracted the Centre for Sustainable Energy to run a programme of activities since 2004 to raise awareness of, and disseminate information about, renewable energy and relevant Government policy and planning

processes. The programme has delivered a series of workshops for both planners and councillors on the technical and planning aspects of different renewable energy technologies including biomass.

Action 37 - Report on the outcome of discussions with BSI and HETAS and take appropriate actions in relation to the Buildings Regulations Part J and/or the associated technical guidance.

The Biomass Task Force had expressed concern that Part J of the Building Regulations (Combustion appliances and fuel storage systems) did not recognise that biomass systems are not radiant heat devices and as such some of the requirements relating for example to flues and heating pads could be unnecessary and unduly burdensome.

A meeting was held between the Renewable Energy Association, CLG and Defra in August 2007 to discuss the way in which Part J of the Building Regulations apply to biomass. The REA subsequently met direct with HETAS to discuss flue and hearth issues and then with CLG. It was agreed that although the Building Regulations did not directly discriminate against biomass, further guidance to building inspectors on interpreting some provisions would be helpful. A review of Part J of the Building Regulations is currently under way and biomass industry experts are included in relevant working groups. It is intended that revised guidance will be produced in 2010 and will include updated information on biomass technology.

Actions 41 and 42

Liaison with the British Standards Institute about the review of guidelines to simplify the testing approval procedure, with report back before the end of 2006

Introduction of amended applications system on the website - www.uksmokecontrolareas.co.uk

Under the Clean Air Act 1993, heating appliances burning wood or coal in smoke control areas must be exempt in regulations to ensure they can operate without emitting smoke. An approval system, based on British Standards Institute's (BSI) standard BS PD 6434, is in place to assess applications. The system is important to protect the public from harmful emissions of smoke particles which can have a serious effect on people's health. The Biomass Task Force had expressed some concerns about the application procedures for obtaining exemption, which it considered to be costly and unnecessarily lengthy.

The BSI were asked to review its procedures in 2006 and new guidelines were adopted to simplify the exemption assessment procedure for wood burning stoves and boilers and other solid fuel appliances.

At the same time, the website application procedure for exemption of solid fuel appliances was streamlined to speed up the application and assessment process,

allowing manufacturers to submit full details of their products at an earlier stage. There are around 160 sizes/types of wood/biomass burning appliances currently exempt for use in smoke control areas.

The department will continue to monitor the application and assessment procedure for solid fuel appliances to ensure the system operates effectively and to take into account technical and other developments.

Actions 43 - European Standards for solid biofuels and solid recovered fuels to be adopted as interim British Standards

Action 44 - An Environmental Impact Assessment (EIA) of the European Standards will be undertaken.

Action 45 - British Standards for solid biofuels and solid recovered fuels to be established

Standards are required to provide quality assurance to the users of biomass fuels, enabling them to purchase the right specification of fuels for their appliances. This is particularly important given the wide range of fuel and equipment currently available.

The UK has been actively involved with the European Committee for Standardisation (CEN) to develop European standards for biomass. CEN/TC 335 is the technical committee responsible for developing the draft standard to describe all forms of solid biofuels within Europe, including wood chips, wood pellets and briquettes, logs, sawdust and straw bales, while TC343 is developing the Solid Recovered Fuel Standards.

The CEN/TC 335 Biomass Standards are being adopted in the UK by BSI British Standards. They cover topics including; Specification and Classes, Fuel Quality Assurance, Sampling and Sample Reduction and methods for the determination of Physical and Chemical Properties of the fuels. These standards will allow a common approach across Europe for the most common parameters used to determine the quality of biomass fuels, such as moisture content, density, ash content and calorific value as well as providing a common terminology and sampling methodology. Free download of the CEN/TC 335 Technical Standards via the BEC website is available for UK-based companies and individuals, courtesy of a contract between BSI, FC and DECC. The standards are in the process of being upgraded to full European Standards (ENs), which will be available in the first half of 2010.

However, despite the publication of these standards, as the demand for biomass expands, additional suppliers will enter the market and we may see more examples of fuel not meeting the specifications required for boilers. A system to certify or guarantee the fuel specification of biomass is needed to further increase user confidence.

The Renewable Energy Association and HETAS have held discussions to progress the implementation of a voluntary fuel-quality certification scheme for solid biomass

fuels, such as woodchips, pellets and logs. DECC is engaging with this process which we hope will lead to the development of robust quality standards

Solid Recovered Fuel comprises a wide range of outputs from Mechanical Biological Treatment Plants (MBT) and other waste management processes. Through the work of Defra's Waste Infrastructure Delivery Programme and SRF composition consultations held in 2007 and January 2008, a minimum standard for SRF has been developed that differentiates this product from chopped up black bag MSW. This minimum SRF standard was included in the statutory consultation for the Renewables Obligation Banding Review and forms part of the Renewables Obligation Order 2009.

