

**Government Response to the  
recommendations made in the  
Royal Commission on  
Environmental Pollution Special  
Report on Biomass as a  
Renewable Energy Source**

Department for Environment, Food and Rural Affairs

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## **Government Response to recommendations made in the Royal Commission on Environmental Pollution Special Report on Biomass as a Renewable Energy Source.**

The Government agrees with the Royal Commission that biomass has the potential to provide a significant contribution to the reduction of carbon dioxide levels if it is substituted for fossil fuel in the generation of heat and electricity. It has the potential to help significantly towards meeting renewables targets in the electricity supply. The Government also shares the RCEP's view that biomass can make an important contribution in the generation of renewable heat and combined heat and power.

We have been working to encourage the biomass industry and progress is being made. The Government agrees however with the RCEP that there are significant barriers to be overcome if confidence in the industry is to be established. We are seeking to address those constraints in the context of a number of initiatives and reviews. These include CAP reform and the development of new England Rural Development Programme arrangements, allocation of DTI funding for the whole range of renewables, the review of the Climate Change Programme and the review of planning guidance. The Government agrees with the RCEP that an integrated approach is needed to ensure that environmental, industrial and agricultural policies cohere effectively to ensure optimum benefits from biomass energy.

It is important not to consider biomass energy in isolation, but to take account of its relative benefits compared with other renewables and other potential uses of biomass material such as for road fuel and production of chemical feedstocks and other renewable materials for industry. This is particularly relevant in relation to potentially competing uses for available land. The RCEP's report gives helpful indications of the possible scale of the land use changes which could be involved, ranging up to the use of 7 million hectares of UK farmland for energy crops. This would be in addition to land used for biofuels for transport and imply a major diversion of land from food production. This analysis compares with the conclusions from the Renewables Innovation Review published by DTI and the Carbon Trust in January 2004, which assessed the potential development of biomass energy taking account of the availability of suitable land. This concluded, on the assumption that the energy would be in the form of electricity rather than heat, that biomass could contribute about 6% of the UK's electricity supply by 2020 requiring in the region of 350,000 hectares of land for energy crop production. In line with its general approach to renewables the Government does not at this stage set a specific target for biomass energy but it will work with interested parties to analyse further the implications of potential major changes in land use implied by development of particular renewables technologies. The review of the Climate Change Programme which is now proceeding will take account of these factors.

The Government already provides support in the form of the Renewables Obligation, capital grants for biomass heat and power generation, planting grants for establishing energy crops, set up costs for producer groups to harvest and market biomass and legislation to allow Renewable Obligation Certificates to be claimed under the Renewables Obligation if biomass is co-fired with coal.

The Government is also now launching the following further initiatives for assessing and developing biomass energy:

- A high level, one-year study of biomass energy is to be undertaken by Sir Ben Gill. He will be assisted by John Roberts, Chief Executive of United Utilities, and Nick Hartley of Oxera Consulting. The team will help Government and the biomass industry to address barriers and optimise the contribution which biomass energy can make
- The Bio-energy Infrastructure scheme has been launched – this will provide additional support of £3.5 million for biomass supply chains
- Planning Policy Statement 22 was issued in August, setting out a positive framework for renewable energy
- An initial scoping study is being commissioned to quantify the benefits which might be gained from promoting renewable heat and the extent to which support is required.
- Cambridge University have been commissioned to provide data on the economics of energy crops by April 2005.

DTI are considering what further benefits might be allocated to bio-energy projects in the context of the 2004 spending review, the Renewables Innovation Review and progress on existing projects.

We give below the Government's response to the RCEP's detailed recommendations (numbered as in the summary in section 5 of the report). We would emphasise that some of the responses are preliminary, pending the completion of further studies, and that the Government will welcome further debate on the issues raised as policy continues to develop in this field.

#### *Fuel production and distribution*

**5.8 *The grant system for farmers should be dependent on farmers meeting set environmental standards in landscape, biodiversity and water assessment when planning and planting energy crops (para 2.46). In return, the grant payments should reflect fully the biodiversity value of these crops (para 2.38). Farmers should be awarded greater flexibility in selecting energy crops and this should not be penalised by a restrictive grants regime (para 2.18).***

Response – The Government agrees with the RCEP’s general assessment of the environmental aspects of growing energy crops. There is evidence that short rotation coppice can enhance biodiversity, but the Government agrees that careful planning is needed to ensure that adverse effects do not occur for example through inappropriate siting of energy crops.

