



Offshore
Wind Evidence
+ Change
Programme

Offshore Wind Evidence and Change Programme

Programme Steering Group Meeting
12 January 2021

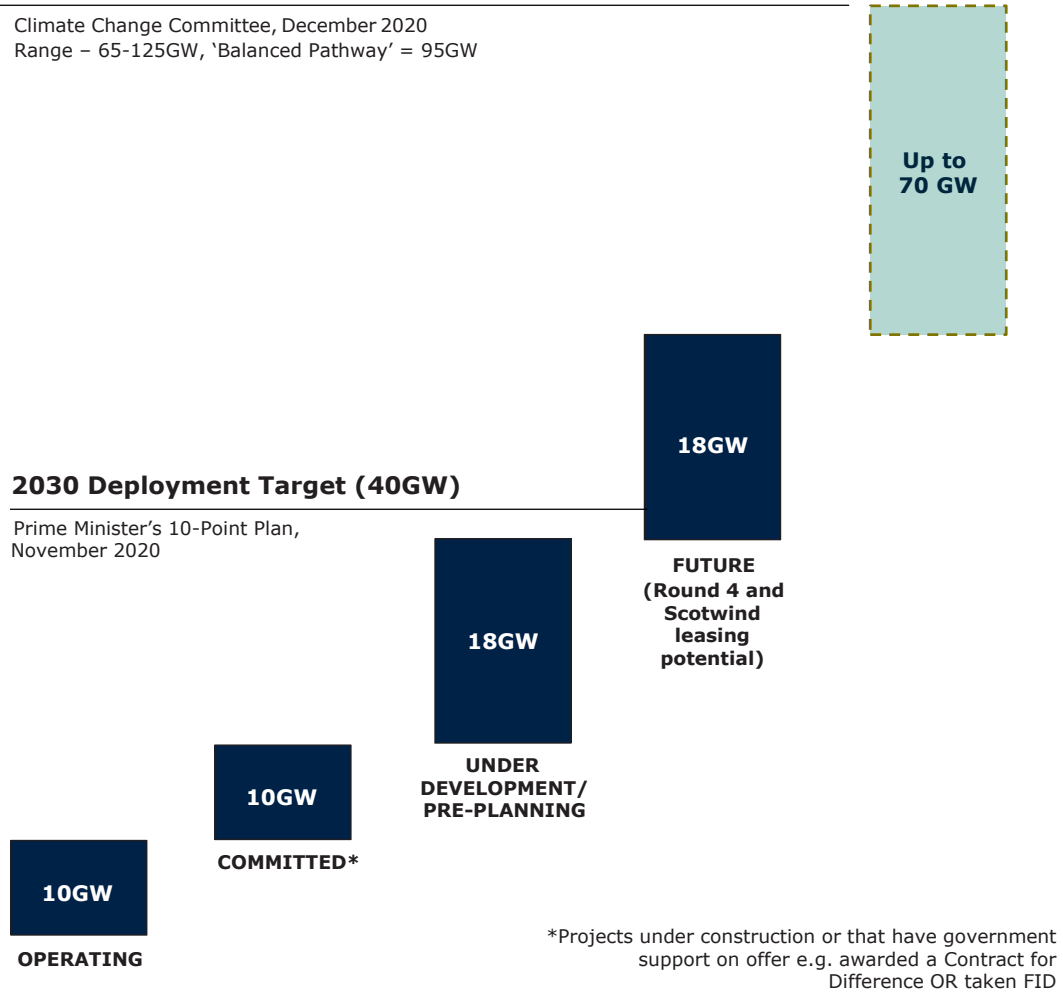


UK Offshore Wind Development Pipeline

Portfolio waterfall – all UK (gigawatts rounded)

