

MONA OFFSHORE WIND FARM NSIP ('THE PROJECT')

RESPONSES TO APPLICANT'S DEADLINE 6 SUBMISSIONS AND FURTHER COMMENTARY AND SUBMISSIONS ON BEHALF OF BODORGAN MARINE LIMITED (BML)

DEADLINE 7 – BML CLOSING STATEMENT

Preamble

- 1 The marine resource is limited in spatial terms. It is critical, therefore, that it is a resource that must be shared as efficiently and as fairly as possible. This is important both in terms of the need to pursue sustainable economic development/growth and is also true in terms of food security. It is for this reason that it is a central pillar of National and Welsh policy that opportunities for co-existence and co-location must not just be taken: they must be 'maximised' (please refer to NPS EN-1 paragraph 4.5.3, for example). Co-existence and co-location are the terms used to describe the situation that arises (and which must arise, because it is a policy imperative) when the marine resource is shared in a sustainable way.
- 2 For far too long, the UK offshore wind industry has ignored this policy imperative and has sought to monopolise, rather than share, the marine resource, which is exploited for its potential for energy generation. It is telling (and, frankly, shameful) that there are at present no offshore aquaculture assets co-located within offshore wind farms in the UK, something that is rightly becoming standard practice in other European nations. This is a central element in creating the balance necessary to enabling the blue economy to play a sustainable role in our shared future. Instead, the most that is done by the UK Offshore Wind Industry is to mitigate, in some way or other, the adverse effects that wind farm provision causes to traditional fisheries, particularly the scallop industry. The present case is a classic example of that approach.
- 3 The status quo must change for, if it does not, very substantial swathes of the marine resource will be lost to the present generation, at the very least. What will also be lost are opportunities to co-locate offshore aquaculture in the very places that co-location would be most suited, namely in marine areas which are less frequently fished by traditional fishing vessels, because of their proximity to wind turbines and generation assets. It is important to appreciate that the very thing that renders the marine blocks edged by turbines particularly unsuitable or unattractive for traditional fishing, makes them particularly suitable for aquaculture.
- 4 The marine areas at stake are vast. The Crown Estate through its various entities is leasing huge areas of Sea that, without a change of course, will be sterilised for the next 60 years, 60 years being the term of the standard Crown Estate lease. Current Crown Estate leasing practices facilitated by current DCO practices will lock out aquaculture operations and hence impede adequate provision for long-term food security. It is critical to note that it is the consenting of the DCO that is the event which causes the proposed lease in those terms to take effect. It is because consenting the DCO (absent the safeguards and

measures contended for by BML) will give rise to these consequences, which are repugnant in policy terms.

- 5 There are 50 OWFs operational in UK waters and the more than 2,700 turbines deployed in these areas currently cover significant parts of the UK territorial waters. The extent of the enormous broad Round 4 Bidding Areas concluded in January 2023) and the actual Round 4 Project Areas are shown on the diagrammatic maps in Annex 4 below. It should be noted that the three Round 4 project areas within the Irish Sea account for a total area of 667km² (or 66,700 hectares) (Mona OFW – 300km², Morgan OFW – 280 km² and Morecambe OFW – 87km²). Round 5 (launch of the tendering process commenced in February 2024) proposals identify a further 1,000km².

But this current programme of Crown appropriation of the UK’s marine commons is dwarfed by the amount of both UK and European sea space that is forecast to be devoted to wind energy:

- a) The UK has a target to increase renewable energy production from 15GW to 50GW by 2030 and at least 90GW by 2050. A significant proportion of this will be located offshore; and,
- b) One academic forecaster is predicting a huge 40,000km² area for OWFs in European waters in the longer term (*‘Co-location of fisheries and offshore wind farms: Current practices and enabling conditions in the North Sea’ by Prince O. Bonsu et al, from Science Direct on Marine Policy, Volume 159, January 2024, at page 21*), which is reproduced below, where the present scenario total figure is added to the mid-term scenario and then the long-term scenario.

| | Present scenario | | Mid-term scenario | | Long-term scenario | | NATIONAL MFD |
|--------------|-----------------------------|-----|-----------------------------|-----|-----------------------------|----------|--------------|
| | OWF area (km ²) | MFD | OWF area (km ²) | MFD | OWF area (km ²) | MFD | |
| UK | 2722 | 806 | 13980 | 440 | - | - | 703 |
| Germany | 759 | 109 | 1575 | 103 | 1574 | 48 | 81 |
| Sweden | - | - | - | - | - | - | - |
| Netherlands | 626 | 121 | 1628 | 14 | 5177 | 26 | 56 |
| Norway | - | - | - | - | 1389 | 1 | |
| Denmark | 175 | 66 | 571 | 22 | 7867 | 27 | 37 |
| Belgium | 178 | 118 | 255 | 5 | - | - | 166 |
| Total | 4460 | | 18008 | | 16008 | - | |

- c) Another team of academic researchers (*‘Finding space for offshore wind to support net zero: A methodology to assess spatial constraints and future scenarios illustrated by a UK case study’ by H. Putuhena et al 2024 in Science Direct, Renewable and Sustainable Energy Reviews, Volume 182, August 2023*, predict in the Conclusions (Section 9, Page 52) that in some scenarios even larger areas of the UK’s Sea may be taken over by offshore wind farms.

‘...future OW to meet net zero could require over 50% of the available space in the UK-EEZ.’

- 6 Aquaculture is increasingly recognised as key to not only national but global food security by national governments, their agencies, University researchers and other highly credible forecasters. Perhaps the most striking recognition of the potential of aquaculture is to be found in DNV's first Marine Aquaculture Forecast, 'Oceans Future to 2050: Marine Aquaculture Forecast, DNV (Det Norske Veritas), 2024' (included as a summary in Annex 4 below). DNV is an international accredited registrar and classification society headquartered in Norway and provides testing, certification, technical advisory services for several industries, including maritime, oil and gas, renewable energy and electrification. This DNV Report makes three important statements:
- *Marine aquaculture is set to play a critical role in securing supplies of food for a global population that will exceed nine billion by 2050*;
 - *'Marine Aquaculture will be vital to secure supplies of protein'*; and, '
 - *Marine aquaculture will more than double by 2050: As seafood demand rises with living standards and population growth, we forecast marine aquaculture production, excluding seaweed, will rise from 30 million tonnes per year (Mt/yr) live weight to 74 Mt/yr.*
- 7 Here in the UK, the importance of aquaculture for food security is increasingly being recognised by the Crown Estate in its emerging strategy for the management of the seabed and other organs of the UK governmental system. BML cites the following two instances:
- a) 'Aquaculture & Blue Growth The Crown Estate Perspective, November 2023' (included in Annex 4 below), a presentation by Caroline Price presented at the Aquaculture for a Thriving Future conference held at the Fishmongers Hall in November 2023, which states under Next Steps: *'Continue to make space for aquaculture – TCE WoS Programme and engagement with the statutory marine planning process.'*
 - b) The UK Parliament's Environment Audit Committee meeting on 8 January 2025 (which notably included a senior representative from CEFAS – referred to in Sections 4 and 7 of BML's D6 submission (**REP6-140**)), where it was acknowledged that of the seven main competing uses for the Sea that fishing and aquaculture was one of the oldest and most important uses.
- 8 It is for these reasons that the co-location of aquaculture assets within offshore wind farms (as opposed to offshore generally in areas unaffected by energy generation assets) represents, unarguably, the optimal manner in which the marine resource can be shared in a manner that enables the same marine resource to be used for energy generation and for the provision of food. It is possible, and of the utmost desirability, that the same marine resource is used to contribute to energy security and food security. Therefore, BML is at a loss to understand how aquaculture and its provision and co-location has been largely ignored by the Applicant.
- 9 There is absolutely no good reason why the Mona Offshore Wind Farm NSIP should not play its part in sharing the marine resource and in sustainably future proofing within the Order Limits. The reasons that the Applicant has articulated amount to little more than protestations that they do not want to share this spatial resource. BML has shown (and it cannot be gainsaid) that the technology for offshore aquaculture exists and (indeed it is being deployed and proven in other European countries); the appetite exists (it is waiting for a DCO to make adequate provision); there is no uncertainty about these matters; and, no

material adverse effects on the Project itself or other existing users that would arise in the event that aquaculture took place within the Order Limits in appropriately located areas, i.e. outside the Scallop Mitigation Zone (SMZ).

- 10 Why then does the Applicant protest so strongly?
- 11 First, it says that it did not understand that there was a demand for offshore aquaculture to be co-located within the Order Limits until BML started engaging in the DCO Examination. That, however, is the direct consequence of the Applicant's own failures to canvas an appropriately wide pool of consultees at the outset. There is an established centre of aquaculture excellence in and around the Menai Straits comprising: a) the School of Ocean Sciences at Bangor University with European-level expertise in aquaculture; b) a concentration of mussel and oyster farmers; and, c) a newly minted Several Order and management organisation for the Menai Straits mussel fishery. All of this expertise was ignored by the Applicant. Far from it being BML's 'fault' that it did not particulate early in the process: it is an indictment of the Applicant's own somewhat myopic 'business as usual' approach that BML had to engage at all in the manner that has regrettably become necessary.
- 12 Second, the Applicant says that it is in fact the Crown Estate leasing arrangements that will lock-out aquaculture from the Order Limits and not the DCO itself. That is simply a non sequitur. If (as it must) the draft DCO includes a new Requirement to the effect that appropriate arrangements must be made to ensure the ability for aquaculture to be co-located with the Project, no doubt the Crown Estate lease will be amended in an appropriate manner. There is nothing statutorily (or, generally) immutable about the provisions of a lease. They can be amended both pre (as in the present case) or post execution. BML attaches to this final D7 Closing submission a marked-up version of a Scottish variant of the Crown Estate marine lease, which would do just that (refer to **Annex 3 below**). As can be seen, in drafting terms, it is a very simple exercise to make the necessary amendments to enable the Applicant to grant a sub-lease to BML for the purposes of aquaculture. It should be noted that BML have had to mark up a Scottish Crown Lease precedent, as the Applicant has declined to make available a copy of its Agreement for Lease, despite BML's request made in the joint meeting on 19 December 2024. Furthermore, some additional commentary has been added to Paragraphs 38 - 39 below to the review of the Crown Estate leasing arrangements.
- 13 BML firmly maintain that it is incumbent, in the context of Section 104, Planning Act, 2008 (PA2008), on the Examining Authority (ExA) to recommend that the draft DCO should only be confirmed if it makes appropriate arrangements for the sharing of the marine resource (that being the whole marine resource within the Order Limits and not just the Scallop Mitigation Zone, which is a small part of the area) and in particular the ability for aquaculture assets to be co-located within the Order Limits. If two private parties (namely the Applicant and the Crown Estate) take the position that they do not want to amend the draft lease so as to make provision for the leased marine resource to be shared in the limited manner that BML has advocated for in this Examination, then the upshot is that those two private parties are promoting a scheme that is not policy compliant and not in the public interest and cannot and should not therefore be consented.

1 Introduction and Purpose of D7 Submission

14 This Deadline 7 (D7) submission is both:

- a) A response to the Applicant's Deadline 6 (D6) relevant documents that were made available on 23 December 2024, whether new or in track changes; and,
- b) An additional commentary on Bodorgan Marine Limited's (BML) position by way of both a 'Preamble' above and 10 'Closing Main Issues' below, in light of the close of the Examination on 16 January 2025.

Some submitted documents do not require comments and so do not form part of this submission.

15 This D7 submission provides comments on the relevant and necessary submitted documents, as set out below together with additional commentary of key aspects of the current DCO application (noting that at this stage, BML has not seen the Applicant's response to BML's D6 submission), under the following sub-headings:

- a) Commentary on Applicant's Key D6 Submissions (amendments)
- b) Crown Estate Policy Update
- c) BML – Closing Main Issues

16 The purposes of the BML D6 submission were fivefold and set out in Section 2 of that D6 submission (**REP6-140**). The purpose of this Closing submission is simpler and is threefold, as follows:

- a) To comment on the relevant changes and omissions in the latest submissions at D6 from the Applicant;
- b) To summarise and emphasise the Crown Estate's recent policy document 'Future of Offshore Wind' published in September 2024 and recently reported in the press by Sky News on 1 January 2025; and,
- c) To summarise BML's Closing Main Issues in 10 points.

2 Commentary on the Applicant's D6 Key Submissions (amendments)

17 There are many minor and consequential changes to the key documents from the Applicant reviewed and commented on below, but only those relevant to BML's interests are covered here.

Application Guide (REP6-003)

18 This sets out all amended documents and plans submitted at D6 and is a useful summary of those changes/additions. However, it is noted that the following documents, relevant to BML, have not been amended:

- a) **Marine Licence Principles Document (REP4-012)**. This is despite the new policy guidance from the Crown Estate set out below in Section 3.
- b) **Outline Fisheries Liaison and Co-Existence Plan (REP3-017)**. This is despite BML's D5 submission (**REP5-103**), BML's D6 submission (**REP6-140**) and the Applicant/BML joint meeting on 19 December 2024.

19 Whilst this revised Application Guide is useful, it does not provide clarity on the 'Control Plan', i.e. the framework for mitigating, monitoring and controlling effects of the Project. Section 7 of BML's D6 submission (**REP6-140**) raised a number

of critical comments concerning how certain documents are secured or not secured and these have not been addressed in the Application Guide.

Changes in Revision F06-F07 to Draft DCO (REP6-017)

- 20 The changes to the draft DCO are limited although it is noted that there are significant additions/amendments to Schedule 10, Part 7 with National Grid (following the National Grid submission on 17 December 2024 (**AS-031**)) and the addition of Part 9 with Awel y Mor.
- 21 In addition, it should be noted that it still does not include any interpretation definition of 'aquaculture', commercial fisheries', 'co-existence' or 'co-location' or any combination thereof – a consequence of the absence of appropriate provision(s) within the draft DCO to facilitate the co-location of aquaculture. Please refer to BML's D6 submission (refer to Section 7 of **REP6-140**), which included proposed amendments to the draft DCO, including the Requirements, to address these deficiencies.

Mitigation and Monitoring Schedule (REP6-027)

- 22 This amended version has only minor amendments and no responses to any points made by BML. It also continues to provide no clarity as to how it has been secured.

Statement of Commonality (REP6-070)

- 23 There appear to be no amendments to this document since **REP5-048** and it is unclear as to why it has been submitted at D6. It should be noted that there is no Statement of Common Ground (SoCG) with BML and very limited technical engagement to date, which is not recognised in this document.

Response to December Hearing Points (REP6-081)

- 24 This is a new document that only responds to Action Points (Aps) from ISH6 in Table 2.1. AP5 relates to BML and aquaculture and the Applicant merely refers to **REP5-103.36** – this appears to be an incorrect reference that, pre-dates ISH6 and is from BML itself. Therefore, this response is not considered helpful and does not provide the Applicant's views on the opportunities for bivalve aquaculture, so it is unclear if the Applicant agrees with BML.
- 25 AP6 is commented on by the Applicant despite it being directed at the Welsh Government, however, the Applicant does refer to its response to BML's D5 submission – **REP6-106**, which is commented on below.

Response to NRW D5 Submission (REP6-096)

- 26 This response focuses on offshore ornithology, marine mammals, NRW fish and shellfish and NRW's physical processes and other environmental matters. Rather surprisingly there is no reference to aquaculture at all.

Response to Welsh Government ExQ2 Submission (REP6-101)

- 27 In response to ExQ2.5.1 regarding Welsh Policy the Applicant confirms robustly that it is in compliance with ECON_01. This is an assertion with which BML completely disagrees, with BML's position being set out in its D6 submission in Section 4 (**REP6-140**). Furthermore, the Applicant reiterates that it has engaged extensively with key commercial fishing stakeholders – BML disagrees as the Applicant has only held one meeting with BML at the direction of the ExA and

this just prior to Christmas 2024. In the Applicant's response there is no mention of aquaculture, only scallop grounds, spacing for fishing access, turbine orientation and burying cables – none of which provide for co-location with aquaculture.

Response to Welsh Government (Fisheries Division) D5 Submission (REP6-102)

- 28 This submission only deals with fish stocks and fisheries, important plaice and sole spawning and nursery grounds and scallop grounds. Once again, there is no mention or response to provision for aquaculture.

Response from Welsh Government to Action Point 6 of ISH6 (REP6-134)

- 29 The Welsh Government has set out its brief response reiterating the need to comply with appropriate marine policy documents. It refers specifically to WNMP Policy ECON_02 and its inherent clarity along with its supporting implementation guidance (Paragraph 70): *'Proposals should set out what options for coexistence with other known sector interests have been considered and how these have been assessed.'* It further stresses that it does not prescribe any particular co-existence priorities or opportunities and that public authorities should ensure a realistic and proportionate approach is taken to applying this policy.
- 30 BML would support this interpretation and request that the Applicant needs to demonstrate clearly how it has investigated the options for co-existence opportunities, including aquaculture, especially as it is a known sector interest. This known interest is demonstrated in Paragraph 6 above and in Sections 5 and 8 in BML's D6 submission (**REP6-140**). The Applicant has stated that it has spoken with the Menai Mussel Fishery Organisation, but there appears to be no evidence of this engagement. Also, the Applicant has not had any apparent engagement with Bangor University, who are working with Crown Estate on a co-location project called 'CoSaris' in the Irish Sea called 'ULTFARMS'. Therefore, it remains BML's position that the Applicant has failed to comply with the relevant policy regarding engagement and would refer the ExA to Section 4 of BML's D6 submission (**REP6-140**) in this respect.

Response to BML ExQ2 Submission (REP6-106)

- 31 This is a 12pp technical response from the Applicant and it represents a complete rejection (besides those 11 points that were just noted or acknowledged) of all points made by BML in its D5 submission (**REP5-103**), which were numbered 1 – 40. This rejection combined with almost no technical engagement with BML or the wider aquaculture industry confirms that the Applicant is adopting the following position or strategy, which:
- a) Is not troubled by the need to provide for co-located aquaculture;
 - b) Does not reflect national policy;
 - c) Constantly just refers to previous documentation, without explanation, in the hope that it convinces the reader of a matter being dealt with;
 - d) Sterilises 300 sq. kms of the Irish Sea; and,
 - e) Is not prepared to engage with BML beyond doing the minimum to satisfy the requirements of the ExA.

It is hoped that the ExA will recognise that this approach taken by the Applicant is neither sustainable nor reasonable and needs to be rejected.

- 32 In reviewing the Applicant's detailed response, BML would make the following commentary on each of the 29 points:

Point REP5-103.5 – the Applicant's case relies on there being no existing aquaculture operations in the OWF area and does not allow for the possibility of future aquaculture operations, which BML wish both to safeguard and to pursue. The Applicant also relies on the Order Limits not being within 'Resource Areas' identified by the Welsh Government that do not overlap with the Mona Array Area. However, these Strategic Resource Areas (SRAs) are just broad scale indications of where an activity, such as aquaculture, might be considered more appropriate and they only relate to nearshore areas, not offshore areas.

The text from the recent Welsh Government's 'Consultation on Strategic Resource Areas for Marine Planning' dated March 2024 (<https://www.gov.wales/consultation-strategic-resource-areas-marine-planning.html#134375>) below contextualizes their scope (refer to section on Strategic Resource Areas (SRAs) in the second paragraph:

*'The identification of SRAs does not mean that development in these areas would be supported. **It also does not mean that a sector has to locate in an SRA.** All developers (whether seeking consent to locate within or outside an SRA) will still need to apply for relevant consents, including demonstrating compliance with Marine Plan policies on environmental protection and on social issues such as delivering benefits for coastal communities, heritage and resilience to coastal change. All developers will also need to comply with environmental regulations in the usual way. Instead, identification of SRAs will ensure that the ability of future generations to access resources is formally considered by public authorities when taking decisions relating to marine management and consenting (e.g. when determining marine licence applications).'* (**emphasis added**)

Point REP5-103.6 – the Applicant refers to the 'intrinsic link' between the CEFAS Report and the Welsh National Marine Plan (WNMP). However, the Applicant does not demonstrate how the CEFAS Report is linked or how its principles have been dealt with in the DCO application documentation.

Point REP5-103.7 – the Applicant merely reiterates that it believes it is compliant with Policy ECON-01, referring to its previous submissions. The Applicant refers to Policy FIS_01b about working with other interested parties, but has singularly failed to work with BML or other aquaculture providers and other relevant bodies, as referred to in Paragraph 11 above).

Point REP5-103.8 – the Applicant seems to rely on the fact that it was not made aware of BML proposal for co-location and so focussed on economic impacts on long-established commercial fishing interests. As was clearly established in BML's D6 submission (which set them out in detail), the Applicant has been aware of BML's interest in co-location since May 2024 and only sought to engage on 19 December 2024, potentially 'running the clock out' on such proposals, late in the Examination process.

Points REP5-103.10 and REP5-103.11 – unsurprisingly, the Applicant disagrees with BML's assertion that failure to provide for aquaculture is a fundamental defect of the Project, largely citing their policy compliance. BML disagrees with the Applicant and explains its position clearly in Section 4 of its D6 submission

(REP6-140). BML requests that the ExA need to make recommendations that resolve this conflict over policy compliance and in particular to require the Applicant to make provision for the co-location of offshore aquaculture within the Order Limits.

The Applicant reiterates its position that it was not made aware of BML's proposals until recently and that it is too late to provide for them. The Applicant stresses that all its benefits outweigh the need to provide for the aquaculture industry, but BML contends that such provision should have been considered from the outset.

Point REP5-103.12 – the Applicant reiterates its position on policy compliance and disagrees with BML's policy position. It is clear, therefore, that the ExA need to make recommendations that resolve this conflict over policy compliance in order to make this project consentable (refer to Paragraph 13 in the Preamble above).

Point REP5-103.13 – the applicant suggests that NPS EN-1 Paragraph 4.5.3 is merely aspirational and not feasible. BML contends that:

- stating this without any examination or technical engagement is overly dismissive; and,
- this paragraph is intended to have real effect.

Point REP5-103.14 – the Applicant seems to contend that the responsibility for engagement and collaboration on the proposed aquaculture co-location is entirely BML's responsibility, disregarding the fact that it is the Applicant's responsibility to fully and technically engage with all relevant stakeholders, including BML and others, which it has not done. Instead, the Applicant cites various other important stakeholders that it has engaged with and claims that this was sufficient.

Point REP5-103.15 – regarding NPS EN-3 Paragraph 2.8.250 the Applicant only responds by stating its previous correspondence, which is not helpful.

Point REP5-103.16 – similarly, regarding NPS EN-3 Paragraph 2.8.251 the Applicant only responds by stating its previous correspondence, again which is not helpful, but is perhaps a carefully crafted response (refer to the final Section 4 of this D7 submission).

Point REP5-103.17 – regarding WNMP ECON_01, the Applicant only responds by stating its previous correspondence, again which is not helpful. BML has set out its position in its D6 submission in Section 4 (**REP6-140**).

