Consultation on Introducing a CfD Sustainable Industry Reward
Marine Energy Council response

Introduction

The Marine Energy Council (MEC) welcomes the opportunity to respond to the Sustainable Industry Reward consultation. The transition to net zero requires a diverse energy mix. The development of renewable technologies is creating exciting opportunities for countries that provide clear policy signals, invest in supply chains and communities to export solutions around the world.

The MEC is the voice of the UK's tidal stream energy (TSE) and wave energy industries. Established in 2018, the MEC's membership spans technology and project developers, key sites, manufacturers, and small and medium sized enterprises working in the supply chain. Our vision is for the marine energy sector to support a secure, cost-effective, and fair transition to net zero, enabling investment, exporting British innovation, and levelling up with employment opportunities across the UK.

The UK has significant marine energy potential, which when realised will play a key role in the UK achieving net zero:

- **TSE** is entirely predictable and could provide up to 11%[1] of the UK's current electricity demand. This predictability can help reduce supply/demand mismatch in the energy system and reduce dependence on fossil fuels and imports. TSE can be deployed rapidly, with the potential construction time of a consented farm being less than three years.
- **Wave energy** provides a more consistent generation profile than solar or wind and could provide up to 20%[2] of the UK's current electricity demand. In addition, its harmonious relationship with wind means it can be co-located at offshore sites supporting a more cost-effective and efficient energy system. [3]

The CfD scheme has been successful in rapidly increasing the UK's wind and solar energy capacity. However, the focus on Levelised Cost of Energy (LCOE), rather than the value of different energy sources, means the CfD has not delivered a diverse supply of renewable generation, jobs have been offshored and potential benefits to the UK missed. The SIR is an opportunity to address some of the mechanisms issues, whilst providing certainty to the renewable industry. This will be key in supporting energy security and a cost-effective net zero energy system.

[1] Coles et al (2021) *'A review of the UK and British Channel Islands practical tidal stream energy resource*'. Available online.
[2] Jin et al (2021) '*Wave energy in the UK: Status review and future perspectives'.* Available online.
[3] In this response 'marine energy' refers to tidal stream and wave energy.

Executive Summary

The Marine Energy Council (MEC) strongly supports the UK Government's ambition to accelerate renewable deployment in a manner that improves supply chain resilience and supports embedding UK content in projects delivered here and around the world.

The Contracts for Difference (CfD) mechanism has been focused on delivering renewable capacity at lowest cost, which has meant that broader value that projects could deliver to the UK has not been considered. Supply Chain Plans started the process of addressing this oversight, and the Sustainable Industry Reward (SIR) can provide further impetus to onshore opportunities for the UK households and communities in the transition to net zero.

The scope of the SIR is too narrow and should be extended to include other renewable technologies

It is disappointing that the SIR is solely focussed on offshore and floating wind. This ignores the significant opportunities in other renewable industries including tidal stream (TSE) and wave energy. TSE projects are currently being deployed with upwards of 80% UK supply chain spend.

If the UK Government acts, TSE and wave energy could deliver up to £41bn GVA benefit to the UK economy by 2050.[4] In addition, we know that average returns (on public investments in innovation) in marine energy projects and TSE is comparatively higher than investment in other renewable technologies and strongly supports balanced economic growth.[5]

The SIR's scope means that projects that are delivering significant benefits to the UK will not be supported because they are not floating or fixed offshore wind.

The UK Government should set a timeline for the introduction of support mechanisms other than offshore and fixed floating wind

The Government's position is that separate challenges faced by other technologies cannot appropriately be addressed through the CfD SIR. As the SIR is currently being consulted on and formulated it is not clear why it cannot be done so in a way that rewards renewable technologies of different sorts to wind that deliver significant benefits to the UK being rewarded.

The consultation notes that if SIR is extended this would require a separate consultation and further policy analysis. This will delay the introduction of support for marine renewables and risks the UK falling behind other countries.

The UK is currently the international leader on TSE. However, the French government has recently announced competitive tenders for TSE projects, Canada is deploying an Orbital device, and the US and China are introducing supportive measures, the UK Government needs to act to maintain its leadership.