Action 46 - A second round of the Government-funded Bio-energy Infrastructure Scheme will be run in 2006/07.

A second round of the scheme was launched on 6 June 2008. Grants were made available to growers to set up producer groups to supply biomass to energy end-users and to producer groups and businesses to develop successful supply chains. Eligible costs include purchase or rent of specialist capital equipment and /or storage for use in harvesting or pre-use processing, quality assurance and handling, and specialist training.

Action 48 - The Forestry Commission will prepare a strategy and implementation plan, in conjunction with the private sector and the RDAs, by 20 September 2006

The Forestry Commission published the 'Woodfuel Strategy for England' in March 2007. A key objective is to bring an additional 2m tonnes of wood to market annually by 2020 (which it estimates would save 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 closely with delivery partners, including Regional Development Agencies, local authorities and private companies to produce a detailed implementation plan to support the strategy. The implementation plan will build on the many successful projects and initiatives already happening around England and will be released later this year.

A full copy of the Woodfuel Strategy is available via the following link:

<http://www.forestry.gov.uk/woodfuel>

Action 49 - Defra will work with delivery partners and RDAs to develop a proposal for energy crop support which will be considered as part of the Rural Development Programme for England 2007-13

Action 57 - Ensure continuity to environmental assessment of energy crops planting applications

Action 58 - Publication of guidance on strategic environmental assessment (SEA) for bioenergy crops

Action 59 - Publication of bioenergy crops opportunity maps, and associated guidance

A new Energy Crop Scheme (ECS) was launched on 1 October 2007 and forms part of the Rural Development Programme for England 2007-13. The Scheme is administered by Natural England and supports the cost of establishment of Miscanthus or Short Rotation Coppice (SRC). Payment are made on the basis of 40% of actual costs (i.e. suppliers/materials/contractors costs) and/or of on-farm costs (i.e. use of own labour and machinery, where applicable).

For further details see:

<http://www.naturalengland.org.uk/ourwork/farming/funding/ecs/default.aspx>

Guidance on opportunities and optimum sitings for energy crops has been placed on the Defra website. These regional maps are to be used as a tool to provide guidance to those seeking to develop energy crops. They show the potential areas for growing the crops plus the areas where this is not appropriate or care would need to be taken from an environmental point of view. The maps are only indicative and should not be regarded as definitive. Five maps have been produced for each English region along with associated guidance. They are:

- **Yield map for miscanthus;** identifies areas where high, average and low miscanthus yields may occur
- **Yield map for SRC;** identifies areas where high, average and low SRC yields may occur
- **Existing energy crop locations;** identifies areas of existing energy crops, planted under the 2000 – 2006 Energy Crops Scheme; allows consideration of opportunities to develop biomass projects and energy supply chains.
- **Designated areas;** identifies a number of environmental designations that may impact where energy crops can be located
- **Joint Character Areas;** identifies which JCA a piece of land falls in. In addition, assessments relating to the likely impact of energy crops in each JCA have been produced by Natural England.

For further details see:

www.defra.gov.uk/farm/crops/industrial/energy/opportunities/index.htm

Individual energy crop applications must also undergo separate environmental assessments before grants are approved. The new Energy Crops Scheme as a whole was subject to a Strategic Environmental Assessment Statement, which was considered by the EU Commission as part of the 2007-2013 RDPE programme package.

Action 50 - Defra will review progress on Entry Level Stewardship in 2007/8 to ensure that expenditure is directed effectively to policy priorities, including climate change objectives

A Review of Progress of Environmental Stewardship (ES) began in May 2007 and reported in February 2008.

The Review concluded that the ES was on course to meet its objectives, but included a recommendation that further work needed to be done to examine whether Entry Level Scheme (ELS) options could be developed or adapted to maximise the environmental contribution of energy crop cultivation. This is being taken forward by Natural England who deliver the ES on behalf of Defra.

Wider work on adapting Environmental Stewardship to take into account climate change objectives is due to be taken forward during 2009.

Action 51 – Defra will commission a study to collate existing data on performance of new varieties, and recommend options for generating and disseminating data on variety performance, identified in discussion with stakeholders

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 SRC varieties that can be grown commercially in the UK is too disparate and incomplete to provide more than the basic advice to growers. On miscanthus, the report concluded that there was no immediate need for data on varietal performance, as no new varieties were becoming available. Results were disseminated to stakeholders in November 2007. Government is currently considering the arrangements for taking forward further variety development work for energy crops.