Point REP5-103.18 – the Applicant acknowledges that this point (distinguishing between co-existence and co-location) was raised by BML in two previous submissions and responded to by the Applicant. The Applicant contends that it has made provision for both, namely only existing fishing interests (scallop and static gear fishery) and engaged with key stakeholders. However, it has not provided for the future or attempted to become a 'pathfinder' for the aquaculture industry and co-location.

Point REP5-103.20 – the Applicant contends that the proposed Scallop Mitigation Zone (SMZ) is co-existence. However, BML contends that the SMZ is properly to be understood as an area where the Applicant considers co-existence to be impossible. Furthermore and importantly, BML contends that the

SMZ is the prime illustration of how the Applicant has failed to understand the meaning of co-existence and co-location and consequently fallen into a position of policy error and prejudiced its ability to win a consent (refer, in particular, to BML's D5 submission (**REP5-103**) in Paragraph 20.

Point REP5-103.21 – the Applicant contends whether other co-located aquaculture projects in Europe are fully developed commercial-scale operations and that they are only an emerging concept, with several pilot projects and research initiatives underway, i.e. that it is not yet standard practice and cites two examples in Germany and the Netherlands. It rather disparagingly refers to the industry being '*still in the experimental and research phase, addressing technical, environmental, and regulatory challenges to determine the viability of such integrated systems.*' It states that BML has, to date, not appeared to have undertaken a detailed review of the complexities of local contexts, stakeholder priorities, and project-specific constraints. Notwithstanding this, the Applicant states it is willing to continue 'without prejudice' discussions, post-consent provided BML provide further details – BML has provided further details in its meeting with the Applicant on 19 December 2024 and in Section 5, 6 and 7 of its D6 submission (**REP6-140**).

BML contend that further discussions 'post consent' would delay further consideration until at least July 2025 (likely to be the earliest decision date). Furthermore, the Applicant appears to 'belittle' current European initiatives and undermine the feasibility of co-located aquaculture in UK waters.

Points REP5-103.23 and REP5-103.24 – again, the Applicant only responds by stating its previous correspondence, again which is not helpful. BML has set out its position in its D6 submission in Section 4 (**REP6-140**).

Points REP5-103.25, REP5-103.26 and REP5-103.27 – the Applicant appears to question the validity and efficacy of the trial at the North Hoyle OFW, particularly into '*the environmental and operational challenges associated with such activities.*' The Applicant emphasises that in its view, this industry is in a the nascent stage of development for this type of co-location and there is a need for further exploration and development, rather than assuming feasibility. However, the Applicant does acknowledge the potential for co-locating aquaculture within OFWs. There is clear potential in the future for aquaculture assets to be co-located within wind farms – that much is acknowledged by the Applicant. That is sufficient to engage the policy referred to above and in BML's previous representations and, in effect, to mean that the project cannot be consented unless it 'future-proofs' the Order Limits, in terms of making reasonable accommodation for aquaculture therein.

Points REP5-103.28, REP5-103.29 and REP5-103.30 – again, the Applicant only responds by stating its previous correspondence, again which is not helpful. BML has set out its position in its D6 submission in Section 4 (**REP6-140**).

Point REP5-103.32 – again, the Applicant only responds by stating its previous correspondence, again which is not helpful. BML has set out its position in its Relevant Representation submission in **RR-006** and in more detail in its D6 submission (Section 4 of **REP6-140**).

Point REP5-103.36 – the Applicant criticises BML for not disclosing its proposals until its D5 submission, but did not attempt to engage with BML, as is required by

the PA2008 and relevant guidance. The Applicant then requires further information 'post-consent' in order to consider these proposals. The Applicant refers to its inability to sub-lease any portion of its Array Area and cites the need for BML to deal directly with the Crown Estate (this leasing issue is addressed in the Preamble above); the Applicant notes that a separate Marine Licence would be required; consent from the Applicant would be required; and, that a Navigational Risk Assessment would be required – these points are largely dealt with by BML in Section 7 of its D6 submission (**REP6-140**).

Point REP5-103.37 – yet again the Applicant blames BML for not engaging on their technical proposals, without acknowledging their own lack of technical engagement or its initiation. The Applicant then reiterates its need for further information prior to further consideration of these proposals and sets out several technical questions for BML and these are responded to below. However, the Applicant refuses to give any future consideration to co-location in advance of consent being granted and without clarification on the specifics of the proposed mussel farm, including detailed information on its design, location and operational parameters. BML responds to each of the technical questions raised by the Applicant, point-by-point below.

Bullet 1 (clarification on whether any aquaculture infrastructure within these marine blocks would need to interact with the Mona Offshore Wind Project infrastructure) – there is no need for a co-located mussel farm to directly interact or interfere with any of the OFW operations – this principle lies at the core of co-location. Whilst it is the case that some of the early academic/research studies into multi-use between OFW and low trophic aquaculture envisaged direct use of the OFW infrastructure within multi-use – these were idealised. All practical studies to date have simply sought to utilize the space between pylon arrays.

It should be noted that the 'Multi-Use Action Plan, produced in late-2018 and run by Marine Scotland and commissioned by the EU, indicates in Table 2 on page 31 the countries that had allocated for multi-use within their legislation/policy – there are many such countries covering the Eastern Atlantic, North Sea, Baltic Sea, Mediterranean Sea and Black Sea.

Bullet 2 (Would the indicated horizontal distance between the surface buoys at the end of the line of floats and the seabed mooring (seemingly 50m) be appropriate to the depth to the seabed in the Mona Array Area, which is on average approximately 40m? This is important in consideration of the overall footprint of the production facilities) – from the information available on the site characteristics and also the offshore shellfish cultivation that is currently deployed in the UK and elsewhere (such as New Zealand and the US), there are common spatial ratios that have been developed to provide for distances which is dependant on depth (2 or 3 times water depth) – the number of deployed lines described within the 50ha blocks accommodates this variable.

Bullet 3 (Has a mooring design for the proposed mussel farm operation been completed, which would afford confidence in the security of the structures given the seabed composition, water depth and degree of exposure of the proposed locations?) – steel helical screw anchors have become the standard system for offshore shellfish cultivation. Previously, wedge shaped concrete blocks with concave bases (to suck into the seabed) were used as the preferred

passive anchoring method. However, screw anchors, with their higher holding power, quicker deployment and ability to support higher set tension loads have become the favoured option over the last 10 years. These can be deployed into a variety of substrates (mud, sand, broken and even solid rock), with diver less deployment to a maximum depth of 60m.

Bullet 4 (Has the design of the proposed structures – the surface lines and floats – been completed to a level which will provide confidence in the ability for it to withstand the hydrodynamic conditions at the proposed location?) – the offshore shellfish cultivation equipment used for illustrations within this process is commercially deployed and it is tried and tested in the UK. Offshore Shellfish Ltd operate 3 offshore sites in Lyme Bay (1,000ha), currently producing 2,500t/yr. The system has also been deployed in the Bangor University offshore site. Both systems, Lyme Bay and Conwy Bay, have been subjected to persistent extreme weather conditions (force 11 winds, wave heights +10m, etc) without significant impacts on cultivation structures.

Bullet 5 (Is the design of the mooring system and surface structure sufficiently robust as to be able to tolerate local conditions and degradation with time such that the projected failure rate/time to first failure are in line with those of the proposed windfarm development?) – cultivation equipment (ropes) deemed redundancy rates of 10-15 cultivation cycles. In Lyme Bay, helical screw anchors and connections are remotely monitored for status (small ROV) for assessment, i.e. there are established systems that work and any adaptations required to meet conditions within the Mona array area can be undertaken.

Points REP5-103.38 and REP5-103.39 – the Applicant reiterates that it is not required to provide for aquaculture within policy, despite BML recommending an additional section within the OFLCP – a point that the Applicant has not responded and which BML still contend.

Point REP5-103.40 – this only acknowledges the BML meeting on 19 December 2024 and does not provide any further detail or actions from that meeting – these are set out in BML's D6 submission in Section 8, Paragraphs 100-101 of its **REP6-140**.

- 33 It is clear that the Applicant has refused to acknowledge any point made by BML, blames BML for the lack of technical engagement, has constantly referred back to previous documentation, requires further technical detail and clearly seeks not to resolve these critical matters prior to the end of the Examination. This is considered not be pro-active or positive, rather the opposite.

3 Crown Estate Policy Update

- 34 The Crown Estate recently published a new policy document entitled '**Future of Offshore Wind**' in September 2024 (refer to Annex 1 below) and it was recently reported in the press by Sky News on 1 January 2025 – <https://news.sky.com/story/fishermen-fear-for-livelihoods-as-offshore-wind-farms-pose-greatest-change-13282246>. This Sky News article is included in Annex 2 below, for convenience.
- 35 The Sky News article stresses the possibility that the Areas of Opportunity may squeeze out fishing patterns and businesses and does not equally prioritise food

security alongside energy security. It recognises the two main drivers of the wider fishing sector:

- being squeezed out by the offshore wind industry's exclusive use of the sea and seabed (especially during construction) that may have longer term impacts on the ecosystems in areas that are some of the most productive biologically; and,
- that areas of sea previously outwith the capability of the OFW sector due to depth profiles will now be used.

Also, it should be noted that the fish and seafood sector seem to be underrepresented in discussions about food security.

36 There are several parts of this recent Crown Estate report that are both relevant and helpful to the points that BML made in its D5, D6 and in this D7 submission and these are set out below.

- a) **Page 7** – *‘Improving the coordination between the process of seabed leasing, energy infrastructure planning and grid connections, helping further accelerate the deployment of offshore wind, while considering other seabed users and the natural environment.’* This clearly opens the door for considering other seabed users, such as the aquaculture industry, by coordinating leasing.
- b) **Page 11** – *‘The seabed and coastline are critical for net zero, nature and a wide range of marine sectors. As the sea space becomes increasingly congested, we must ensure we plan for the future of offshore wind in the context of nature and all sea users.’ ‘Identifying 2050 spatial pathways to enable the best use of the marine space in order to meet policy objectives and user needs across sectors. This will provide stakeholders with long-term visibility on the key areas of opportunity for each sector, including opportunities for co-location, and support early resolution of competing demands.’* Clearly, this promotes opportunities for co-location and early resolution of competing demands, not currently recognised by the Applicant.
- c) **Page 12** – the benefits of this Marine Delivery Routemap are cited as optimising the use of marine space, opportunities for biodiversity and nature and supporting economic development.
- d) **Page 13** – this identifies 10 main discussion points, including co-location given an increasingly busy marine space, our (Crown Estate) view is that it is important to enable co-location in Areas of Opportunity through leasing design.
- e) **Page 25** – this identifies the need for early identification of co-location options and agreeing the best use of space being critical.
- f) **Page 26** – this acknowledges that there is overlap with current interests and future sector opportunities, including fisheries.
- g) **Page 27** – this reiterates the points made concerning co-location on Page 13, referred to above.
- h) **Page 38** – this stresses the importance of *‘seeking opportunities for positive environmental outcomes, nature inclusive design, and sector decarbonisation alongside broader approaches for creating inclusive communities and supporting economic growth.’* This could and should include the wider aquaculture industry.

- i) **Appendix 2** – this methodology requires that ‘*results demonstrate whether a scenario has met the demand requirements as well as prioritisation and co-location implications.*’
- 37 It is clear that the Crown Estate recognises the importance of co-location and provides for its priority in determining OFW provision. Whilst not referring specifically to aquaculture, it is clear that the fishing industry needs to be considered as part of the ongoing discussions with stakeholders and refinement of both ‘Areas of Search’ (AoS) and ‘Project Development Areas’ (PDAs), as set out on Page 21.
- 38 Crown Estate Leasing Latest Update – BML requested that the Applicant disclose a copy of their Crown Estate lease (under an NDA) at the joint meeting on 19 December 2024. The Applicant confirmed, without any substantiation or evidence, that no changes could be made to that lease. In addition, the Applicant has elected not to provide a copy to BML and will only respond to this request for provision and changes in its D7 submission on 14 January 2025 (just 2 days before the close of the Examination). BML have demonstrated that the changes to the lease set out in Paragraph 9 of the Preamble above, here and in Annex 3 below are not impossible and the Applicant has not provided any evidence to demonstrate why provision of the lease or any changes to it are not possible.
- 39 BML would add that, in terms of sub-leasing, it is absolutely the case that with the consent of both parties to the lease, the outcome that BML are asking for (and which BML state is mandated as a matter of policy) is possible, that is unarguable. There is no legal impediment to the two parties bringing about a policy-compliant situation and if the parties (one or both) simply do not *want* to do that, then they must not be granted the DCO.

4 BML – Closing Main Issues

- 40 In consideration of all the information and commentary above and BML’s D6 Submission (**REP6-140**), it is considered helpful here to distil, summarise and set out the **10 main issues** that require the ExA’s consideration. These are considered to be the following:
- 1 **National Policy Compliance** – BML submit that this project is not consentable in the context of S104 PA2008, unless it makes adequate provision for the co-location of aquaculture within the Order Limits and within the draft DCO itself. There is no good or sound reason in this case why the Applicant should be relieved of the obligation to:
- (a) pursue opportunities to enhance (and not just mitigate adverse effects created by the project) the economic yield of the marine resource of the Area, which the Project will occupy; and,
 - (b) to provide for the co-location of aquaculture assets within the Order Limits, given that this is what is required by policy and in any event is an ‘important and relevant’ consideration.

Given the Applicant’s views on Welsh National policy compliance (set out in Section 4 and paragraph 97 of BML’s D6 submission (**REP6-140**), there is clear disagreement that requires resolution. However, it is clear that the Welsh Government supports the principles of co-existence and the need to set out options that are realistic and proportionate – refer to its D6

submission (**REP6-134**). Furthermore, the latest policy document from the Crown Estate (as set out in Section 3 above) needs to be recognised and implemented in its discussions with BML – this was recommended in Section 7 of the BML D6 submission (**REP6-140**).

- 2 **Provision for Aquaculture within the DCO** – the BML proactive recommendations for straightforward additional drafting within the OFLCP, Schedule 14 and a new Requirement require positive consideration, as set out in BML's D6 submission (**REP6-140**). The consequence of this not being delivered is the sterilisation of 300km² for this project alone (refer to Section 1.2 of the Planning Statement (**APP-186**)), preventing the valuable aquaculture sector from developing offshore and compromising an opportunity to deliver greater food security and co-location within an area that will otherwise be sterilised.
- 3 **Further Support by the Applicant of the 'Technical Ask' from BML** – this is set out clearly and in detail in Sections 5 and 6 of BML's D6 submission (**REP6-140**), but it requires the Applicant's written support and further actions as set out in Sections 7 and 8 of that submission. The Applicant's request for further information set out in its D6 submission (**REP6-106**) and discussed above has not been proactive and has appeared very late in the Examination process, but has been responded to in this submission in Section 2 above and in subsequent technical engagement, should there be any such engagement.
- 4 **Further Technical Engagement from the Applicant** – the lack of real technical engagement by the Applicant with the aquaculture sector is evident. Indeed, in its D6 submission (**REP6-106**) in the Table 2 response reference **REP5-103.5** the Applicant acknowledges its focus for co-existence to date has been on existing commercial fishing activities within the Mona Array Area. It is BML's position that the Applicant has failed to properly consider the aquaculture sector a matter that the Applicant does not contest, rather the Applicant claims it had no need to engage with the aquaculture sector.

Now initial technical discussions have been held late in the DCO Examination process between the Applicant and BML, they should continue during the Examination and beyond, to resolve outstanding issues and ensure the interests of BML and the aquaculture industry are fully accounted for. BML note the Applicant's commitment to continue discussions with BML post-consent, which is welcomed, however, this engagement must be secured within the DCO and commence immediately after the close of the Examination. It remains BML's position that the draft DCO should not be made without the necessary provisions to avoid sterilisation of the aquaculture sector within the Order Limits – please refer to the draft new Requirement and amendments to the deemed Marine Licence in Section 7 of BML's D6 submission (**REP6-140**). Moreover, these discussions, secured in the draft DCO, should NOT only continue 'post-consent', as suggested by the Applicant, but should proceed during the Examination and post Examination period with a view to reaching an agreement that can be recommended for inclusion in either the DCO or an appropriate Control Document. This engagement would be greatly assisted and be secured by

the Applicant or ExA accepting and incorporating into the DCO the recommendations in Section 7 of the BML D6 submission (**REP6-140**).

Latest Update – the Applicant has now confirmed in their email dated 10 January 2025, that they are too busy to engage further with BML before the end of the Examination. Furthermore, that the actions agreed at our 19 December 2024 meeting (which up to the D7 deadline is a period of at least 10 working days, even accounting for the Christmas/New Year period) would only be responded to in the Applicant's D7 submission, so too late for any reaction or response by BML within the Examination period. This is considered most unsatisfactory, unhelpful and potentially not in the spirit of the PA2008 or its accompanying guidelines. The Applicant clearly is not serious about its technical engagement or about giving any positive reactions to BML's submissions. It is unacceptable to be too busy to engage for at least 10 working days, at this late stage in the DCO process.

Furthermore, BML would like to point out that instead of seeking to engage with BML positively since it first made their representations to the Examination in May 2024, the Applicant has elected to adopt an express policy of non-engagement as a pattern of behaviour (as demonstrated here and in Section 8 of the BML D6 submission (**REP6-140**), the result of which is that the substantive issues raised by BML have no prospect of being resolved by the Applicant itself and accordingly must (and can only) be resolved by the ExA itself.

- 5 **Proactive Consideration of Benefits of Aquaculture Co-Location** – it is clear from the NPS EN-1 and EN-3, WNMP, CEFAS Report and the recent Crown Estate Policy Report that there is not only support but a need for aquaculture co-location and yet no UK OFW project has yet made any provision, notwithstanding the progress being made in European waters. The benefits of aquaculture co-location were set out in Section 5 of BML's D6 submission (**REP6-140**). It is therefore clear that this project represents an opportunity for the Applicant to be a 'Pathfinder' for such provision.
- 6 **Actions from Technical Engagement** – these 5 actions were set out in Section 8, Paragraph 101 of BML's D6 Submission (**REP6-140**), but have so far not been received from the Applicant. The Christmas/New Year occurred just after the technical meeting, but this 3-week delay and now refusal to provide from the Applicant is not considered helpful or acceptable.
- 7 **Specific Requests of the Examining Authority (ExA)** – BML requests that the ExA considers the following six specific requests, as contained within its D6 submission (**REP6-140**) and this D7 submission.
 - a) That consideration be given positively to wider strategic concerns set out within the 'Preamble' in Paragraphs 1 – 13 above and acted upon;
 - b) That particular recognition is given to the growing importance of food security. This is especially relevant given how small in the overall scheme of the Project is the area that BML has requested be reserved and sub-let for the purposes of aquaculture (just 250 hectares);
 - c) That the National and Welsh policy disagreements between BML and the Applicant are resolved in favour of BML;

- d) That the recommended changes to the draft DCO as set out in the BML D6 submission in Section 7 be implemented in their recommendations to the Secretary of State;
- e) That the draft DCO is amended to secure the continued technical engagement discussions between the Applicant and BML from now until its positive conclusion to ensure the provision for aquaculture within this Mona wind farm project; and,
- f) That opportunities for amending the current Crown Estate leasing arrangements are supported and a sub-lease to BML for the purposes of aquaculture is put in place, utilising the statements made in the Preamble above (Paragraphs 1 – 13) and in Section 3 above and Annex 3 below.

8 **Changing the Crown Estate Leasing Arrangements** – BML set out in Section 7, Paragraph 87 of its D6 submission (**REP6-140**) the request for a new Requirement to cover the Applicant’s concerns about restrictions in its Agreement for Lease Arrangements with the Crown Estate. BML has considered this further and makes the following recommendations that may assist both the ExA and the Applicant:

- a) That the ExA consider positively the content of Section 3 and Annex 1 below regarding an increasing flexible policy towards sub-leasing from the Crown Estate; and,
- b) That the content of Annex 3 below and referred to in Paragraph 12 of the Preamble above demonstrates how straightforward and simple changes to the Crown Estate lease could be and hence viewed positively.

9 **Areas of Disagreement** – the ExA in its email dated 6 January 2025 suggested setting out the remaining areas of disagreement between BML and the Applicant and these are set out below. In the meantime, BML have written to the Applicant requesting progress on the actions from the joint meeting on 19 December 2024 and the Applicant’s response is set out in Main Issue 4 above. It should be noted that there are many areas of disagreement between the Applicant and BML and little currently agreed other than the three matters set out at ‘Main Issue 10’ below. Set out below are the main seven areas of disagreement for conciseness.

- a) Overall principle and understanding of Co-Location – as set out above in the Preamble in Paragraphs 1 – 13, including whether the SMZ can be properly be considered as a form of co-existence or co-location;
- b) Policy compliance and ‘consentability’ – as set out in BML’s D6 submission (**Section 4 of REP6-140**), including whether policy is intended to be of no effect and aspirational and the intention of the policy frameworks;
- c) The content of the draft DCO – it is understood that the Applicant does not agree with the proposed amendments set out in Section 7 of BML’s D6 submission (**REP6-140**);
- d) Ability to include a Sub Lease within the Crown Estate Marine Lease to the Applicant – the Applicant maintains that this is not possible and BML set out in the Preamble, Paragraph 12, Section 3 and in Annex 3 how this is both possible and simple;
- e) Practicality of co-located aquaculture within a OWF: this is important because it is on this practicality point that the Applicant’s defence of its

failure to comply with its duties pursuant to Paragraph 2.8.251 of NPS EN3 relies. Paragraph 2.8.251 states: *'Mitigation should be designed to enhance, **where reasonably possible**, any potential medium and long-term positive benefits to the fishing industry, commercial fish stocks and the marine environment'* (**emphasis added**) The Applicant appears to be suggesting that co-located aquaculture is not reasonably possible;

- f) DCO documentation and Evidence Omissions – BML has set out in Section 3 of its D6 submission (**REP6-140**) and in Section 2 of this D7 submission its specific disagreements with specific DCO documents. The Applicant's response (**REP6-106**) to BML's D5 submission (**REP5-103**) indicates that the Applicant will not entertain any changes to its documentation – which presages the Applicant's likely objection to the changes recommended in both BML's D6 and D7 submissions; and,
- g) Applicant's Limited Technical Engagement – BML contend that the Applicant has merely undertaken engagement with the commercial fishing industry sufficient to discharge the Applicant's obligations and has had very limited engagement with the aquaculture industry resulting in a deficient Project.

10 **Areas of 'Agreement'** – given both the extent and the fundamental nature of the parties' disagreements, BML is pleased to be able to report to the Examining Authority that the parties are in agreement on three matters of significance – all of a negative nature, as set out below.