The UK Government demonstrated international leadership in setting a ringfence for TSE in AR4 and AR5. This has put the UK on course to have over 100MW of TSE capacity deployed in its waters by 2028. Wave energy does not have ringfenced support or a viable route to market in the UK. In addition, wave energy and TSE has received £57m and £17m in technology funding between 2017-22. Research demonstrates that innovation funding will rapidly increase learning rates and reduce the cost of technology in the future. An increase in the technology learning rate from 10% to 15% has the potential

[4] University of Edinburgh (2023) *What is the value of innovative offshore renewable energy deployment ot he UK economy?* Available online.
[5] Resolution Foundation (2022) *The Economy 2030 Inquiry*. Available online.

to reduce the total investment required for tidal stream from £18.6bn to £3.3bn and reduce the total investment required for wave from £20.5bn to £3.0bn when delivering 6GW of each technology by 2050. ORE Catapult forecast at 1GW of deployment both wave energy and TSE will be cheaper than new nuclear and TSE could reach around £50/MWh by 2050.[6]

There is a lack of clarity on what future innovation support might be available for TSE and wave energy. Capturing and incentivising this in the SIR will accelerate deployment and a cost-effective net zero transition.

The SIR should reward offshore wind companies that undertake co-location of wind and wave assets.

Multiuse is a clearly quantifiable benefit that the SIR could seek to support increasing deployment. Currently the CfD mechanism does not make provision for innovative deployment of renewables. The UK Government should follow the lead of the Dutch government which mandated for the next generation of offshore wind farms to deploy 5MW of floating solar capacity. This requirement is set to ramp up to 100MW for the next leasing round, creating a long-term market that will attract investment into innovative technology. In the absence of mandating for multiuse or co-location the SIR could kickstart this process by awarding higher points to applicants that co-locate offshore wind sites with other renewables such as wave energy converters.

Co-locating offshore wind and wave energy converters allows wave energy converters and offshore wind technologies to share assets will reduce costs by 12% for both projects. This will reduce the cost of meeting the UK's renewable energy targets on UK energy bill payers. [7]

The SIR should include reward for investments in manufacturing facilities or ports that include provision for other offshore renewable deployments

The MEC strongly supports the Government incentivising investment in manufacturing facilities and ports as part of the SIR. Applicants should be rewarded for future-proofing their investment and how they may continue to service offshore renewables in the future and deployment of other technologies including wave and TSE.

In addition to innovative approaches to deployment the SIR should reward energy system benefit and export potential.

The MEC supports the three criteria that the consultation sets out. As the SIR is being funded by household energy bills the mechanism should renewables that deliver a clear system benefit in terms of cost and energy security and position the UK to benefit from growing export markets.

The Government is right to separate the CfD and SIR into different funding pots

This will avoid distortion of the CfD and will allow the Government to better target support at desired outcomes. An equivalent SIR ringfence based on technology, as established for tidal stream in the AR4 and AR5 processes, should be established. The MEC believes that the SIR should be funded through general taxation rather than on household energy bills.

[6] University of Edinburgh (2023) *Ocean Energy and Net Zero: Policy Support for the Cost Effective Delivery of 12GW Wave and Tidal Sream by 2050.* Available online.
[7] OWC (2023) *Wave and Floating Wind Energy, opportunities for sharing infrastructure services and supply chain.* Available online.

MEC response

With regard to the proposed delivery model:

1. **Is the government's preferred model for allocating and valuing SIR proposals an appropriate delivery model to avoid overcompensation, while giving applicants flexibility on how they deliver their proposals? What could be the unintended consequences and value for money concerns, if any?**

The Marine Energy Council (MEC) welcomes the Government's decision to keep the SIR funding pot separate from the CfD budget, and that the proposal to re-rank bids based on how they scored against SIR-criteria within the CfD is not being taken forward. The SIR acting as a top-up is appropriate, provided the CfD maintains its pot structure, with specific ringfences for technologies such as tidal stream and wave energy.

The competition for the SIR award between renewable developers should provide the conditions to avoid overcompensation, provided the scoring system, backstops and the way the budget is allocated is robust.

In the MEC's response to the Non-Price Factors (NPF) consultation, we raised the point that funding the additional mechanism via household energy bills is inherently regressive, and that the UK Government's aims for onshoring supply chains and spreading the benefits of the Net Zero transition would be more appropriately supported via general taxation. We remain of this view.

Avoiding overcompensation should be a priority regardless of how SIR is funded. However, particularly for more developed renewables the UK is now in a race to onshore supply chains that have become embedded elsewhere. There is a clear opportunity in less-established technologies like tidal stream and wave energy to embed UK supply chains in delivery in our waters and around the world. Supporting these two technologies could deliver up to £41bn GVA benefit to the UK economy by 2050.[8] It is currently not clear what overcompensation would look like in practice, if in the long-term this intervention enables the UK to lead in the global race for renewable deployment.