2050 Net Zero scenarios (up to 125GW)

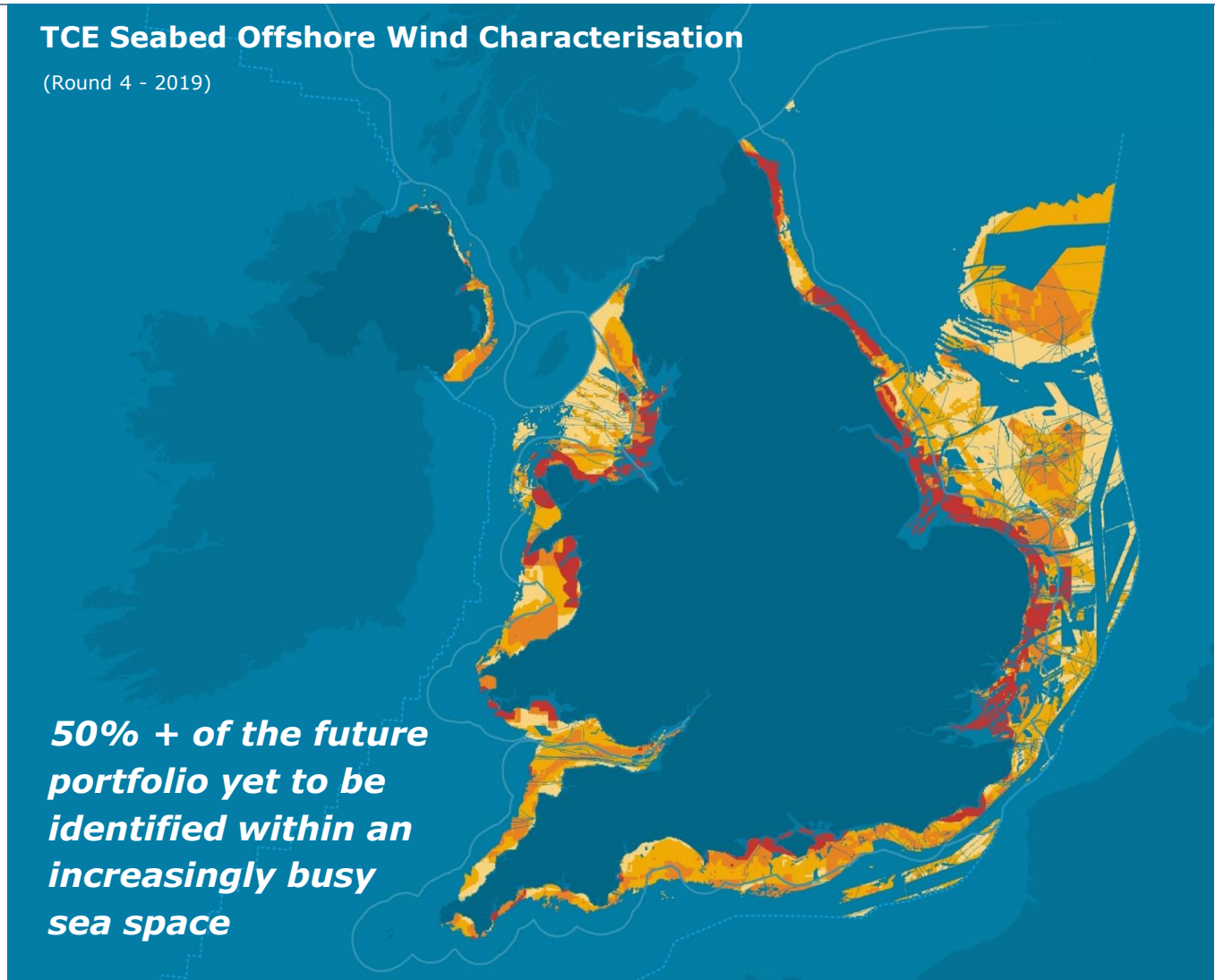
Climate Change Committee, December 2020
Range – 65-125GW, 'Balanced Pathway' = 95GW



TCE Seabed Offshore Wind Characterisation

(Round 4 - 2019)

50% + of the future portfolio yet to be identified within an increasingly busy sea space