Applications for grants under Defra’s Energy Crops Scheme (ECS) already incorporate an environmental assessment, which takes account of landscape, archaeology and water issues. From 1 January 2005, energy crops grown on single payment land will also be subject to ‘cross compliance’ requirements to comply with good farming practice. It is expected also that under the new structure of agri-environment schemes in England, due to be introduced in 2005, there will be scope to combine elements of the new Entry Level and Higher Tier Schemes on the same holding with energy crops.

The ECS is part of the England Rural Development Programme (ERDP) which is part-funded by the EU and is subject to the rules set out in the EU Rural Development Regulation (RDR). The current RDR allows payments for certain types of capital expenditure, but for short rotation coppice these are limited to establishment costs without any supplement to reflect environmental benefits. The RDR is currently being renegotiated with a view to a new regulatory framework being in place for the next cycle of Member States’ rural development programmes, to follow the existing programmes from 2007. It is hoped that this EU negotiation will be concluded by summer 2005 and the Government will consider, in the light of the outcome, the shape of the new programme to succeed the current ERDP. A further factor in this consideration will be the new structure for rural support measures outlined in the Defra Rural Strategy published in July 2004 which envisages a substantial streamlining of existing support schemes.

On the types of energy crops to be supported, the Government agrees with the RCEP that there may be a case for extending the range for example to include ‘short rotation forestry’, and Defra is working with the Forestry Commission to assess the environmental and economic issues which arise.

**5.9 *Farmer security needs to be improved to encourage the planting of long-term energy crops Requiring generators to provide long-term contracts to growers to enable them to qualify for ROCs would provide the necessary security for farmers and would introduce equity between key stakeholders in the ROC system (para 4.61). The Government may also wish to consider offering guaranteed markets to farmers to increase security until markets are more developed (para 4.6-4.7).***

Response – The Government agrees that long-term security is a key issue for development of energy crops. The evidence is that farmers are ready to diversify into energy crop production if the energy industry can make suitable contracts available. The RCEP’s specific recommendation on compulsory long-term contracts related to the co-firing provisions of the Renewables Obligation. This issue was considered in detail in the review of these

provisions which led to DTI's announcement in December 2003 on new measures designed to encourage the uptake of energy crops in co-firing. Following extensive consultation the conclusion was reached that compulsory contracts would on balance not help towards this objective as they could act as a further constraint on generators who might be interested in increasing the use of energy crops in co-firing. The Government understands that some generators are currently actively considering the co-firing option in conjunction with potential suppliers of energy crops.

Subject to these special arrangements for co-firing the Renewables Obligation is a market-based measure and the detailed terms for fuel supply, including energy crop fuel supply, are for the companies concerned to negotiate.

The Bioenergy Capital Grants Scheme is designed to offer increased security for energy crop suppliers participating in aided projects. As noted above, the DTI is considering what further support can be made available. The Forestry Commission is also discussing the possibility of giving pro-active support to several heat/CHP clusters in each region to stimulate targeted activity. In relation to additional support at farm level, options for Member States are constrained by Common Agricultural Policy rules including those in the RDR discussed above, which are likely to rule out guaranteed payments to farmers of the kind suggested.

**5.10 *The Commission supports the earliest possible implementation of the Biomass Infrastructure Scheme to improve farmer access to markets and investor confidence in the sector (para 4.35)***

Response – The Bio-energy Infrastructure Scheme, worth £3.5m, has been approved under the EU state aids procedure and will be open for competitive bids from 15 October 2004.

*Technology*

**5.11 *Biomass energy technology, like others, must comply with environmental standards. Planning should be sensitively designed and all possible technical measures should be utilised to reduce noise and emissions and to increase efficiency and therefore reduce transportation of fuel. Solid wastes. Fly ash in particular, will need to be disposed of carefully and appropriately (para 3.48 – 3.57).***

Response – The Government agrees. A great many environmental controls are in place to address the concerns mentioned. The treatment of waste, noise and emissions from a development would be relevant considerations within a planning application and would be likely to form part of any environmental assessment carried out. Market forces will also be a factor in determining how far it is economic to transport biomass material for energy installations.