As well as improving the performance of existing energy crops grown in the UK, investigating the potential of new types of energy crops will be increasingly important if we are to increase supplies in a sustainable way. Land available for energy crops is limited, and in the longer term, changes in weather and other environmental conditions as a result of climate change, will mean that we need to look to alternative high yielding species.

DECC and Defra have commissioned work to examine the potential for new types of energy crop and the scope for growing energy crops on idle and marginal land.

DECC is also funding a £1.5m three year research project to examine the feasibility of short rotation forestry as a viable renewable energy source. The project, which is being managed by Forestry Commission (England), will provide ongoing monitoring and scientific data on hydrology, carbon balance, economic viability, biodiversity, and possible environmental risks such as the impact of the project on landscape and biodiversity.

The Sustainable Bioenergy Centre, launched in January 2009, has established a research programme to examine ways in which yields of perennial energy crops can be improved without having to increase inputs, and to maximise the amount of carbon from the crops which can be used for bio energy.

For further information on this work see:

<http://www.bsbec.bbsrc.ac.uk/216/Perennial-bioenergy-crops.html>

The role of the Sustainable Bioenergy Centre is discussed in more detail at action 60.

Action 53 - To explore with the Sector Skills Council development of the skills base to support increased demand for microgeneration technologies

This action was taken forward through the Microgeneration Strategy. A progress report on the Strategy issued in June 2008 reports the following achievements:

“The government worked with SummitSkills, one of the SSCs, to develop National Occupational Standards (NOS) for Environmental Technologies, which includes microgeneration, and this work was completed at the end of March 2008. As a result, we now have standard competences for microgeneration technologies, which can be integrated into existing qualifications and, where necessary, new Scottish and National Vocational Qualifications.

The Microgeneration Certification Scheme has fed into that work to align MCS product and installation standards with NOS. Also the Department for Communities and Local Government is working on Minimum Technical Competences for microgeneration to amend and update assessment certification processes for Competent Person Schemes. There are a number of activities taking place and we hope to see a step change as these work streams come together over the next few months.

As committed in the Energy White Paper, all Regional Development Agencies (RDAs) are working with partners, including Sector Skills Councils, to support the development and delivery of the skills needed for the wider deployment of sustainable energy technology and services, including microgeneration. While all regions are making progress, the level of support for microgeneration skills and the current priority given to microgeneration support per se varies across the RDAs. For example, some RDAs are reviewing energy skills, and others are developing training programmes.

Other achievements to date include the SummitSkills report identifying the extent of microgeneration training for installers and system designers, with several accredited courses now available, SSC development of Sector Skills Agreements and actions to address skills gap.”

Action 54 - The UK to continue to participate fully in discussions on implementation of the EU Biomass Action Plan

The UK has played an active role in a wide range of discussions in EU Council and Working Groups relating to the implementation of the EU Biomass Action Plan (which was published in December 2005). In particular we have been involved in the following EU initiatives:

- EC's Communication 'An Energy Policy for Europe' (issued on 10/1/07) which gave a commitment that a 2007 renewable legislation package would include specific measures to facilitate the market penetration of renewable heating and cooling.
- The EU's climate change and renewable energy package issued in January 2008, which culminated in agreement on the Renewable Energy Directive (RED) in December 2008.

Under the RED, the EU will be required to meet a target of 20% renewable energy by 2020, which includes a binding target of 10% transport biofuel to come from renewable sources. The UK's share will be 15%. Details of how UK plans to meet this ambitious target will be set out in a Renewable Energy Strategy (RES), due to be published in summer 2009. A consultation on the draft RES was issued in June 2008. This points to a key role for bioenergy, with the suggestion that approximately 30% of UK's renewable energy could come from biomass.

Action 55 - Liaise with Institute for Environmental and Sustainability (IES) to discuss the need for internationally agreed boundaries to LCAs on bio energy.

The Task Force highlighted the need to ensure that data used for building life cycle inventories (LCI) and performing life cycle assessment (LCA) for biomass fuels and technologies takes into account relevant international work.

We have worked with a number of EU and international players in this area. Through its work on developing an updated LCA assessment tool for bioenergy (see action 57 below), Defra and its delivery partner AEAT held discussions with the EU's Institute for Environment & Sustainability over the need & scope for internationally agreed boundaries for LCAs.

In addition, the Global Bio-Energy Partnership (GBEP) has established a task force to develop a harmonised methodology for calculation greenhouse gas emissions from transport biofuels, and the UK is taking a strong lead in this work.

Action 56 - Commission Life Cycle Analysis (LCA) assessment tool for bioenergy

An updated Biomass Environmental Assessment Tool (BEAT₂) was launched by Defra, DECC and the Environment Agency in November 2008, building on an earlier version of BEAT and other existing life-cycle resources.