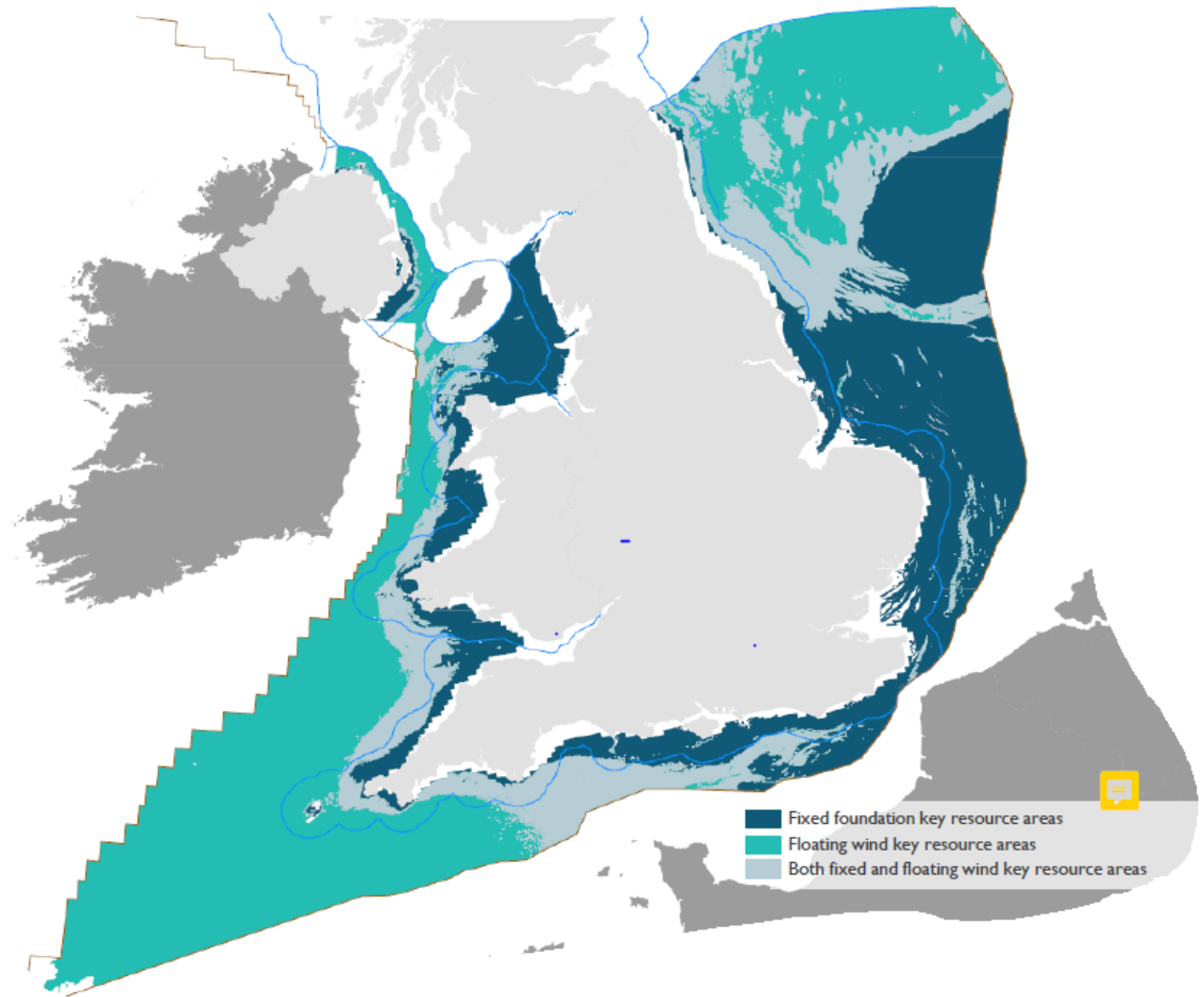


TCE Offshore wind key resource areas released December 2020

A first step to understanding which areas could practically be made available for development to meet net zero in England, Ireland and Welsh waters

Given technological advances in the sector by 2040, including the floating offshore wind, there will be few technical limits to where offshore wind developments can be sited.

A much broader evidence base will now need to be established to account for the resilience of environmentally sensitive areas and the rich biodiversity offshore, as well as the many competing demands from an increasingly busy onshore, coastal and marine environment.



Ref: <https://bit.ly/Broad-Horizons-Offshore-Wind>



Offshore Wind – Enabling the future ...



