

Written evidence submitted by Marine Energy Council (MEC) (IND0017)

Introduction

The MEC welcomes the opportunity to respond to this critical inquiry. This response follows our previous submission to the *Securing the domestic supply chain* submission during the last Parliament. As such, this response builds on the progress made by the marine energy sector since January 2024, the challenges that remain, and how the marine energy sector strongly supports this Government's Clean Energy Superpower and green growth ambitions.

1. How can UK plc capture its fair share of the economic potential of emerging or less developed energy technologies?

The UK Government can achieve its Clean Energy Superpower ambitions by providing clear signals to investors, developing sector-specific strategies, and proactively removing barriers to getting projects deployed. It cannot achieve this ambition without identifying where it has strategic advantages and identifying where there are opportunities internationally to lead. It must act to secure a share of the potential global market of specific emerging energy technologies.

The UK has the offshore engineering expertise, supply chain and natural resources to lead the world in tidal stream and wave energy. Marine energy projects are currently being developed, deployed and exported with over 80% UK supply chain content spend. This is significantly higher than other renewable technologies, and Inyanga Marine are targeting 100% UK supply chain content spend in delivering its tidal stream projects in Anglesey.

In 2022 the UK demonstrated international leadership by introducing a ringfence for tidal stream in its renewable auctions. This has led to over 120MW of tidal stream being contracted. To put this in context globally there is around 20MW of tidal stream capacity currently deployed, half of which is in UK waters. The UK therefore can lead and grow the global installed capacity significantly. The LSE's Grantham Institute has undertaken research into the technologies that the UK has the potential to lead the world in developing, deploying and exporting. Its report singled tidal stream out as a technology where the UK could capture export opportunities from high-value products relevant for tidal stream energy such as turbines, in which it is already specialised.¹

Set a £30m tidal stream ringfence in Allocation Round 7

Our ambition is to see UK content embedded in tidal stream projects deployed here, and around the world. However, the industry has had inconsistent support in the last three renewable auctions. This is damaging investor confidence into UK supply chains which could take advantage of a large global market.

The International Energy Agency has forecast that 120GW of tidal stream capacity could be deployed by 2050. Developing this initial capacity could see tidal stream provide 30% of New Zealand's, 11% of the UK's and 10% of Indonesia's current electricity demand. There are significant opportunities for tidal stream to play a key role in local electricity systems. For example, Alaska's tidal stream capacity represents 5x its annual electricity demand, for China's Zhoushan province 150% and the Bay of Fundy in Nova Scotia, 50% of their demand.² The UK can play a leading role in exporting tidal stream turbines, technology, and expertise to these countries, supporting the Government's ambition to make the UK a Clean Energy Superpower.

¹ Serin, E (2023) [Sizing sustainable growth opportunities from tidal stream energy in the UK.](#)

² Coles, D (2024) [A review of global tidal stream energy resources.](#)

Introduce a £5m wave energy ringfence in Allocation Round 7

Wave energy does not have a viable route to market in the UK. Wave energy is abundant, with the Intergovernmental Panel on Climate Change (IPCC) identifying wave energy as the world's largest untapped renewable energy resource with over 29,500TWh potential, ten times more than Europe's annual electricity consumption. Wave energy could provide electricity for 500m homes whilst supporting 400k jobs globally. Its abundance means the economic opportunity for the UK is tremendous.

In the absence of a route to market, wave energy companies can and are relocating where support is provided. The UK at risk of being left behind. The United States is investing \$152m over the next five years to advance the commercial readiness of the sector, and China has enshrined the 'large-scale deployment of ocean energy' in its five-year plan and in 2023 deployed its first full scale wave energy converter. In Europe, Portugal has a 70MW deployment target for utility scale wave energy by 2030, Spain is targeting 60MW deployment by 2030 and ESB has partnered with CorPower to deploy a 5MW wave energy array in Ireland.

Provide advanced sight of ringfenced support

One of the challenges that emerging technologies face is the annual nature in which CfD budgets and ringfences are set. Prior to bidding into the CfD mechanism projects require a lease agreement, environmental licence and grid offer. This can take over 8 years. Going through this process is expensive and time-consuming, and companies are not incentivised to make capacity 'eligible' for the CfD mechanism due to the lack of clarity on there being a route to market at the end of this process.

The UK Government should give advanced sight of what ringfenced support will be available to emerging technologies, to give investors the confidence to grow the UK's supply chain.

