Date: Friday 13 July 2001

Time: 10.30am to 1.00pm

Venue: Community Hall, Llanidloes

RENEWABLE ENERGY RESOURCES IN WALES

Comments by Environment Agency Wales

Introduction

1. Environment Agency Wales welcomes the opportunity to contribute to the Assembly's debate on sustainable energy in Wales.
2. Our comments are in three parts. Part One is an explanation of the Agency's role in energy generation and efficiency. Part Two consists of brief comments on the Agency's views on some renewable techniques. Part Three is recommendations and possible targets for the development of renewable energy.

Part One - The Environment Agency's (EA) Role

1. The Agency's present role in energy is primarily, but not solely, is to regulate the environmental impact of individual sites or facilities. Under the Environment Protection Act 1990 we regulate large combustion plants and incinerators. Under the Radioactive Substances Act we regulate nuclear power stations, and under the Water Resources Act 1991 we regulate hydroelectric stations in respect of their water usage. These regulatory powers have been modified n the Environment Act 1995 and the PPC (Pollution Protection and Control) regulations. Even so, our powers will still be limited to ensuring that these generating stations meet the limits and principles set out in the legislation on an individual site basis.
2. With regard to some renewable techniques such as wind farms, wave and tidal techniques our powers are only consultative with regard to planning applications. The Environment Agency regulates renewables derived from biomass and biogas combustion where the installed thermal capacity is greater than 3 MW. Should a tidal

device require a lagoon then we would need to licence any impoundment. Under PPC regulations, the Agency takes account of energy efficiency at those installations it regulates.

3. The purpose behind the Agency's regulatory duties is the protection of the environment and the prevention of harm. This can best be met with respect to energy generation by a significant shift to renewable forms of energy. This will not only reduce carbon dioxide but it is the most effective means of reducing acidification and Air Quality impacts from the burning of fossil fuels such as coal.

Part Two – Environment Agency Views on Renewable Energy Techniques

4. The Agency does not consider landfill gas or energy from municipal waste to be within the definition of a renewable energy source. This is because much of the content of waste is from non-renewable resources and policies aimed at minimising waste and increasing recycling rates mean that waste is unlikely to have a long-term potential as an energy source.
5. The Agency believes that renewable energy has the potential to provide truly sustainable energy for society, and that any potential negative impact can be avoided through a well managed approach to the expansion of renewable energy that ensures the sensitive siting and operation of renewable energy schemes. The Agency considers the use of fossil fuels and nuclear power to have fundamental sustainability problems, whereas the environmental impacts of renewable energy tend to be more local and reversible in nature and can be more readily ameliorated or controlled.
6. We also recognise that a sharp step change to renewables is not feasible. As we move towards renewables there will need to be interim arrangements for a number of years involving high efficiency fossil fuelled CHP Plants.
7. The exploitation of renewable energy involves harvesting the natural energy flows in the environment which are very diffuse compared to the high density of energy contained in fossil fuels. This brings renewable electricity generation closer to the consumer because of an increasing number of smaller, local generating units. By contrast, the traditional highly centralised electricity system relies upon a relatively small number of large generating units and this takes electricity production and its environmental impacts out of sight and out of mind for most people.
8. The development of renewable energy will force the issue of how and where electricity is being produced and the corresponding environmental and social costs. People today have a higher environmental awareness of the impact of developments than in the past. If the UK's approach to sustainable energy is well managed, this increased awareness could contribute to the development of sustainable energy rather than being seen as an obstacle to the expansion of renewable energy.
9. The environmental impact of renewable energy that appears to cause most concern is its visual impact upon the landscape. This is particularly the case for onshore wind turbines that are otherwise environmentally benign in operation. Not everyone considers the visual presence of wind turbines as an adverse environmental impact.

Whether it has a negative or positive aesthetic impact is a matter of personal taste rather than a quantitative measurement. A change to the landscape can be classified as an environmental issue, but the impact it has upon quality of life and sustainability derives from the subjectivity of the observer.

10. Wind farms do not affect the nature or use of the land as extensively as many other forms of development. Although personal values are important in determining sustainability impacts it is difficult to weigh aesthetic issues against the fundamental risks that continued fossil fuel use pose to natural systems at the global, regional and local level.
11. The Agency supports the UK Government position that there is little scope for new large-scale hydropower schemes. We also believe that it is highly unlikely that tidal barrages would be environmentally acceptable due to their very large impact upon the ecology of estuarine systems. We think it unlikely that a Severn Barrage scheme could be made environmentally acceptable particularly because of the status of much of the Severn Estuary as a Special Protection Area under the Habitats Directive. However, the Agency considers the potential contribution of tidal stream turbines to be very promising and acceptable because this technology has a far smaller environmental impact than barrages.

