

ECOFlow Announcement of Opportunity: Stakeholder Interests Full Responses

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1 Introduction

This document provides the full text responses received from stakeholders engaged with the ECOFlow programme (Ecological effects of floating offshore wind structures). It provides additional details of their interests and the support they can offer to the call, including Project Partnership roles, in addition to the summary document included within the Announcement of Opportunity.

Stakeholders were asked the following questions:

- What do you want the impact of ECOFlow to be?
- How could ECOFlow help you deliver your objectives and how might you use the results?
- How could you support this call?

All queries regarding collaborations should be directed to the ECOFlow Champion email address at champions@ecoflow.org.uk. ECOFlow Champions will facilitate interactions between stakeholders and project leaders.

2 Project Partners

The following organisations have expressed an interest in Project Partnership:

- bp
- Celtic Sea Power
- Cooper Marine Advisors
- Department for Environment Food and Rural Affairs
- Department for Energy Security and Net Zero
- EDF Renewables
- Flotation Energy Ltd
- Marine Conservation Research
- Marine Energy Wales
- Morwind Ltd
- OceanOS Earth Ltd
- Ossian Offshore Windfarm
- RWE Renewables
- The Crown Estate
- Whale and Dolphin Conservation

Additional project partners from industry may be available in due course and this can be discussed with the ECOFlow Champion at full bid stage.

It should be noted that the organisations listed above are not obliged to become Project Partners and their level of involvement in projects is to be agreed during the full bid preparation stage of ECOFlow.

3 Stakeholder Responses

This section presents the full responses from stakeholders regarding their interests in ECOWind and details the level of support that individual organisations could offer projects.

3.1 bp

What would you want the impact of ECOFlow to be?

bp would like to see research that delivers outputs that provide genuine benefit to the delivery of floating offshore wind (FLOW) at scale, is targeted at material consent risk (not any "potential effects"), adds meaningful value to the efficiency of data capture, and tangibly improves policy making regarding marine management.

How could ECOFlow help you deliver your objectives and how might you use the results?

bp objectives are to deliver FLOW at scale in the Celtic Sea and North Sea in a safe and cost-effective manner, whilst reducing impact on, and improving co-existence with, other receptors (be they ecological or human) and where possible, seeking to ensure a net positive outcome for nature from bp operated assets. If ECOFlow delivers in line with its objectives, then it will help bp achieve this. Results would be used in our consenting work and policy engagement within the FLOW sector.

How could you support this call?

- Advisory role to ensure project delivery is focused on the actual needs of the FLOW sector.
- Potentially as a project partner.
- Potential access to infrastructure.

3.2 Celtic Sea Power

What would you want the impact of ECOFlow to be?

Better understanding of the marine environment for the Celtic Sea and potential future interactions with FLOW.

How could ECOFlow help you deliver your objectives and how might you use the results?

Delivery of new environmental survey campaigns. Results would be integrated into regional environmental characterisation models to support future leasing, licensing and consent decisions for FLOW as well as to influence sustainable FLOW farm design, technology and infrastructure selection. Modelling outputs would be made publicly available.

Better understanding of potential environmental interactions for FLOW in the Celtic Sea that can support more strategic, regional level marine spatial planning considerations.

How could you support this call?

Data, evidence and access to delivered research outputs for FLOW in the Celtic Sea, alignment with ongoing research and governance programmes and advisory input.

Additional comments

Project partner interest subject to not being restricted in making applications to the fund through consortia with academic and industry consortia.

3.3 Cooper Marine Advisors

What would you want the impact of ECOFlow to be?

Timely outputs that have practical application in support of upcoming rounds.

How could ECOFlow help you deliver your objectives and how might you use the results?

Results need to be able to support upcoming projects, notably at the Environmental Impact Assessment (EIA) stage, providing credible outputs that are not likely to be challenged by consenting bodies as being insufficient evidence.

How could you support this call?

Advisors, researchers, so long as this is funded so all contributors are receiving an equitable share of the funding for their relative contributions.

Additional comments

1. The research questions proposed in funding applications need to be shared with the wider industry.
2. There also needs to be a mechanism to monitor the successful impact of ECOFlow in the delivery of floating wind projects, this impact is not how many papers are published in scientific literature and how many citations are received as that all remains within the academic community. The impact needs to be measured on real project delivery for industry and how the investment in ECOFlow has saved the industry time and effort that would otherwise have been spent on dealing with the associated subjects funded for research. That has to be the motivation for the research.