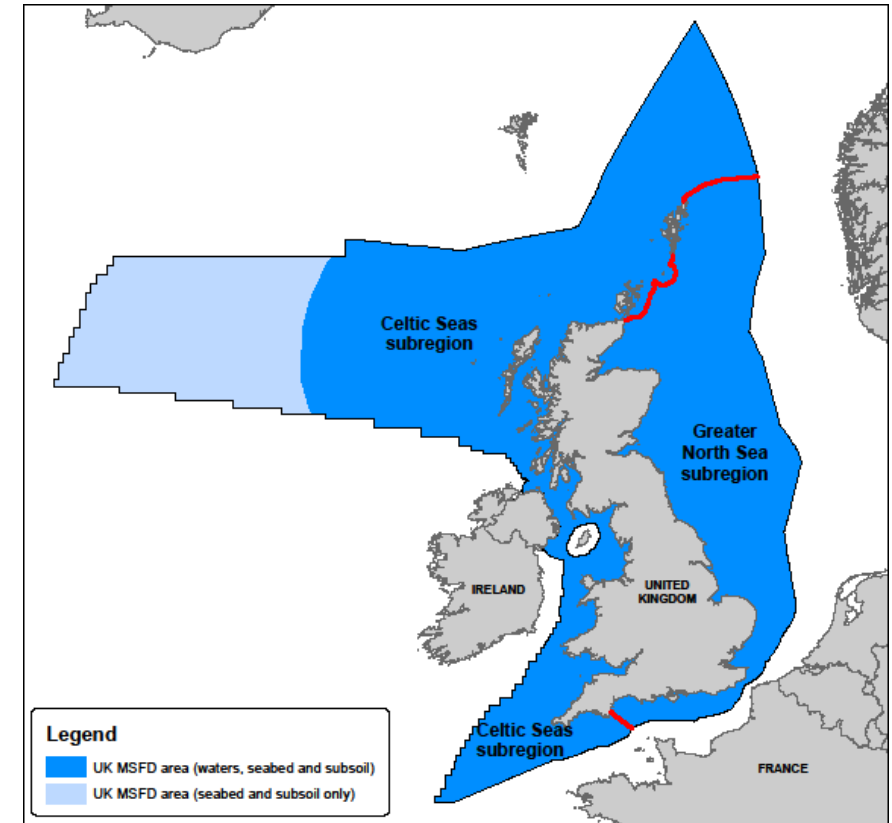
The UK's vision is for clean, healthy, safe, productive and biologically diverse ocean and seas.

This vision is reflected in the UK Marine Strategy (UKMS) and underpinned by the Marine Strategy Regulations 2010.

The UKMS delivers international commitments to protect and preserve the marine environment.

The Government's commitment was confirmed in the 25 Year Environment Plan (2018), which committed to:

- reversing the loss of marine biodiversity and, where practicable, restoring it
- increasing the proportion of protected and well-managed seas, and better managing existing protected sites
- making sure populations of key species are sustainable with appropriate age structures
- ensuring seafloor habitats are productive and sufficiently extensive to support healthy, sustainable ecosystems



The Marine Strategy Regulations committed us to achieve and maintain Good Environmental Status (GES) in Europe's seas by 2020.

- Ecologically diverse and dynamic oceans and seas which are clean, healthy and productive within their intrinsic conditions, and;
- Use of the marine environment is sustainable - safeguarding the potential for uses and activities by current and future generations.
- This is a coordinated approach across all four Administrations and cooperation with other countries sharing seas.

GES Descriptors of the UK marine environment

No.	Descriptor
1	Biological diversity maintained (cetaceans, seals, seabird, fish, pelagic and benthic habitats)
2	Non-indigenous species
3	Commercial fish & shellfish
4	Food-webs
5	Eutrophication
6	Sea-floor integrity
7	Hydrographical conditions
8	Contaminants
9	Contaminants in seafood
10	Litter
11	Energy, incl. underwater noise



The picture on GES is currently mixed, and there is still much more to do.

- 4 Descriptors have achieved and/or are maintaining GES
- A further 4 Descriptors where GES has either been partially or not achieved have an improving situation
- Remaining Descriptors have a stable, mixed or – in the case of seabirds – a declining situation

2024 is our next focus, expect to publish programme of measures later this year.



The growth in offshore wind capacity must proceed in a way that supports the UK's vision for the marine environment, and our commitments in the Marine Strategy Regulations.

To support this, Defra and BEIS successfully bid for £4.3m over 2020/21-2022/23 to improve the understanding of adverse environmental impacts from construction and developing a cross-Government approach to compensating for them, as well as reducing the impacts of underwater noise, introducing net gain through offshore wind deployment and using big data to improve consenting and monitoring.



