

Limiting climate change

Marine renewables

There is enormous potential to convert the energy from the seas around the UK into electricity. Tidal barrages and lagoons can exploit the potential energy between high and low tides; tidal stream systems make use of the energy of moving tidal waters, and various wave power systems use the energy in waves.

The UK has many potential sites for tidal barrages, and feasibility projects are underway in the Severn Estuary, the Mersey and Solway Firth. Tidal power is a particularly useful renewable energy because it is predictable, and a few examples already exist around the world. One disadvantage is the potentially adverse effect on marine life and commercial fisheries.

The **UK's Renewable Energy Strategy** envisages that by 2020 wave and tidal energy in the UK will provide about three per cent (1GW) of total renewable electricity generation. This will require a huge increase in investment and production. Despite the potential of marine energy, and extensive research into wave and tidal power, progress towards commercial exploitation has been slow. However, the pace of



development is now accelerating due to increased Government support and growing interest from the energy industry. The following initiatives are planned or underway.

The Government has set up a £22 million **Marine Proving Fund** to support the testing and demonstration of wave and tidal devices, supplementing the existing £50 million Marine Deployment Fund. Additional funding is also going into a Wave Hub project off North Hayle in Cornwall and the European Marine Energy Centre (EMEC) in the Orkneys.

The Government plans to develop a **Marine Renewables Action Plan** as a framework for supporting wave and tidal technologies. It will also prepare a Strategic Environmental Assessment (SEA) for all UK seas (apart from Scotland and the Severn

Estuary where separate SEAs have been or are being carried out). An SEA is a pre-requisite of any marine power generation over 10MW. We will work closely with Government in preparing the SEA.

Our role in marine energy

As wave and tidal energy projects emerge we can expect a range of implications for our regulatory roles. We will see applications for test sites close to shore and in estuaries, affecting flood risk, shoreline management, fisheries, conservation and water quality. We may be involved with offshore installations where they have potential onshore impacts and through our fisheries responsibilities.

We will develop a positive approach to the development of innovative marine renewables. We need to work with the industry to gain a sound evidence base in readiness for commercial use. We must fulfil our environmental protection role while promoting a significant shift to low carbon energy generation.

We have major responsibilities for helping to limit greenhouse gas emissions and adapt to climate change in England and Wales. We also administer schemes that cover a large proportion of the UK's greenhouse gas emissions, and play a leading role in reducing the risks from climate change, such as increased flooding, drought, and sea level rise.

For more information, visit our website <http://www.environment-agency.gov.uk/> or contact the Climate Change Team on 08708 506 506 or enquiries@environment-agency.gov.uk