3.4 Department for Environment Food and Rural Affairs

What would you want the impact of ECOFlow to be?

That ECOFlow allows government to understand the cumulative impacts of offshore wind on the environment, to better support compensation approaches. Identifying better sampling practices would be useful to monitor compensation impacts.

Additionally, to inform successful implementation and delivery of marine net gain for floating offshore wind developments, by providing relevant evidence for policy and developers.

How could ECOFlow help you deliver your objectives and how might you use the results?

By providing robust evidence of the cumulative impacts of offshore wind on marine ecosystems. This would be used to support our work in providing compensation advice to offshore wind developers and help build our library of compensation measures. Identify relevant nature recovery and marine net gain opportunities at development sites or regions.

How could you support this call?

Alignment to policy and could work with the programme on potential pilot marine net gain projects.

Additional comments

Project partner basis would be alongside Offshore Wind Enabling Actions Programme colleagues.

3.5 Department for Energy Security and Net Zero

What would you want the impact of ECOFlow to be?

Keen that environmental uncertainties and differences in impact from fixed bottom offshore wind structures are explored and projects are undertaken to fill those evidence gaps. Would suggest prioritising on potential issues (e.g. Habitat Regulations Assessment (HRA)) that are likely to cause consenting delays/challenges to ensure we have the maximum time to try and address the concerns in the pre-app phase and ahead of any applications.

How could ECOFlow help you deliver your objectives and how might you use the results?

If ECOFlow can help address consenting challenges, we should ease the consenting process, enabling deployment of offshore wind at pace to meet 2030 and 2050 ambitions.

How could you support this call?

Members of the offshore wind policy team (depending on workloads) can help support in terms of policy needs and alignment with existing work.

3.6 EDF Renewables

What would you want the impact of ECOFlow to be?

EDF Renewables UK would want ECOFlow to have a positive and timely impact on the delivery of the UK offshore wind industry to meet UK Net Zero targets. To do this it needs to deliver research that meets Statutory Nature Conservation Body and regulatory body quality requirements, so they can be applied to inform decision making and reduce consenting risk associated with the UK offshore wind development. The research should add to/build the knowledge base and be directly applicable in improving our understanding of ecosystem response to offshore wind and other cumulative pressures. ECOFlow should aim to maximise and demonstrate the value of a strong collaboration between academia, developers, government and their advisors and non-governmental organisations (NGOs), to enhance the research methods and technologies. For the offshore wind industry, and for the UK to meet its Net Zero targets, outputs from the ECOFlow programme need to be delivered and reported in a timely and readily available manner. This would help ensure that the outputs can be directly applied to offshore wind consent decisions, policy and marine spatial management.

The overall impact of ECOFlow would be best maximised through strong coordination and integration with the other existing UK strategic research initiatives.

How could ECOFlow help you deliver your objectives and how might you use the results?

Offshore wind in the UK features strongly as part of our renewable energy generation ambition, with consenting risk seen as a key challenge for EDF Renewables to meet this ambition. However, ECOFlow provides an opportunity for new expertise from academia to work collaboratively with government, policy makers, developers and NGOs to innovate and enhance the research already being delivered in other strategic research programmes, to address key areas of uncertainty in the marine ecosystem response to offshore wind developments. Outputs from ECOFlow should be directly applicable for use in marine policy, management and consenting, which will allow government, policy makers and advisors to provide informed advice and make timely consent application decisions. For the UK to meet its Net Zero targets there needs to be a strong evidence base to support informed and effective policy and management solutions, including delivery of marine environmental net gain and restoration.

How could you support this call?

EDF Renewables would look to support this call where feasible and appropriate on a Project specific basis. Such support could include:

- Provision of existing data from our UK offshore wind sites, such as data collected to support consent applications or post consent monitoring.
- Access to infrastructure to undertake measurements or sampling at offshore wind farms undergoing construction or operation. This would be subject to agreement on the specific details such as the sampling methods, proximities to infrastructure, and timings so that the any activities wouldn't interfere with the ongoing construction or operations of the wind farms.
- Where appropriate, look to support individual project delivery through sitting on project advisory groups representing the interests of offshore wind developers and/or on broad stakeholder groups. EDF Renewables represent UK offshore wind developers on the majority of strategic research groups (e.g. Offshore Renewables Joint Industry Programme, ScotMER, Offshore Wind Strategic Monitoring and Research Forum, the Offshore Wind Industry Council, and the Scottish Offshore Wind Energy Council) looking at improving the knowledge base around the environmental issues, and as such can help contribute to ensuring alignment and efficiencies with existing similar programmes.

