

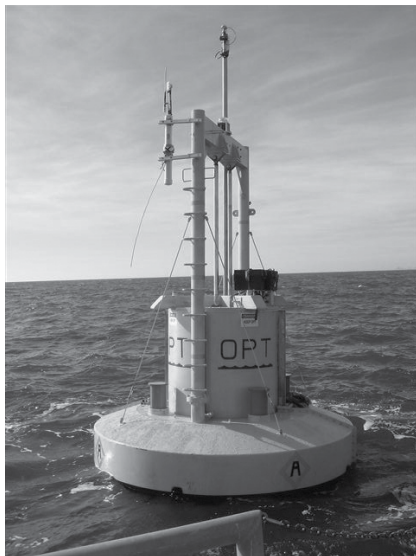
Towards Delivery

By Mike Hay, Head of Offshore Renewables

It's only March but already it is clear that 2007 will be a year like no other in the UK's wave and tidal stream industry. As well as the upcoming Energy White Paper and RO Reform announcements from DTI, there is a Marine Bill White Paper from DEFRA and the Scottish Executive's Marine Supplier Obligation is expected to start on the 1st April. The Scottish Executive have also made clear their intention to support the development of an industry with Deputy First Minister Nicol Stephen's recent announcement of £13 million of project support. This was distributed to:

- CRE Energy Ltd (subsidiary of ScottishPower) - £4.141m
- AWS Ocean Energy - £2.128m
- ScotRenewables - £1.796m
- Open Hydro - £1.214m
- Ocean Power Technology - £0.598m
- Aquamarine - £0.275m
- CleanTechCom £0.273m
- Wavegen - £0.149m
- Tidal Generation - £0.077m

The bulk of the successful projects will take place in and around EMEC in Orkney, with the installation of small arrays and single devices. Devices are expected in the water this year, with full commissioning during 2008. An additional £2.5 million has also



PowerBuoy © Ocean Power Technology

been ring-fenced for upgrading the site at EMEC to help accommodate these devices.

On top of this support the Scottish Executive will be releasing the Environmental Report on their SEA towards the end of March. This should help strategic decision making for future marine projects off Scotland's western and northern coasts. DTI will also begin the process of SEA 8 in the South West of England. The intention is to take this as an oil and gas assessment but incorporate available information on other activities that may be looking to deploy in this area, including marine technologies. This unfortunately doesn't amount to a marine SEA but will lay down a decent foundation to build one upon.

The South West will be a key area for both wave and tidal stream. The Wave Hub concept is presently passing through the consenting process and the hope is that it will come out soon in order to begin construction as soon as possible and be available for projects early 2008. MCT are also working on developing a 10 MW project with their Seagen device at their present Lynmouth site off North Devon. This development is obviously dependent on deployment of their full-scale prototype in Strangford Lough in Northern Ireland, which should be in the water by summer this year.

Similarly the development of ScottishPower's project with OPD on Orkney is dependent on the successful deployment of their full-scale prototype at EMEC. This was recently taken back up to this facility for further testing in spring. Once testing is completed satisfactorily, this should trigger OPD's Portuguese project with Enersis and lead to a greater push for Wave Hub in order to facilitate the Westwave project with E.ON and Ocean Prospect in 2008.

Ocean Power Technologies will also be looking to utilise Wave Hub following successful testing of their PowerBuoy



Pelamis © Ocean Power Delivery Ltd

device on Orkney and Fred Olsen will continue development of their Buldra Platform for the same reason. Wave Hub have also recently opened the opportunity for another developer to access this pioneering project and the results of this are expected soon.

On Lewis npower renewables are working hard on their Siadar project with Wavegen and looking towards development within the next couple of years. This is complemented by many other sites around the UK that are being scoped by developers for wave and tidal stream project to move into in the coming years.