Future Offshore Wind Scenarios

Project Scope

Challenge

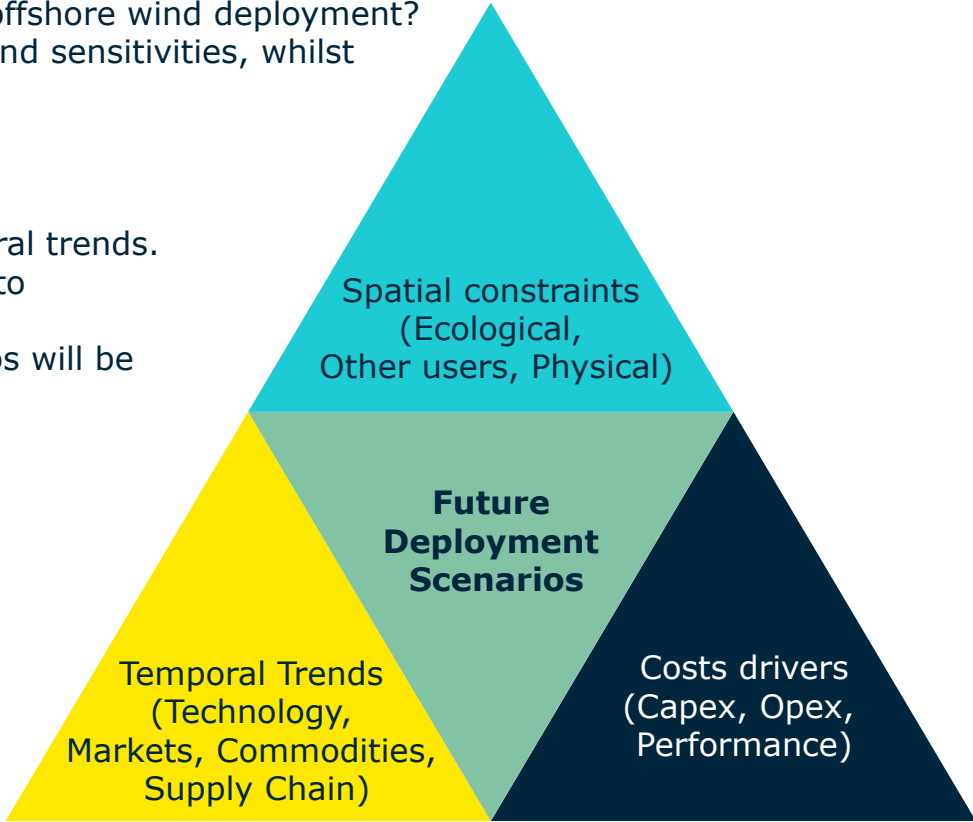
What are the potential future trade-offs for the UK to meet a net zero consistent level of offshore wind deployment?
Which locations are suitable for future deployment with respect to other interests, users and sensitivities, whilst delivering cost efficient deployment?

Project

Project will map out spatial constraints and costs of future deployment considering temporal trends. Specific configurations of constraints, cost drivers and temporal trends will be combined to a small number of scenarios to illustrate trade-offs in deployment. Selection of constraints, cost drivers and temporal trends as well as definition of scenarios will be informed by stakeholder consultation.

Outcomes

Levelized Cost of Electricity (LCOE) heatmaps for predefined scenarios.
Project report and webinar.

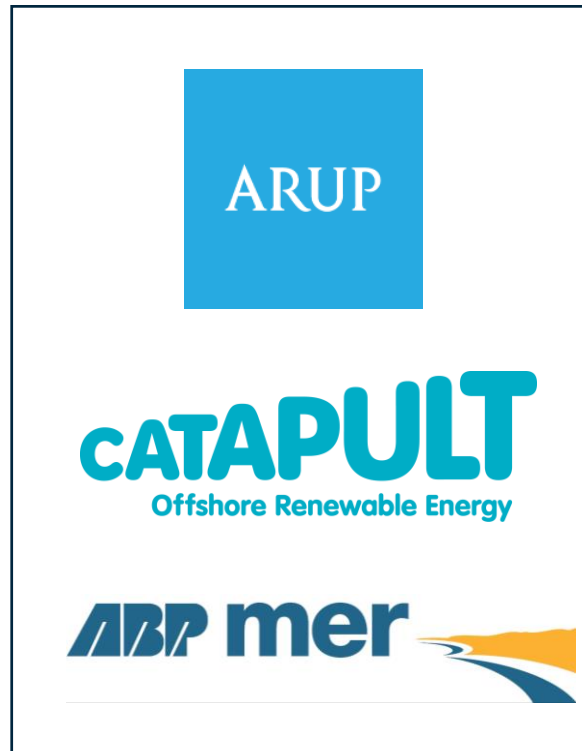


Future Offshore Wind Scenarios - Project Governance

Project Sponsors



Contractors



Project Advisory Group

- Marine Scotland
- Marine Management Organisation
- Welsh Government
- The Department of Agriculture, Environment and Rural Affairs, Northern Ireland
- Department for the Economy, Northern Ireland
- National Grid ESO
- SONI Limited

Future Offshore Wind Scenarios – How to feed in?