3.7 Flotation Energy

What would you want the impact of ECOFlow to be?

In a similar light to ScotMer, we would want ECOFlow projects to help understand the wide scale implications of installing offshore wind in the marine environment and separating important marine science questions from consent questions. Additionally, providing robust evidence in order to scope out issues from EIAs that have negligible significance. This would

accelerate the consenting process for offshore wind and help meet the UK's net zero targets more quickly.

How could ECOFlow help you deliver your objectives and how might you use the results?

Wide scale ECOFlow projects could be used to provide sufficient evidence based marine science to support wide scale consenting offshore wind challenges and negate the requirements for individual projects repeating the same assessments as part of consenting process. This understanding is key focusing on key issues achieving proportionate EIA.

How could you support this call?

Flotation Energy are happy to contribute to all parts of the process, including key staff time and access to data and infrastructure to support the process.

As Flotation Energy is one of the few developers to have been involved in a floating project (Kincardine was developed by our founders) we feel our input would be vital. We have new projects across the UK which have very different challenges and this understanding plus our exiting project knowledge will be invaluable to the call.

3.8 Joint Nature Conservation Committee

What would you want the impact of ECOFlow to be?

Research needs to be of direct relevance to the offshore wind sector, including key stakeholders who are involved in undertaking and advising on impact assessments (both plan and project levels) and regulators. Outputs need to clearly align with existing tools and framework, or otherwise provide clear recommendations for how to achieve significant practical improvements. Early consultations with key stakeholders (including statutory nature conservation bodies), is essential to co-design projects and ensure outputs fit their interests and needs (e.g. formats, resolution). An essential part of any project is to ensure significant resources are allocated to stakeholder engagement, and the necessary support to maximise research output uptake by end-users (e.g. demonstration, training, technical guidance).

How could ECOFlow help you deliver your objectives and how might you use the results?

Reducing uncertainty in scientific evidence around the likely impact of floating wind on marine birds, leading to reducing precaution in consent decisions.

How could you support this call?

Advisor

3.9 Marine Conservation Research

What would you want the impact of ECOFlow to be?

To inform how best to minimise the impacts of FLOW development and operations on the marine environment, particularly cetaceans.

How could ECOFlow help you deliver your objectives and how might you use the results?

Marine Conservation Research is a small consultancy specialising in applied research on cetaceans, using passive acoustic and visual survey techniques from a purpose built, low carbon, commercially coded (MCA cat 0) research vessel (R/V Song of the Whale). We undertake contract and grant funded projects, either independently or in collaboration with other organisations (and have previously worked with a range of academic and NGOs).

How could you support this call?

- As a project partner and/or research platform provider, as outlined above.

3.10 Marine Energy Wales and Marine Energy Test Area

What would you want the impact of ECOFlow to be?

Marine Energy Wales (MEW) is a membership organisation dedicated to supporting the development of the industry, including Floating Wind in the Celtic Sea. MEW supports a proactive and proportionate approach to consenting to enable the timely delivery projects. From an MEW perspective we would like to see ECOFlow support this goal where possible.

How could ECOFlow help you deliver your objectives and how might you use the results?

- Identify and fill evidence gaps to inform consenting decisions and policy.
- Reduce consenting risks through collection of robust data and development of improved methods.
- Work with other marine users to identify opportunities for the shared use of the marine space where possible.
- Enable the sustainable development of FLOW in the Celtic Sea

Important stakeholders work together on this rather than in isolation *i.e.* industry, researchers, regulators, NGOs, marine users.

How could you support this call?

MEW manages the Marine Energy Test Area (META) <https://www.meta.wales/>. This is a series of pre-consented and well characterised sites for testing and demonstrating innovative marine technology; which includes FLOW components and innovative monitoring equipment. META is adjacent to the Celtic Sea and could be a useful test bed for any initial testing or longer term demonstration of innovative monitoring equipment or other devices.

MEW runs the Celtic Sea Developer Alliance (CSDA). The CSDA facilitates collaboration and engagement between FLOW developers to advance the sector and support the delivery of floating wind energy in the Celtic Sea region. This could be a useful forum to engage with industry.