**5.12 *The focus should be on establishing the sector through the use of existing, proven technologies and demonstration plants. The Bio-energy Capital Grant Scheme should be expanded and its guidelines revised to make clear that its main purpose is to support the installation of biomass-based combustion equipment to bring about a large-scale expansion of heat-only and CHP generation (power-only generation should be excluded on efficiency grounds) from biomass. We recommend that the Government underwrite the cost of at least one but preferably several schemes to demonstrate the commercial viability of medium-scale biomass energy projects. Future schemes should however be designed to utilise their heat output as well as electrical power (para 3.39-3.41).***

Response – We point out again that arrangements for future support are currently under consideration, and decisions will take account of the RCEP's recommendations. The majority of £66m funding under the existing Bio-energy Grant Scheme has been offered to conventional technology plant including CHP. Programme allocations were based on the Performance and Innovation Unit's recommendations. While efficiency grounds and economics do favour projects which can find a heat sink, to make this an additional requirement for funding applications may be adding another hurdle for developers to jump. Projects such as the 36MW Elean straw plant show the significant benefits that can be delivered by power-only generation plant.

To date several schemes which will use biomass have been approved under the Community Energy Programme. Some of these could be viewed as demonstration projects in terms of their commercial viability and there are processes in place to monitor all Community Energy Schemes, which could be adapted for more general use.

#### *Generation of energy*

**5.13 *Possibilities for secure arrangements should be investigated whereby Ofgem can certify blended fuels for co-firing as eligible ROCs at sites other than the power station that is going to use them. Review of the ROC scheme should consider the delay in energy crop production and how this affects current deadlines (paras 3.46-3.47)***

Response – There is a burden of proof which has to be met by the generators to ensure the integrity of the system, given the high value of the scheme and the potential for fraud. Under the legal requirements of the Renewables Obligation, Ofgem are required to satisfy themselves as to the nature of the fuel and the percentages of biomass and fossil fuel used in a generating station within each monthly accounting period. Ofgem's view, based on legal and technical advice, is that biomass fuel should be measured at the generating station, as that is where the fuel is used and it is the legislation that requires measurement of the biomass fuel used. In addition, there are concerns about measuring biomass remotely from the generating station. These concerns relate to the difficulty of auditing, the potential for

contamination and changes in transit, increased opportunities for abuse of the system and the increased burden of administration. It is also relevant to note that the biomass and/or coal may be imported. Although it is hard to envisage a simple resolution to these difficulties, DTI will keep this issue under review as it takes forward the 2005/6 Review of the Renewables Obligation and Ofgem will work with DTI as part of that process.

There is also a problem in measuring accurately the energy content of a non-homogenous fuel mix. By measuring the energy content of the biomass prior to blending, generators can obtain accurate data on which ROCs can be based. This is currently happening at the generating station and ROCs for co-firing can be issued on this basis.

The decision, announced this year, to revise the dates for co-firing under the Renewables Obligation was based on the results of a full consultation and a thorough analysis of the issue undertaken for DTI by independent consultants.

**5.14 *The scope for biomass as a source of renewable heat needs further investigation. The introduction of a green heat credit would help raise the profile and profitability of schemes that use biomass. It would also encourage better efficiency in energy generation and increase the CO2 savings in the UK energy sector (para 3.32)***

Response – The Government agrees that biomass heat could deliver significant benefits. During debate on the Energy Bill, now the Energy Act 2004, the Government gave a commitment to undertake analysis to answer a number of key questions about the scope for promoting renewable heat, including the possibility of a renewable heat obligation. DTI and Defra are jointly commissioning an initial six-month study that will seek to answer some of the basic questions about quantification and sources of heat, economics, potential greenhouse gas savings and the extent to which support may be required to deliver the benefits.

**5.15 *Biomass energy should be considered positively in all new-build and retrofit projects. The assumption should be in favour of biomass energy in all projects; construction companies and councils should have to justify any decision not to adopt this option (para 3.24,4.18-4.19)***

Response – The Government strongly supports the use of renewable energy in construction projects. Biomass will often be the optimum renewable fuel source but other renewables also need to be considered. Planning Policy Statement (PPS) 22, issued on 9 August, sets out a positive framework for renewable energy. It enables local planning authorities to set policies within their plans requiring a percentage of the energy to be used in new developments to come from on-site renewable energy developments. PPS 22 also requires regional spatial strategies (RSS) to include the target for renewable energy capacity in the region, which should be derived from assessments of the region's renewable energy resource potential including

available biomass. In addition draft PPS1 on Creating Sustainable Communities, issued for consultation on 1 March, stresses the prudent use of resources and proposes in particular the encouragement of energy efficient buildings, community heating schemes and the use of combined heat and power in developments.