The tool can be accessed by BEC website and provides a comprehensive public domain database and tool together with the life-cycle assessments of all existing and potential bioenergy supply chains. It includes the facility to assess the greenhouse gas emission mitigation costs to the public purse as affected by a wide range of economic and supply chain variables.

For further information see:

http://www.biomassenergycentre.org.uk/portal/page?_pageid=74,153193&_dad=portal&_schema=PORTAL

Action 60 - Bioenergy Funders' Forum to publish strategic priorities for biomass research and development in summer 2006

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

A full copy of the report is available via the following link:

<http://aims.defra.gov.uk/homepage/documents/44.pdf>

Linked to this, the UK Energy Research Centre (UKERC) are developing a bioenergy road map to identify the gaps/priorities in the research required to underpin the

development of renewable energy sources, including biomass. The map is currently being peer reviewed and will be published shortly.

On 27 January 2009, Government launched the BBSRC Sustainable Bioenergy Centre. This is a £27million investment which is focussed on six research hubs of academic and industrial partners, based at each of the Universities of Cambridge, Dundee and York and Rothamsted Research and two at the University of Nottingham. Another 7 universities and institutes are involved and 15 industrial partners across the hubs are contributing around £7M of the funding.

The Centre's research activities will encompass many different stages of bioenergy production, from widening the range of materials that can be the starting point for bioenergy to improving the crops used by making them grow more efficiently to changing plant cell walls. The Centre will also analyse the complete economic and environmental life cycle of potential sources of bioenergy.

For further information on the Centre see: <http://www.bsbec.bbsrc.ac.uk/>

Action 61 - National Institute for Energy Technologies to be established

The Energy Technologies Institute was launched in December 2007 as a 50:50 public-private partnership. The Government has committed up to £550 million, creating the potential for a £1.1 billion Institute over 10 years. Some of the world's biggest energy and engineering companies are already involved in the venture, including BP, Caterpillar, EDF Energy, E.ON UK, Rolls-Royce and Shell.

The Institute's remit is to invest in research and development to accelerate the development of secure, reliable and cost-effective low-carbon energy technologies towards commercial deployment.

So far projects supported have focussed on innovative wind and tidal technologies but calls are currently in place for projects under the Distributed energy programme which covers combined heat and power (CHP) modularisation and cost reduction and integrated energy supply processing, such as anaerobic digestion, gasification of waste, and utilisation of waste gases.

For further information see the ETI's Technology Strategy at:

http://www.energytechnologies.co.uk/Home/ETI_Technology_Strategy.aspx

ACTIONS NOT YET FULLY COMPLETED

Action 9 - Subject to the outcome of the Waste Strategy Review, liaise with industry and other stakeholders on plans to develop an awareness raising programme on energy from waste.

Historically there have been considerable public concerns about energy from waste plants and biomass combustion plants located close to residential areas, and about the overall validity of going down this route rather than recycling. Exploiting heat from waste and biomass via Combined Heat and Power units requires plant to be situated near to the heat customer, and also depends (in common with other large-scale heat technologies) on finding a suitable heat customer.

Communications is therefore a priority for the Waste Infrastructure Delivery Programme (WIDP) which has set up a unit to support the timely and cost effective delivery of the major waste infrastructure (including energy from waste facilities) needed to meet Landfill Directive targets.

So far activities have included securing planning approvals for Ineos Chlor's SRF combustion facility at Runcorn, Cheshire, and planning approvals for energy from waste plants linked to waste PFI projects at Newhaven (for East Sussex, Brighton & Hove), Shropshire, Nottingham and Northumberland. However, planning continues to be a contentious issue as evidenced by failure to secure planning approvals for energy from waste plants in Cornwall and Surrey.

Defra is also producing a toolkit for Local Authorities to help them make public announcements on waste policy and communicate more effectively on issues of concern for the general public.

Action 31 - Subject to the outcomes of the Defra estate mapping, the major procuring Departments will undertake a mapping exercise, taking account of the conclusions of the lessons learned exercise.

Specific biomass mapping work has been extended to total of 24 central Government Departments and their estates including the biggest procuring Departments, Ministry of Defence, Department of Health, Ministry of Justice, Department of Work and Pensions and HM Revenue and Customs. 19 departments and agencies have completed the work and the remainder are continuing to take forward across various time scales. A summary of progress for each Department is at **Annex C**.

As at March 2009, biomass boilers have been installed on 23 sites on the Government estate, with further detailed assessments and feasibility studies being carried out in a number of other locations⁸. Some Departments have committed to re assess buildings for biomass suitability on a rolling basis and/or when existing boilers become due for replacement.