- a) The Applicant has accepted that it has not turned its mind, until the very latter stages of this DCO process, to aquaculture – this is referenced in its D6 submission (**REP6-106** in Section REP5-103.5 on page 3) to aquaculture and Strategic Resource Areas;
- b) The Applicant has agreed that it has never considered the CEFAS Report, 2020 (refer to **REP6-106** in Section REP5-103.6); and,
- c) The Applicant's Project has accepted that its proposals and, in particular, its proposed mitigation of commercial fisheries, do not comprise the enhancement of fishing and the marine environment required by the NPS EN-3. This can be referenced in the following Applicant's submissions at **REP4-113.5** and in its 'follow-up' representations at **REP5-062 and REP6-106 in Section REP5-103.9**, where the Applicant acknowledges BML's references to both NPS EN-1 and EN-3 and the WNMP, but otherwise make no further substantive representations on the issue of enhancement.

The Applicant's submission at **REP4-113.5** is particularly telling as, despite all its noise and protestations, the Applicant clearly accepts that it is not intending for the Project to deliver any enhancement of the sea or its fisheries. The Applicant's representation is worth setting out in full:

'The Applicant acknowledges that the nature of the development provides limited opportunities for enhancement'. (emphasis added)

ANNEX 1

'Future of Offshore Wind', Crown Estate, September 2024

Future of Offshore Wind

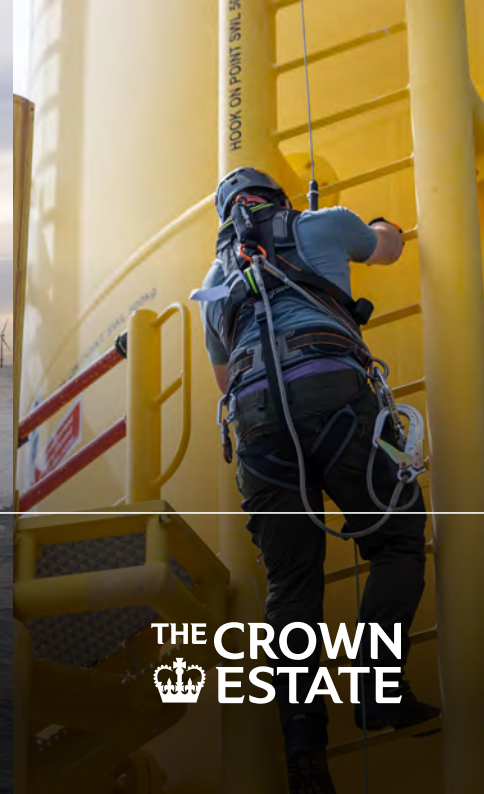
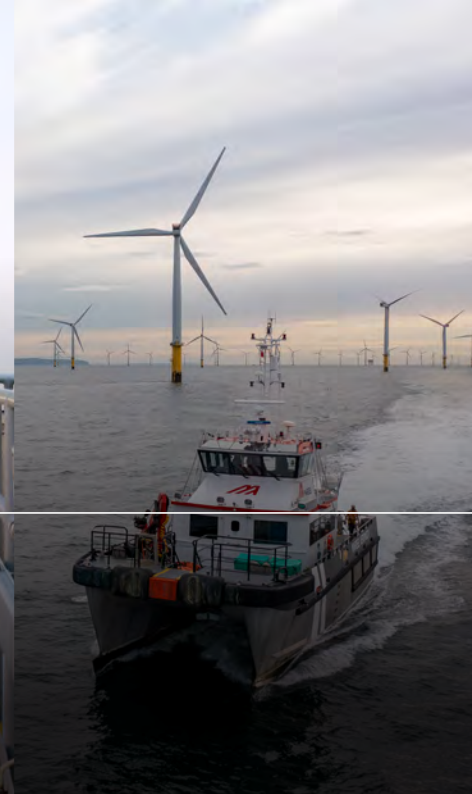
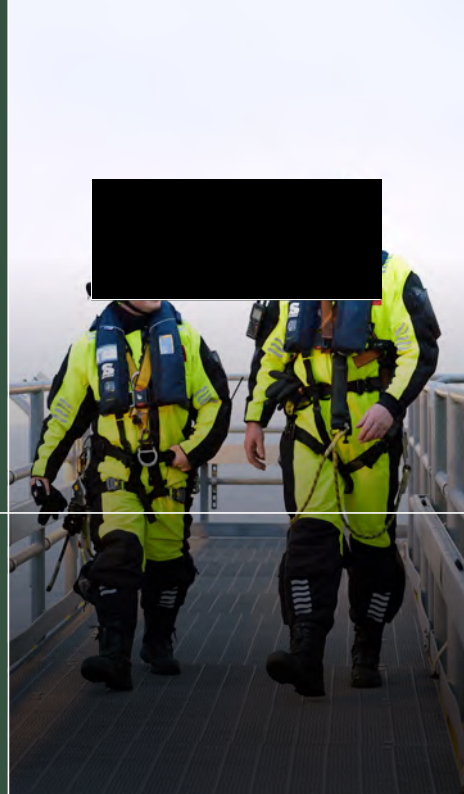
Considerations for development and leasing to 2030 and beyond

 Marine Delivery
Routemap

A Marine Delivery
Routemap publication

A report on behalf of Great British Energy: The Crown Estate

September 2024



THE CROWN
ESTATE

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"I am delighted that Great British Energy is partnering with The Crown Estate to write the next chapter of the UK's renewable energy story."



Juergen Maier
Chair, Great British Energy

Foreword

The UK is amongst the world leaders in harnessing the power of offshore wind, powering homes and businesses across the country, supporting the energy transition and attracting billions of pounds of investment into the economy. The scale of the sector is now very impressive, providing clean energy to millions of households and employing tens of thousands of people.

Great British Energy sits at the heart of the government's mission to accelerate this success and make Britain a clean energy superpower. It will be owned by the British people, for the British people, with the ability to invest to support clean power projects and create many thousands more valuable careers across the UK.

I am delighted that Great British Energy is partnering with The Crown Estate to write the next chapter of the UK's renewable energy story. There is a huge prize on offer and by bringing together Great British Energy's strategic industrial policy with The Crown Estate's internationally-recognised expertise and management of the seabed, we can ensure Britain continues setting the pace for global offshore wind. This will be backed by £8.3 billion of new money for Great British Energy, alongside new borrowing and investment powers for The Crown Estate which are currently being brought forward in Parliament.

To achieve our goals, we need to push ourselves to move faster and work harder to reach our net zero targets, unlock investment and support the growth of local supply chains. This report marks an exciting step towards unlocking the next 20-30GW of offshore wind pipeline – enough power for the equivalent of almost 20 million homes. Not only does it plot a course to bringing this new capacity to market by 2030, it sets out a number of important proposals to accelerate and de-risk the process for developers and maintain the attractiveness of the UK market for international investors.

There are exciting times ahead, both off our shores and within the onshore communities that stand to benefit from the continued success of UK offshore wind. As we continue to build Great British Energy, I look forward to working with industry and other partners for the benefit of all British people.

Juergen Maier
Chair, Great British Energy

"The UK's offshore wind industry has a long track-record of working together to rise to new challenges, and the shared depth of experience and expertise leaves us well-placed to face the future."



Julia Rose
Head of Offshore Wind
Marine, The Crown Estate

Introduction

UK offshore wind is a success story on a global scale. Each turbine rotating off our shores represents decades of commitment, research, expertise and ingenuity which have combined to make the UK one of the most attractive markets for offshore wind in the world. And with each new turbine comes more investment into the UK economy, more jobs and more onshore opportunities for coastal communities.

At The Crown Estate, we're proud of the role we have played in supporting the growth of a sector that now produces enough renewable energy for half of all UK homes and is set to employ more than 100,000 people by the end of the decade.

Given this success, it is no surprise that offshore wind has become the cornerstone of the UK's drive to net zero. But with this comes the need to do more than ever before, and at a faster pace. This report sets out how seabed rights for 20-30GW of new offshore capacity could be brought to market before the end of the decade to support the UK's net zero and energy security ambitions. It looks at the prime areas of opportunity for new wind farms and considers how a mix of fixed, deep-water fixed and floating wind projects might be brought forward and developed over the coming years.

Being able to deliver against these ambitious targets means more than simply bringing new areas of seabed to market. It means challenging ourselves to consider

how we could tackle some of the wider systemic challenges and support a move towards more predictable, coordinated offshore wind development, while enabling nature recovery amidst a changing climate.

If this sounds like a major undertaking, it's because it is. But the UK's offshore wind industry has a long track-record of working together to rise to new challenges, and the shared depth of experience and expertise leaves us well-placed to face the future.

Part of the solution lies with the development of a new Marine Delivery Routemap, with our early thinking on this published alongside this report. This exciting work, founded in partnership, builds on The Crown Estate's world-leading expertise and marine data capabilities to plot a course for a long-term vision for the competing demands on our seabed, while protecting and enhancing the marine environment. Further publications are planned as part of this work on other key sectors, such as carbon capture and storage (CCS) and minerals. We will also be taking a more detailed look at our approach to nature, including how we can continue working in collaboration with others to deliver restoration and recovery.

Continued policy support will also have an important role to play. For example, the Contracts for Difference regime has helped underpin the success of UK offshore wind, providing an investable and globally attractive route to market. This needs to continue to evolve to support our

growing ambition. And the recent announcement of the creation of Great British Energy and its new partnership with The Crown Estate will bring together investment, policy-making and offshore wind data and expertise in a way we haven't seen before. Alongside this, new legislation being considered by Parliament will modernise the way The Crown Estate can borrow and invest, unlocking new ways for us to play an even greater role in supporting the sector.

For our part, when it comes to leasing new areas of seabed for important new offshore wind projects, this report sets out an evolving approach that seeks to overcome some of the systemic challenges faced by

developers. By providing greater certainty through the process, we can create a more predictable forward path for industry and in turn, retain the attractiveness of the UK market to global investors.

Alongside all of this, feedback and the views of our partners, stakeholders and industry are crucial to shaping the future of our approach to seabed leasing. This report therefore poses a number of important questions about our evolving approach – from identifying the most attractive sites for development to looking at how we can help advance the consenting process through things like up-front surveys and working more closely with the Energy Systems Operator (ESO) on early grid design.

We understand the scale of the challenges ahead. The feedback we receive on the discussion points set out in this report will be invaluable as we work together to ensure the UK's offshore wind industry continues to deliver for generations to come. Thank you.

Julia Rose

Head of Offshore Wind
Marine, The Crown Estate



A new approach to offshore wind

The UK's offshore wind market is one of the largest and most successful in the world, with more than 50 wind farms around the UK coastline at various stages of development, producing enough renewable energy to power half of all UK homes.

The UK's offshore wind pipeline currently stands at approximately 95GW, with a Government ambition to decarbonise the power system by 2030, including a radical increase in offshore wind capacity in the same timeframe. In March, National Grid ESO published a blueprint for a decarbonised electricity system, setting out the electricity network upgrades needed to deliver this.

Recent announcements by the UK Government, including the creation of Great British Energy and its partnership

with The Crown Estate, offer an important platform to build momentum and provide confidence to meet longer term ambitions for offshore wind – whilst delivering in the context of nature and all other demands on the seabed.

We recognise that the marine environment is already under incredible pressure, with biodiversity loss affecting habitats and species along our coast and at sea. As an organisation focused on delivering lasting and shared prosperity for the nation, we acknowledge the vital need to match our ambition for offshore wind and energy security with our ambition for nature outcomes. Healthy and resilient ecosystems are fundamental for society and nature-based solutions have a critical role to play in our net zero future. Our approach for the next generation of

offshore wind responds to this nature context and the risks to infrastructure deployment of not doing so.

As part of this report, we are sharing our early thinking on the 'what, when, where and how' for future seabed development, alongside potential associated enabling and de-risking activity, to support the offshore wind industry in meeting potential demand out to 2040. A core element of this includes planning strategically to consider how this investment can also support environmental outcomes.

Much of this new offshore wind capacity is expected to be in areas of the Celtic Sea, which lies off the coasts of South Wales and South West England, and North East England. Additional smaller areas of opportunity,





Photo by Alison Pettitt | Nature-based solutions play a critical role in ensuring healthy and resilient ecosystems

that could accommodate smaller scale developments, lie off the coasts of North Wales, North West England, Lincolnshire and Yorkshire. The precise approach to development remains under consideration but is expected to include a mix of fixed and floating foundations. Further details on the spatial design and potential areas of opportunity are set out on [pages 16-27](#).

We are considering how we could tackle some of the wider systemic challenges and support a move towards more predictable and coordinated offshore wind development. This ensures that offshore wind can play its part in reaching net zero targets whilst delivering financial, environmental, and social value for the nation.

These are set out in more detail on [pages 28-32](#) but include potential steps such as:

- Drawing on our rich evidence and marine spatial modelling capabilities to play a more active role in

identifying and surveying attractive and deliverable sites for future offshore wind, helping to accelerate and de-risk deployment.

- Exploring opportunities to support the consenting process through front-loading some of our activities (i.e. environmental surveys and analysis), securing statements of common ground from key stakeholders at a plan-level and/or anticipating other activities that could de-risk and accelerate the consenting process post-lease.
- Improving the coordination between the process of seabed leasing, energy infrastructure planning and grid connections, helping further accelerate the deployment of offshore wind, while considering other seabed users and the natural environment.

This report also sets out further detail on how The Crown Estate might play a more active role in investing to support and stimulate the infrastructure and supply chain

needed to enable the future growth of offshore wind. This follows legislation currently being considered by Parliament, to modernise The Crown Estate's borrowing and investment powers, alongside the new partnership recently announced with Great British Energy. This is covered on [pages 33-36](#), including details on initial areas of focus to help unblock strategic bottlenecks to speed up the delivery of offshore wind projects, in particular offshore wind ports and wider supply chain.

The views of stakeholders will be key as we progress our thinking and further develop our future leasing programme. This report poses a number of discussion points, summarised on [pages 13-14](#), with further details of how to take part in this important conversation, and we are looking forward to hearing your views on these important matters.

The role of The Crown Estate

The Crown Estate is an independent organisation, sitting between the public and private sectors, with a purpose to create lasting value for the nation from its activities. When it comes to its role in managing the seabed around England, Wales and Northern Ireland, this means taking a holistic and long-term view of this vital resource, helping catalyse the UK's transition to net zero while playing an important role in stewarding the marine environment. By working in partnership with industry, governments and stakeholders, The Crown Estate has helped establish the UK as home to one of the most successful offshore wind markets in the world.

This also means we are well-placed to bring people together to find solutions to some of the shared systems

challenges facing our increasingly congested shores. This includes convening partners to help solve key systems issues together such as supply chain, grid connection, consenting processes and delivering beneficial outcomes for the environment.

Since the first turbines appeared in UK waters some 25 years ago, The Crown Estate has developed its expertise and capabilities, becoming a world leader for spatial mapping. By combining these skills with new digital capabilities, we have been working with partners to digitally map the seabed resource needed to meet the long-term needs of vital industries, net zero commitments and nature recovery.

Safety First

We have a unique and special role in fostering an environment where everyone who works in, supports, or visits the marine environment can do so healthily and safely. This means ensuring the minimum of personal risk but also meeting expectations of an environment where they can thrive. We are committed to continued innovation and improvement and have made 'Safety First' a central tenet of our approach across our whole business, and our marine strategy.

More details on our Safety First approach are set out in our Marine Delivery Routemap which can be found [here](#).



Our remit

Our remit covers England, Wales and Northern Ireland, so we do not make proposals in this report for offshore wind provision in Scotland, although we continue to work closely with Crown Estate Scotland on areas of shared interest, such as transmission cable routes and sharing of valuable data which can help de-risk development.

Northern Ireland

Alongside the work reported here, we are working with Department for the Economy, the Department of Agriculture, Environment and Rural Affairs and other stakeholders across Northern Ireland to develop and execute the Offshore Renewable Energy Action Plan (OREAP)¹. This is expected to put in place the policy and legislative frameworks to support future offshore wind leasing. We will be applying the insights and analysis from this report to help inform that work and envisage undertaking seabed leasing in Northern Ireland in support of OREAP at the appropriate time.



1. "Draft Offshore Renewable Energy Action Plan", Department for the Economy

Data and evidence: our Whole of Seabed Programme

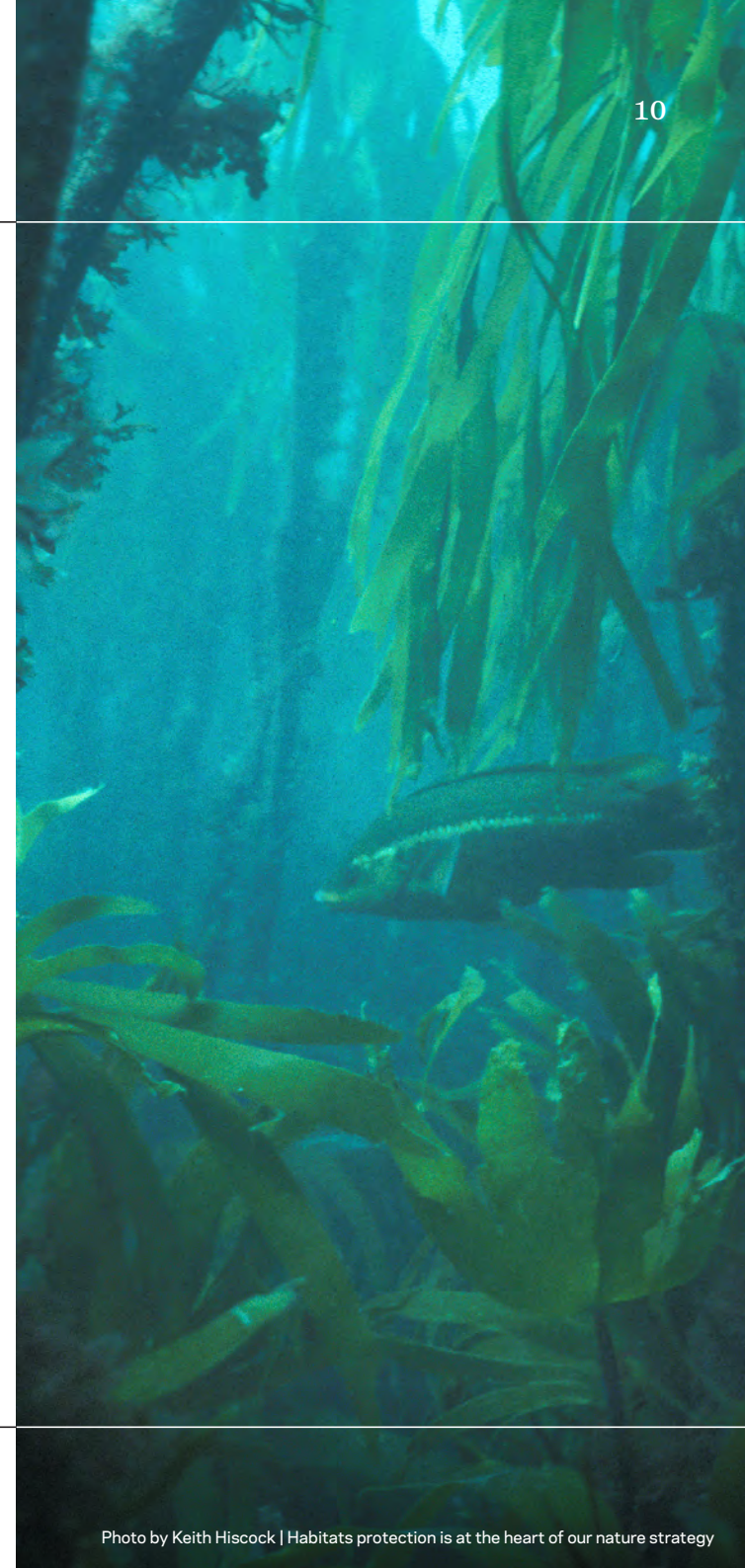
The Crown Estate's Whole of Seabed Programme combines our spatial mapping expertise, digital capabilities, an overview of seabed demands across sectors and nature, and inputs from our partners to [digitally map the seabed](#) resource needed to meet future objectives – supporting vital industries, net zero and nature recovery for the long-term. This modelling capability represents the most comprehensive and sophisticated approach to spatial mapping in our history and will be kept up to date as new data, evidence and information becomes available. The analysis covers a range of critical sectors including offshore wind, other types of energy generation, CCS, aggregate extraction, telecoms cabling and nature. Tailored approaches have been co-developed with key stakeholders to map opportunities for each sector, while considering all uses and interests in the marine space, including those beyond The Crown Estate's responsibilities, to promote co-location and minimise potential future conflicts.

Our data capability

With an increasingly constrained offshore environment, data, analysis and collaboration are fundamental to supporting accelerated growth in UK offshore sectors and building confidence in the UK market. The Crown Estate is committed to investing in and sharing pioneering research, data and digital capabilities to manage the seabed holistically and inform future delivery, in a way that works as part of the wider ecosystem – building confidence in the quality and sustainability of developments.

You can find out more in the section that starts on [page 33](#).

You can find out more about our Whole of Seabed Programme [here](#).



A Marine Delivery Routemap: working with offshore wind

The seabed and coastline are critical for net zero, nature and a wide range of marine sectors. As the sea space becomes increasingly congested, we must ensure we plan for the future of offshore wind in the context of nature and all sea users. Through our Whole of Seabed Programme, we are creating a unique picture of the anticipated demands on the seabed. It is this evidence base that underpins this next phase of working with our stakeholders to plot a course for the sustainable growth of marine industries, alongside the restoration and creation of marine habitats and the enablement of thriving communities.

We are using this insight to play our part in co-developing with stakeholders a Marine Delivery Routemap that provides a forward strategy for the marine space to deliver on net zero and nature recovery, build a thriving marine economy and benefit onshore communities.

In embarking on this journey, we have set the following objectives:

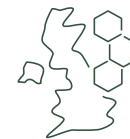
- To catalyse the UK towards a net zero and energy secure future.
- To deliver a thriving marine environment and promote nature recovery.
- To optimise value from the marine space across sectors for the economy and communities.

It is envisaged that the Routemap will support:



Spatial pathways

Identifying 2050 spatial pathways to enable the best use of the marine space in order to meet policy objectives and user needs across sectors. This will provide stakeholders with long-term visibility on the key areas of opportunity for each sector, including opportunities for co-location, and support early resolution of competing demands.



Seabed and coastal management

Informed by these pathways, developing forward plans which align the needs of industries, sectors, and the natural environment. For The Crown Estate, this means a timeline of leasing activity and investment for nature and infrastructure which it manages, while providing valuable long-term visibility for other users of the marine space.