Things are moving forward for this industry in the UK. Both the Scottish Executive and DTI's support packages will be accessed this year and the fruits of this will be brought to bear in 2008. This year is also key to ensuring this momentum continues beyond these packages. As outlined in BWEA's 'Path to Power' published in June 2006, what is required is a strategic vision for this industry that allows deployment at scale and therefore for costs to reduce. Only by providing this opportunity for a domestic market will technology companies and their supply chains securely embed themselves in the UK, and only by doing this will the UK reap the potential benefits of a domestic clean energy industry. □

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Commitment is Key

By Mike Hay, Head of Offshore Renewables

Between 1993 and 2003, the Danish Government invested £1.3 billion in R&D and market stimulation measures for the wind industry. This helped create a turbine manufacture, service and maintenance industry that earns £2 billion in annual export revenues and employs 20,000 people. Today Denmark maintains around a 40% share of the worldwide industry. Japan, over the same period, invested £1 billion in photovoltaic technology and has created a manufacturing industry which has 50% of the world market, earns £600 million in annual export revenues and supports 15,000 jobs.

Of course these countries had the added advantage of being windy and sunny, providing them with a resource to tap into and therefore a domestic market opportunity from which to build on. Such opportunities are few and far between in the global energy market. However, with the increasing need for clean and secure energy, countries around the world are now becoming much more introspective in their search for new resources and looking to build upon the natural strengths available to them.

Simply looking at a map of the UK would lead to the conclusion that the offshore environment is where this Government should be focussing its energy efforts. Digging deeper would uncover a pioneering oil and gas industry that, for decades, has led the world on offshore exploration. Further still into the energy sector, an offshore wind industry would emerge that is building on this experience and expanding into the marine environment at a scale unparalleled globally. Eventually a small industry based around wave and tidal stream energy would show itself. Due to its scale you might miss it, in the same way the UK Government did with wind in the early 1980's, however it's there

and is poised to become extremely visible over the coming years.

Where this visibility will occur is as yet unclear. The world's first multiple device wave energy project will be deployed off the Portuguese coast this year. In the US, the west coast states of California, Maine and Oregon are all competing to host the country's first wave project. Spain is also expected to start a support mechanism that will facilitate wave energy projects off its northern coast this year. The Bay of Fundy on the east coast of Canada is the largest tidal resource in the world and the surrounding states of New Brunswick and Nova Scotia are pushing hard to capitalise on the industrial opportunity this presents. France meanwhile is increasingly involved in discussions around both wave and tidal stream in order to build upon its marine energy experience gained through over 40 years of harnessing this resource at the La Rance tidal barrage.

But what of the UK? At present this country is leading the race in technology development, with export orders already being delivered abroad. Since 1998, around £30 million of allocated R&D support has brought this country to the forefront of this market, although only a small amount of this has actually been spent. In 2006, a £50 million support package for early demonstration projects also became live, providing the opportunity for technology and project developers to team up and deploy at sea up to a limited scale. This amounts to just over £80 million of funds that have been allocated in nine years, which has certainly been welcome, but is not exactly comparable with the scale of support provided in both Denmark and Japan to their respective industries.

Last year the Carbon Trust suggested that the additional cost to the UK of preserving the marine option above the cost of the RO out to 2010 would be around £150 million. These funds, it states, must be committed to now in the form of revenue support in

order to provide the strong signal of long-term commitment required by private sector investors. Assuming that it remained favourable to preserve this option, the total commitment would become around £400 million by 2015 and around £600 million by 2020. Under a faster development case the total commitment would only rise to around £800 million by 2020.

This additional funding compares with the potential prize of £600 million to £4.2 billion in annual UK revenues (slow vs. fast development case) from domestic and export revenues by 2050, and £300 million to £900 million annually by 2030. The prize in terms of economic benefit could therefore be very significant, in the order of the industries developed by Denmark in wind and Japan in photovoltaic cells.

The only thing that is required to unlock this potential is Government commitment across the UK. The Energy White Paper, RO Review and upcoming Comprehensive Spending Review combined are the only chance between now and 2010 to deliver what industry requires. 2007 is a sweet spot of opportunity that must be grasped if this country is to realise its full potential in harnessing the power of the sea. It has all the ingredients required to present the right level of support in the right form in order to deliver UK projects together with technologies for an increasingly accommodating international export market. Given this Government's desire to be regarded as leading the global climate change debate it will therefore be on this year that its willingness and ability to deliver a clean energy industry for the UK will be judged. □

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