⁸ N.B. Not all of the boilers on site were installed as a result of this mapping exercise. Some pre date the mapping work and others were already in the pipeline when mapping began.

More generally, various procedures are already in place across the Government and the wider public estate to ensure that alternative technologies, including locally generated renewable energy systems such as biomass-fuelled heating, are fully considered when undertaking major refurbishments of properties and for new builds.

Action 38 - Rapidly establish a biomass industry-focussed group to produce a biomass section as an addendum for each of the Heating Compliance Guides.

Action 39 - Validate the biomass data and aim to publish addenda by December 2006

Action 40 - Publish the biomass addenda with the Heating Compliance Guides on the ODPM (now CLG) website.

These actions relate to increasing and updating the coverage of biomass in the technical Guides associated with Part L of the Building Regulations (Conservation of Fuel and Power). It was initially envisaged that this would be taken forward by a biomass focussed industry group and although this group was established it did not achieve all of its objectives, due largely to changes in personnel.

CLG published a 2nd edition of domestic and heating compliance guides in December 2008:

http://www.planningportal.gov.uk/uploads/br/BR_PDF_PTL_DOMHEAT.pdf

This includes some updated information on solid fuels including a wide range of biomass - wood chips, logs, pellets etc. and details for biomass fuelled CHP and/or district heating.

Outstanding work, including updating the non domestic compliance guide to ensure biomass is appropriately covered, will be taken forward by the industry working groups participating in the forthcoming 2009 consultations on updates to Part L of the Building Regulations, which includes an industry expert on biomass. The revised Regulations and Compliance Guides are due to come into effect during 2010.

Part L of the Building Regulations (and its associated calculation tools) already takes into account low and zero carbon systems including biomass.

When they come into effect in 2010 these stronger performance standards will further encourage uptake of these technologies.

Action 47 - Regional Development Agencies (RDAs) will report on regional activity on the biomass fuel supply chain by October 2006.

RDAs have a key role in building partnerships that are needed for development of supply chains, integrated with the regional strategies for renewable energy development. 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.

Although not all regions have produced separate specific reports, information on biomass availability and supply chains is available through regional documentation (Regional Economic Strategies, spatial strategies and related documents), and has also been captured through regional work carried out by NNFCC and BEC, Defra visits and Forestry Commission activities.

Accurate identification and assessment of the UK's biomass resources and further development of supply chains from the ground up will be vital if we are to maximise the contribution bioenergy can make to our renewable energy targets. The RDAs will continue to play a pivotal role here and the forthcoming RES is likely to set out further regional activities in this area.

Action 52 - To continue to work with the SSCs and RDAs to identify the skills and training needed for the (biomass) sector. Studies of the sector will be complete by the end of 2006 and a Workforce Development Plan for the sector will be in draft within the same time span.

The Energy and Utility Sector Skills Council (EUSSC) published its Sector Skills Agreement for the energy and utility sectors as a whole during 2007 and this culminated in the issue of separate regional reports and action plans, drawn up in conjunction with RDAs, local employers and other stakeholders. The plans set out actions for tackling the short, medium and long term priority skills issues. Actions relating to developing skills aimed at bringing about the successful deployment of renewable energy are included in the majority of the plans, although often not in a great deal of detail.

In order to gain a better insight in to the specific needs of the renewable energy sector, the EUSSC produced a separate Occupational and Functional map on renewable energy in 2006, working closely with the Building Services SSC, Land and Agriculture SSC and Lantra. This covered biomass heat and power as well as biofuels and was updated in 2007 to include more detailed information on biomass supply chains. The following areas of the biomass sector / supply chain were identified as having further skills and training needs:

- Education of architects and builders
- Ability to design effective systems
- Supply chain
- Mechanical handling
- How to deliver fuel efficiently
- Storage of fuels

The report recommended that a separate and more detailed Occupational and Functional Map of the biomass sectors should also be conducted to acknowledge

the full range of business opportunities already arising from biomass industry developments.

For further information see: <http://www.euskills.co.uk/download.php?id=511>

The consultation on the Renewable Energy Strategy identified the need for a more coordinated push by Government, industry and other stakeholders into building the necessary skills and training across the renewable sector. This is a serious challenge because the industry is fragmented and made up largely of SMEs. Also, because many of the initiatives driving renewables such as zero carbon homes, do not prescribe specific technologies, it is difficult to predict or plan for supply (including skill needs). The Office for Renewable Energy Deployment will be considering how best to address skills and training needs for all renewable sectors, including biomass, and further information is expected to be set out in the Renewable Energy Strategy.