Enabling investment

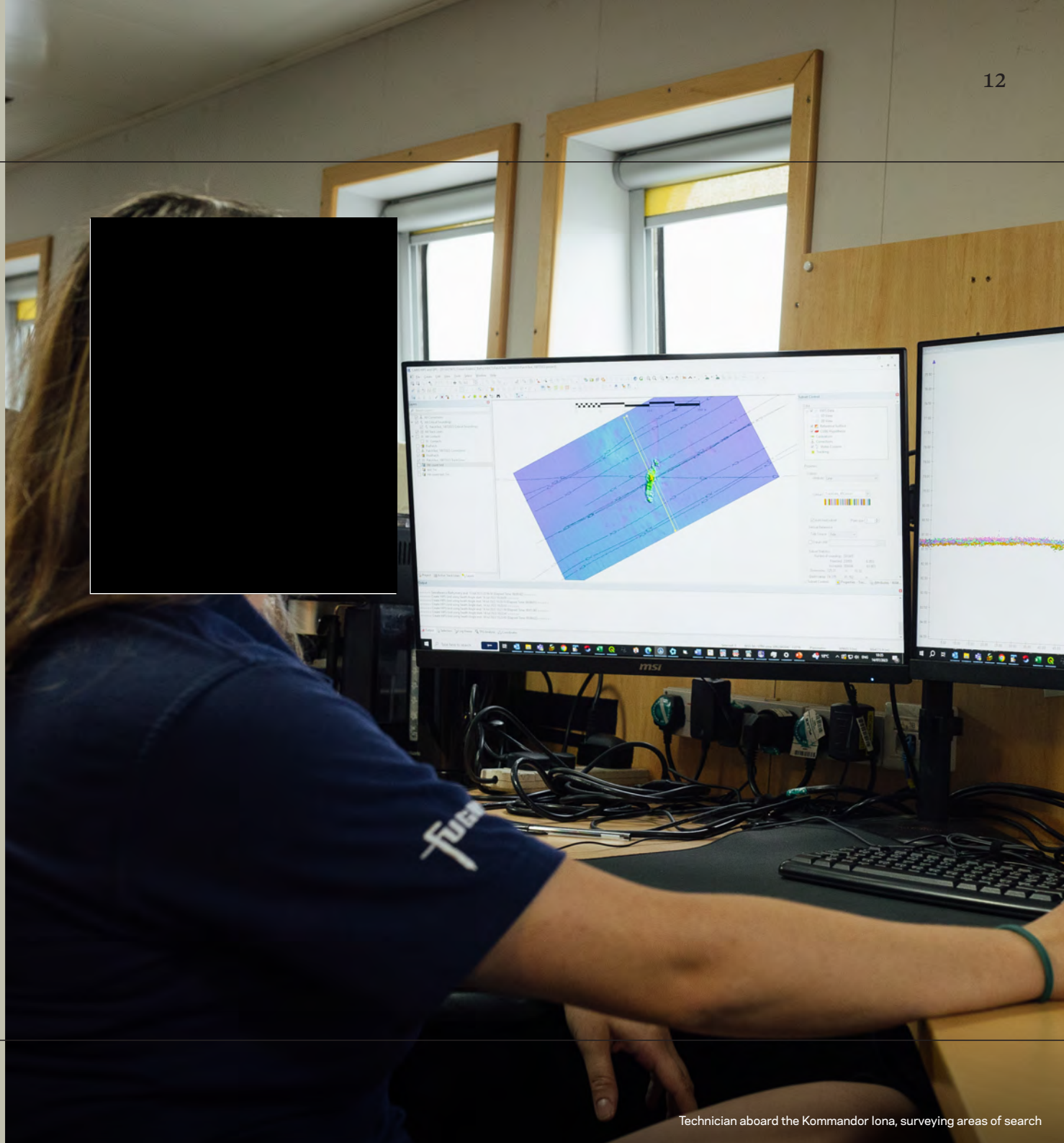
Providing forward visibility on where and when key enabling investments are needed (e.g. ports, supply chain, grid, nature). This can help underpin anticipatory investment needed and identify the opportunities these can create for impacted communities.

This will all be underpinned by The Crown Estate's world-leading data and evidence. As we progress with the development of the Routemap, we will be able to identify in advance any gaps in this data across sectors, and how they can be addressed through research, shared forums and collaborations.

Through effective collaboration across users of the seabed and other interested parties, we have identified a number of benefits of a Routemap, including:

- ✓ **Optimise the use of marine space**, securing best outcomes for the economy, the environment and society.
- ✓ **Identify high-opportunity areas for biodiversity and nature**, supporting delivery of a thriving marine environment.
- ✓ **Provide visibility and certainty** to sea users across sectors on how the seabed will be used, giving market confidence.
- ✓ **Accelerate delivery and reduce costs across sectors**: for example, in energy, working with the ESO to find low-cost pathways for net zero with low consenting risk and which fit with the needs of nature and non-energy sectors.
- ✓ **Support economic development and communities** by identifying enabling investment needs and opportunities over the long-term (e.g. skills, infrastructure, ports, supply chain).

This report forms the first in a series of Marine Delivery Routemap publications. More on the overall approach and a link to the Routemap can be found [here](#).



Discussion points



Through early analysis and engagement, we have developed our thinking on some key aspects of the approach to developing future offshore wind and bringing it to the market. These are distributed as discussion points throughout this report and are designed to underpin the next stage of a dialogue about our early thinking in terms of the 'what, where, when and how' for the future of offshore wind.

1 Cross system coordination

Forward delivery planning which works across all key marine sectors and nature for the marine space, i.e. the Marine Delivery Routemap, is critical to enhance safety, accelerate delivery, reduce consenting risks and spatial conflicts, and ensure that we make best use of scarce seabed.

2 Future demand

Our view is that there is a need to bring to market between 20-30GW of new offshore wind seabed rights in the waters off England and Wales by 2030, for delivery out to 2040².

3 Leasing rounds

Running successive leasing rounds in the period out to 2030 would deliver the best value and opportunity for developers. The timing and number of rounds, and the scale of each, remain under consideration.

4 Locations

We anticipate that the key multi-gigawatt (GW) opportunity for new leasing by 2030 will be in the Celtic Sea (off the south-western coasts of England and Wales) and in the North Sea (off the north east coast of England), with additional, more dispersed GW scale resource in other regions.

Further detailed spatial design and stakeholder engagement will refine these areas down through Areas of Search, refined Areas of Search, to final Project Development Areas (PDAs).

5 Co-location

Given an increasingly busy marine space, our view is that it is important to enable co-location in Areas of Opportunity through leasing design.

6 De-risking and accelerating HRA, offshore surveys and consenting

By bringing sites to market with a greater level of assurance, we can reduce potential stumbling blocks upfront and reduce the risk of attrition and delays in later development stages - accelerating projects, providing more certainty for investment, reducing project development costs and ultimately reducing consumer bills. This could be achieved by:

- Plan-level strategic environmental measures to ensure that future offshore wind takes full account of the UK's targets for the Marine Protected Area network.
- Undertaking pre-consent surveys.
- Developing options for additional upfront work to support consent ahead of sites moving to the market.

² The focus of this report is new offshore wind leasing in the waters off England and Wales. There is potential for additional offshore wind leasing in Northern Ireland in support of the Offshore Renewable Energy Action Plan, and we will engage on this as plans progress.

7 Grid connections

By taking a systems-led approach we can provide more coordination between seabed development and transmission design and delivery, aligned with strategic planning processes for the energy sector. Working with Connections Reform, we will explore forward design of grid connections and applying for and entering into grid connection agreements for PDAs for novation to successful bidders.

8 Broad value

Our view is that we must harness the opportunities created by the delivery of offshore wind to enable net zero commitments, steward flourishing biodiversity and marine environments, create thriving communities and support economic growth. We are exploring how we can best achieve this through how we bring developments to market.

9 Technologies

Future offshore wind leasing will include a mix of sites that accommodate the development of fixed, deep-water fixed and floating sub-structures. Our long-term ambition is to give developers the flexibility to deploy the concept they consider most appropriate for a given site, noting that a tailored approach may be needed to ensure we foster growth and development of innovative foundation technologies, such as floating foundations.

10 Hydrogen

We recognise that offshore green hydrogen has significant potential, but we anticipate that there is unlikely to be a need for spatial design and leasing focused on this during the timeframes considered here. However, we are open to developers having the option to incorporate the production of green hydrogen in their development plans, where market arrangements and system plans align with this.

These are not final positions, and represent the next stage of dialogue with industry, partners, stakeholders and governments. We have compiled this report as part of our commitment to provide early visibility of our future offshore wind leasing intentions, in the context of a Marine Delivery Routemap. The Routemap aims to complement and inform key related marine spatial programmes - for example, the Marine Spatial Prioritisation (MSPri) programme in England, and Strategic Resource Areas (SRAs) in Wales - and forward plans for specific marine sectors. By providing a holistic view of the needs of all marine sectors and nature, the Routemap will also support the ESO's development of the Strategic Spatial Energy Plan (SSEP) and we are working together to ensure these programmes are closely aligned.

Seeking views

The views of stakeholders and partners are integral to this exercise. So we look forward to ongoing conversations as we progress our thinking and further develop our future leasing programme. As part of this, we will be undertaking regular engagement with the market, statutory and non-profit organisations, governments, sea users, and delivery partners. This will include supporting bi-lateral engagement with industry via trade bodies.

Alongside this report we will be issuing a questionnaire seeking feedback from existing and potential offshore wind developers. If you are a potential developer or investor who may be interested in bidding in a lease, either as a sole bidder or as part of a consortium, please complete the questionnaire for completion by 4 October.

If you are a potential developer or investor and wish to be considered, please apply by emailing a request to leasing@thecrownestate.co.uk. Please note that we are unable to decline requests from other organisations to respond, at this time, noting that The Crown Estate will engage with other categories of stakeholder at appropriate times. You can also find this information in a Prior Information Notice on the Find a Tender website: www.gov.uk/find-tender.

A parallel questionnaire is being issued to key stakeholders (including statutory, non-profit organisations, governments, sea users and delivery partners) seeking feedback; alongside this, we are running an initial call for data and evidence to support our spatial design process.

Thank you for your continued support and engagement, which is invaluable as we work together to shape the long-term future of a resource on which we all rely.



The future of offshore wind

Overview

Since the first turbines were installed off the Northumberland coast almost 25 years ago, the UK's offshore wind industry has flourished. Today, UK waters are home to more than 40% of all European offshore wind capacity. But just as important as delivering new, secure energy, the sector now also supports 32,000 jobs – [a figure set to grow to more than 100,000 by 2030](#). Through its management of the seabed, and working in tandem with a strong government policy framework, The Crown Estate has played a key role in this success, helping create the right conditions for offshore wind to thrive. By working together to plot a course for the long-term growth of this critical industry, we can write the next chapter in this exciting story.

Design of future leasing rounds will be informed by views of the market and wider stakeholders, and they will support key energy and environmental policies, as has been the case for previous rounds. However, we intend to take a more strategic approach, working in the context of the Marine Delivery Routemap discussed above and seeking to 'design out' many of the systemic challenges arising from an increasingly busy seabed. Our future approach also acknowledges the challenges of introducing additional infrastructure into a marine environment already under pressure from a changing climate and suffering biodiversity loss. Achieving a net

zero and climate resilient future requires us to realise the opportunity for offshore wind in a way that allows nature to flourish.

Discussion point 1

Cross system coordination: forward delivery planning which works across all key marine sectors and nature for the marine space, i.e. the 'Marine Delivery Routemap, is critical to enhance safety, accelerate delivery, reduce consenting risks and spatial conflicts, and ensure that we make best use of scarce seabed.



As detailed in the pages of this report, we propose that future offshore wind development by 2030 will:

- 1 Help to meet the UK's ambitions for future offshore wind demand out to 2040 - helping maintain a pathway to UK net zero.
- 2 Support development of a range of technologies that will deliver low-cost offshore wind over the long term.
- 3 Take a strategic approach to spatial design to support long-term cross-sector delivery and transmission infrastructure planning.
- 4 Include de-risking activities that not only accelerate sustainable deployment of offshore wind but also maximise the opportunities for beneficial outcomes for nature and recognise the needs of other users of the seabed.
- 5 Be designed in a manner which creates lasting financial, environmental and social value for the nation.

Additional leasing may be required beyond 2030 to enable further growth out to 2050, but this is out of scope of this report and is a topic we would come back to in due course.



Photo by Ben Barden Photography Ltd | Our Marine Delivery Routemap aims to unlock delivery of net zero and nature recovery goals

Meeting future demand for offshore wind

In order to maintain momentum to net zero by 2050 and provide necessary confidence to meet likely deployment ambitions for the mid-2030s and beyond, the time has come to consider plans for future offshore wind development.

Our long-term planning is based on external forecasts from organisations such as the ESO and the Climate Change Committee (CCC). [Figure 1](#) shows that under net zero pathways in the 2024 Future Energy Scenarios report³, 93-99GW of operational offshore wind could be needed by c.2040, and up to 103GW could be required by 2050⁴. Higher pathways published by the Climate Change Committee forecast that demand for UK offshore wind could reach 125GW-140GW by 2050⁵. The UK's Offshore Wind Net Zero Investment Roadmap⁶ referenced up to 125GW of offshore wind potentially being required by 2050. We use a mixture of these forecasts in our long-term planning to ensure that leasing acts as an enabler for the sector to meet policy and demand targets.

Discussion point 2

Future demand: our view is that there is a need to bring to market between 20-30GW of new offshore wind seabed rights in the waters off England and Wales by 2030, for delivery out to 2040.



³ "Future Energy Scenarios (FES)," National Grid ESO, accessed February 29, 2024.

⁴ CCC's scenarios are 65-140GW by 2050: "The Sixth Carbon Budget - Electricity Generation" Climate Change Committee, accessed 29 February 2024.

⁵ Reference: Sixth Carbon Budget, 9 December 2020.

⁶ "Offshore Wind Net Zero Investment Roadmap," Department for Energy Security and Net Zero, March 31, 2023.

Figure 1 also shows that the current UK pipeline stands at approximately 95GW of capacity, which includes circa 15GW operational, circa 12GW under construction/contracted, circa 11GW with consent granted, circa 16GW with planning applications submitted, circa 27GW in pre-planning, and circa 14GW of potential further capacity from leasing that has been announced, but for which seabed rights have not yet been awarded⁷. This includes potential capacity increases under consideration by The Crown Estate⁸, and the capacity currently being offered to the market through Offshore Wind Leasing Round 5 in the Celtic Sea.

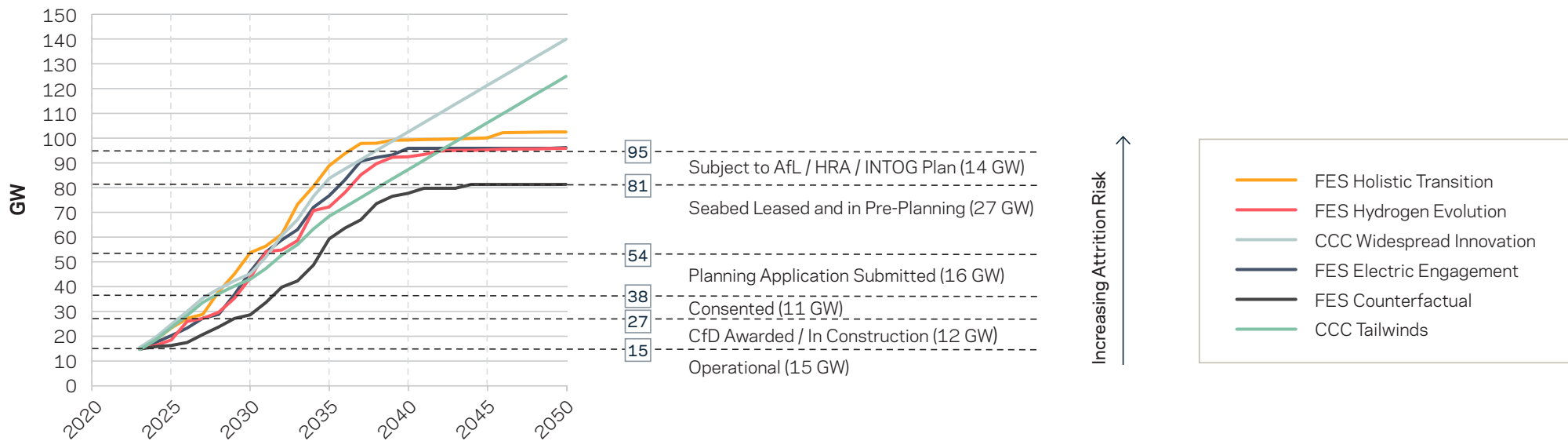
As with all major infrastructure projects, there is an increased attrition risk for developments that are at earlier development stages, therefore it is unlikely that all 95GW will be realised. Potential attrition in leased vs delivered capacity is an important factor when considering future leasing. However, potential attrition is not something that is represented in the Future Energy Scenarios (FES) or CCC numbers as these represent operational capacities needed to support the nation’s transition to net zero.

Although there may be sufficient potential to meet short-term capacity targets from the current pipeline, additional leasing will be required to supplement the pipeline capacity for delivery by 2040 in order to maintain a cost-effective

and deliverable pathway to net zero. Additional leasing can also help ensure the UK can meet its potential to export more clean electricity to continental Europe.

In light of this, having considered the risks across the current pipeline and the opportunities from new pipeline, our analysis has led us to an initial view that between 20-30GW of new offshore wind seabed rights should be brought to market in the waters off England and Wales by 2030, to meet potential demand for offshore wind out to 2040. The upper end of this range would provide more resilience against attrition in the project pipeline and for net zero scenarios with higher levels of offshore wind deployment – as well as greater optionality for lower-cost deployment.

Figure 1: Published UK future offshore wind pathways (solid lines) and capacities under agreement (dashed lines)⁹



⁷ Projects, leasing rounds and additional capacity subject to AfL and plan-level HRA or INTOG Sectoral Marine Plan.

⁸ "The Crown Estate Sets Out Plan to Unlock Enough New Offshore Wind Capacity to Power up to Four Million Homes", The Crown Estate, November 9, 2023.

⁹ Data correct as at 31 August 2024. Contract for Difference Allocation Round 6 results were published on 3rd September 2024, which will move approximately 4GW of offshore wind projects from 'Consented' to 'CfD Awarded / In Construction'.

Offshore Wind Leasing Round 5 - a new chapter for UK offshore wind

In December 2023, The Crown Estate [published details](#) of Offshore Wind Leasing Round 5, which subsequently launched in early 2024. This latest leasing round is for three Project Development Areas (PDAs) in the Celtic Sea, off the coast of Wales and South West England, and is focused exclusively on the development of the UK's floating offshore wind capabilities.

Alongside establishing a new market for floating offshore wind, a key objective of Round 5 is driving wider social and economic benefits arising from new developments in the Celtic Sea. This is set out in more detail on [page 37](#).

Round 5 also demonstrates the evolution of The Crown Estate's approach to leasing, with a number of up-front activities to help accelerate and de-risk the process for developers. This includes a multi-million-pound programme of marine surveys, up-front environmental assessment and working with ESO at an early stage to inform grid design.

In August 2024 we confirmed that the tender process [had reached its next milestone](#) (Invitation to Tender Stage 1) on schedule, and - thanks to groundbreaking collaboration with ESO - would be the first leasing round to come to market with an agreed plan for connecting the new wind farms to the energy grid.

The leasing process is due to proceed to an auction (Invitation to Tender Stage 2) in Spring 2025, with Agreements for Lease expected to be signed with winning bidders in Summer 2025.



Route to market

We acknowledge that having a robust route to market is critical to successful project development.

There has been a relatively consistent and stable policy environment for offshore wind for more than a decade in the UK. However, it is evolving and a number of changes are either being implemented or are on the horizon, that will alter the policy framework moving forward, which we recognise could influence the risk profile for future investment.

Other structural changes are being actively considered through the Government's Review of Electricity Market Arrangements (REMA)¹⁰ and the specifics of the Contract for Difference (CfD) scheme (such as how the scheme could be amended further to address price and volume risks associated with intermittent renewables). More generally, consideration is also being given to how renewable generators participate in the wholesale electricity market in the future, to ensure the overall system is optimised.

We are actively engaging with Government, and will continue to adapt our leasing approach to interact effectively with prevailing and new policies, in order to de-risk the route to market for projects and development.

Successive leasing rounds

One of our core aims is to provide the industry and wider stakeholders with forward visibility of a pipeline of future leasing rounds, with full consideration of other sectors and opportunities for nature – as part of the Marine Delivery Routemap. This will help enable early identification and efficient planning and resourcing of related activities, de-risking and investments. We want that pipeline visibility to drive investor confidence in upcoming development opportunities and unlock related anticipatory investment and value creation opportunities.

We believe the optimal approach to delivering that pipeline is to run successive leasing rounds in the period out to 2030 that collectively meet the future demand for offshore wind out to 2040. The precise timing and number of rounds, and the scale of each, remain under consideration at this stage, and will evolve as the leasing design progresses, with the aim to optimise deployment in support of supply chain considerations. We look forward to our engagement with stakeholders and the market as a key input into this.

Discussion point 3

Leasing rounds: running successive leasing rounds in the period out to 2030 would deliver the best value and opportunity for developers. The timing and number of rounds, and the scale of each, remain under consideration.



Locations

Successfully enabling this scale of capacity will require careful consideration of the marine space to ensure optimal locations are identified. Demand for space in the marine environment is accelerating and is predicted to at least double out to 2050¹¹. Therefore, it is critical to consider future opportunities and development costs for offshore wind in the context of nature and other potential uses of the sea.

Approach to spatial design for future leasing

Our approach will analyse the best available data and evidence, including from our Whole of Seabed Programme, combined with extensive stakeholder engagement, to refine opportunities from a national picture, down to individual offshore wind PDAs. We believe that identification of PDAs by The Crown Estate, and offering these to the market through the leasing process (as we have done on Leasing Round 5), brings a number of advantages in supporting the sustainable deployment of offshore wind. Doing so allows The Crown Estate to incorporate a strategic approach to nature, avoiding areas identified as essential in supporting the most sensitive and vulnerable habitats and species, and take account of other sea users. We can also accelerate deployment by investing in transmission design and earlier offshore surveys, as well as undertaking plan-level HRA (see De-risking and Accelerating section on [page 28](#)).