The Grantham Institute's research has found tidal stream, with the right policy framework, has the potential to contribute to sustainable economic growth in the UK, enhancing net zero efforts, improving energy security and generating jobs across the country. UK- based companies are internationally leading innovators in marine energy and the UK is comparatively more specialised in this area than in other clean technologies, including offshore wind, nuclear and CCUS.[9]

We have an opportunity to embed UK supply chain content in deployments here and around the world. For example, tidal stream projects have far exceeded offshore wind's UK supply chain content target of 60%: Nova Innovation and Orbital Marine Power have both achieved more than 80% UK content for site construction in their most recent installations. Nova Innovation have gone on to retain 98% UK content in their operational supply chain. This is creating and sustaining jobs. Tidal stream projects create 76 full time equivalent (FTE) jobs per MW during a project's construction in the UK, and 5.5 jobs/MW/year during operation.[10] This is particularly pertinent given the consultation notes that part

[8] University of Edinburgh (2023) *What is the value of innovative offshore renewable energy deployment to the UK economy?* Available online.
[9] London School of Economics (2023) *Seizing sustainable growth opportunities from tidal stream energy in the UK.* Available online.
[10] Element (2022) *European Tidal Energy Impact Analysis Report.* Available online.

of the reason for the introduction and focus of the SIR is a lack of supply chain resilience in the face of a multitude of economic, political and environmental shocks.

The UK's significant marine resource can be harnessed with UK supply chains.

However, due to the SIR not considering technologies other than offshore wind, the opportunity to develop and realise the multifaceted benefits of marine energy will be delayed. This is while countries like Portugal and Ireland are leading the way on wave energy development, and France recently announced its intention to hold tenders for tidal stream deployment.[11]

2. **What kind of backstop or mitigation would you suggest the government introduces to prevent a small number of large projects capturing the vast majority of the SIR budget?**

Capping the amount of award to a single project can secure, could allow for a spread and opportunity for more projects to secure funding. In the future if DESNZ decides to expand the number of technologies that could qualify for SIR support, the amount per technology could also be set and capped.

An equivalent SIR ringfence based on technology, as established for tidal stream in the AR4 and AR5 processes, could provide mitigation in this specific instance.

An additional benefit to expanding the number of technologies that could support is supporting cost-effective delivery of infrastructure investment that can accommodate a range of renewable technologies.

3. **Would it be of value to Applicants to allow multiple SIR bids? What should the limit be on multiple bids per criteria? Please explain your answer.**

As currently detailed in the consultation, an applicant could submit 3 SIR proposals with the option to make variations to the aspects of each criteria.

There would be a concern that the potential variation within this could challenge DESNZ response times. The ability to allocate and value the proposals quickly is vital to prevent them becoming out of date in terms of inflation or supply chain availability, and do not tie up suppliers who may not win a SIR.

4. **Is 6 months in advance of the opening of a CfD Allocation Round the optimal time to hold the SIR award and valuation process, assuming a 35 working days process to assess each application and notify applicants of the results? If not, when would you suggest?**

The relationship between the SIR award and CfD bids should be kept under review. If announcements of the former have a distorting effect of bids into the latter the Government could consider running the SIR award and CfD concurrently, whilst allowing multiple CfD bids based on various outcomes as to whether a project secures a SIR award or not.

5. **What is the right weighting between marks awarded for quality and marks for the price of delivery when determining the overall combined score of a proposal? Provide a reason why.**

[11] Offshore Energy (2023) *France steps up its tidal power game.* Available online.

This may vary depending on which area or category is being assessed, but a broad 50/50 split between quality and price of delivery should encourage balanced proposals that are also financially viable.

6. **When considering minimum standards, should the government bar applicants who have not obtained at least one SIR reward award from the CfD auction, or should it apply minimum standards to each SIR criteria as a contractual obligation instead? Please consider the need to minimise "gaming" of the SIR allocation process in your answer.**

The MEC strongly supports the Government's proposed approach of setting minimum standard requirements that need to be met prior to an applicant being eligible to bid into the CfD mechanism. The minimum standards can then be aligned to the outcomes the Government is trying to realise. This is a better approach than obtaining a single SIR reward, which could lead to a project focussing its energies on meeting that threshold whilst not delivering on the broader aims the Government is trying to deliver through the SIR and CfD mechanism.