ANNEX A

SUMMARY OF PROGRESS

ACTION	STATUS
HEAT	
1. New round of the Bio-energy Capital Grants Scheme to be run in 2006, dedicated to biomass heat/CHP projects	Complete
2. Launch of Low Carbon Buildings Programme and publication of Microgeneration Strategy	Complete
3. New five-year capital grant scheme for biomass heat and biomass CHP projects to be introduced around end 2006, subject to EU state aid clearance, following development of the scheme design with stakeholders.	Complete
4. Examine longer-term mechanisms for supporting renewable heat as recommended, taking account of conclusions from the Energy Review and EU developments, and report on this work within 12 months.	Complete
WASTE AND ANAEROBIC DIGESTION	
5. Publish outcomes of the Energy Review and Waste Strategy Review on energy from waste.	Complete
6. Identify possible end users of RDF and SRF, and quantify the likely demand for these fuels.	Complete
7. Government to continue to consider the potential for an enhanced capital allowance scheme to encourage investment in markets.	Complete
8. Continue to provide input to the discussions in Europe on the Waste Thematic Strategy and the revision of the Waste Framework Directive.	Complete
9. Subject to the outcome of the Waste Strategy Review, liaise with industry and other stakeholders on plans to develop an awareness raising programme on energy from waste.	Ongoing
10. Develop markets for wood waste as a primary fuel source, through the WIP team.	Complete
11. Continue to fund the Environment Agency's Waste Technology Data Centre, subject to budget provision and to satisfactory outcomes within the existing MOU with Defra.	Complete
12. Clarification of the regulatory requirements of the use of biomass for energy recovery by the Environment Agency by April 2006.	Complete
13. A review of the Government's approach to anaerobic digestion will be undertaken within 12 months of the publication of the response.	Complete
14. A quality protocol for waste composting - such as AD digestate - will be published by the Environment Agency and Waste & Resources Action Programme (WRAP)	Complete
15. Government will continue to consider how best to integrate biogas into the Renewable Transport Fuel Obligation that is being introduced on 1 April 2008.	Complete
DEDICATED BIOMASS ELECTRICITY	

16. Undertake a review of co-firing as part of the Energy Review.	Complete
17. The Government is seeking legislative amendments to achieve these changes through the Climate Change and Sustainable Energy Bill. Subject to the successful passage of the Bill through Parliament, the Government will consult on the details of implementing the changes later in 2006.	Complete
DELIVERING THE POLICY AND MESSAGE	
18. Work with RDAs to develop regional carbon saving targets	Complete
19. Government to work with RDAs to develop an overview of the delivery structures across the English regions, including the examination of the delivery of local and regional energy projects.	Complete
20. Launch of Biomass Energy Centre (BEC) in April 2006	Complete
21. Government to review the existing support, advice and dissemination services on biomass to ascertain whether they meet users needs, and if not, how gaps can be filled. Work is to be taken forward in liaison with the BEC and input will be sought from across the industry, stakeholders, including independent advice bodies and local authorities	Complete
22. Aim to collate and publish technical, economic and best practice information on the Biomass Energy Centre by end of June 2006.	Complete
23. Publication of best practice biomass guidance to builders within the next 12 months.	Complete
24. Launch of Biomass Heat Accelerator Project (BHAP) during Summer 2006	Complete
25. Review of Carbon and Energy Savings Trusts' websites and literature and publication of updated material by end of July 2006	Complete
26. Review of implementing a specific logo for biomass heating over the coming year.	Complete
PUBLIC ESTATE AND PROCUREMENT	
27. The Department for Education & Skills (DfES) will develop a requirement for its delivery partners to evaluate the feasibility of the use of biomass for all capital projects, including PFI contracts. The DfES will investigate the development of a methodology for evaluating the feasibility of the use of biomass in capital projects.	Complete
28. Government will set new sustainable operations targets for its land and buildings by summer 2006.	Complete
29. Government will publish its response to the report of the Sustainable Procurement Task Force.	Complete
30. Defra will map the suitability of its estate for conversion to biomass heating and will develop a methodology and toolkit to support the mapping process. Following the mapping of its estate, Defra will undertake a lessons learned exercise and implement the conclusions.	Complete
31. Subject to the outcomes of the Defra estate mapping, the major procuring Departments will undertake a mapping exercise, taking account of the conclusions of the lessons learned exercise.	Progressing
PLANNING	
32. Government will continue to monitor compliance with national planning guidance and provide guidance to regional Government Offices to assist in	Complete