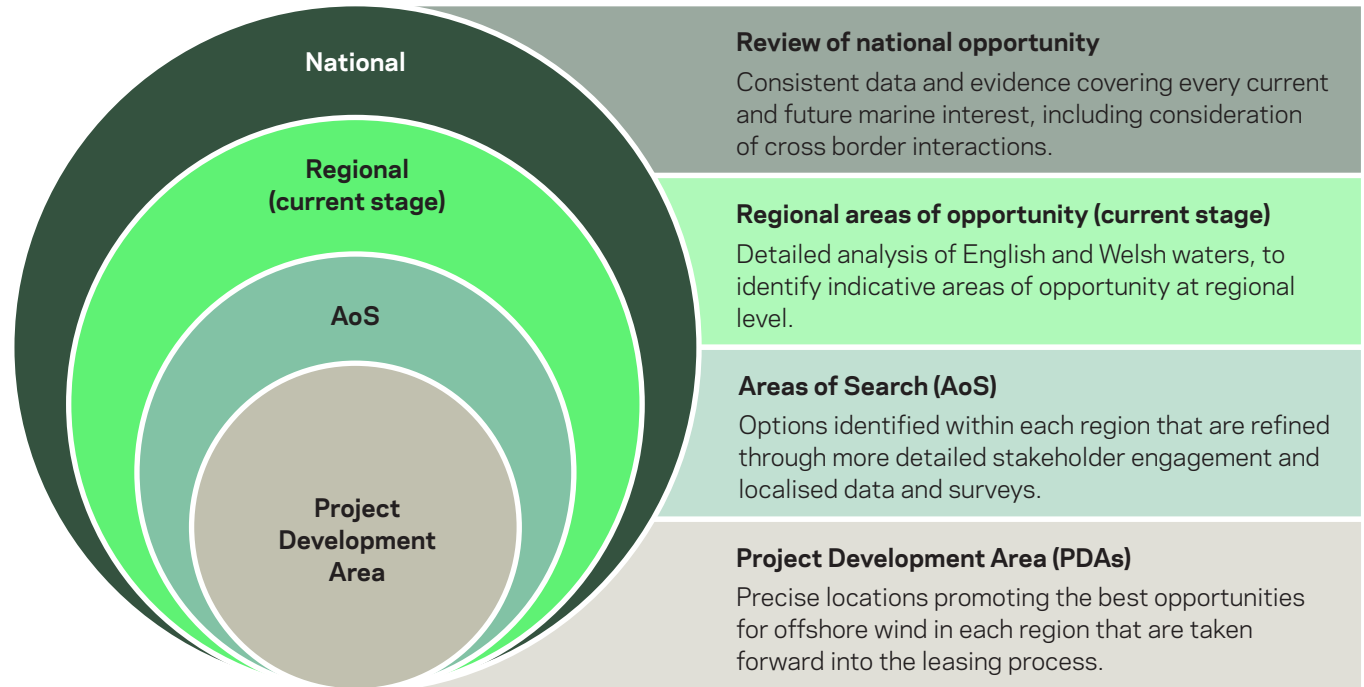
¹⁰ ["Review of Electricity Market Arrangements \(REMA\): Second Consultation"](#), Department for Energy Security and Net Zero, 12 March 2024.

¹¹ For the sectors The Crown Estate manages (e.g. Offshore Wind, CCS, Cables, Minerals etc) the space needed is 2 times the current seabed area out to 2050, with further space needed for nature recovery and non-The Crown Estate sectors (e.g. Oil & Gas, Fishing, Defence, Shipping etc.).

Our regional analysis and engagement to date highlights the following key findings:

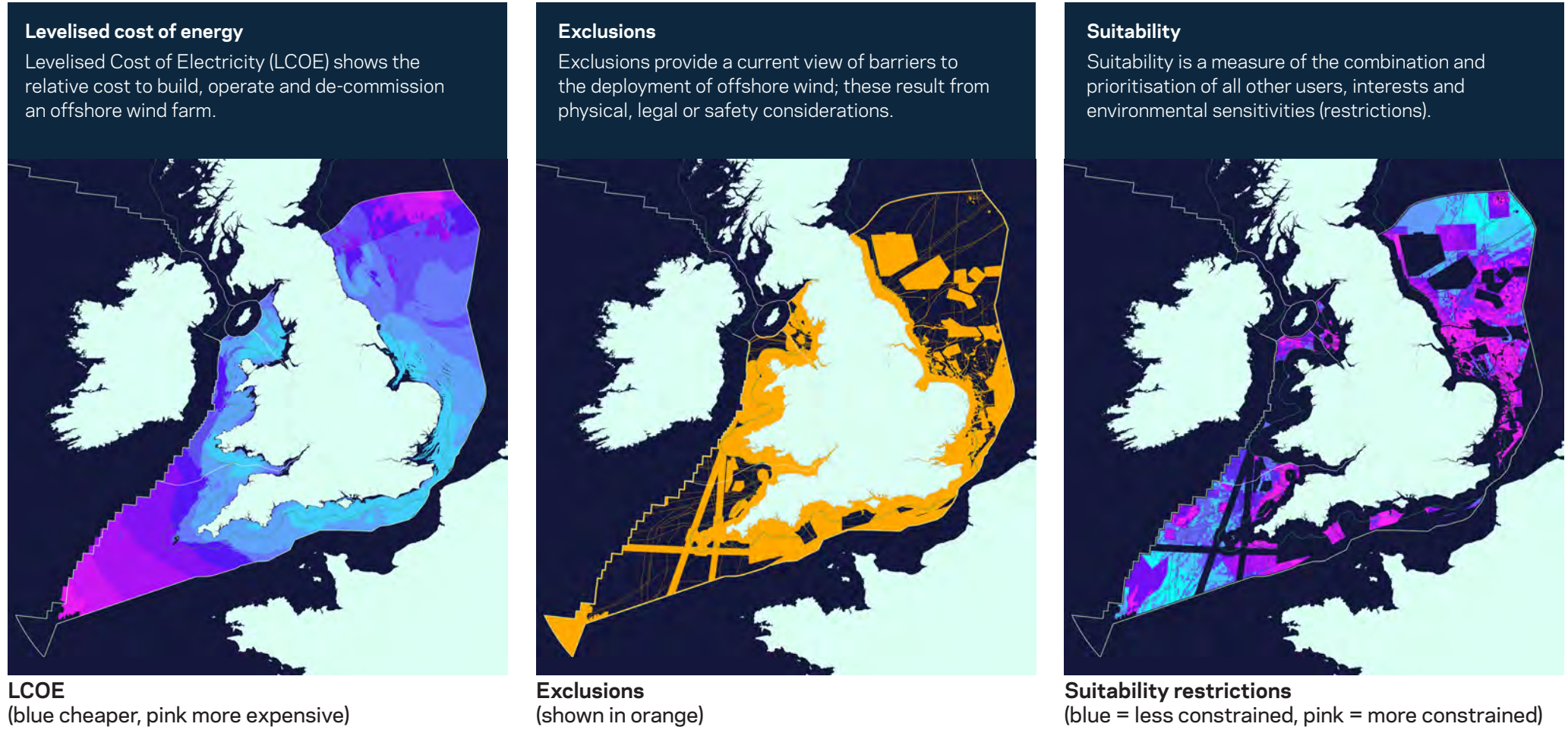
- There are substantial areas of seabed which have favourable technical characteristics for offshore wind development: high wind speed, relatively shallow seabed and proximity to shore. Consideration of other interests, however, shows that these areas are often also high value areas for nature including, but not limited to, the presence of Marine Protected Areas. They also coincide with areas of current activity and future opportunity for other sectors (e.g. shipping, fishing and nearshore leisure interests).
- While there are many opportunities for co-location (e.g. with other renewables, nature and CCS), critical decisions remain around overlaps between prime areas for sectors that need to be resolved as we refine areas for future offshore wind.
- The ESO recently published electricity network upgrade proposals¹² looking into the early 2030s, and beyond. However, further network upgrades are likely to be needed to support this scale of deployment, which is why we are committed to working closely with the ESO and National Grid Electricity Transmission (NGET) to support and inform network needs and delivery plans.

Project Development Areas are identified by working through the following steps:



¹² [“Beyond 2030: A National Blueprint for a Decarbonised Electricity System in Great Britain,”](#) National Grid ESO, accessed 29 February 2024.

Figure 2: Draft maps showing the diversity of opportunity and interests



To find out more information about the data used to create the maps presented above. Please see [Appendix 1](#) of this report



Following analysis of different scenarios to find a balance between economic factors, exclusions and suitability metrics as shown in Figure 2 on the previous page, three key indicative regional areas of opportunity have been identified in English and Welsh waters¹³: the North East, the South West (Celtic Sea), and more dispersed areas in Other Regions. These are shown in Figure 3 on the next page.

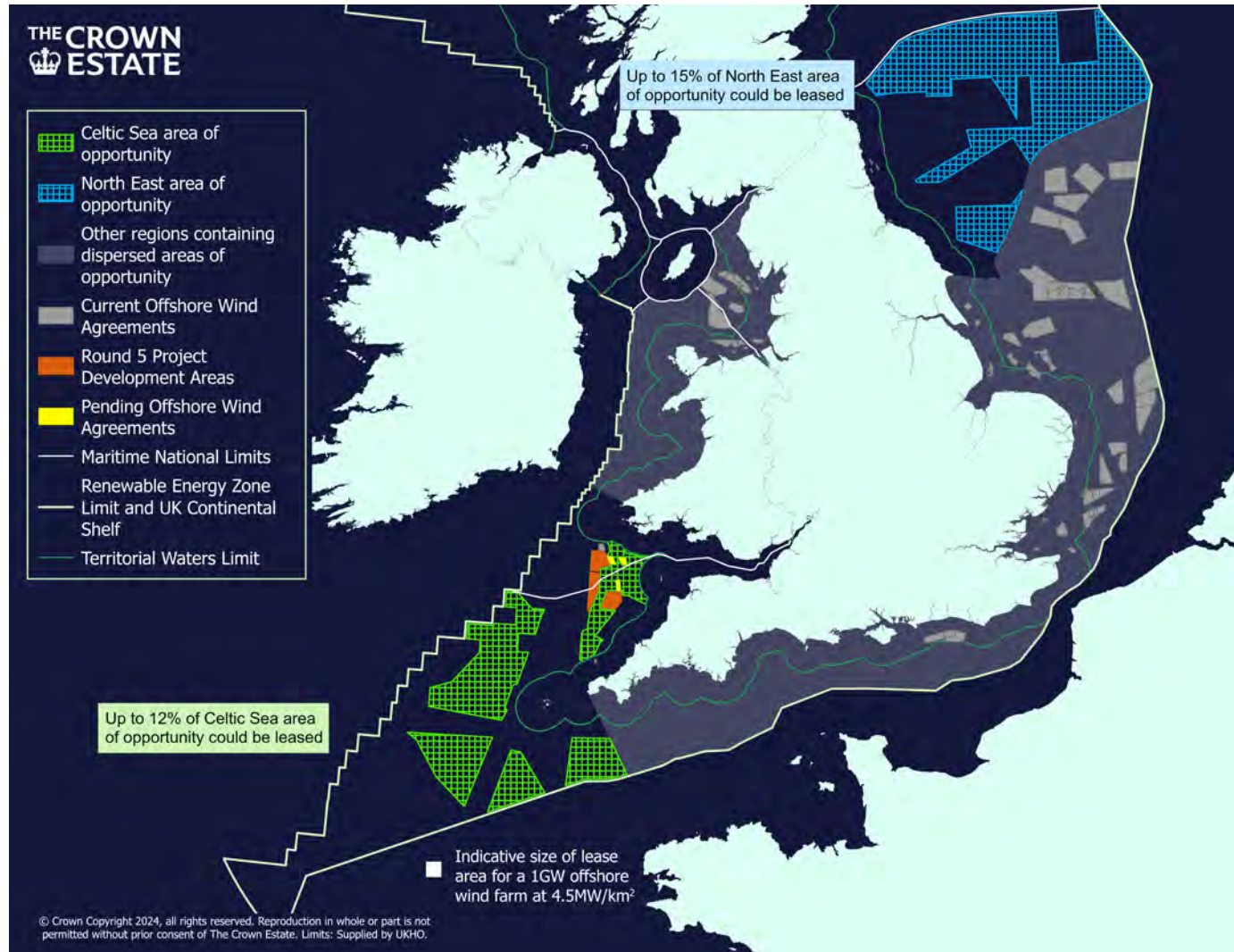
Within the North East and Celtic Sea regions, the contiguous areas of opportunity shown have been identified as the best areas for potential future development. The resource in Other Regions is more dispersed and distributed across the whole of this area.

There is significantly more space within all these areas of opportunity than will be needed to meet all net zero ambitions, meaning significant optionality exists. These areas of opportunity have been identified using our own modelling, drawing on understanding from previous leasing and engagement processes. The area of opportunity in the South West has also been informed by discussions with key government stakeholders.

Identification of more specific Areas of Search will commence shortly and will be the subject of extensive stakeholder engagement. The first stage of this engagement is the stakeholder questionnaire and call for evidence being issued to key stakeholders with this report.

¹³ Areas of opportunity in Northern Irish waters are currently being investigated in partnership with Department for the Economy, the Department of Agriculture, Environment and Rural Affairs and other stakeholders across Northern Ireland through OREAP, and so are not discussed further here.

Figure 3: Regional areas of potential opportunity for offshore wind in England and Wales



To enable additional capacity to be operational by 2040, based on the upper end of the GW ranges set out in this report, it is expected we would only need to lease a small proportion of each area of opportunity:

- Celtic Sea (up to 12% of Area of Opportunity)
- North East (up to 15% of Area of Opportunity)
- Other areas of dispersed opportunity (up to 2%)

The map shows indicative areas of opportunity for offshore wind in the waters off England and Wales, as identified in our Whole of Seabed analysis. These will be refined to Areas of Search and ultimately to precise Project Development Areas for leasing through further consideration of all marine sectors and nature, as part of the Marine Delivery Routemap.

Next steps will be fully informed by wide stakeholder engagement. Offshore wind leasing in the waters off Northern Ireland is being considered in parallel through the work under the Offshore Renewable Energy Plan.

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Figure 4: Initial view of competition for future marine space

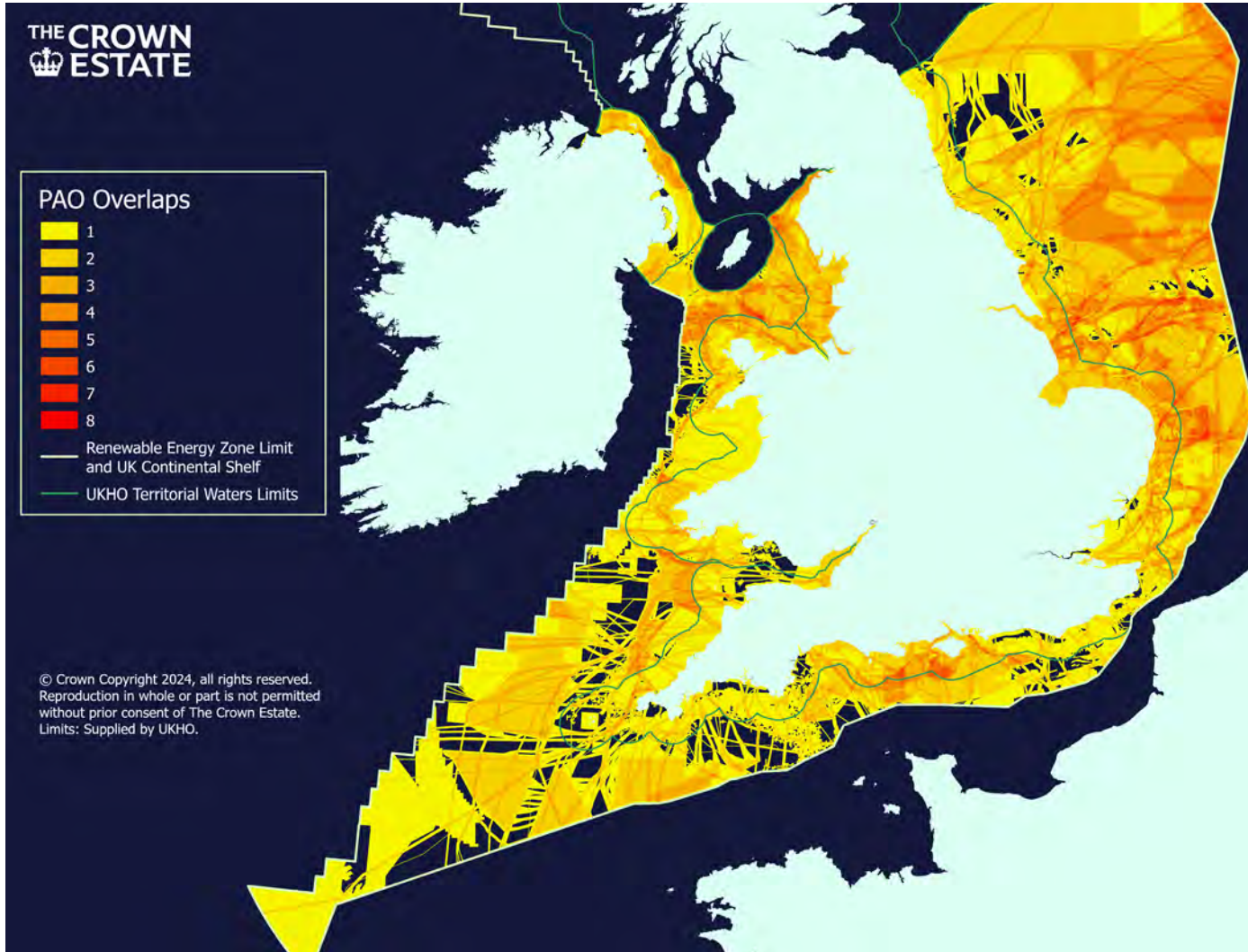


Figure 4 shows the overlaps between ‘potential areas of opportunity’ (PAOs) for marine sectors and highlights the growing competition for future space. In turn, it highlights the critical decisions around how the seabed is developed and used.

For example, the east has attractive areas for relatively low-cost future offshore wind development, but there is a lot of competition for space with environmental interests and other sectors (e.g. navigation, fisheries, defence, CCS, power cables, pipelines etc.) and areas designated to protect key environmental habitats and species. Therefore, early identification of co-location options and agreeing the best use of space are critical.

General characteristics of each regional area of opportunity

THE NORTH EAST

Spatial potential for circa 10-16GW additional capacity leased by 2030 and in operation from 2035 to 2040^{14, 15}.

- Broad region of opportunities for relatively deep water fixed, or relatively shallow water sub-structures.
- Moderate cost to construct and operate.
- Other sectoral current interests and future opportunities include marine navigation, fisheries, defence, power cables, CCS, oil and gas extraction and associated pipelines.
- Environmental interests include Marine Protected Areas, productive ocean fronts and the presence of mobile species (seabirds and marine mammals), with further work underway to better understand the context for these, including seabird foraging ranges at sea.
- To achieve the GW numbers above, we would need to lease approximately 8-15% of the area marked as 'North East area of opportunity' in [Figure 3](#) by 2030.

THE CELTIC SEA

Spatial potential for up to 12GW, of which 4-10GW could be leased by 2030 and in operation from 2035 to 2040^{14, 15}.

- Further opportunities to deploy floating technology at scale in the Celtic Sea, alongside some smaller areas of deep water fixed opportunity.
- Higher cost to construct and operate, particularly in deeper waters further offshore.
- Moderate overlap with current interests and future sectoral opportunities including marine navigation, fisheries, defence, telecommunications cables.
- Like the North East, mobile species are present in the region as well as designated Marine Protected Areas. Further evidence is required to better understand the context for mobile species in this region.
- To achieve the GW numbers above, we would need to lease approximately 5-12% of the area marked as 'Celtic Sea area of opportunity' in [Figure 3](#) by 2030.

OTHER REGIONS

Spatial potential for circa 2-8GW additional capacity leased by 2030 and in operation from 2035 to 2040^{14, 15}.

- Dispersed areas of single project scale opportunity in the Southern North Sea, English Channel, Welsh Waters and North West England.
- Shallower water suitable for fixed sub-structures.
- Lower cost to build and generally closer to onshore electricity demand.
- Overlap with current interests and future sector opportunities varies site to site but includes marine navigation, fisheries, defence, power and telecommunication cables, marine aggregates, CCS, oil and gas extraction, pipelines and civil radar.
- Environmental interests also vary site to site but include the same sensitivities found in other regions.
- To achieve the GW numbers above, we would need to lease up to 2% of the area marked 'Other regions containing dispersed areas of opportunity' in [Figure 3](#), by 2030.

¹⁴ With the aim to bring to market between 20-30GW of new offshore wind seabed rights by 2030, these regional estimates capture wide ranges to allow for optionality. By undertaking the PDA refinement process as explained on p19 we will narrow down these estimates to ensure optimum locations are prioritized.

¹⁵ Subject to grid assessment.



Our initial analysis gives us confidence that these areas could support circa 20-30GW of new capacity operational by 2040, could allow new offshore wind developments to co-exist with other industries, and be delivered in a way that is sensitive to the nature context. The mid points of the GW ranges quoted above sum up to equal the mid-point in the overall capacity range (25GW). However, in quoting ranges, we are acknowledging that uncertainty remains. We will narrow this uncertainty through the detailed spatial design process, working closely with the ESO, NGET, delivery partners, sea users and environmental stakeholders to more fully understand the implications of different scenarios on onshore and offshore transmission network needs, other sectors, and nature. We will provide further details of our plans in due course.

As part of our early thinking on leasing design we are also considering how we might best enable opportunities for co-location of offshore wind with other uses of the seabed, such as nature restoration and CCS. For CCS in particular, we have established the Offshore Wind and Co-Location Forum to bring together partners to better understand the challenges, and find potential solutions, to co-location of both technologies. We are aware that co-location poses both benefits and challenges across all sectors and will consider these further as we develop our plans.

We will also continue to convene and partner with others through our Marine Delivery Routemap and will use our Whole of Seabed Programme to contribute to key spatial programmes, including the MSPri programme in England, SRAs in Wales, the SSEP with ESO, and statutory marine plans of the Marine Management Organisation (MMO) and the Northern Ireland Executive.

Discussion point 4



Locations: we anticipate that the key multi-gigawatt (GW) opportunity for new leasing by 2030 will be in the Celtic Sea (off the south-western coasts of England and Wales) and in the North Sea (off the north east coast of England), with additional, more dispersed GW scale resource in other regions.

Further detailed spatial design and stakeholder engagement will refine these areas down through Areas of Search, refined Areas of Search, to final Project Development Areas (PDAs).

Discussion point 5



Co-location: given an increasingly busy marine space, our view is that it is important to enable co-location in Areas of Opportunity through leasing design.

De-risking and accelerating

As we move forward, we are putting the foundations in place to provide greater targeted support to the UK's offshore wind market, helping it retain its status as one of the most attractive marine markets in the world. The recently-announced partnership with Great British Energy further strengthens this endeavour by bringing together the new body's ability to invest and develop critical strategic industrial policy with The Crown Estate's world-leading expertise in marine spatial planning and seabed leasing in supporting the growth in UK offshore wind. In addition, new borrowing and investment powers being considered by Parliament will further enhance The Crown Estate's own ability to accelerate and scale up our capabilities and provide targeted investment in the supply chain.

The global offshore wind industry is fortunate to benefit from a depth of expertise and experience built up over many decades across a wide range of organisations and sectors. This industry know-how will be central to its continued success, with The Crown Estate turning its attention to how it can better use its unique position to remove some of the systems-level and macro hurdles facing developers and support the accelerated deployment of new projects.

In part, this means moving our approach to seabed development towards a systems-level approach which better recognises, anticipates and explores some of the challenges that developers may be facing. This is underpinned by the proposed Marine Delivery Routemap,

which will highlight, help address early, and de-risk issues over competition for sea space across a range of sectors, while maintaining a strong, proactive focus on nature restoration and recovery. In turn, the Routemap will enable the identification of the most attractive sites for future offshore wind, from a technical, economic and consenting perspective.