Stakeholder Questionnaire

Stakeholders will be consulted on deployment constraints, cost drivers and temporal trends to be considered in the project. Questionnaire will be disseminated by ARUP w/c 15/02/21 and expected to be returned w/c 01/03/21. ARUP will study and digest questionnaire responses.



Workshop 1

Workshop 1 will build on the questionnaire. This is the chance for ARUP to understand stakeholder positions on constraints, cost drivers and temporal trends in more detail. Workshop 1 is scheduled to take place in w/c 08/03/21.



Workshop 2

Workshop 2 will inform stakeholders of interim results and seek views on deployment scenarios used in the final project report. Workshop 2 is scheduled to take place in w/c 17/05/21.

If your organization would like to feed into the project, register as a stakeholder!



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East Coast Grid Spatial Study

- **A study to consider spatial context for connecting future offshore wind in the east of England.**
- Funded by TCE's Offshore Wind and Evidence Change Programme; tendered and awarded to AECOM in late July 2020.
- Study aims:
 - Develop a deeper understanding of potential terrestrial and marine constraints that future offshore wind farms connecting into the east coast of England are likely to face as and when grid connection solutions are developed under the prevailing radial connection model.
 - Assess the risks and issues to deployment of offshore wind projects driven by constraints, and
 - Consider if a coordinated or integrated approach to offshore transmission could mitigate those risks and issues.
- Findings will provide spatial/constraint analysis evidence into BEIS' Offshore Transmission Network Review (www.gov.uk/government/publications/offshore-transmission-network-review) and other work
- Informed by early stakeholder engagement and input on draft findings from BEIS' OTNR Expert Group



Study partners



Marine
Management
Organisation

nationalgrid

nationalgridESO

- The Crown Estate is the lead partner commissioning this study. The Crown Estate's current Round 4 leasing round has the aspiration of up to 8.5 GW of new offshore wind in England and Wales.
- The MMO licenses, regulates and plans marine activities in the seas around England so that they're carried out in a sustainable way. The MMO oversees the development and implementation of regional marine plans for England.
- National Grid is the asset owner of electricity transmission network in England and Wales.
- National Grid ESO is the operator of the electricity supply system in Great Britain



Why undertake the work

- To date all GB offshore wind projects have been connected to grid on a radial or point to point basis - operated by OFTOs and licensed by Ofgem. Successful but not sustainable in context of Net Zero.
- The Crown Estate fully supports direction of travel toward more coordinated grid connection solutions and we are directly involved in the OTNR and wider policy evolution.
- Our study brings in a spatial and environmental perspective to the analysis – these aspects are vital considerations as we make the transition and work will support the largely economic and technical work underway by others.
- Focus on east of England region initially given:
 - the connection of offshore wind is expected to grow significantly over the coming years given the excellent wind resource in these areas,
 - other infrastructure is seeking to develop in addition in the region (such as electricity interconnectors and nuclear generation), adding to the pressure and disruption for onshore communities and environment, and
 - challenges on the environment and other marine activities, such as marine protected area and fisheries.



Emerging conclusions from spatial mapping

- Some areas within study area more or less constrained than others, former would benefit from a coordinated approach earlier.
- Existing offshore wind projects have a significant spatial influence on future development, having likely taken optimal routeing options
- Level of constraint is dynamic and will change over time, particularly if we continue on a radial basis only (reducing opportunities/diminishing returns).
- Nearshore routeing/landfall selection is the most significant pinch point, acute in certain geographic locations
- Coastal (offshore nodes) in the nearshore environment likely to be challenging – physical processes, landscape/seascape.
- May be opportunities to extend the onshore transmission system to coastal locations i.e. build out once as opposed to build in several times (i.e. for each OSW farm).