appraisal of planning documents.	
33. Following the review of local plans to check compliance with PPS22, ODPM (now CLG) will act on any problems identified.	Complete
34. Government will prepare and consult on a new PPS on use of the planning system to reduce carbon emissions in new development.	Complete
35. Regional Sustainability Checklists for Developments are being produced to improve information and awareness of renewables, to ensure that benefits are fully considered in planning.	Complete
36. Government will explore further training options for planners on renewable energy by December 2006.	Complete
REGULATORY CONTROLS	
37. Report on the outcome of discussions with BSI and HETAS and take appropriate actions in relation to the Buildings Regulations Part J and/or the associated technical guidance.	Complete
38. Rapidly establish a biomass industry-focussed group to produce a biomass section as an addendum for each of the Heating Compliance Guides.	Progressing
39. Validate the biomass data and aim to publish addenda by December 2006.	Progressing
40. Publish the biomass addenda with the Heating Compliance Guides on the ODPM (now CLG) website.	Progressing
41. Liaison with the British Standards Institute about the review of guidelines (for heat appliances in smoke control areas) to simplify the testing approval procedure, with report back before the end of 2006.	Complete
42. Introduction of amended applications system on the website - www.uksmokecontrolareas.co.uk	Complete
43. European Standards to be adopted as interim British Standards.	Complete
44. An Environmental Impact Assessment (EIA) of the European Standards will be undertaken.	Complete
45. British Standards for solid biofuels and solid recovered fuels to be established.	Complete
FUEL SUPPLY CHAIN DEVELOPMENT	
46. A second round of the Government-funded Bio-energy Infrastructure scheme will be run in 2006/07.	Complete
47. Regional Development Agencies (RDAs) will report on regional activity on the biomass fuel supply chain by October 2006.	Progressing
48. The Forestry Commission will prepare a strategy and implementation plan, in conjunction with the private sector and the RDAs, by 20 September 2006.	Complete
49. Defra will work with delivery partners and RDAs to develop a proposal for energy crop support which will be considered as part of the Rural Development Programme for England 2007-13.	Complete
50. Defra will review progress on Entry Level Stewardship in 2007/8 to ensure that expenditure is directed effectively to policy priorities,	Complete

including climate change objectives.	
51. Commission project to advise on varietal performance data collation and then recommend options for generating and disseminating data on variety performance, identified in discussion with stakeholders	Complete
SKILLS AND ACCREDITATION	
52. To continue to work with the SSCs and RDAs. Studies of the sector will be complete by the end of 2006 and a Workforce Development Plan for the sector will be in draft within the same time span.	Progressing
53. To explore with the Sector Skills Council development of the skills base to support increased demand for microgeneration technologies. (NB this action is also in the microgeneration strategy)	Complete
OVERARCHING ISSUES	
54. The UK to continue to participate fully in discussions on implementation of the EU Biomass Action Plan.	Complete
55. Liaise with Institute for Environmental and Sustainability (IES) to discuss the need for internationally agreed boundaries to LCAs on bioenergy.	Complete
56. Commission Life Cycle Analysis (LCA) assessment tool for bioenergy.	Complete
57. Ensure continuity to environmental assessment of energy crops planting applications	Complete
58. Publication of guidance on strategic environmental assessment (SEA) for bioenergy crops	Complete
59. Publication of bioenergy crops opportunity maps, and associated guidance	Complete
60. Bioenergy Funders' Forum to publish research priorities document for biomass research and development.	Complete
61. National Institute for Energy Technologies established	Complete

ANNEX B

Mapping the Government estate for biomass heat opportunities progress summary as at May 2009

DEPARTMENT	PROGRESS	RESULTS
MoD	Complete. Suitability assessed using own system	5 operational, 2 planned, 4 potential
DWP	Mapping complete	4 potential sites
DH	Complete. Suitability assessed using own system	No potential in core department, but considering for NDPBs
NHS PASA	Have included biomass assessments in their Sustainability Strategy	
MoJ	Suitability assessed using own system on ongoing basis	
HMPS	Suitability assessed using own system.	1 operational, 2 under construction. Potential for others as and when prison re-boiling, refurbishment and new construction schemes drawn up.
HO	Mapping to start soon	
HMT	Mapping complete	No potential
FC	Mapping complete	11 operational, 1 planned, 1 potential
DfID	Mapping complete	1 potential
CO	Mapping complete	No suitable sites
CLG	Mapping complete	1 operational, 1 potential
Land Registry	Mapping complete	7 potential (1 undergoing feasibility study)
FCO	Mapping complete	1 operational

ECGD	Mapping complete	No suitable sites
HMRC	Mapping underway.	
CPS	Mapping complete	No suitable sites
DCMS	Mapping complete	No suitable sites
DEFRA	Mapping complete	3 operational, 8 more due to be installed over next 3 years.
DCSF	Suitability assessed using own system	No suitable sites in core estate (but approximately 50 schools suitable or operational)
DfT	Suitability being assessed using own system	1 potential site
EA	Suitability assessed using own system	1 operational, 2 potential
BERR	Suitability assessed using own system	No suitable sites
GCHQ	Suitability assessed by Carbon Trust	1 site identified with potential for biomethane