Discussion point 6

De-risking and accelerating HRA, offshore surveys and consenting: by bringing sites to market with a greater level of assurance, we can reduce potential stumbling blocks upfront and reduce the risk of attrition and delays in later development stages – accelerating projects, providing more certainty for investment, reducing project development costs and ultimately reducing consumer bills. This could be achieved by:

- Plan-level strategic environmental measures to ensure that future offshore wind takes full account of the UK's targets for the Marine Protected Area network.
- Undertaking pre-consent surveys.
- Developing options for additional upfront work to support consent ahead of sites moving to the market.



Optimising siting and surveys

Despite the rapid growth of offshore wind in UK waters, the time it takes to move from initial project conception through to the generation of new power can be up to ten years or more. Drawing on rich evidence and marine spatial modelling capabilities, The Crown Estate is well positioned to identify and survey attractive and deliverable sites for future offshore wind, helping to accelerate and de-risk deployment.

For example, by bringing sites to market with a greater level of assurance, we can eliminate potential stumbling blocks upfront and reduce the risk of attrition and delays in later development stages.

For Offshore Wind Leasing Round 5, we have already invested in surveys to inform early developer decision making and consenting, building on our early site identification and engagement with stakeholders. As we look to future leasing rounds, we are considering using surveys to inform technical characterisation, the plan-level HRA and identify sensitive environmental features to refine site selection. By better understanding early the spatial context and risks associated with the seabed being offered, we can reduce the timeline of development, accelerate delivery, take full account of the UK Government targets for the Marine Protected Area network, and deliver improved environmental outcomes.

This programme of surveys can also serve to reduce the costs and time for developers' design and consenting processes following the conclusion of the tender. In considering the potential for continuation of this approach for future rounds, we are exploring a range of options including geophysical, geotechnical, metocean and ecological surveys, and we will continue to engage with the market and key stakeholders to inform the scoping and timing of any such programme.



Supporting consent

Linked to this, one of the major challenges developers can face when progressing projects is the statutory consenting process, where increased uncertainty regarding the timeliness or likelihood of achieving consent can raise the risk associated with project decisions, such as those to do with early investments in supply chain, risking further delay to the deployment of offshore wind.

Building on our approach to optimising site selection through our world-leading spatial expertise and technical surveys, we are exploring opportunities for The Crown Estate to further front-load some of our activities (i.e. environmental surveys and analysis) to de-risk the consenting of future projects. We can further support consent through a range of actions, including reaching statements of common ground with key stakeholders at a plan level and anticipating other activities that could de-risk and accelerate the consenting process, post-lease.

This might include a range of actions aimed at streamlining the consenting process through building formal agreement with key stakeholders on critical issues, both pre and post leasing. This could extend to identifying, agreeing and implementing plan-level measures to avoid, minimise and balance environmental impacts (whether they be associated with HRA or key EIA topics) as well as other consenting considerations (e.g. interactions with other sector activity).

Working with key partners, such as Defra's Offshore Wind Enabling Action Programme, we plan to explore a variety of opportunities for de-risking consent. This could include spatial design, consideration of technical definitions or innovative mitigation, identification and application of environmental standards, providing plan-level environmental data for early stakeholder engagement and developer planning and strategic environmental compensation delivery, at a plan or sector level.

The delivery of strategic environmental compensation includes consideration of a variety of potential mechanisms which could include a Marine Recovery Fund to provide compensation across multiple projects, removing the need for project-specific compensation solutions. It might also include the potential for leasing areas for strategic compensation alongside those for development of generation and transmission assets, for example.

By taking a more strategic and systems-based approach to avoiding, minimising and balancing risks for projects, and embedding opportunities for environmental benefit across our leasing activity, we will deliver better outcomes for nature, identifying optimal sites and enabling reduced consenting and delivery timelines for sustainable offshore wind projects.

Greater certainty over grid connections

Offshore renewables are critical to net zero and are expected to provide around 50% of electricity generation by 2050. The Crown Estate is committed to ensuring there is sufficient pipeline to deliver this. However, ensuring that these critical future offshore wind projects can be connected in a timely manner is a major challenge, with planning bottlenecks for grid build-out and a long queue for grid connections.

By improving the coordination between the processes of seabed leasing, energy infrastructure planning and grid connections, there is a clear opportunity to further accelerate the deployment of offshore wind, while considering other sea users and the natural environment.

In December 2023, The Crown Estate and the ESO signed a Statement of Intent to begin a new chapter in our collaboration, which will be crucial in the development of future offshore wind leasing. The renewed agreement will see enhanced levels of information-sharing and programme alignment, to best enable future offshore development and energy infrastructure planning together.

This collaboration underpinned our approach to Offshore Wind Leasing Round 5, which [recently became the first leasing round to come to market](#) with an agreed plan for connecting the new floating wind farms to the UK's electricity grid.

Looking to the future, we will collaborate with the ESO to achieve new levels of coordination between seabed leasing and transmission design to accelerate the deployment of offshore renewable generation and infrastructure essential for successful delivery of net zero ambitions.

Building on the holistic network design of 2022, the ESO this year recommended further offshore and onshore electricity network upgrades that could integrate up to 86GW of offshore wind with a combined estimated capital cost of £112 billion¹⁵. Looking even further ahead, as we are with our future leasing plans, further network upgrades are likely. By planning further leasing and grid together, we can provide the best chance for projects and associated network upgrades to be deliverable and operational by 2040.

Our continued collaboration presents a number of benefits, in particular:

- The ability to plan areas for future offshore wind development in step with spatial energy planning and network design processes (SSEP and CSNP).
- In turn, earlier network designs will help inform and underpin anticipatory investment in the grid upgrades required to deliver new offshore wind capacity.
- Building on our experience with Round 5, we are exploring the potential to assist the securing of firm and timely grid connection agreements ahead of future auctions in the seabed leasing process, subject to the appropriate grid connection reforms.
- This partnership approach will enable a clearer pathway for the offshore wind and transmission networks industries out to 2040, increasing confidence and certainty.



Discussion point 7

Grid connections: by taking a systems-led approach, we can provide more coordination between seabed development and transmission design and delivery, aligned with strategic planning processes for the energy sector. Working with Connections Reform, we will explore forward design of grid connections and applying for and entering into grid connection agreements for PDAs for novation to successful bidders.



¹⁵ £58 billion from ESO Beyond 2030 report [Beyond 2030 | ESO \(nationalgrideso.com\)](#) and £54 billion from ESO HND report [download \(nationalgrideso.com\)](#)

De-risking the supply chain

While the steps we have outlined above are designed to create greater assurance and streamline processes connected with offshore wind development, there is also a pressing need to support the growth of the supply chain required. This is particularly the case in areas such as the Celtic Sea region which are set to play a key role in the next chapter of the UK's offshore wind story, but which do not yet have an established supply chain.

In recent months we have seen two important steps towards transforming The Crown Estate's ability to further de-risk the supply chain. Firstly, our partnership with the

newly created Great British Energy will bring together our long-term visibility of the demands on seabed and associated supply chain needs with the new body's ability to invest and help shape critical industrial policy.

Secondly, proposals currently being considered by Parliament to modernise The Crown Estate's ability to borrow will enable us to provide more targeted investment in the supply chain. Details of how this can further support initiatives such as our Supply Chain Accelerator are set out in the Investing to accelerate delivery section on [page 33](#).

De-risking and accelerating summary

Our primary driver is to accelerate the deployment of offshore wind in a sustainable manner, and we believe that the measures above all have a potential material impact on our ability to achieve this objective. The scope, timing and sequencing of de-risking activities undertaken will have a material bearing on the timing of future leasing rounds, with a number of trade-offs to be considered. We welcome continued engagement on the options we have set out and will continue to share our thinking as it develops.



Investing to accelerate delivery

As a company for the country, one of The Crown Estate's core objectives is to catalyse the UK's transition towards a net zero and energy secure future, and we are committed to investing to support this.

We are already investing in activities that will help de-risk future offshore wind projects, for instance through our activities to support Offshore Wind Leasing Round 5. This includes both plan-level strategic measures to ensure compliance with Marine Protected Area requirements, and investing in pre-consent site investigation surveys.

In addition, we recognise the need to accelerate delivery by investing in enabling infrastructure, most specifically in the development and construction of the necessary port and supply chain infrastructure that will accelerate offshore wind development and help the UK to capture even more of the economic benefits available through the energy transition.

The announcement by the UK Government to modernise The Crown Estate's investment powers and our partnership with Great British Energy will help to support this activity. The context is set out in more detail in the pages that follow.



Rotor blades about to be lifted, ready for being transported offshore

Signpost, Stimulate, Invest

Significant market evidence exists of the need for anticipatory capital investment to help address system barriers and to provide the enabling infrastructure to support deployment of offshore wind. For example: UK Governments Offshore Wind Manufacturing Investment Scheme (OWMIS); Ports for Offshore Wind; the Net Zero Opportunity (Crown Estate Scotland); Floating Offshore Wind Manufacturing Investment Scheme (FLOWMIS); RUK Industrialisation Roadmap 2040; Industrial Growth Plan (IGP); and Port and Manufacturing Investment Models (Offshore Renewable Energy Catapult, WSP), amongst others. We are undertaking three discrete activities to support this, which we are terming **Signpost, Stimulate, Invest**:

Signpost

This Future of Offshore Wind publication is the first stage in providing greater visibility of the long-term demand requirements for the potential scale and broad location of future fixed and floating offshore wind sites in UK waters, with up to 20-30GW of new leasing expected to come forward before 2030.

By identifying the future areas of development through our Marine Delivery Routemap, this provides an opportunity to more accurately review supply chain gaps and assess potential opportunities to stimulate and build out advance capacity in strategic locations to support future deployment. This should provide confidence to private capital of the benefits from investing in direct projects and the adjacent supply chain, as well as identifying the potential locations at a high level that could be the source of this future growth.

We have undertaken similar signposting exercises in more granular detail with our funding and publication of the [Celtic Sea Blueprint](#), and co-funding of the [Offshore Wind Industrial Growth Plan](#), both of which look to articulate the onshore supply chain needs to support delivery of Offshore Wind Leasing Round 5 (Celtic Sea Blueprint) and 2050 Offshore Wind targets (e.g. Industrial Growth Plan covering 2024-2035).

Stimulate

We recognise the importance of stimulating investment activity, which is why we have established the £50 million [Supply Chain Accelerator fund](#) with the explicit objective of helping catalyse the UK supply chain capacity and capability for offshore wind.

The first £10 million of the Supply Chain Accelerator was launched in May 2024 with a focus on supporting development expenditure for the core activities identified by the Celtic Sea Blueprint. This first wave of the Accelerator closed at the end of July 2024 and we are currently considering applications received. Further updates will be provided in due course, including details of further rounds of the Supply Chain Accelerator and potential themes.



Invest

There is a need for collective and upfront capital investment to address strategic bottlenecks and accelerate delivery, particularly in respect of enabling infrastructure (UK ports and supply chain). Our aim is that the additional 20-30GW of new development being brought to market before 2030, set out in this report, will provide a visible pipeline to allow investment capital to flow into some of these projects.

The Crown Estate has an ambition to commit capital into enabling infrastructure assets and we have the conviction and desire to invest alongside others in anticipation of this future pipeline. We welcome the decision by the UK Government in July 2024 to bring forward The Crown Estate Bill which will modernise our borrowing and investment powers and help to realise this ambition. This is explored further in the section that follows.

Investment focus areas: adjacent infrastructure to support offshore wind

The passing of The Crown Estate Bill will enable The Crown Estate to allocate £200m - £400m of capital over the short to medium term towards investments in enabling infrastructure assets that will allow the accelerated delivery of offshore wind projects.

We are focused on two specific areas for investment, unlocking strategic bottlenecks to speed up the delivery of offshore wind projects.

1 Offshore wind ports: investing in the expansion of UK ports and port-based activities to support the construction, assembly, integration and delivery of fixed/floating offshore wind.

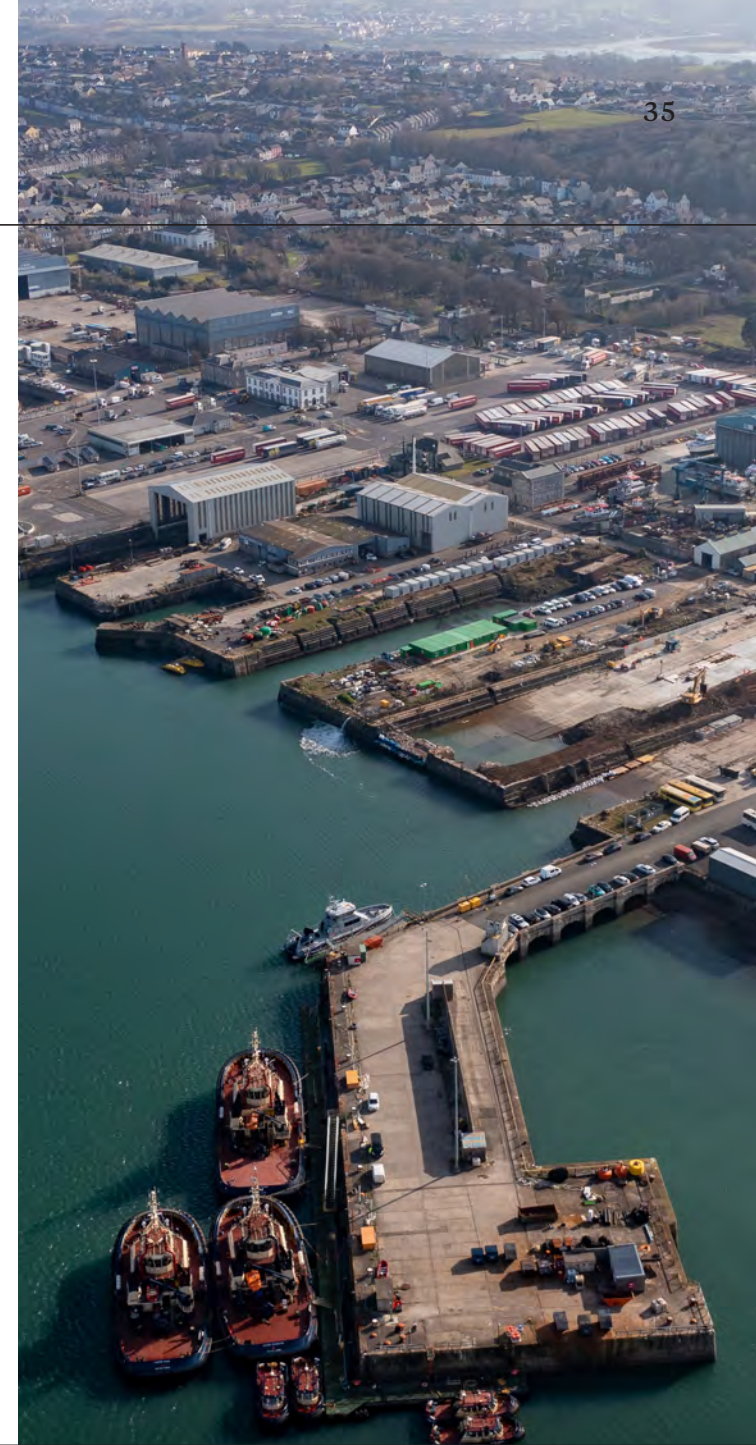
2 Offshore wind supply chain: supporting the development and enhancement of the UK's offshore wind supply chain capability and capacity including the establishment of new or expanded manufacturing facilities and the establishment of associated R&D and training facilities. This can be at the early stage to fund development activity (through the Supply Chain Accelerator) but could also cover larger investments at the capital phase for more mature and well-established projects.

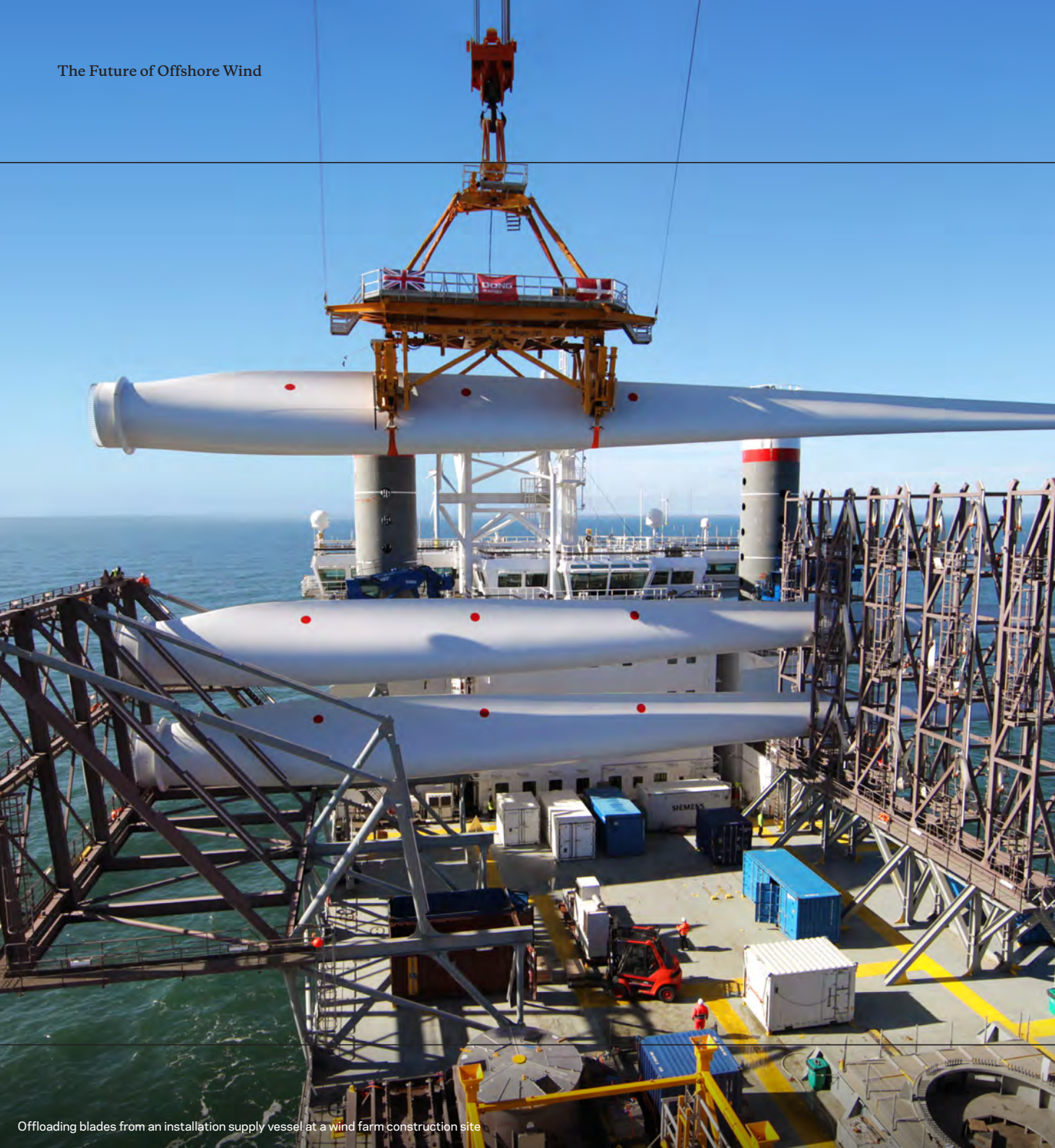
In addition, as part of The Crown Estate's recently announced partnership with Great British Energy, we are exploring further opportunities to invest in order to de-risk, keep pace and accelerate offshore wind projects in the development phase. We are evaluating this further with Great British Energy and UK Government and will be developing and sharing details on this in due course.

We recognise that there is significant revenue uncertainty and volatility in the initial years for some of these enabling infrastructure requirements. The Crown Estate has an established track-record, across its 260 years, of taking a long-term approach to creating lasting and shared prosperity, which means that we are prepared to accommodate short-term volatility in order to realise long-term value for the benefit of the nation.

We will be looking to secure long-term commercial returns as a co-investor working with aligned partners and to also generate wider impact from these investments including the potential to support jobs, catalyse urban and coastal regeneration, and drive economic growth as well as facilitate accelerated deployment of offshore wind.

In addition, The Crown Estate has geographic flexibility to invest into suitable offshore wind-adjacent infrastructure assets across England, Wales, Northern Ireland and Scotland. The passing of The Crown Estate Bill to modernise The Crown Estate's investment powers will also give us greater flexibility in and using different structures to deliver responsible financial returns from those investments.





Next steps in our evolving investment approach

This publication sets out an early indication of The Crown Estate's evolving approach to investment, in particular our ambition to further support the accelerated deployment of offshore wind. In due course we will begin to engage with developers, land-owners, promoters and investors who wish to discuss specific projects or opportunities where we may be able to invest our capital.

It is anticipated that investment opportunities will be assessed against a set of yet to be determined criteria based on the potential they may offer in the context of The Crown Estate's strategic goals, and their investment characteristics of the specific opportunity.

Driving broad value

The Crown Estate's purpose is to create lasting and shared prosperity for the nation across all of our work. This means we are seeking to harness the opportunities created by the delivery of offshore wind to enable net zero, steward thriving biodiversity and marine environments, create inclusive communities and support economic growth.

Our approach to delivering such broad value will seek to use our systems-level, strategic perspective and convening power to collaborate with others and identify the best enabling activity or investment opportunities across key areas of the UK, to support sectors and places.

Building on the approach we have taken in Offshore Wind Leasing Round 5, this will include consideration of how best we can drive broader social and environmental value. As part of future leasing opportunities, we will continue to work closely with regional stakeholders, communities and industry clusters to develop our approach. This will include exploring how we can further catalyse activity and investment aimed at enhancing environmental and social value for the nation, whilst delivering cost-effective offshore wind and retaining the UK's position as a leading attractive market for offshore wind investment. We recognise the need to work with local partners to unlock onshore opportunities in support of offshore wind, and ensure these communities benefit from its long-term success. Together with engagement at an early stage of design, this will ensure that the highest value opportunities can be integrated into the leasing process.



Discussion point 8

Broad value: our view is that we must harness the opportunities created by the delivery of offshore wind to enable net zero commitments, steward flourishing biodiversity and marine environments, create thriving communities and support economic growth. We are exploring how we can best achieve this through our leasing design.



Identifying the opportunity

As part of our strategic approach, alongside Offshore Wind Leasing Round 5, The Crown Estate commissioned the Celtic Sea Supply Chain Blueprint¹⁶. Published in February 2024, the report identified the minimum infrastructure and supply chain capability required to deliver up to 4.5GW of floating wind in the Celtic Sea - highlighting opportunities for investment in plugging the capability gap - with the potential to create 5,300 jobs and £1.4bn of economic growth for the UK.

- In April 2024, the Offshore Wind Industrial Growth Plan¹⁷ sets out the potential 'made in the UK' jobs and economic growth from offshore wind, and the infrastructure and supply chain capability required to secure this. This vision assumes sufficient capability exists to deliver up to 4.5GW of projects, but also capture £25bn of economic growth and create the pathway to growing the UK supply chain to over 100,000. The report, jointly-commissioned by OWIC, Renewable UK, The Crown Estate and Crown Estate Scotland, builds upon the Supply Chain Capability Analysis published in September 2023, which provided an evidence-based assessment of the products, services and infrastructure required to deliver the UK offshore wind portfolio out to 2040.