MEW is also the secretariat for the Welsh Marine Energy Consenting Strategic Advisory Group (CSAG). The overall purpose of the CSAG is to collaborate on identifying and overcoming barriers to support the efficient, proportionate and timely consenting of marine renewables (including wave, tidal stream, tidal range and floating wind energy) in Wales. This group brings together developers (just test and demo developers at the moment), Natural Resources Wales, The Crown Estate, Welsh Government, Academia and NGOs. This could also be a useful forum to engage with relevant stakeholders.

3.11 Marine Management Organisation

What would you want the impact of ECOFlow to be?

As the regulator for England's seas, the Marine Management Organisation (MMO) is charged with contributing to sustainable development in the marine environment. This requires us to consider the environmental, economic and social consequences of proposed projects, and to make decisions based on the best-available scientific evidence.

The MMO would like to see ECOFlow projects demonstrate that successful collaboration between the academic community, government and industry can support research and evidence development which can be used to inform decision making. We would therefore welcome any research which can be used directly to inform decisions on the planning or management of activities related to floating offshore wind.

Specific research which could feed directly into priority work at the MMO include:

- Recommended approaches to monitoring the impacts of floating wind.
- Impacts from floating wind on designated features in Marine Protected Areas (MPA).
- Ecological and socio-economic implications of interactions between floating wind and other marine sectors, e.g. displacement of fisheries.
- Understanding the impacts of floating wind in terms of natural capital and ecosystem services.

How could ECOFlow help you deliver your objectives and how might you use the results?

The MMO is responsible for developing Marine Plans for English waters, for delivering Marine Licensing, and for developing byelaws to achieve the conservation objectives of Marine Protected Areas. Results from ECOFlow could help deliver these functions.

Marine Plans aim to deliver the high-level marine objectives set out in the UK Marine Policy Statement. Research which improves our understanding of the ecosystem-scale impacts of floating wind could therefore be used to inform the development of marine plan policies in line with these objectives, including potentially more prescriptive policies. Marine planning is also an essential tool for managing the cumulative effects of development, and therefore research in this area could inform future planning.

Marine Licence conditions are used to mitigate the environmental impacts of development, as well as detailing how the developer should monitor these impacts. Research which focuses on management solutions or improved methods of marine observation could therefore be beneficial in developing marine licence conditions.

The Marine Conservation Team is responsible for developing management plans and byelaws for MPAs to achieve their stated conservation objectives. Research on the effects of floating wind on MPA features and appropriate management solutions, could inform the development of such byelaws.

How could you support this call?

The MMO would be able to advise on the direction of research projects which align with our published Evidence Strategy, and which fulfil our Evidence Requirements, to ensure that projects are aligned with existing work and our priorities.

In addition, the MMO is responsible for a number of datasets associated with marine activity. The Explore Marine Plans service shows the range of available datasets, and the MMO would be able to provide access and support for any of the data where we are listed as the source.

We are also willing to sit on project advisory groups, to provide technical input, and lend written support to projects that align with the MMO evidence requirements set out above.

3.12 Morwind Ltd

What would you want the impact of ECOFlow to be?

Grow confidence and understanding of nature risks and opportunities to the extent that decisions can be accelerated, risks mitigated, and nature benefits embedded as part of delivery and operations.

How could ECOFlow help you deliver your objectives and how might you use the results?

Using knowledge to drive nature positive design, outcomes and solutions to be built into our various FLOW consenting, development and operational activities.

How could you support this call?

We are bidding to be a developer - if we are successful, we will provide data, access, advice and opportunity to innovate - in the short and long-term.

3.13 Natural England

What would you want the impact of ECOFlow to be?

The outputs of ECOFlow should fill identified evidence gaps in relation to floating wind, particularly where the impact pathways may be sufficiently different from fixed foundations to warrant further investigation, prior to commercial scale roll-out.

Particular areas of interest include consideration of:

- Collection of evidence to establish quantitative figures for benthic footprints, anchor mooring types, penetration depths, scour protection requirements and removability on decommissioning, to inform likely design envelopes for commercial scale projects. The submission of realistic design envelopes for below water elements of FLOW into examination will reduce assessments and consenting timeframes and data would be useful in informing accurate project and regional modelling.
- Identification of wet storage requirements for infrastructure and potential regional impacts.
- Potential to bundle export cables.
- Smothering and siltation rate changes.
- Collision below water particularly for marine megafauna - primary, secondary and tertiary entanglement and effectiveness of potential mitigation measures with a view to adoption as best practice.
- Electromagnetic related ecological changes associated with free spanning cables.
- Temperature increases and associated ecological impacts from inter array cables.