7. **Are the government's proposals on performance related adjustments (i.e. to address non-delivery) proportionate and enforceable? Please answer in relation to: a. Performance related adjustments for non-delivery or partial delivery of SIR commitments. b. Performance related adjustments for non-delivery of minimum standards.**

No answer provided.

8. **When considering by how much to vary an applicant's CfD payments in the event that an applicant fails to deliver the minimum standards required, do you consider it appropriate to link the performance-related adjustment of CfD payments to the original SIR delivery cost the applicant put forward? If not, what would you suggest as an alternative?**

No answer provided.

9. **When considering dispute resolution mechanisms (at both application and payment stage), what sort of independent panel body, or independent members, would be appropriate for DESNZ to appoint?**

No answer provided.

With regard to the proposed SIR criteria:

10. Are the proposed SIR criteria appropriate considering the government's policy objectives, and should others be considered?

The MEC supports the economic, environmental, and social sustainability of projects being key criteria for the SIR, and recommend the Government consider the following factors in addition:

Energy system benefit (and cost-reduction)

The CfD process does not currently value the energy system benefit of different technologies. As the cost of the CfD, and now potentially the SIR, being paid for by household energy bills, the need to deliver a cost-effective transition is particularly pressing.

The University of Edinburgh has modelled the impact of 6.4GW of wave and 6.2GW of tidal stream deployment by 2050 on energy system cost. It found that deployment of 12.6GW of marine energy would lead to a reduction in the annual dispatch cost from £13.5bn to £12.5bn, a saving of £1.03bn per annum for UK households. This cost reduction comes from a higher dispatch of renewable energy – by up to 27 TWh (+6%), and thus a lower requirement for expensive peaking generation – by as much as 24 TWh (-16%) when wave and tidal generation are part of the electricity mix, compared with a scenario without marine energy generation.[12]

A diverse energy mix also supports energy security. Modelling carried out by Research by Imperial College London shows that tidal stream can directly reduce natural gas capacity required to ensure energy security by about 40%.[13] As more than half of UK gas is imported, firmer power renewable energy resources like tidal stream will be key in supporting energy security, a cost-effective transition to net zero that protects households from international gas price shocks.[14]

Export potential

The transition to net zero provides a significant economic opportunity to grow the industries of the future, whilst creating jobs opportunities and supporting supply chains across the UK. The Government in introducing the SIR or via other mechanisms should consider how the CfD can position the UK to benefit from growing export markets.

In the 1980s Denmark invested early in their wind energy industry, delivering projects with high levels of local content, and developing its domestic market. In the process it gained first mover advantage and in exports alone its wind sector generates over £7bn annually for the Danish economy. In 2012, 88% of Denmark's exports were associated with tidal turbines and components.[15] By contrast the UK's wind sector, Europe's largest generator of wind energy, exports less than £0.5bn annually and is a net importer of wind technology, principally from Denmark.[16]

With the right support marine energy will deliver significant economic benefit to the UK, and up to £41bn Gross Value Added to the UK economy by 2050.[17] As noted marine energy supply chains span

[12] University of Edinburgh (2023) *Ocean Energy and Net Zero: Policy Support for the Cost Effective Delivery of 12GW Wave and Tidal Stream by 2050.* Available online.
[13] Frost (2022) *Quantifying the benefits of tidal stream energy to the wider UK energy system.* Available online.
[14] D. Pudjianto, G. Strbac (2022) *Role and Value of Tidal Stream Generation in the Future UK Energy Mix*.
[15] Deloitte (2012) *Study of the macroeconomic impact of Wind Energy in Denmark*
[16] State of Green (2021) *The economic benefits of wind energy*. Available online.
[17] University of Edinburgh (2023) *What is the value of innovative offshore renewable energy deployment to the UK economy?* Available online.

across the UK, and a significant amount of the economic benefit (50-60%) is expected to be generated in coastal areas that have been targeted in need for economic investment.[18]

The London School of Economics has found that average returns on public investments in innovation in TSE is comparatively higher than investment in other renewable technologies, and that marine energy strongly supports balanced economic growth.[19]

Over 90% of the world's economies are now covered by net zero targets. The demand for harnessing the resources provided by oceans' waves and tides will continue to grow. The UK should seek to lead in developing and deploying these critical technologies.

Support for innovation on the transition to net zero

As noted, as SIRs and CfDs will be paid by household energy bills there is a responsibility to take a whole system view of the impact of different technologies on system costs.

Co-locating or enabling multiuse of sites will be key in a cost-effective and secure transition to net zero. This is bringing two or more renewables together at a single site to harness more power whilst utilising existing or optimising new infrastructure. Despite its benefits the UK energy system, consenting regime and regulatory frameworks discourages and acts as a barrier to multiuse.