2. What more can the Government do to encourage greater domestic supply chain investment in the energy industry by 2035, including through the Contracts for Difference scheme?

The Contracts for Difference (CfD) scheme has been successful in increasing renewable deployment of established technologies, it is an imperfect mechanism for supporting emerging technologies. As noted in response to question 1, its structure does not support investor confidence in emerging technologies, and the new mechanisms introduced that could have secured greater domestic supply chain investment are solely focused on wind.

The Government should ensure emerging technologies are supported via initiatives including the Clean Industries Bonus.

The CfD is designed to deploy increasing capacities of renewables at lower and lower costs. It is not designed to grow UK supply chains and create jobs. The introduction of Supply Chain Plans, and the Clean Industries Bonus, is tacit acknowledgement of this. However, it is a source of frustration that emerging technologies are not included in these considerations and therefore cannot access increased support.

The Government should review whether the CfD mechanism is appropriate for supporting the growth of emerging renewable sectors.

The current Pot 2 within the UK's Contracts for Difference (CfD) system encompasses emerging technologies such as tidal stream energy and floating offshore wind. However, there is limited empirical understanding or case study evidence regarding the actual pricing dynamics for these technologies. In any market or auction-based system, competitive pressure can drive companies to prioritise securing CfD contracts over ensuring project deliverability. This often leads to value cannibalisation, where companies underbid to secure funding, potentially jeopardising project completion.

The MEC advocates that the Government undertaking a review of the effectiveness of Pot 2 and the CfD approach to supporting emerging technologies.

Great British Energy provides an opportunity to embed UK content in marine energy projects deployed here and around the world.

Great British Energy could play a critical role in encouraging domestic supply chain investment. The MEC has submitted two proposals to the Government for it to consider and we would be happy to share the full proposals of these with the committee if of interest:

- **Great British Energy Sea Power**

As noted, tidal stream projects are being deployed with upwards of 80% UK supply chain content spend. This is significantly higher than other renewable technologies. GB Energy should seek to accelerate deployment of, and embed UK content in, projects installed here and around the world. However, high capital costs and long investment return profiles are currently hindering the sectors progress to secure adequate volumes of finance and a move towards large-scale construction.

This proposal would see Great British Energy commit 3% of its budget to supporting the marine energy sector by taking equity stakes under commercial terms in projects that have secured a CfD, bringing them to FID and into construction, helping to create essential momentum in the progress of the emerging tidal project pipeline. These projects will deploy during this Parliament, ensuring GB Energy has a visible and tangible impact for constituencies across the UK.

Great British Energy can take equity stakes in projects committed to maintaining high levels of UK supply chain content. In doing so GB Energy will support the UK lead the world in marine energy and becoming a Clean Energy Superpower. Via investing alongside private debt and equity investors to derisk initial projects, GBESP will stimulate multiples of its own investments into the supply chain across the UK, ensure the benefits of tidal stream are secured and shared, whilst positioning the UK to benefit from a global export market.

Setting the target investment budget at £250m provide sufficient capital for GBESP to invest in multiple marine energy projects to support the development of the UK's marine energy sector, including wave energy. After a project is deployed it is envisaged that GB Energy could divest part of its project stake, profiting on its investment and recycle this into new marine energy projects and opportunities.

- **AtWave**

The US Government is investing to create PacWave a wave energy testing site in Oregon.³ The partnerships between Great British Energy and the Crown Estate, and Crown Estate Scotland, provides a potential route to invest and develop a pre-leased consented, grid connected site for wave energy projects.

³ Further information PacWave is available [here](#).

This will follow the success and example of Morlais. Morlais is a tidal stream energy project located in Anglesey, with the potential to generate up to 240MW of renewable, predictably electricity. The 240MW was broken into berths of 30MWs and rented out to various turbine development companies. The project was developed in a cooperative manner with the Welsh Government and Natural Resources Wales and has been instrumental in removing barriers to investment in emerging renewable technology in the UK.

Building on previous work and initiatives, the UK Government could quickly identify and support the development of a new site to unlock wave energy in the UK. The first step will be identifying an appropriate site. The site could be the Pentland Firth and Orkney Waters (PFOW) Strategic Area, which can be quickly developed to create a 100MW wave energy array, with the potential to increase to 200MW.

Supply chains once established can be difficult to shift. AtWave, combined with a route to market via the CfD mechanism, will encourage wave energy developers to focus investment into UK communities.