Next steps

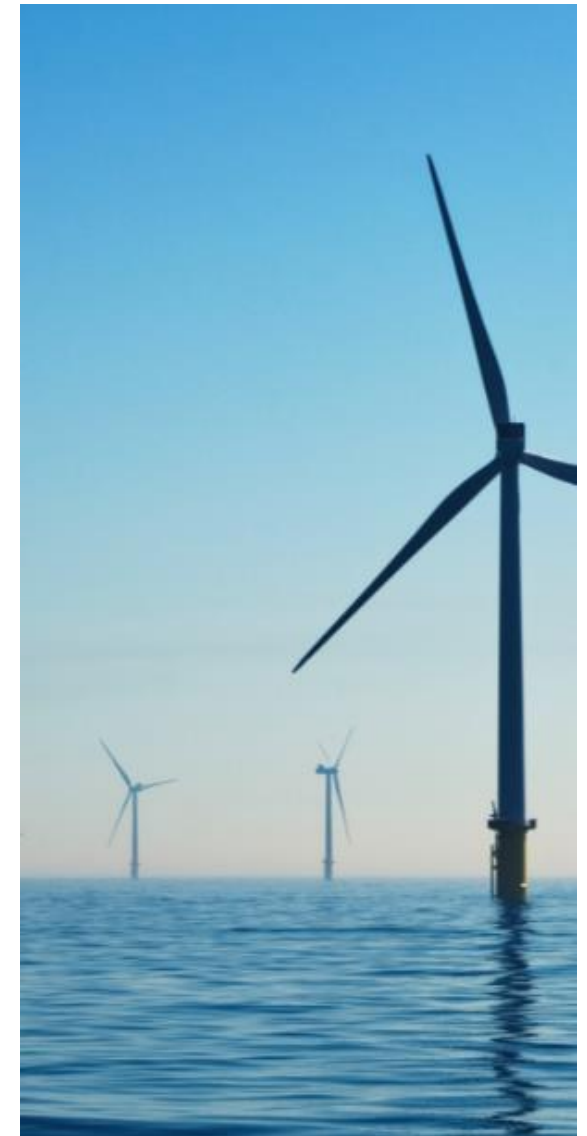
- Draft report currently under review – helpful input received from OTNR Expert Group and other external parties
- Publish output in early 2021
- Use findings in OTNR workstreams and within broader OWEC programme
- Ascertain if/how findings from this study could be applicable elsewhere and consider potential and need for undertaking similar studies in other geographic locations



Offshore Wind Environmental Evidence Register

The challenge

1. The UK's targets for offshore wind deployment are some of the most ambitious in the world and our approach is being watched closely. Given this scale of growth and scrutiny we need strategic plans in place to ensure we are not only meeting our targets, but we are doing so sustainably and not causing damage to the environment.
2. Robust evidence is needed to improve understanding of the environmental impacts of offshore wind developments in order to manage, mitigate, and, where required, effectively compensate for impacts. Without this evidence, consenting decisions risk being delayed or made in the absence of sufficiently robust information.
3. Several offshore wind groups have taken a lead in identifying and, where possible, funding what they consider to be the key evidence needs but, despite their good work, actual progress in commissioning strategic-level studies has been slow. Additionally, there is no single register/oversight tool that identifies UK-wide key evidence gaps and tracks how they are being filled.
4. The absence of a more strategic approach being taken to address environmental uncertainties is considered to be a high risk for future offshore wind development in UK waters.



Offshore Wind Environmental Evidence Register

Proposal

1. To build and maintain a UK-wide and publicly available register of (a) prioritised strategic evidence gaps and (b) research projects recently completed, in progress, and in planning, that are relevant to reducing the environmental consenting risk to UK offshore wind developments.
2. The register will be kept up-to-date by monitoring progress towards filling gaps and by horizon scanning to identify and prioritise new evidence needs.
3. The primary purpose of the register will be to **assist in prioritising funding for OWEC programme strategic research** but it will also provide:
 - a. **A 'live' and publicly available resource for wider use** – for example for other funding bodies and researchers to identify priority evidence gaps as well as projects planned and in progress to help inform their research and foster collaboration;
 - b. **Increased understanding of the current breadth and scope of the research field** – including identifying key research funders and academic teams, and helping to reduce project duplication, encourage research collaboration and disseminate project findings;
 - c. **Awareness-raising and sharing of research findings to facilitate debate, discussion and change** – an annual forum will be held to present and discuss key findings with decision-makers to facilitate the effective translation of evidence into changes to policy, operations and/or decision-making, so that evidence-based actions are taken to reduce environmental consenting risks.