Co-locating offshore wind and wave energy converters allows wave energy converters and offshore wind technologies to share assets will reduce costs by 12% for both projects.[20] This will reduce the cost of meeting the UK's renewable energy targets on UK energy bill payers.

The UK Government should follow the lead of the Dutch government which mandated for the next generation of offshore wind farms to deploy 5MW of floating solar capacity. This requirement is set to ramp up to 100MW for the next leasing round, creating a long-term market that will attract investment into innovative technology.

Waves provide a more consistent generation profile than wind and can be harnessed 3-8 hours after the energy is initially harnessed by wind farms. The UK should build on its initial support for co-location and provide a route to commercialisation through allowing enhanced sites to bid through the normal CfD process.

Optimising sea area will lead to cost reductions in DEVEX, CAPEX and OPEX, as well as providing a more stable energy output from the same geographical area. The SIR could incentivise offshore wind developers to make better use of their assets and be rewarded for delivering co-location and multiuse of an increasing competitive and congested offshore site(s).

11. Will the deprived areas SIR criteria reward applicants effectively so that they are incentivised to invest in manufacturing facilities, deployment infrastructure (such as ports), skills and R&D within deprived areas? Please say why.

The MEC supports the government seeking to focus investment in areas relatively near to deployment zones and utilising Department for Levelling Up, Housing and Communities data to target "left behind" areas.

[18] Offshore Renewable Energy Catapult (2018) *Tidal Stream and Wave Energy Cost Reduction and Industrial Benefit*. Available online
[19] Resolution Foundation (2022) *The Economy 2030 Inquiry*. Available online.
[20] OWC (2023) *Wave and Floating Wind Energy, opportunities for sharing infrastructure services and supply chain.* Available online.

The TSE ringfence has had a positive effect in terms of investment into coastal areas around the UK. HydroWing, which will deploy a 10MW TSE array in Anglesey is a good example of this, moving its turbine factory from the Netherlands to the UK. Having access to support via the SIR or another mechanism would support this being directed into areas the UK Government is seeking to develop.

Maintaining public support is key to the successful management of the net zero transition. Securing investment into facilities, UK supply chains and ports will be key in enabling communities to be active participants in the net zero transition. By 2030 the tidal stream industry could generate a cumulative benefit £1.4bn to the UK economy, whilst supporting 4,OOO jobs. With wave energy this could be over 22,000 jobs by 2040.[21]

A significant amount of the economic benefit from marine energy is expected to be generated in coastal areas (50-60%). These areas that the DHLUC would define as left behind. Due to the SIR only considering offshore wind, the broader benefits that other technologies can deliver will not be realised via the CfD and SIR mechanisms.

12. **Will rewarding applicants with projects spending a greater percentage of total DevEx and CapEx spending on SMEs lead to an increase in the amount of project spend that goes to SMEs? Please say why.**

This has the potential to increase SME spending, particularly for smaller projects, provided that there is a mechanism to prevent larger developers 'buying up' all relevant capability/capacity in a smaller market such as Scotland.

13. **To what extent would it be burdensome for developers and tier one suppliers to collect the requested information project DevEx and CapEx spend that goes to SMEs?**

Clear definitions of key terms, including 'SME' and 'directly contract' would be required to fully understand the extent to which this would be burdensome.

14. **What would you deem to be appropriate minimum, medium and maximum thresholds by which to score applicants against the SME SIR criteria and why? For example, a minimum threshold might be that at least 5% of a project's DevEx and CapEx spend goes to SMEs.**

No answer provided.

15. **Is the Carbon Trust's Joint Industry Programme methodology an appropriate, and effective, means by which to measure the CO2 emissions of offshore and floating offshore wind projects? Please say why.**

No answer provided.

16. **Are science-based targets an appropriate standard by which to determine the sustainability of suppliers' manufacturing and procurement practices? Are there alternative measures the government should be considering that are easily measurable and verifiable?**

No answer provided.

17. **What would you deem to be appropriate minimum thresholds by which to score applicants against the SBTi criteria and why? For example, a minimum threshold might be that at**

[21] Offshore Renewable Energy Catapult (2018) *Tidal Stream and Wave Energy Cost Reduction and Industrial Benefit*. Available online

least 20% of a project's Tier 1 suppliers have set, and are pursuing, science-based targets that have been submitted for validation and communicated.

No answer provided.