Part Three - Recommendations and Targets

12. Although the targets we suggest are, at this stage, only "best guesses", we think it is important that discussions start as soon as possible on establishing targets. Our suggestions are intended to stimulate that debate.

Offshore Wind Farms

3.2 Our recommendations in response to the NAW consultation document were:

- Identify and then carry out a detailed examination of possible installation sites.
- Carry out a study into the manufacturing and servicing operations in Wales and seek ways of increasing the potential for these activities.
- That a Welsh Sustainable Energy Agency be established to provide an advisory service to facilitate applications through the Dti one-stop application route.

3.3 Our suggested targets are to:

- Establish four offshore wind farms with a minimum combined capacity of 125MW by 2010.
- Spend 20% of capital costs of offshore wind farms in Wales by 2010.

Onshore Wind Farms

3.4 Our recommendations in response to the NAW consultation document were:

- Involve stakeholders in a process that will encourage the identification of possible sites in Local Plans.
- Review the options for lower wind speed sites to encourage wind farms or single turbines in urbanised areas
- Raise public awareness of wind farms and educate the public, e.g. by establishing visitor centres at some farms and by sign-posting wind farms on way-marked paths and trails.

3.5 We recommend the following targets:

- By 2010 there should be 500MW of capacity in Wales.
- 20% of capital costs of on-shore wind farms should be spent in Wales by 2010.

Biomass

Our recommendations in response to the NAW consultation document were

- Needs to break the "catch 22" situation where a Biomass Power Station cannot start without guaranteed supplies and farmers are not willing to grow biomass crops without a market. This could be done through a pilot power station using forestry waste initially and then using fuel grown as a crop.
- Identify suitable sites for biomass fuelled power stations. Urban sites may be better served by transport infrastructure and in Wales still be near to supplies.
- Identify derelict sites where energy crops could be grown.
- Introduce an Energy Crop Scheme similar to the one in England to help farmers move towards growing fuel crops.
- Use the proposed Welsh Sustainable Energy Agency to provide an advisory service to facilitate applications for Planning and permitting under IPPC.
- Wherever possible biomass should fuel combined heat and power generation.

3.7 We suggest targets such as:

- 100MW of biomass fuelled generation by 2010 of which 40MW should have CHP.
- "X" hectares of land growing biomass crops.

Hydropower

3.8 Our recommendations in response to the NAW consultation document were

- Use the proposed Welsh Sustainable Energy Agency to facilitate the joint development of a hydropower strategy by Environment Agency Wales and developers which would include low flow schemes.

3.9 We suggest the Assembly should adopt the target of:

- An additional 20 MW of capacity by 2010

Solar Heating Systems and Photovoltaics

3.10 Our recommendations in response to the NAW consultation document were:

- Encourage the use of solar heating and photovoltaics in new public buildings and public housing schemes through changes in building policy and grants to housing associations.
- Encourage the development of a Wales-based Industry making products to meet the demand created by the above recommendation.
- Assess the potential for photovoltaic installations along motorway verges.

3.11 We suggest the Assembly adopt the following targets:

- 10 MW equivalent of solar and PV installations by 2010.
- 50% of installations manufactured in Wales.

General Recommendations

3.12 We recommend that a Welsh Sustainable Energy Agency be established that would:

- Broker partnerships.
- Advise on and develop funding packages.
- Help local community groups to identify and establish community-owned (either whole or in part) renewable energy facilities.
- Help to create a climate where renewable energy can flourish. This would involve working with the media, operating a renewable energy web site, help create demonstration projects, encourage visitor centres, and provide educational material to schools.
- Provide high quality information and advice to the public, developers, regulators and NGOs.
- Provide expertise on regulation, planning and permits.
- Facilitate R&D.
- Identify economic opportunities.

Conclusion

13. A strategy that positively supports the development of sustainable and renewable energy is needed to protect the Welsh environment and landscape from the effects of climate change, acidification and eutrophication.
14. Even without the imperative of climate change there are good economic reasons for developing renewable energy in that oil and gas will get more and more expensive at the same time as the UK's oil and gas resources are declining.
15. The EA supports the UK Government and Assembly's target to supply 10% of UK electricity from renewable sources by 2010. We believe that the Assembly should also establish, and urge the UK government to establish, a renewable heat target as a

means of addressing the substantial carbon dioxide emissions associated with space heating.

16. EA recognises that wind power, energy crops and forestry products will be the most important renewables for achieving the 10% target as these are the most developed renewable energy technologies. The other renewables, such as wave power, are expected to be able to play only a small role in achieving the 2010 target, and their role will grow after 2010.