Sue Barr
Chair
The UK Marine Energy Council
3rd Floor Office
207 Regent Street
London
W1B 3HH

Rt Hon Stephen Crabb MP
Chair, Welsh Affairs Select Committee
House of Commons
London
SW1A 0AA
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Dear Chair,

Welsh Affairs Select Committee, Grid capacity in Wales inquiry: MEC response

Thank you for launching this important and timely inquiry into grid capacity in Wales., the Marine Energy Council is the representative body for the UK's tidal stream and wave energy industries with over 50 members working across the sector. Our vision is for the marine energy sector to support a secure, cost-effective, and fair transition to net zero, creating investment, export, and employment opportunities across the Wales and the UK.

Wales is strongly positioned to benefit from its natural wave and tidal resource, with 456MW of marine energy sites already leased and an additional 3.4GW of potential.[1] In addition to this natural resource Wales is developing the technologies and intelligence to benefit from a sector with the potential to create over 22,000 jobs and deliver £8.85bn GVA[2] to the UK's economy in coastal communities and beyond, whilst accessing a global market forecast to be worth £76bn by 2050. [3]

The inquiry sets out important questions that need to be addressed to ensure Wales is prepared for the transition to net zero and to benefit from the opportunities that will be created through green growth.

In lieu of a response to each question posed, I wanted to write to you to highlight key points for your committee and concerns that MEC members have regarding grid capacity in Wales. I hope this is helpful for your inquiry, outlining some of the challenges that the marine energy sector faces, and how barriers to realising tidal stream and wave technology potential in Wales could be removed.

If MEC can be of any further assistance in helping the committee with its inquiry, please do let me know.

Yours sincerely,

Sue Barr

Chair, The UK Marine Energy Council

[1] Marine Energy Wales (2021) *'State of the Sector 2021 Economic Benefits for Wales'* Available online.
[2] Supergen (2021) '*What is the Value of Innovative ORE Deployment to the UK Economy?'* Available online.
[3] Catapult ORE (2018)*'Tidal Stream and Wave Energy Cost Reduction and Industrial Benefit*'. Available online.

The UK Government, Welsh Government, Crown Estate, Ofgem and electricity network companies should work with the marine energy sector to rapidly increase the number of leased sites to avoid potential bottlenecks in the future.

There are currently 465MW of marine energy sites that have been leased in Welsh waters.[4] The UK Government's welcome announcement of £20m ringfencing for tidal stream support in AR4 is expected to deliver around 34MW of capacity.[5]

To secure cost reductions and realise the potential of tidal stream it is imperative that there is ongoing support for tidal stream in future allocation rounds. This will be critical in unlocking the benefits of economies of scale and ultimately reducing the cost of marine energy projects. Given that 124MW across the UK had the necessary consents and grid connections to bid into AR4, that available capacity will be quickly taken up. To ensure the rounds remains competitive and to give Wales the opportunity to benefit from increased support, the UK Government, Welsh Government and Crown Estate, Ofgem and electricity network companies should work with the marine industry to increase the availability of sites that qualify for future CFD allocation rounds.

To realise the 3.4GW potential of marine energy in Wales the regulatory and policy environments need to be aligned to remove barriers to that delay increasing the number of leased sites with grid connection (required to secure CFD contracts) are not financially onerous for emerging technologies.

Where possible a piecemeal approach to increasing consents, leasing and grid capacity should be avoided.

MEC strongly supports electricity network companies investing to increase capacity aligned to net zero rather than based on current need. The UK's net zero commitment is forecast to treble electricity demand. This will require a significant increase in renewable capacity and to support energy security diversity of generation will be paramount.

Tidal stream is entirely predictable, provides near-baseload energy and has the potential to provide 11% of the UK's current energy demand.[6] At the point of 1GW of deployment it is expected that tidal stream will be below £90 per MWh.[7]

The UK and Welsh Governments can support the pathway to cost reduction through providing certainty from the policy sphere and avoiding a piecemeal approach to increasing Wales's marine capacity. Providing more consents, and working collaboratively to expediate grid connection, will improve investor confidence and the industry can reduce costs through economies of scale and learning by doing.