- Trialling of impact reduction and mitigation measures for the above.
- Should the environmental impacts from FLOW be sufficiently different to fixed foundation it may be necessary to identify specific pressure benchmarks for certain impacts, and for ECOFlow to inform the requirement for separate Advice on Operations in relation to renewable energy which can be presented in statutory conservation advice packages (viewable from Site Search (naturalengland.org.uk)).
- There would be merit in the development of a national/international repository for FLOW specific data and research, perhaps as part of Offshore Wind Evidence & Knowledge Hub.
- We would welcome consideration of how outputs of ECOFlow can be incorporated and inform the Test and Demonstration site projects within Celtic Sea and vice versa, as these develop simultaneously.

How could ECOFlow help you deliver your objectives and how might you use the results?

ECOFlow could help Natural England deliver our objectives in line with our approach to offshore wind [Natural England's Approach to Offshore Wind: Our ambitions, aims and objectives - TIN181](#) and through filling evidence gaps as identified on the Offshore Wind Environmental Evidence Register (OWEER). Version 4 of the OWEER is available to download [2021, JNCC, Offshore Wind Evidence and Change Programme, Offshore Wind Environmental Evidence Register | Marine Data Exchange](#) and version 5 will be published in the new year.

Natural England would use results of ECOFlow to inform the evidence base and advice in relation to Marine Protected Areas achieving their conservation objectives (available here [Site Search \(naturalengland.org.uk\)](#)).

Natural England has developed best practice for [Offshore wind – best practice advice to facilitate sustainable development - Natural England \(blog.gov.uk\)](#) which currently relates to fixed foundation. Natural England would wish to use the results of ECOFlow to update the best practice to incorporate advice on FLOW.

How could you support this call?

Natural England would like to support this call in a project adviser capacity, as the government's statutory advisor on the natural environment.

Natural England would particularly like to advise at the project submission screening process stage to input into the scope of projects selected for award. We are keen to ensure that the outputs are in a form that are accessible to end users, will lead to evidence-based reductions of environmental risk and streamline the consenting process.

As a statutory adviser Natural England are engaged with stakeholders at a plan and project level through pre-application discussions, Examination, construction, operation and maintenance, and facilitate research including our Poseidon and Rescue projects. We would support this call by providing national and regional advice in relation to priority evidence gaps, identifying impact pathways for FLOW which may be different to those from fixed foundations, and alignment with existing workstreams to help avoid duplication and optimise value.

Dependent on the projects awarded. Natural England can subject to resource availability provide technical advice and support throughout the ECOFlow projects, through provision of specialist time according to the projects objectives and specialisms required.

3.14 NatureScot

What would you want the impact of ECOFlow to be?

ECOFlow should aim to deliver research that is evidence led, robust and can make a clear difference to the knowledge required in both current and future considerations of planning for future sites and / or the application process. It should not duplicate current research but should focus on identified short, medium and long-term evidence gaps (some of which are already identified in ScotMER and OWEER) and identify clearly what research outputs will do to improve/ change existing practices whether it is in baseline data techniques, assessment methodologies, monitoring techniques as well as constraints mapping and/ or consideration of best possible marine space use.

How could ECOFlow help you deliver your objectives and how might you use the results?

Scotland stands to deliver a large amount of FLOW projects as part of the ScotWind and Innovation and Targeted Oil & Gas leasing rounds. There are still unanswered aspects around environmental impacts from floating wind - we would wish research to focus in on the information required to help inform the consenting regime and to help with identification of appropriate sites for future planning rounds for floating wind. This should not just be related to locations where floating turbines will be sited but also any other environmental aspects in the delivery of these windfarms such as operation and maintenance works as well as construction aspects. Consideration of changes to existing baseline conditions will be key in comparisons to existing evidence and knowledge in respect of fixed wind and other marine industries. We would also be looking for any differing opportunities for nature inclusive design, particularly around dynamic cabling as well as coexistence and/ or consideration of impacts of fishery displacement on predator prey interactions outside of the windfarm array.

How could you support this call?