Social and environmental value

We intend to explore opportunities for The Crown Estate to deepen its support for communities and nature through building increased social and environmental value into future leasing programmes. We will seek opportunities for positive environmental outcomes, nature inclusive design, and sector decarbonisation alongside broader approaches for creating inclusive communities and supporting economic growth.



In February 2024, The Crown Estate announced a £10 million pilot fund with an initial focus on capturing some of the economic opportunities identified by the Celtic Sea Blueprint¹⁸ and supporting the UK supply chain. A further £40 million has been earmarked, which could be deployed over time to deliver on the wider Industrial Growth Plan. The initial Supply Chain Accelerator was launched in May 2024 - the submission window has now closed and proposals are currently under evaluation, with results due to be announced later in 2024.

Social and environmental value creation in Leasing Round 5

Offshore Wind Leasing Round 5 seeks to establish the next generation of floating offshore wind farms in the Celtic Sea. At up to 4.5GW it is set to be one of the biggest schemes of its kind in the world. Given the nascent nature of this technology and the absence of an established supply chain in the region, a key objective of the Celtic Sea Programme is to incentivise new onshore opportunities and create broader social and environmental value through the leasing process.

This means that Bidders are required to set out plans with clear commitments to delivering positive social outcomes aligned with core themes, such as new employment and skills, tackling inequality and diversity in the workforce, apprenticeships, volunteering and working with local communities. Bidders will also need to set out at an early stage how they intend to work with ports, which will be critical to the assembly and ongoing operation and maintenance of the new floating turbines. Successful Bidders will need to demonstrate how they will accelerate progress towards a net positive outcome for the environment and improved resilience of marine ecosystems.

The Crown Estate has also been clear that the leasing process is just one lever for driving these wider benefits, and ongoing collaboration between industry, onshore stakeholders and governments will be needed to truly realise the full potential of a new floating wind industry in the Celtic Sea.

¹⁶ "Supply Chain for Celtic Sea Floating Wind Farms Could Power 5,000 New Jobs and a £1.4bn Boost for the Economy," The Crown Estate, 22 February 2024.

¹⁷ "Offshore Wind Industry Unveils Industrial Growth Plan to Create Jobs, Triple Supply Chain Manufacturing and Boost UK Economy by £25 Billion," 17 April 2024.

Technologies and innovation

Innovation has an important role to play in the development of the seabed and the energy transition, as the UK continues to find new ways to harness energy from our natural resources in a sustainable manner. As part of reviewing our approach to future leasing, we are interested in assessing the potential to bring forward innovation and new technologies. This could include, for example, the continued development of floating wind, the integration of floating solar or wave and tidal power generation technologies, introducing offshore hybrid assets into grid connection designs and the production of green hydrogen (see Green hydrogen section on [page 41](#)). To do this, we are considering the recommendations set out in the Industrial Growth Plan (IGP). It is apparent that despite early investment in some of these areas there remain challenges in commercialising new technologies for the market. For instance, the ambition to deploy and demonstrate new technologies at scale may at times be hampered by concerns about their bankability, and by the wider objective to drive down LCOE.

We will consider our role on this agenda and continue to deliver on our actions agreed within the IGP, including building on the lessons learned from previous leasing activity; noting this report and our wider Marine Delivery Routemap is identified as a key action to increase confidence in demand, thereby de-risking investments in supply chain and innovation. We recognise the criticality

of working with others, and we will build on our existing partnerships with Government, industry, and actors such as ORE Catapult and SuperGEN ORE, as we seek to align our approach with the new IGP Delivery Body over the coming months.

Innovation is fundamental as we evolve our approach to leasing in order to support new technology development and to allow multiple technologies to access the seabed efficiently while supporting a thriving marine environment.

Three areas of current discussion are the relative mix of fixed and floating wind, and the production of green hydrogen and other complementary technologies.

Discussion point 9

Technologies: future offshore wind leasing will include a mix of sites that accommodate the development of fixed and floating sub-structures. Our long-term ambition is to give developers the flexibility to deploy the concept they consider most appropriate for a given site, noting that a tailored approach may be needed to ensure we foster growth and development of innovative foundation technologies, such as floating foundations.

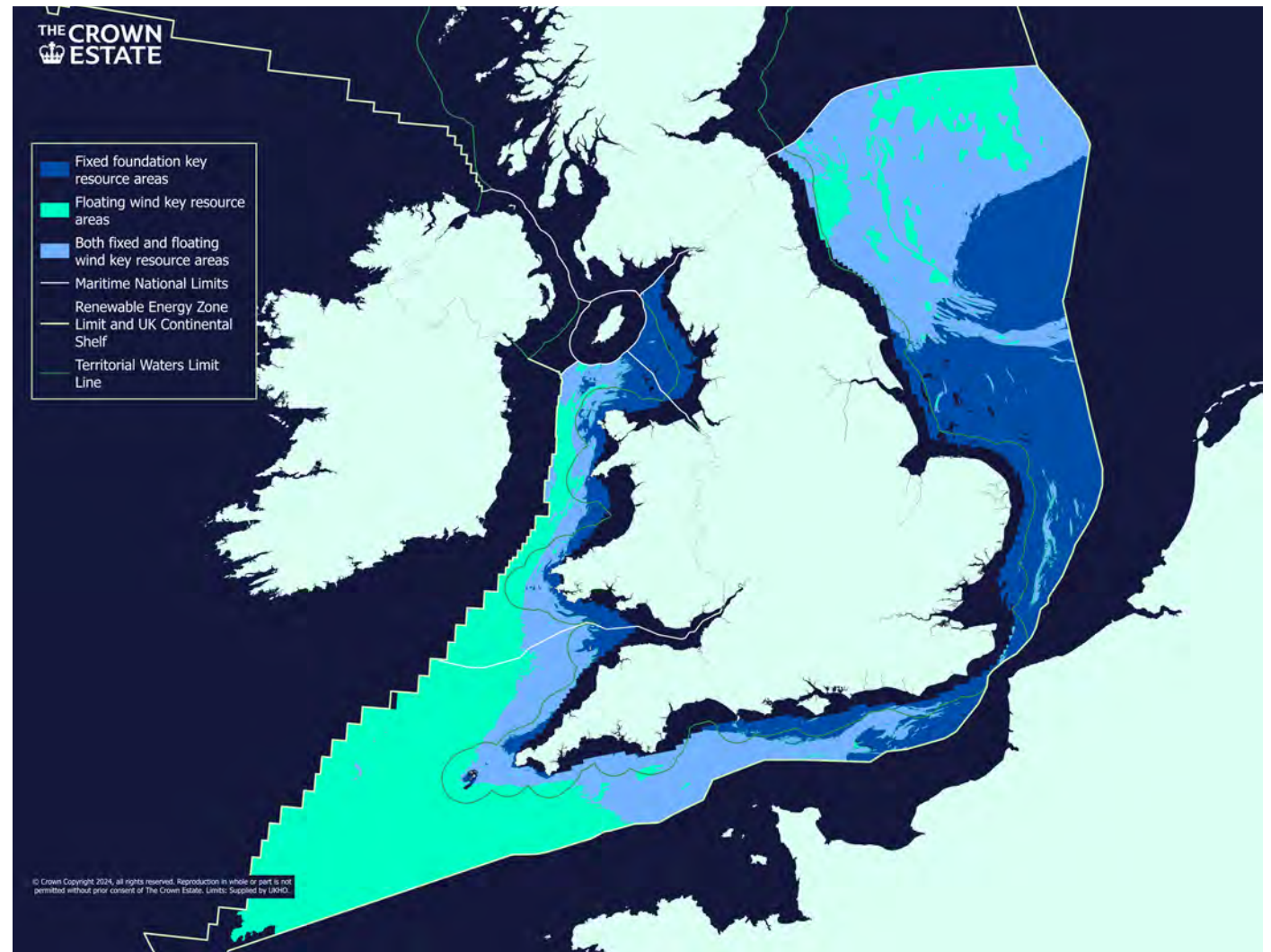


Sub-structure technology

In 2020, The Crown Estate commissioned a report¹⁸ that identified significant opportunities for both fixed and floating offshore wind in the waters off England, Wales and Northern Ireland. The report identified that fixed wind is expected to be able to be deployed in deeper waters than ever before, and floating wind will open up significant new areas of seabed to offshore wind deployment. Since publication, developing understanding of engineering solutions has led to a further increased maximum water depth for fixed sub-structures from 70 to 80m, as shown in Figure 5.

To satisfy future aspirations for offshore wind in a manner which is cost effective for the UK over the long term, there will be a need to develop offshore wind farms in a range of water depths and distances to shore. Our long-term ambition is therefore to move to an approach where we make available a mix of site types to enable the development of fixed and floating sub-structures, but give developers the choice to deploy the foundation concept they consider most appropriate and cost effective for each site, acknowledging that technology will develop over time and developers may have different approaches that would determine this choice. Due consideration will be given to technology choices in the coming rounds, to ensure we strike the right balance of flexibility for developers and foster growth and development of innovative foundation technologies, such as floating foundations.

Figure 5: Key offshore wind resource areas, Broad Horizons, 2020



¹⁸ ["Broad Horizons: Key Resource Areas for Offshore Wind."](#) The Crown Estate, 2020

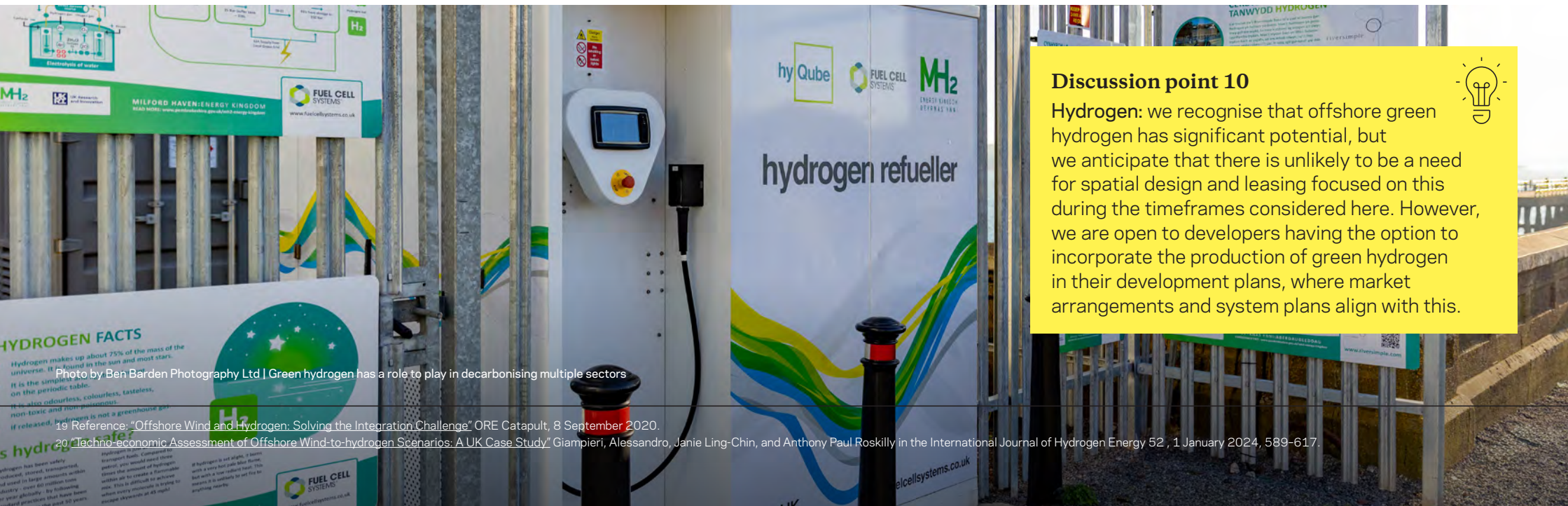
Green hydrogen


Green hydrogen has a key role to play in the drive to net zero – helping to decarbonise a range of sectors (e.g. industry, transport) and harnessing the UK's strong wind and hydrogen storage resource. Significant opportunities exist for the development and production of green hydrogen produced by electrolysis and powered directly by offshore wind. This is an exciting and developing new area, but it remains in its early stages. Researchers assessing the comparative advantages of onshore and offshore electrolysis have reached different conclusions as to how these will develop over time^{19, 20}. As the hydrogen market develops, the economics will become clearer. It is also too early to say how the development of this technology will feature in system level processes such as the SSEP.

In light of the above, we therefore do not consider that there is a need for spatial design and leasing focused solely on offshore green hydrogen production at this stage. However, we are open to developers having the option to incorporate green hydrogen production, either through onshore or offshore electrolysis, as a route to market in their development plans in the next rounds of offshore wind leasing, where market arrangements and system plans align with this. We see great potential in green hydrogen production powered by offshore wind which also uses the UK's strong offshore storage potential. We look forward to further dialogue, both on this proposed approach and how The Crown Estate can support the development of the sector. We will continue to keep this under review.

Other complementary technologies

We are following innovation and developments in the markets for other complementary technologies such as floating solar or wave and tidal power generation technologies with much interest whilst we evolve our approach for future leasing. We are exploring opportunities how we can support the development of these sectors and will continue to review our approach as these sectors continue to innovate and mature.



Discussion point 10 

Hydrogen: we recognise that offshore green hydrogen has significant potential, but we anticipate that there is unlikely to be a need for spatial design and leasing focused on this during the timeframes considered here. However, we are open to developers having the option to incorporate the production of green hydrogen in their development plans, where market arrangements and system plans align with this.

Photo by Ben Barden Photography Ltd | Green hydrogen has a role to play in decarbonising multiple sectors

¹⁹ Reference: "Offshore Wind and Hydrogen: Solving the Integration Challenge" ORE Catapult, 8 September 2020.

²⁰ "Techno-economic Assessment of Offshore Wind-to-hydrogen Scenarios: A UK Case Study" Giampieri, Alessandro, Janie Ling-Chin, and Anthony Paul Roskilly in the International Journal of Hydrogen Energy 52 , 1 January 2024, 589–617.

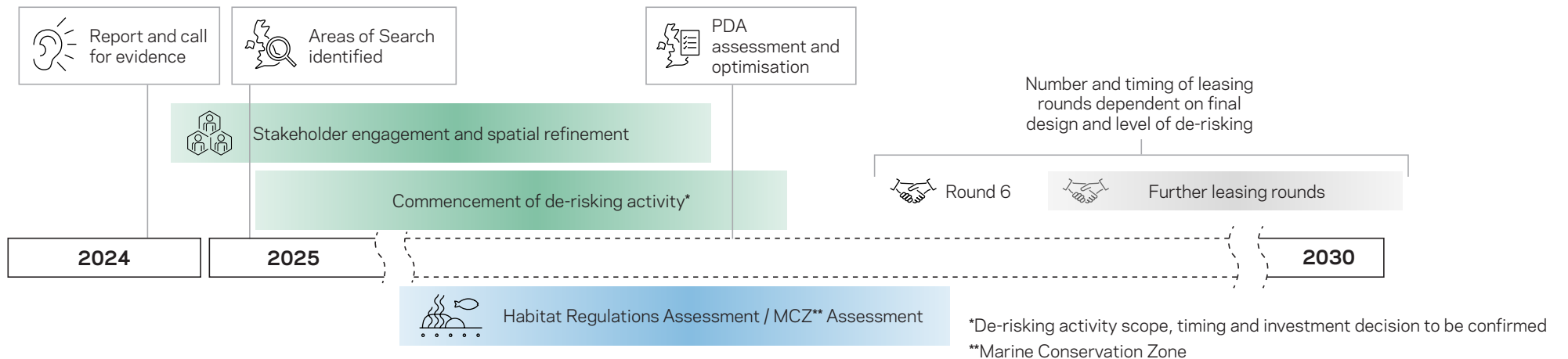
Next steps

In sharing our assumptions at this early stage, alongside our report on the Marine Delivery Routemap, we are presenting a vision of a more strategic approach to offshore wind development than ever before. Moving beyond a linear ‘round-by-round’ approach, we are looking more strategically and holistically at how we can enable the industry to play its part in delivering a sustainable energy transition for the country and supporting a thriving marine environment.

As set out, we are proposing our approach to future offshore wind to be closely informed by our Whole of Seabed Programme and our work with delivery partners and governments on the Marine Delivery Routemap. This was one of the key recommendations from the Electricity Networks Commissioner, Nick Winser, accepted as part of the Government’s TAAP²². Likewise, the de-risking options in this report addresses recommendations made by the Offshore Wind Champion, Tim Pick, in his report, [“Accelerating the deployment of offshore wind farms”](#).

This is the next stage of the conversation. As illustrated in Figure 6, we will, upon publication of the report, commence extensive stakeholder engagement, whilst progressing to refine the spatial design assumptions for our future leasing rounds. We welcome your views on the discussion points raised in the report, and will take this feedback into consideration when scoping the de-risking activities which we aim to undertake ahead of future leasing rounds. This will inform the detailed programme for our next tender rounds, and we will continue to engage with the market as we refine timings and design assumptions.

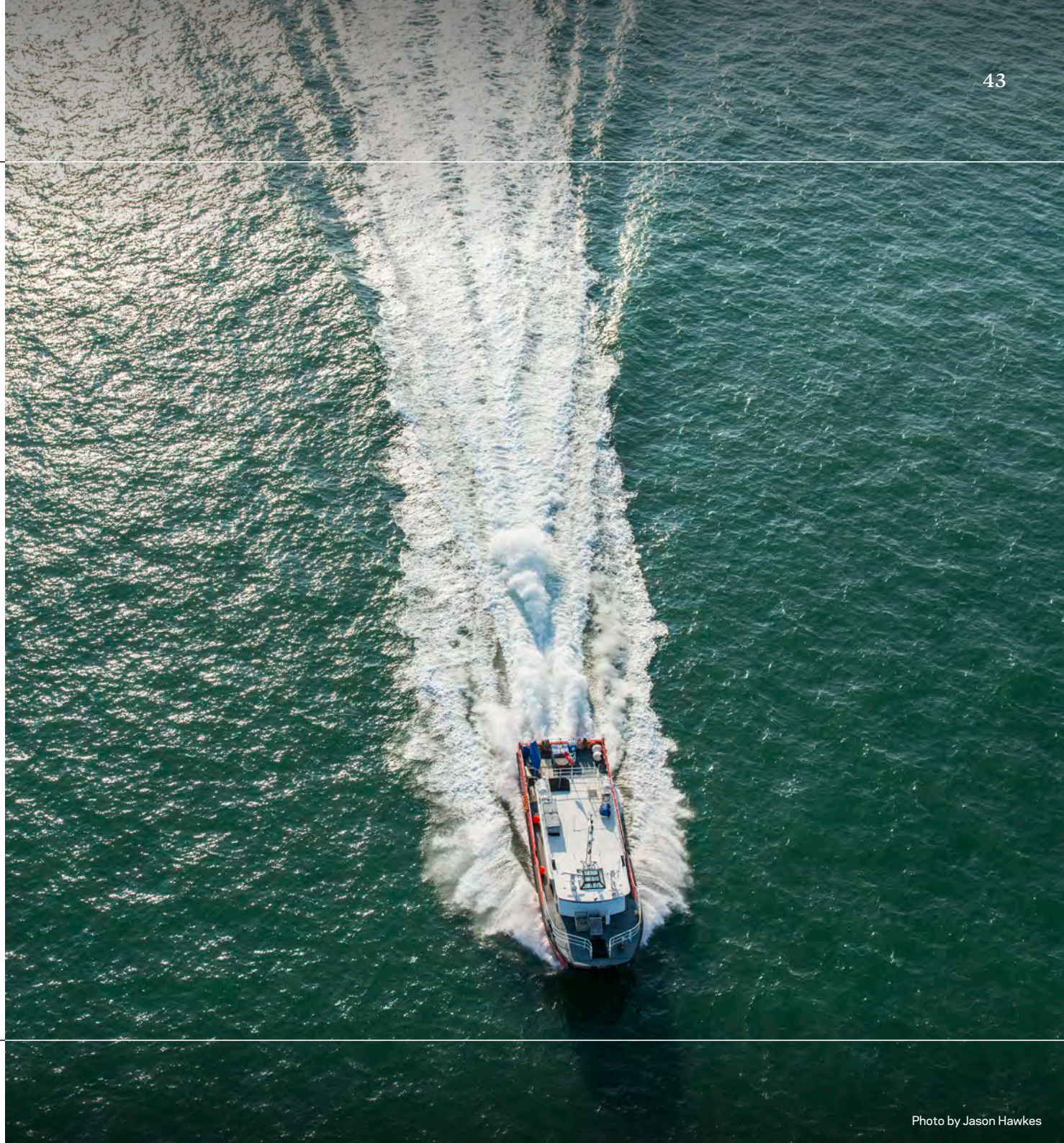
Figure 6: Illustrative timelines, including potential de-risking activities



²² [“Accelerating Electricity Transmission Network Deployment: Electricity Networks Commissioner’s Recommendations”](#), Department for Energy Security and Net Zero, 4 August 2023.

As discussed, the Routemap will complement and inform key related marine spatial programmes and forward plans for specific marine sectors. This Routemap series of publications will continue to expand, with future thinking to be shared in due course on our approach to nature, CCS, marine aggregates and other key marine sectors. A driving principle of our approach through all these will be to engage with sectors and stakeholders to test our assumptions and seek feedback on our proposals. In responding to this feedback, we will also seek to ensure that developers have an understanding of our likely requirements for our future leasing processes. As part of our broader approach, throughout the development of our future leasing programme, we will continue to seek the views of non-profit organisations, governments, sea users, and delivery partners on how we can work together to ensure our leasing programme supports biodiversity, nature recovery and the creation of broad environmental and social value.

We look forward to working with all stakeholders to refine our approach and develop a world-class programme that creates lasting and shared prosperity for the nation.



About The Crown Estate

The Crown Estate has a diverse £16bn portfolio that includes urban centres and development opportunities; one of the largest rural holdings in the country; Regent Street and St James's in London's West End; and Windsor Great Park. We also manage the seabed and much of the coastline around England, Wales and Northern Ireland, playing a major role in the UK's world leading offshore wind sector.

We are a unique business established by an Act of Parliament, tasked with growing the value of the portfolio for the nation and returning all of our net profit to HM Treasury for the benefit of public spending. This has totalled £4bn over the last ten years.

For further information please contact The Crown Estate Press Office:
www.thecrownestate.co.uk | 0845 241 2342

Through our statutory purpose, The Crown Estate creates environmental, social and financial value both for now and into the long term. This includes:

- Playing a significant role in unlocking renewable energy for millions of homes through sectors such as offshore wind and creating opportunities for new technologies like CCUS and hydrogen to deliver the UK's energy security transition, resulting in thousands of jobs for communities across the UK.
- Supporting the sustainable transformation of land use in the UK through diversified, regenerative agricultural and environmental best practice alongside a thriving natural world.
- Becoming recognised as a centre of excellence for environmental and ecological best practice across the Windsor Estate.
- Identifying and creating opportunities for thriving and resilient communities across the country to support regeneration, housing and innovation.
- Ensuring London retains its global city status, by fostering a more vibrant, greener and inclusive destination for millions of visitors and businesses.