The Government's Sustainable Communities' Plan actively encourages developers to build using innovative and modern methods which benefit the environment. The Millennium Communities programme, which forms part of this plan, aims to demonstrate that energy efficient environmentally responsible development is achievable regardless of geographical location and in different markets.

The Government is taking forward the recommendation from the Sustainable Buildings Task Group, established in October 2003, for development of a Code for Sustainable Buildings. We will ensure that the Code reflects the Government's policy for renewable energy, including energy from biomass, and considers the environmental impact of materials across their entire life cycle.

### *Strategy*

**5.16 *The planning process should be open, transparent, flexible and inclusive. Local communities should be involved in every stage of planning a new biomass plant and local 'ownership' should be encouraged in all new-build projects (para 4.63-4.69).***

Response – The Government agrees with these principles, which are all promoted by the changes in the planning system introduced by the Planning and Compulsory Purchase Act 2004. In particular, the introduction of statements of community involvement within plans will set out a framework for the local planning authority to engage with their local community on planning matters, including any major applications they might receive such as a local biomass plant. Applications for plants to generate over 50MW fall outside the planning system and are dealt with under the consents regime operated by DTI.

**5.17 *A biomass forum should be established to encourage the sharing of ideas and expertise and to provide support to early-stage projects. This forum should be open to all stakeholders including farmers, construction companies, local councils, power generators and environmental NGOs (paras 2.77,4.22)***

Response – The Government welcomes this proposal and has already taken steps to develop a discussion forum on these lines. A biomass summit was organised in January 2004 with key players from all areas of the industry, environmental organisations and from DTI, Defra and Forestry Commission. There was an enthusiastic response to taking this group forward to inform future direction and policymaking and to exchange ideas. This first meeting covered biomass heat, CHP and electricity production. A second well-

attended seminar focusing on energy from waste was held in July 2004. The Government intends to continue with similar meetings, which will be open to participation by all sectors of the industry and other interested organisations.

The Government also believes that a regional approach can be extremely helpful in further development of biomass energy. In several regions biomass co-ordination groups already exist and significant progress has been made with biomass projects in certain parts of the country. In addition the regional strategies of each Regional Development Agency give a crucial focus for developing renewable energy in the light of local strengths, resources and needs. The Government will consider with its regional Offices and with RDAs how experiences from these regional initiatives can best be shared and disseminated throughout the country.

**5.18 *The four-stage approach set out in this report allows for periodical review and reaction to changes brought about by the development of a biomass sector (para 4.73, 4.76). Because of the considerable uncertainties that exist in this early stage of biomass development in the UK, a strategy for increasing energy crop production must include both regular assessment of fuel sources and rigorous monitoring of impacts, with assessments of environmental consequence at each stage.***

Response – The Government agrees with the concept of a staged approach with reviews. The existing base data include the Forestry Commission's published database of wood resource (including short rotation coppice) and the information collated in the DTI's Renewables Innovation Review. The future reviews should take account of the factors mentioned in the recommendation as well as the significant land use issues referred to in the introduction to this response. They will also take into account the Non Food Crops Strategy which will be published shortly by Defra and DTI. As indicated above there is a key regional dimension to this work and the reviews will be taken forward in conjunction with Regional authorities.

**5.19 *We invite the government to improve measures to encourage biomass as a long-term, stable and secure option for renewable energy. We particularly encourage the government to conduct an investigation into the potential for green heat production and the use of policy measures outlined in this study to make real progress towards the establishment of this sector. The opportunities for using biomass to reach CO2 reduction targets for the UK are significant and all biomass policy should be aimed primarily at this goal.***

Response – As we have indicated, the Government agrees with the RCEP's analysis of the potential benefits of biomass energy and especially in relation to CO2 reduction targets, whether by use for heat, CHP or electricity. As promised, the Government will further investigate the issues relating to 'green heat' and other options to encourage biomass as a long-term stable and secure option for renewable energy.