NatureScot is the statutory adviser for all windfarms in Scottish waters. We offer the ability to share environmental data that we hold/ manage as well as providing consideration of issues around both planning and consenting of offshore wind farms and other marine industries. Our involvement in this industry is extensive and we have direct experience of providing advice to two existing operational floating windfarms as well as new projects entering into the planning system. We are involved in several areas of research to consider the practical application of findings for both planning and consenting purposes e.g. PrePARED, PELAgIO as well as sitting on the Regional Advisory Groups for existing clusters of windfarms in the Forth and Tay and Moray Firth regions. Our resources are stretched so we would prefer specific roles in terms of practical application and/ or advice. We also want to see specific project ideas that do not duplicate existing research but should either complement by taking aspects onto the next stage or be new research areas/ aspects specific to floating wind.

3.15 OceanOS Earth Ltd

What would you want the impact of ECOFlow to be?

Collectively we need to understand the impact we have on the marine environment to better plan and design installation of floating renewable structures.

To achieve this we must establish techniques, methods, and technology that allow us to monitor biodiversity impact at scale. These must be scientifically robust, practical in their application, and cost effective.

Present technology allows us to monitor biodiversity at a localised level, but with the exponential growth of FLOW we need to quickly develop machine learning/ artificial intelligence (ML/AI) models to access biodiversity at scale.

We need to be cautious about placing additional cost and onus on wind farm operators that could potential slow the transition to renewable energy. It is critical that programmes like ECOFlow are collaborative and drive industry and government to work more closely and take risks by working with start-ups and universities developing cutting edge technology.

How could ECOFlow help you deliver your objectives and how might you use the results?

We are a start-up developing software to monitor marine biodiversity using ML/AI. To accelerate development, we require collaborative and financial input which is why projects like ECOFlow are useful.

By monitoring the marine biodiversity impact in deeper water, we can provide critical data to governing organisations to better plan, site, and design FLOW projects to achieve minimum ecosystem disruption.

ECOFlow can provide access to a network of companies focused on similar objectives that may compliment the work we are doing and help to shape the outputs of the software.

OceanOS plans to utilise the outputs of the ECOFlow project to help FLOW operators to predict their biodiversity impact and plan accordingly. By understanding where biodiversity is highly concentrated, we can look at micro-siting structures or re-routing power cables.

How could you support this call?

The ECOFlow project aligns with existing workscopes:

- We have previously been awarded a grant of £250k through Defra/ UK Research and Innovation (UKRI) for the call Improving Observation Capabilities of Biodiversity in UK Waters working with Offshore Renewable Energy Catapult. Here we are looking at monitoring marine biodiversity around fixed bottom assets and how this can be modelled within full-scale wind farm site.
- We have also recently been selected to join Bridge AI (UKRI & Alan Turing Institute) to help us develop the ML/AI component of the work we are doing by providing access to industry experts.
- We are looking for or to be a project partner in a wider consortium to develop ML/AI monitoring in deeper waters for FLOW projects to (1) improve ecosystem modelling, (2) help shape policy frameworks, and (3) reduce costs of environmental impact assessments.

3.16 Ossian Offshore Windfarm

What would you want the impact of ECOFlow to be?

Ossian offshore wind farm would want the ECOFlow programme to:

- Increase understanding of ecosystem responses to the cumulative pressures of deployment of floating wind.
- Provide a sound evidence base to address risks and reduce uncertainty to inform our decision making and the consenting process that can be applied without being constrained locationally or by specific criteria.
- Provide actionable solutions for implementing government policy.

How could ECOFlow help you deliver your objectives and how might you use the results?

Ossian offshore wind farm is a joint venture between SSE Renewables, Marubeni Corporation and Copenhagen Infrastructure Partners. With a potential capacity of up to 3.6GW, Ossian will be one of the largest floating offshore wind farms globally. We intend to submit our application for the Ossian array in 2024. With this timetable in mind, the results of ECOFlow (expected 2027-2028) will be most useful to us as evidence to inform post-consent monitoring requirements and adaptive management approaches.

How could you support this call?

Our support on this call could include:

- Contribution of staff time to support at both the bid development stage and with the progress of the successful research project.
- Potential access to data.
- Potential access to infrastructure, depending on the site location and the research requests.

3.17 Royal Society for the Protection of Birds

What would you want the impact of ECOFlow to be?