The UK Government, and Welsh Government can assist Ofgem and electricity network companies in delivery capacity in a cost-effective manner by setting a clear target for marine energy.

[4] Marine Energy Wales (2021) ibid.
[5] Catapult ORE (2021) *What does the BEIS CFD AR4 announcement mean for the tidal stream energy sector?* Blog available online.
[6] Coles et al, Royal Society (2021) *A review of the UK and British Channel Islands Practical Tidal Stream Energy Resource*. Available online.
[7] Catapult (2018) ibid.

Electricity networks and Ofgem should be supported to increase capacity by setting a clear capacity target for marine energy. This will assist National Grid, Western Power Distribution, and Scottish Power Energy Networks preparing accordingly for the necessary increase in electricity being generated by tidal stream and wave energy projects.

The recognition that setting a clear target for a sector can reduce costs and send a clear message to investors is reflected in the UK Government's decision to set a target for floating offshore wind. The announcement of tidal stream ringfencing alone led to a significant increase in international investor interest in the UK.

There is a significant opportunity to grow Welsh supply chains that will support delivery of a marine energy target and maintain international leadership in an export market forecast to be worth £76bn by 2050.[8] The UK should seek to emulate the Danish experience in supporting the wind industry and benefitting from its commercialisation internationally. Denmark acted and supported this emerging renewable industry in the 1980s and created a domestic environment that encouraged and grew indigenous supply chains. In 2019 the wind sector was worth £7.7bn per annum to the Danish economy.[9]

The level of anticipatory investment that is required should be aligned to the Climate Change Committee's (CCC) recommendations and the *'Leading the Way'* scenario as part of National Grid's Future Energy Scenarios. Investing in infrastructure to avoid repeatedly having to increase capacity in a piecemeal manner will avoid £34bn of unnecessary expenditure by 2035.[10]

Marine energy is strongly positioned and able to support the transition to a smarter electricity system in Wales.

Flexibility and demand side response measures will be critical in the transition to net zero. The marine energy sector has worked collaboratively on a range of different projects that highlight its potential role in the future energy system. This includes: the European Marine Energy Centre (EMEC) combining tidal power with a flow battery to unlock continuous hydrogen production, delivering a 1.8MWh flow battery on the island of Eday[11]; and Nova Innovation integrating its Shetland tidal array with Tesla battery storage to provide clean power on demand.[12]

MEC believes that the Welsh Government should be seeking to emulate initiatives and projects such as these at key sites in Anglesey and Pembrokeshire. A potential barrier for delivering innovation projects will be a lack of a clear route to unlock investment in research and development, or through initiatives such as the EU's Horizon scheme. Continued participation in the latter has been agreed with the EU through the Cooperation Agreement, however delays in this being implemented is having a negative impact on investor and project confidence in opportunities in Wales.

The Welsh and UK Governments should work with the marine energy sector to address any shortfalls in funding that tidal stream and wave technology and project developers may experience following the UK's exit from the EU.

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[8] Catapult ORE (2018) ibid.
[9] Wind Denmark (2020) *Wind in Denmark: Statistics*. Available online.
[10] Vivid Economics (2019) *Accelerated electrification and the GB electricity system*. Available online.
[11] EMEC (2021) *Press release: flow batteries to combine with tidal power to produce world's first continuous green hydrogen.* Available online.
[12] Nova Innovation (2018) *Press release: A world first for Nova Innovation – the 'Holy Grail' of baseload tidal power.* Available online.

Supporting technologies at different stages of the development process will be critical and the MEC welcomes the recent announcement that Morlais will receive £31m in European Regional Development Funding from the Welsh Government. This will support the development of tidal power generation technologies whilst creating wider benefits for Anglesey and the local economy.

Flexibility will have an important role in a cost-effective transition to net zero, however base-load style capacity that tidal stream provides will be critical for support energy security.

Flexibility can in certain instances delay and avoid network reinforcement and will have a critical role in the future energy system. However as already highlighted the rapid increase in demand that net zero will create means that securing a diverse generation portfolio should be prioritised.