



Briefing: Members' Debate 18th February

THE WAVE ENERGY SECTOR IN SCOTLAND

The Scottish wave energy sector has huge potential. The setting-up of Wave Energy Scotland is a welcome response to recent challenges for the sector, but the Scottish Government needs to provide further operational detail. At UK-level, the suitability of electricity market support should be considered and grid interconnection for the Scottish islands needs to be a priority.

Key Points

- With 10% of European wave power potential, a strong skills base and facilities like EMEC in Orkney, **Scotland remains one of the best locations globally for the development of wave energy**. Scotland has the great natural advantage of being able to lead the development of an important global technology.
- Despite recent set-backs, we believe wave energy still has an important long-term role to play in ensuring Scotland achieves its climate targets.
- **WWF Scotland welcomes the establishment of Wave Energy Scotland** as an appropriate response to the sad difficulties at Pelamis and Aquamarine Power. **However, we call on the Scottish Government to urgently clarify details on business plan, staffing and budget for Wave Energy Scotland.**
- The UK Government should take meaningful steps to adjust the Electricity Market framework to provide greater support to the wave energy sector, given the sector's current challenges.
- Securing **an affordable and timely grid connection solution for the Scottish islands** needs to be given priority by UK and Scottish Governments.

Wave power has long-term potential for Scotland

Scotland has specific geographic and economic competitive advantages for the development of wave power, that puts **Scotland at the forefront globally for the development of wave energy**. Scotland's advantages for the development of wave power include:

- Scotland has 10% of Europe's wave power potential, in addition to its vast tidal resource.
- The EMEC facility on the Orkney mainland is the world's foremost marine energy technology development site, with more grid-connected marine energy converters deployed than any other single site in the world.
- The Offshore Renewable Energy (ORE) Catapult, established by the UK Government and headquartered in Glasgow provides technological development for all forms of offshore low-carbon energy, including the wave power sector.

- The breadth of technological development that has taken place in Scotland, means that Scotland has developed a specific engineering skills base in wave energy.

Despite recent set-backs, we continue to believe that Scotland's wave energy has the potential to play a significant role long-term in decarbonising the UK's electricity supply and delivering on Scotland's climate change targets.

Current challenges

While Scotland has been at the forefront of developing this sector, the scale of current challenge it faces is clear. WWF Scotland was saddened to hear of the entry of Pelamis into administration and of recent redundancies at Aquamarine Power. Engineering and financing constraints have contributed to a very difficult recent operating environment for wave projects.

With high capital costs, a long payback period, little design convergence and a level of engineering risk, it has been challenging for the sector to secure continuing private-sector finance. Wave developers are still at the point of proving their devices and investors have been pulling out of the market due to a lack of clarity on the level and timing of future return on investment. The ORE Catapult has estimated that approximately £150m of investment is needed over the next five years for two or three wave technologies to complete full scale demonstration and move towards commercial readiness. This demonstrates **a need for Scottish Government intervention to support technology demonstration and attract investors back to the sector.**

Scotland cannot afford to lose the skills base, intellectual property and first mover advantage it has built up in the wave sector and must make every effort to salvage as much as possible so that the industry can move forward and build on its experience and progress to date.

Wave Energy Scotland

WWF Scotland warmly welcomed the establishment of Wave Energy Scotland as an appropriate response to the recent challenges in the wave energy sector. Wave Energy Scotland should help drive technology development and harness the expertise that has been built up in Scotland.

Whilst it was good to see that WES was able to secure the intellectual property and other assets from Pelamis, **there still remains a lack of clarity about the business plan of Wave Energy Scotland, as well as its staffing and funding.** WWF Scotland calls on the Scottish Government to further clarify details on these aspects, to ensure that the maximum level of skills-base is retained in Scotland. The ORE Catapult has also highlighted that a co-ordinated approach could reduce the level of investment required to move the wave energy sector closer towards commercialisation.

The ORE Catapult has identified five actions that would reduce risk for investors and enable the sector to move from prototype to full demonstration:

- greater alignment of the ways in which technologies are assessed;
- standardisation in the approach taken to technology development;
- a licensing initiative to allow the wider usage of enabling technologies to avoid duplication of development effort;
- greater coordination between private and public sector investors;
- and a potential role for government in underwriting debt finance for the industry.

WWF Scotland believes that Wave Energy Scotland must consider the full breadth of potential interventions it could make, as it develops a fuller remit and operating plan.

UK Energy Market & Grid interconnection for the Scottish Islands

The UK Electricity Market, following Electricity Market Reform, does not provide any form of long-term financial support for the wave energy sector, in contrast to the long-term price guarantees being provided for the development of a nuclear power station at Hinkley Point in Somerset. **The UK Government should take meaningful steps to adjust the Electricity Market framework to provide greater support to the wave energy sector, given current challenges.**

The creation of an affordable and timely grid connection to the Scottish islands, especially Orkney, Shetland and the Western Isles, would significantly improve the long-term market environment for marine energy in the UK generally and these communities specifically. In the short-term, grid interconnection for the islands would also unlock significant onshore wind generation capacity and provide additional capacity for demonstration arrays. Ultimately it will provide an important economic and jobs boost for these communities. The UK and Scottish Governments must continue to work with industry to secure a solution to this issue.

Many energy technologies that we rely on today have developed out of a sustained, long-term, often public-driven approach to funding research and development. Given the wave sector's potential in Scotland and globally, we must find ways to give it even a fraction of that sustained attention and financial support, in order that it can reach commercial maturity.

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