Understanding ecosystem responses of cumulative pressures is essential to provide the baseline for nature recovery. It's good to see the inclusion of sound evidence base to inform policy, this must include feedback loops to ensure that the most up to date evidence is continuously informing the best decision making. The impact of ECOFlow should be to demonstrate that, while some impacts can be mitigated by this technology, the real power/benefit of FLOW is in the reduced spatial restriction – if FLOW is aligned with a suitable, robustly evidence Marine Spatial Plan, that isolated the most sensitive areas for nature, there is a real opportunity for this to facilitate a truly Nature Positive approach.

How could ECOFlow help you deliver your objectives and how might you use the results?

As mentioned, a key focus in our objectives is through effective marine spatial planning. We see FLOW as helping to unlock the restrictions of fixed-based turbines being in highly sensitive marine areas. Providing a sound evidence base, demonstrating innovation, ecologically

sustainable management and long-term relationships are all key in unlocking this, but the devil is in the detail. Seabirds at in a dire situation and with that comes minimal room for error. Infrastructure at sea, fixed-base or floating, is impactful so we need to halting decline and nature recovery embedded in the policy and legislation, something that ECOFlow could help with pushing up the agenda.

How could you support this call?

Likely able to support with seabird data and as an advisor. We would like to be kept in the loop with this project.

3.18 RWE Renewables

What would you want the impact of ECOFlow to be?

The ECOFlow research imperative should be to support the rapid de-risking of floating wind ecological effects, identifying knowledge gaps and developing peer-verified approaches to resolving ecological effects. It should seek to identify projects suitable for ecological enhancement to ensure alignment with future imperatives including marine net gain, and more broadly overarching nature positivity. It should not introduce additional risks to the deployment of floating wind by opening new areas of research curiosity which lead to non-value adding activities for the development community given the need for industry acceleration. A measurable impact should be to identify and help resolve key data gaps which could prevent the consent of future floating offshore wind projects throughout the UK.

ECOFlow should establish a scientifically robust understanding of the environmental impacts of FLOW, dispel 'myths', and identify risks, opportunities, and possible mitigations. The impact of this should be to instil confidence in consenting bodies, NGOs, and other stakeholders, including the public, that FLOW can be rolled out at scale without unacceptable environmental impact. It should also provide information that enables developers and original equipment manufacturers to consider environmental impacts during the design, installation, and operational phases of projects, in order to minimise any impacts.

How could ECOFlow help you deliver your objectives and how might you use the results?

By helping to provide evidence-based reporting on the ecological effects of floating wind such that it can be referred to by developers in applying for project consents and will satisfy the requirements of the statutory bodies responsible for marine environmental impacts. The results would be observable by supporting rapid consenting decision making and overall yielding measurably effective ecological enhancement approaches for future floating offshore wind projects.

At RWE we have an in-house knowledge programme aimed at improving our understanding of the environmental impacts of FLOW, called FloDev. FloDev is made up of a group of experienced environmental and consenting specialists whose remit is to identify and close knowledge gaps around environmental and other development areas of FLOW with the aim of making RWE a leader in the field of FLOW development. This is achieved through the use of specialist consultants, research organisations, joint industry groups and our own internal expertise. The outputs of ECOFlow, alone or in conjunction with our own work, could be used to close some of these knowledge gaps, improving the industries knowledge in these areas.

To help deliver our objectives ECOFlow should be structured, and outcome focussed, generating outputs centred around the most significant environmental challenges the industry faces such as secondary entanglement, underwater noise, impacts on cetaceans, benthic impacts etc.

How could you support this call?

RWE would be interested in supporting the call in an advisory capacity at this stage. In the absence of specific project definitions, we are unable to commit to being a project partner at such an early stage in the call, and feel that our experience can best support in helping to shape the proposal and assist in identifying those proposals best suited to accelerating and de-risking future floating wind deployments.

As mentioned above RWE already have a wealth of knowledge around offshore wind development in general, but also around FLOW. We could bring this knowledge as an advisor or project partner, as appropriate. RWE are also partners in two FLOW demonstrators that are currently deployed, one in the North Sea (Tetraspar) and one in the southern Bay of Biscay (Demosath). The possibility of utilising knowledge and data collected from these turbines could be investigated, subject to agreement from other project partners, compliance with intellectual property restrictions and if timescales align. There may also be the opportunity for access to the demonstrators by ECOFlow should suitable proposals arise. As well as the environmental knowledge programme, RWE also have similar technical programmes covering engineering, industrialisation, and commercial aspects of FLOW. Knowledge from these programmes could be used to enhance ECOFlow outputs and ensure they are applicable/ deliverable in the 'real world' of FLOW development.