The UK Government should establish a Marine Energy Taskforce

The UK Government has successfully launched groups covering wind and solar. Marine energy, which can provide over 30% of the UK's electricity demand and provide jobs in coastal communities and beyond, should be supported through a government-backed taskforce. The group will be focussed on delivery, advising on practical and deliverable actions that make the UK the best place in the world to invest in marine energy, and ensure that opportunities to lead the world are not missed.

The MEC has proposed that the Taskforce should be charged with developing a strategic roadmap, to remove barriers and identify opportunities to secure investment and deliver value for money.

- 3. Does the UK have the supply chain capacity to deliver the required energy infrastructure by 2035, including an expanded electricity network? *and***
- 4. To what extent would growing the domestic supply chain bolster UK energy security?**

The UK can grow its supply chains as the marine energy sector expands

The marine energy sector in the UK will need to increase capacity significantly to realise the UK's 30GW+ of capacity. We are at the start of this journey with 130MW of tidal stream capacity to be deployed by 2029. Companies like Inyanga Marine are seeking to deploy their projects with 100% UK supply chain content spend, whilst others including Nova Innovation and Orbital Marine Power have already deployed projects with over 80% UK supply chain content spend.

The development of domestic supply chain capabilities to support net zero is vital step in maintaining the socio-economic benefits associated with a successful marine energy sector within the UK. Without adequate financial support and policy oversight into supply chain capabilities, there is a very real danger that the marine energy sector, and the GVA and jobs benefits that are associated with it, could be led by other competing nations. A robust supply UK supply chain with the capability to underpin the marine energy sector will increase overall energy security and

providing a meaningful contribution to a fair transition to net zero by providing jobs in coastal communities

Growing the domestic supply chain will create global opportunities

A good example of the potential opportunity within this sector is Leask Marine. Leask Marine has worked on 216 tidal and wave projects internationally since 2003. In the past two years it has invested over £24m in new vessels and equipment to support the sector, developing the world's first submersible drilling rig (SDR) of its kind. With 68 employees, primarily located in coastal areas, Leask Marine is one of the most innovative companies in the world operating in this space. This is the sort of company the Government needs to engage with, learn from, and support to grow.

This global potential was highlighted in a recent report from the University of Edinburgh, which completed a comprehensive study into the impact of Scotland leading the marine energy sector. The report finds marine energy could add £37bn GVA to Scotland's economy by 2050, with £28bn of this coming from exports. The report finds that if Scotland can seize the export opportunity marine energy could support 62,400 jobs in Scotland alone. Around half of these jobs will be from device construction. 15,000 of these jobs will be high-value jobs located in coastal communities. For context there are currently around 20,000 people employed by the wind industry.⁴

Growing the supply chain will be supported by a clear strategy

The Government is right to develop its Invest 2035: Industrial Strategy approach to supporting clean energy technologies. A lack of a strategic plan has hampered the marine energy sector and its supply chain growth.

It is essential that if the UK wishes to maintain its world-leading position within the marine energy sector, then comprehensive policy support and financial investment is both provided and incentivised across the supply chain. Primarily this support should be utilised to provide a fully modernised supply chain, capable of competing with other established nations in the manufacture of key subsystems. This may include the uptake of advanced manufacturing techniques; automation of welding and other fabrication processes; digitisation and data analytics; and the use of robotics. Furthermore, policy support programmes to enable the competitive manufacture of these subsystems at volume, should be guided by a comprehensive framework that considers additional underlying drivers with the potential to influence the UK's competitive position, which may include drivers such as market opportunity; workforce capability and research and innovation support. In doing so policy programmes that can potentially enact sector-wide improvements could be implemented.

With other competing nations waking up to the economic opportunities presented by a successful marine energy sector, the UK must act quickly to ensure that domestic manufacturing capability is competitive enough to ensure that underpinning foundational sectors and supply chains remain within the UK. The Marine Energy Council believes that a range of underpinning subsystems manufacturing sectors such as tidal turbine blades; fabrication of device substructures, certain power take-off components; system integration; and device operation and maintenance should all be supported if the UK wishes to enforce its position as the leading nation in the development of the marine energy sector.

The Marine Energy Taskforce, led by DESNZ, can create the conditions and a clear plan for realising the UK's marine energy potential.

⁴Noble, DR (2025) [Future Economic Potential of Tidal Stream & Wave Energy in Scotland](#).

February 2025