Offshore Wind Environmental Evidence Register

Governance

- To be led by Defra but working in close collaboration with TCE and BEIS
- To be overseen by a new Project-level Steering Group comprising OWEC members and wider stakeholders
- To report to the OWEC Programme Steering Group via the group's chair
- The work required to build and maintain the register will be commissioned externally

Timelines

- Initial register of prioritised key evidence gaps and relevant research projects complete – end May 2021
- First annual forum – TBC
- Review of the benefits of the register – January 2023
- Defra to lead on the register until May 2023

Next steps

- Obtain Programme Steering Group views and comments
- Form Project Steering Group and agree Terms of Reference
- Commission work to build and maintain the register



Call for projects – from 1 Jan 2021

The Crown Estate will provide discretionary funding to projects that meet its criteria.

There will be two annual calls to the PSG for projects throughout the life of the 5-year programme starting in Jan 2021.

- TCE wishes to support significant projects that would not otherwise be funded – hence the scale of the calls.
- PSG members are encouraged to collaborate to identify, shape and prioritise projects. These must be within the 4 themes (and align with goals/outcomes identified at 4 Dec 2019 workshop)
- PSG members asked to agree a “lead organisation”
- Funding can include project management/ stakeholder engagement costs.
- Match funding sought – can include “in kind” time/expertise.
- TCE retains the right to fund projects < @£50,000 at any time (internal governance criteria still apply)
- TCE wishes some involvement in projects it invests in – not a grant-giving body

Calls	Project Size
Main Call (1st half of year)	Crown Estate funding of at least £500,000 per Project
Second Call (2nd half of year)	Crown Estate funding of between £50,000 and £500,000 per Project
Other Projects (any time)	Crown Estate funding of <@ £50,000 per Project



Key themes

Spatial co-ordination and co-location

To increase strategic coordination of different activities and interests in the seaspace and onshore, opening-up new opportunities for offshore wind through co-location and innovation allowing multi-use of space.

Improve understanding of environmental impacts and benefits

Strategic research, evidence gathering and data sharing projects to: reduce impacts, uncertainty and risk, foster innovation, enabling more offshore wind to be deployed with confidence that impacts will not impede recovery of the environment and preservation of our cultural heritage.

Derogation process - unlock further offshore wind deployment

investigate the availability and use of the Habitats Regulations Assessment (HRA) derogation process and Measures of Equivalent Environmental Benefit (MEEB) to help the consenting of offshore wind whilst maintaining the integrity of Marine Protected Areas – including alternatives and compensatory measures

Delivery of net environmental gains

To investigate the delivery of net environmental gains to evidence and secure the benefits of deployment of offshore wind.



Project evaluation – how will it work?

Three-stage submission process:

1. Project Outline - advisory
2. Concept Evaluation - required
3. Funding Application - required

Other steps

Project Advisory Groups (PAG) to be formed
PAG to agree the project Terms of Reference

Criteria
Has support from PSG
Is collaborative with involvement/support from different sectors
Contributes to the Programmes Mission and objectives
Contributes to one or more of the four thematic workstreams
Does not duplicate work on other projects (in or outside the Programme)
Sets out projects aims, rationale and expected outcomes
Describes the role of the Lead Organisation and wider project team
Describes arrangements for project management
Provides expected deliverables/outputs
Sets out the project's overall timeline and staffing requirements
Provides a guide of likely funding and co-funding requirements
Identifies the main project risks and mitigations

How will funding decisions be made?

TCE will assess Funding Applications, with BEIS, Defra and subject matter experts on a Project Evaluation Board (PEB).



Submission dates 2021

Project Outline <i>Optional - recommended</i>	Concept Evaluation	Funding Application	Funding Decisions
<p>Main Call - 31 Jan Second Call - 31 July</p> <p>Purpose: Enable programme team to connect similar projects and advise</p> <p>Requirements 2 sides A4 – template provided</p>	<p>Main Call - 28 Feb Second Call 31 Aug</p> <p>Purpose Assess the suitability of the project. Allocate TCE workstream lead Does not guarantee funding</p> <p>Requirements Project Initiation Plan – first draft (PIP v1) - template provided</p>	<p>Main Call - 30 Jun Second Call - 31 Dec</p> <p>Purpose To inform funding decision Applications to be scored and ranked by PEB</p> <p>Requirements Project Initiation Plan – final (PIP v2)</p>	<p>Main Call - 31 July Second Call - 31 Jan (2022)</p> <p>=>Sign Funding Agreements</p>



Ask of Programme Steering Group Members

- Bring forward ideas for projects for funding at each of the three stages (stage 1 optional)
- Work in collaboration to achieve this, using wider networks to engage
- Nominate staff to participate in Project Advisory Groups (PAGs) and agree Terms of References for suitable projects
- Help us to interpret and promote the findings