Additional comments

We will be in a better position to judge the appropriateness or otherwise of a project partner role once proposals begin to be submitted and we can assess their relevance. At this stage we feel that we are best positioned to provide steering and advice. We have ticked 'yes' regarding interest in being a project partner, however this would depend on what is required from this role. Further detail would be needed prior to final agreement.

3.19 The Crown Estate

What would you want the impact of ECOFlow to be?

To reduce the uncertainty in the consenting process, and greater consistency in the evidence base presented/ methodology for assessments - leading to lower requirements for stakeholder resource inputs into consenting. It should link to, not duplicate, and build on the activity being undertaken by ECOWind and other ongoing research but with specific consideration of the differences between fixed and floating offshore wind technologies.

How could ECOFlow help you deliver your objectives and how might you use the results?

The Crown Estate, as the custodian of the seabed, is committed to delivering its role in the context of both the current biodiversity and climate emergencies, alongside providing social value to the UK. In this vein, The Crown Estate is undertaking plan-level HRA to support a forthcoming FLOW leasing round (Offshore Wind Leasing Round 5). There are a number of

known (and likely unknown) uncertainties regarding the potential impacts and benefits of Floating OW, both environmentally and socially (e.g. through consideration of impacts on fisheries), that would benefit from further research/ data collection. By addressing uncertainties ECOFlow research would help support the design, consent, and operational management of FLOW projects, alongside both The Crown Estate's internal objectives and wider UK objectives towards Net Zero. For the latest information on our FLOW Leasing Round please see our website: [Offshore Wind Leasing Round 5 | The Crown Estate](#).

How could you support this call?

The outcome of our plan-level assessment for Offshore Wind Leasing Round 5 will be publicly available, and data collected by The Crown Estate through our pre-consent survey activity will be available to projects under ECOFlow. Similarly, any data collected by developers will be made available through the Marine Data Exchange.

The Crown Estate has also established a research programme, the Offshore Wind Evidence and Change (OWEC) programme, which has supported a significant number of projects in addressing key evidence gaps around offshore wind. A number of these projects have had relevance to/ are focussed on FLOW and The Crown Estate would be supportive in aligning future work through ECOFlow with these projects and their outcomes. It would be beneficial for project proponents to consider OWEER, which includes consideration of evidence gaps related to FLOW. The OWEER is available via the Marine Data Exchange: [2021, JNCC, Offshore Wind Evidence and Change Programme, Offshore Wind Environmental Evidence Register | Marine Data Exchange](#)

Additional comments

As co-funder of the programme we cannot be a partner on individual proposals but will support all funded projects during the course of their research.

3.20 Whale and Dolphin Conservation

What would you want the impact of ECOFlow to be?

Develop a robust understanding of the individual and cumulative impacts of FLOW developments on the marine environment, from licensing and construction to operation. Develop a robust set of habitat requirements to allow FLOW to be leased (e.g. areas of exemption), and technologies to mitigate impact on sensitive marine species and habitats (e.g. noise, entanglement).

How could ECOFlow help you deliver your objectives and how might you use the results?

Our key objectives are to ensure marine habitat and species restoration and future resilience and limit the harmful impacts of marine industrial activities on cetaceans (whales and dolphins), so the opportunity to feed into a research programme that aims to do this for an emerging and expanding technology is a critical step to achieve this. Key impacts on cetaceans include underwater noise (including seismic/ geotechnical surveys, piling, operational noise) during pre-construction and construction phases, impact of mooring systems, potential entanglement in cables, impacts on prey species, cumulative impacts. We would use the results of the research to inform expert advice provision for future FLOW

developments, promote best practice for FLOW across the UK, and potential advocacy for government policy and legislation to reduce the impact of FLOW on the marine environment.

How could you support this call?

We can offer our expertise into shaping the research questions/ directions to ensure they adequately consider a wide range of impacts on the marine environment, including specific impacts for cetaceans, which are legally protected under the Habitats Regulations. We could potentially offer to act as a partner to advise on the project and ensure it delivers on its environmental objectives, especially from the perspective of cetaceans. Future engagement will depend on the final proposal and the expectations in terms of time commitment required.