Notes:

- **This information is based on each Department’s own assessment of “potential” and “planned” sites, and therefore there may be some inconsistency.**
- **The information was updated between 2 April 2009 and 19 May 2009. This pre-dates the machinery of Government changes announced in June 2009.**
- **The operational and planned systems are not necessarily a direct result of the mapping exercise**

ANNEX C

REGIONAL DISTRIBUTION OF ACTUAL BIOMASS INSTALLATIONS ACROSS THE GOVERNMENT ESTATE AS AT JANUARY 2009

ADDRESS	TOWN/CITY	DEPT	STATUS
A: ENGLAND			
NORTH EAST			
Lion House	Alnwick	Defra	Operational Dec 2008 (48kW, woodchip)
Kielder ,Eals Burn, Bellingham	Northumberland	Forestry Commission	Operational 2004 (300kW, woodchip)
NORTH WEST			
VIC Barton Hall	Preston	Defra	Currently being installed – due to be operational 2009 (150kW, woodchip/pellet)
VLA Merrythorpe	Cumbria	Defra	Installed July 2008 – boiler currently being recommissioned (250kW, woodchip/pellet)
Business Park	Crewe	Defra	Currently being installed – due to be operational 2009 (200kW, woodchip/pellet)
Grizedale Visitors Centre	Cumbria	Forestry Commission	220kW
YORKSHIRE AND HUMBER			
Dalby Visitors Centre	Thortonleigh, Pickering, Yorks	Forestry Commission	Boiler installed 2007, 100kW, fuel: wood chip – TO BE REPLACED BY 50kW PELLETT BOILER
VIC Thirsk	Thirsk	Defra	Currently being installed – due to be operational 2009 (150kW, woodchip/pellet)
EAST MIDLANDS			
The Audit Commission	Leicester	CLG	Boiler installed Dec 2008– (50kW, pellet)
Top Lodge Visitors Centre	Corby, Northants	Forestry Commission	Boiler installed 2005 , 90kW, fuelled by

			woodchip
Sherwood, Edwinstowe, Mansfield	Notts	Forestry Commission	Boiler installed 2006, 40kWth, fuel: woodchip
HMP Nottingham	Nottingham	MoJ (HMPS)	Due to be operational in Feb 2010 (125kW, pellet)
Chambers Wood Farm	Bardney, Lincolnshire	Forestry Commission	Boiler installed, 15kW, fuel: pellets
Birches Valley Visitors Centre	Lady Hill, Rugeley, Staffs	Forestry Commission	Installed 2007 (25kW, pellet)
Birches Valley Education Centre	Lady Hill, Rugeley, Staffs	Forestry Commission	Installed 2007 (25kW, pellet)
WEST MIDLANDS			
Whittington Road	Worcester	Defra	Operational June 2005 (80kW, woodchip/pellet)
Rosliston Visitors Centre	Swadlingcote	Forestry Commission	Boiler installed Sept 2004, 90kW, fuel : wood chip
Wyre Classroom	Callowhill, Worcs	Forestry Commission	Installed 2007 (25kW, pellet)
Wyre Visitors Centre	Callowhill, Worcs	Forestry Commission	Due to be installed 2009 (100kW, woodchip)
EAST ANGLIA			
Colchester Garrison	Colchester, Essex	MoD	Installed April 2009 (pellet)
SOUTH EAST			
Scots Float	Rye	Environment Agency	Biomass boiler operating (since April 2007) – 150kW, woodchip
Wilton Park Executive Agency	Wiston House West Sussex	FCO	Biomass boiler operating since July 2007 – 165kW
ARMCEN Bovingdon	Hertfordshire	MoD	Operational Sept '08 (220kW, woodchip)
Bedgebury Visitors Centre	Goudhurst Kent	Forestry Commission	Biomass boiler installed 2006, 40kW, Fuel : wood chip
ATC Pirbright	Pirbright	MoD	System due to be installed mid-2009 (70kW, pellet)
Woolwich Barracks	Woolwich, London	MoD	System to be installed in 2009
HMP Isis	Thamesmead, London	MoJ (HMPS)	Due to be operational July 2010
SOUTH WEST			
RM Poole	Poole	MoD	Operational Oct 2008
HMP Guys Marsh	Shaftesbury,	MoJ	Installed 2007 (150kW,

	Dorset	(HMPS)	woodchip)
SCOTLAND			
HMNB Clyde	Faslane	MoD	Operational Jan 2009 (900kW)
WALES			
RAF Valley	Anglesey	MoD	Operational since 2007 (2 x 150kW, pellet)