Appendix 1: Glossary and references


Glossary

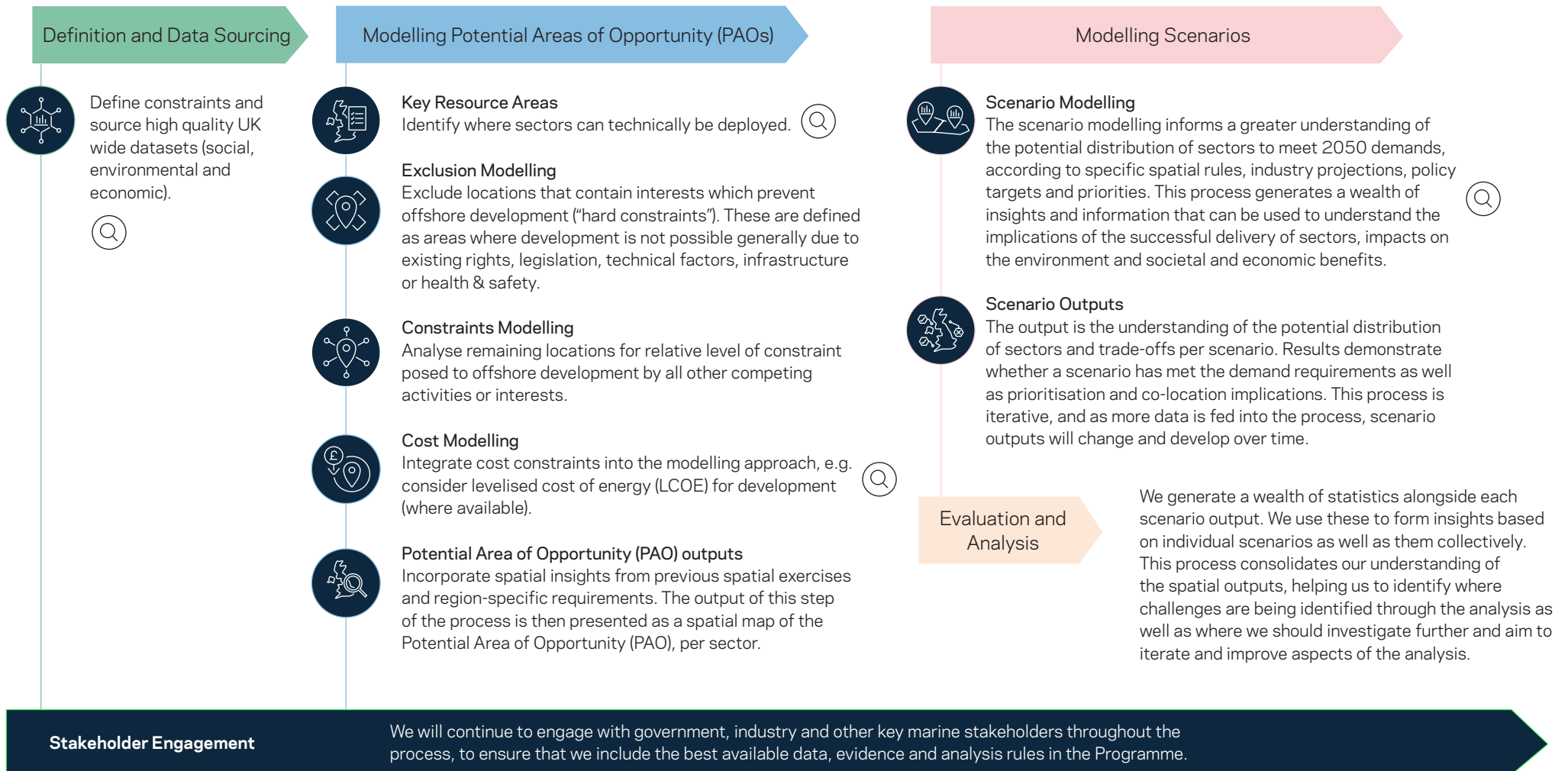
| | | | |
|----------------|-----------------------------------------------------------|----------------|-----------------------------------------------|
| AIS | Automatic Identification System | MSPri | Marine Spatial Prioritisation |
| AoS | Area(s) of Search | MW | megawatt |
| CADW | the Welsh Government's historic environment service | NATS | National Air Traffic Services |
| CCC | Climate Change Committee | NE | Natural England |
| CCS | Carbon Capture and Storage | NIEA | Northern Ireland Environment Agency |
| Cefas | Centre for Environment, Fisheries and Aquaculture Science | NGET | National Grid Electricity Transmission |
| CfD(s) | Contract(s) for Difference | NGS | Natural Gas Storage |
| CSNP | Centralised Strategic Network Plan | NM | nanometer |
| EIA | Environmental Impact Assessment | NRW | Natural Resources Wales |
| EMODnet | European Marine Observation and Data Network | OREAP | Offshore Renewable Energy Action Plan |
| ESO | Energy System Operator | OREC | Offshore Renewable Energy Catapult |
| FES | Future Energy Scenarios | OSWMIS | Offshore Wind Manufacturing Investment Scheme |
| FLOWMIS | Floating Offshore Wind Manufacturing Investment Scheme | PAO(s) | Potential Area(s) of Opportunity |
| GW | Gigawatts | PDA(s) | Project Development Area(s) |
| HRA | Habitats Regulations Assessment | PEXA | Military exercise areas and danger areas |
| IGP | Industrial Growth Plan | REMA | Review of Electricity Markets Arrangements |
| JNCC | Joint Nature Conservation Committee | RIO | Resource Identification and Optimisation tool |
| km | kilometer | R&D | research and development |
| LCOE | Levelised Cost of Electricity | SACs | Special Areas of Conservation |
| MCZ | Marine Conservation Zone | SPAs | Special Protection Areas |
| MCS | Marine Conservation Society | SSSIs | Sites of Special Scientific Interest |
| MMO | Marine Management Organisation | SRA | Strategic Resource Area |
| MNRs | Marine Noise Registries | SSEP | Strategic Spatial Energy Plan |

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Appendix 2: Whole of Seabed Methodology

 This symbol illustrates the quality assurance process, conducted to ensure outputs are reliable and that only high quality datasets have been used in the modelling process.



Appendix 3: Future Offshore Wind report – map data

This appendix provides an overview of the data used to create the Exclusion and Suitability maps presented within this report.



Datasets used in the Exclusions Map (shown in column 2 of [Figure 2](#))

The model used to create the Exclusions Map was created with The Crown Estate's Resource Identification and Optimisation tool (RIO), an advanced mapping and analysis capability developed by The Crown Estate.

'Exclusions' are defined as areas where development is not possible generally due to existing rights, legislation, technical factors, infrastructure or health & safety. The model identifies hard constraint areas where development is not possible and these are excluded from further consideration. These excluded areas may also include relevant buffer distances around sensitive features.

The list of exclusions in the table below are informed by previous engagement undertaken with stakeholders in February 2022 through the Celtic Sea Floating Offshore Wind Leasing Round 5 programme, as well as informed through engagement with stakeholders via the MSPri programme in May 2023.

The datasets included in the model as exclusions are as follows:

Exclusion Model

| Dataset | Source Organisation | Buffer | Notes |
|--------------------------------------------|--------------------------------|--------|----------------------------------------------------------------------|
| 12NM from shore in Welsh Waters | The Crown Estate | | Aligned with Welsh Government Resource Area identification |
| 6NM from shore in English Waters | The Crown Estate | | Development of future offshore wind inshore recognised as infeasible |
| Abandoned Wells | North Sea Transition Authority | 250m | Existing infrastructure would preclude development. |
| Active Cables Infrastructure | The Crown Estate | 250m | Current legal agreement / infrastructure. |
| Active Pipelines Infrastructure | The Crown Estate | 250m | Current legal agreement / infrastructure. |
| Aggregates Tender Round sites | The Crown Estate | | Ongoing leasing process |
| Aquaculture Agreements | The Crown Estate | | Current legal agreement / infrastructure |
| Cables Agreements | The Crown Estate | | Current legal agreement / infrastructure |
| HPMAs | Natural England | 1km | Highly Protected Marine Areas |
| Inshore Traffic Zones | UK Hydrographic Office | | IMO routing measures designated to maintain safety at sea. |
| International boundary buffer | The Crown Estate | 2.5km | Buffer to avoid directly abutting international waters |
| Leasing Round 5 Project Development Areas | The Crown Estate | 5km | Ongoing leasing process |
| MCMS Navigational Dredging | Marine Management Organisation | | Navigational conservation and maintenance |
| Meteorological Equipment Agreements | The Crown Estate | | Current legal agreement / infrastructure |
| Minerals and Aggregates Agreements | The Crown Estate | 1km | Current legal agreement / infrastructure |
| Minerals Capital and Navigation Agreements | The Crown Estate | | Current legal agreement / infrastructure |
| Natural Gas Storage Agreements | The Crown Estate | | Current legal agreement / infrastructure |
| Navigation AIS – high density | EMODnet | | Safety grounds |

| Dataset | Source Organisation | Buffer | Notes |
|------------------------------------------------------|------------------------------------------------------------------------|---------------|--------------------------------------------------------------------------------------------------------------------|
| Oil and Gas Agreements (infrastructure inside 1.2NM) | The Crown Estate | | Current legal agreement / infrastructure |
| Open Disposal Sites | Cefas | | Navigational conservation & maintenance |
| Outfall Leases | The Crown Estate | 250m | Current legal agreement / infrastructure |
| PEXA danger areas ²³ | Ministry of Defence | | Defence requirements |
| Pilot Boarding Areas | UK Hydrographic Office | 2NM | Safety grounds |
| Pipelines Agreements | The Crown Estate | | Current legal agreement / infrastructure |
| Platform Helicopter Safety Zones - 500m | North Sea Transition Authority | | Safety grounds |
| Protected Wrecks Exclusion Zones | English Heritage, CADW, Historic Scotland, Northern Ireland Government | | Legislative protection |
| Shipping routes between Traffic Separation Schemes | The Crown Estate | | Safety grounds |
| Suspended Wells | North Sea Transition Authority | 500m | Legal requirement for abandonment procedures to be carried out. Existing infrastructure would preclude development |
| Tidal Stream Agreements | The Crown Estate | | Current legal agreement / infrastructure |
| Traffic Separations Schemes & Deep Water Channels | UK Hydrographic Office | 2NM | Safety grounds |
| Nuclear Power Stations | EDF | 1NM | Safety grounds |
| Wave Agreements | The Crown Estate | | Current legal agreement / infrastructure |
| Wind Agreements | The Crown Estate | 5km | Current legal agreement / infrastructure |

²³ A subset of danger areas and firing ranges were included as exclusions, as advised by the MOD via the Marine Spatial Prioritisation Programme.

Datasets used in the Suitability Map (shown in column 3 of Figure 2)

The Suitability Model combines the outputs of the Exclusion model above with a Restriction Model. Built using RIO, this model is used to analyse all economic, social and environmental interests in the marine space that are not 'hard constraints'.

For analysis purposes these are termed 'restrictions' and defined as all other activities or sensitivities which require consideration alongside offshore wind development but offer potential for co-existence.

Each restriction is prioritised (weighted) according to the extent that offshore wind development may impact the users or sensitivities, based on the feedback gathered over the past 15 years, and recently as part of the MSPri programme. The weightings and resulting heat-map demonstrate the extent that co-existence may or may not be possible between other economic, social and environmental sensitivities and offshore wind.

The datasets included in the model to represent soft constraints are as follows:

Restriction Model

| Dataset | Source Organisation | Buffer |
|----------------------------------------------------------------|---------------------------------|--------|
| 2021 Aggregates Tender Round Sites | The Crown Estate | |
| Anchorage Areas | UK Hydrographic Office | |
| Bathing Beaches | MCS | 1NM |
| Carbon Storage 1 st Round Provisional Licence Areas | North Sea Transition Authority | |
| Carbon Storage Licences | North Sea Transition Authority | |
| CCS Agreements | The Crown Estate | |
| Civil Radar Interference | NATS | |
| Closed Disposal Sites | Cefas | |
| Designated Feature Risk Layers (mobile species) | The Crown Estate | |
| Evaporites Agreements | The Crown Estate | |
| Fish Spawning and Nursery Grounds | Cefas | |
| Fisheries Areas of Importance | Marine Management Organisation | |
| Harbour Authority Areas | UK Hydrographic Office | |
| Leisure Vessel AIS intensity | EMODnet | |
| Licensed Field Determination Areas | North Sea Transition Authority | |
| MCZs & MNRs | JNCC, NE, NRW, NatureScot, NIEA | |
| Navigation AIS Density | EMODnet | |
| Oil & Gas Platform Helicopter Safety Zones | The Crown Estate | |
| Out of Service Cables Infrastructure | The Crown Estate | 250m |
| Out of Service Pipelines Infrastructure | The Crown Estate | 250m |
| Petroleum - 2 nd & 3 rd Term Licences | North Sea Transition Authority | |
| Petroleum - Initial Term Licences | North Sea Transition Authority | |
| PEXA areas ²⁴ | Ministry of Defence | |
| Ramsars (European) | JNCC, NE, NRW, NatureScot, NIEA | |
| SACs (European) | JNCC, NE, NRW, NatureScot, NIEA | |
| SPAs (European) | JNCC, NE, NRW, NatureScot, NIEA | |
| SSSIs | JNCC, NE, NRW, NatureScot, NIEA | |
| Visibility from Coast | The Crown Estate | |
| World Heritage Sites | English Heritage, CADW | |
| Wrecks - unprotected | UK Hydrographic Office | 50m |

²⁴ A subset of danger areas and firing ranges were included as exclusions, as advised by the MOD via the Marine Spatial Prioritisation Programme.

Analysis used in the Regional Opportunity Map

[\(Figure 4\)](#)

This was created through analysis of the suitability model as well as consideration of development costs (Levelised Cost of Electricity - LCOE), shown in column 1 of [Figure 2](#).

This analysis was undertaken as part of The Crown Estate's Whole of Seabed Programme and identifies future locations for offshore wind to areas that have lower negative interactions with other interests and users of the marine space.

As the potential locations of future offshore wind are refined, there will be opportunity for stakeholders to flag further datasets for consideration.

Further detail on the Whole of Seabed, data and analysis will be provided as we move through the more detailed spatial design process for future offshore wind. This will include testing and refinement through stakeholder engagement as we transition from the regional opportunity identified in this report through Areas of Search to Project Development Areas that will be offered to market. General updates on the Whole of Seabed Programme, which covers all sectors leased by The Crown Estate and future usage of the seabed in English, Welsh and Northern Irish waters can be found on the following website page: [Marine | The Crown Estate](#).

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THE CROWN
 **ESTATE**

ANNEX 2

Sky News Article – ‘Cornwall fishermen fear for livelihoods as offshore wind farms pose 'greatest change' the industry has faced’, 1 January 2025

‘Cornwall fishermen fear for livelihoods as offshore wind farms pose 'greatest change' the industry has faced.

David Stevens, from the Cornwall Fish Producers Organisation, says the proposals for the area where he fishes would "close down around 60% to 70%" of the waters.

Fishermen in Cornwall fear proposals for mass offshore wind farms could destroy their businesses and pose the "greatest change" the fishing industry has ever faced.

The Crown Estate - which owns much of the country's seabed - has published plans for what it calls "areas of opportunity" for offshore wind farms in waters off the North East and the Celtic Sea around South Wales, Devon and Cornwall.

It insists a maximum of 15% of North East and 12% of Celtic Sea zones may be leased to offshore wind companies.

But David Stevens from the Cornwall Fish Producers Organisation told Sky News fishermen fear they will be squeezed out of already busy waters.

He said: "This is probably the greatest change to our fishing patterns and businesses we're ever going to encounter, we're going to be squeezed out of the way, that's our greatest fear, by all these wind farms all of a sudden taking up ground that we traditionally fish."

He added: *"I've looked at the proposals to the south where I work and it would completely close down around about 60% to 70% of the area I work. So my business plan - it's gone out of the window."*

Mr Stevens said this is not about the fishing industry being against green energy, adding: "I am all in favour of renewable energy – it's definitely the way to go forward. But there needs to be a balance between energy security for the country and food security for the country

"We're the fishermen, we're out providing the food source, that is also, is it not, as important as energy, we're humans we need heat, we need food, we need shelter."

The Crown Estate told Sky News offshore wind has a "critical" role to play in supporting the UK's energy transition.

It said: "The seabed is subject to a wide range of competing and complementary demands, which is why we have set out our initial thinking on how, and where, the future deployment of offshore wind might be possible, taking into account the needs of different sectors - including fishing - and the natural environment".

It says it will continue to seek opinions from marine stakeholders.

Offshore wind is not the only green initiative causing concern amongst coastal communities in the South West.

Several seaweed farms are planned around Cornwall - covering 600 hectares of coastline.

The product could provide alternatives to plastic - but campaigners say consultation over the farms has been insufficient and worry ropes used could cause a risk to marine wildlife.

Barnaby Kay is from the group Save Our Bays.

He said: *"There is a South West sea-grab in terms of the applications of large scale seaweed farms.*

"For instance, the [seaweed] harvest period coincides with spawning for mackerel and various other fish and they're likely to spawn around the seaweed and on the seaweed and at that point it's harvest and so all that ecosystem will be pulled out."

Locals say they were not consulted about the farms and have criticised the Marine Management Organisation (MMO) which issues licences.

An MMO spokesperson told Sky News it must follow a "clear consultation process" and take an "evidence-based approach" and that it takes into account all responses.

The Liberal Democrat MP for North Cornwall, Ben Maguire, said the details of all green proposals must be looked at carefully.

He said: *"We need to bring our communities together along this journey, make sure they have input into it, make sure their views are heard, and make sure their feedback is collected in a valid way and that policy makers in the government listen to those local resident's concerns."*

ANNEX 3

Crown Estate Marine Lease – Mark Up of Proposed Changes



CROWN ESTATE ~~SCOTLAND~~

and

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LEASE
of
Rights for Wind Farm Site upon Bed of
the Sea at []

Contents

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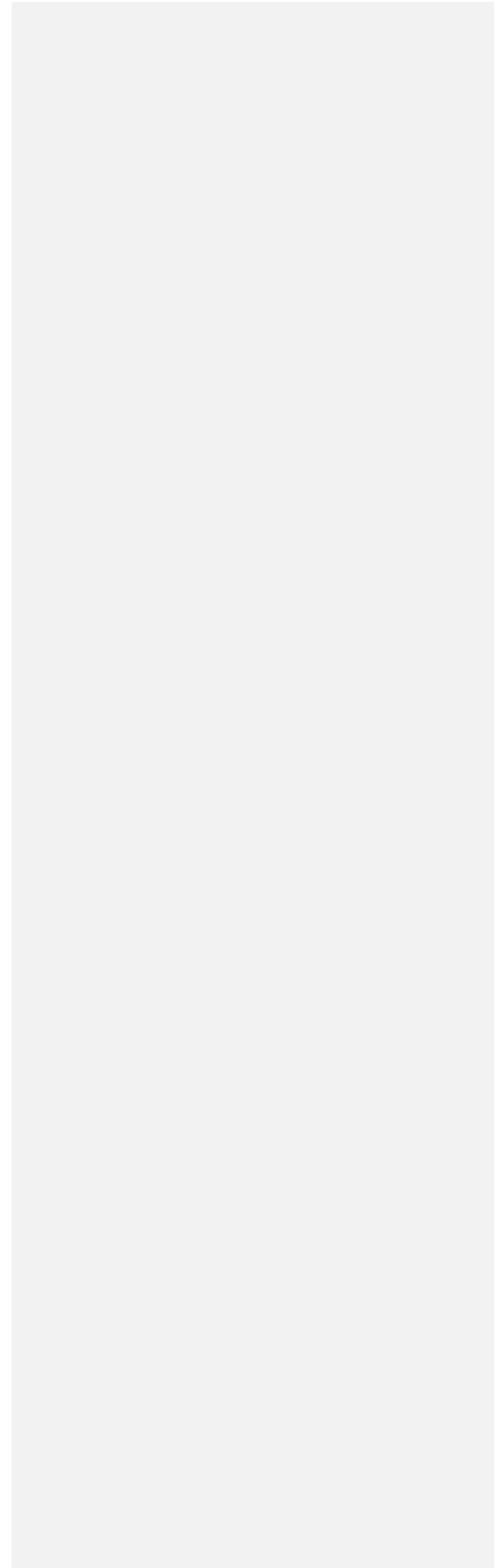
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LEASE BETWEEN:

- (1) **CROWN ESTATE SCOTLAND** (in Gaelic, Oighreachd a' Chrùin Alba) established as a body corporate in terms of the Crown Estate Scotland Order 2017 (previously carrying on business under the name of Crown Estate Scotland (Interim Management), (in Gaelic, Oighreachd a' Chrùin Alba (Stiùireadh Eadar-amail)) and renamed in terms of the Scottish Crown Estate Act 2019), having its principal office at Quatermile Two, 2nd Floor, 2 Lister Square Edinburgh EH3 9GL and acting in exercise of the powers conferred on it by the Scottish Crown Estate Act 2019 on behalf of Her Majesty The Queen (and its successors **the Landlord**); and
- (2) [] (the **Tenant**).

WHEREAS:

The parties have agreed to enter into this Lease to permit the Tenant to construct an offshore wind farm on the Site in accordance with the Specification prepared by the Tenant in respect of the Tenant's Works;

NOW WITNESSES as follows:

1 Definitions and Interpretation

1.1 In this Lease unless the context otherwise requires:

Acceptable Covenant means an entity with either:

- (a) BBB- or higher with Standard & Poor's Rating Group (a division of the McGraw-Hill Group of Companies, Inc.) or Baa3 or higher with Moody's Investor Services Inc. (or, if either cease to exist, an equivalent credit rating from another internationally recognised credit rating agency); or
- (b) Net Assets in excess of [20 x indemnity cap sum] POUNDS (£[]) Sterling (indexed annually upwards only);

Aquaculture means the farming and/or growing of aquatic organisms including (but not limited to) fish, molluscs, crustaceans and aquatic plants;

Authority means an authority whether statutory public local European international or otherwise government department or agency or a court of competent jurisdiction;

Break Event means where the Tenant's Works or part of them have been destroyed or damaged by an Insured Risk and a funder has elected in accordance with the provisions of a direct agreement between the funder and the Landlord that the insurance monies will be applied in repayment of amounts owing under the funding agreement between the funder and the Tenant rather than in reinstating the Tenant's Works or the part of them damaged or destroyed;

Break Fee means the sum calculated in accordance with Clause 6.4

Cable Corridor means []

Cap means £[] ([] POUNDS) [Note: to be calculated for each project based on potential CES losses] Sterling as increased by Indexation;

Commencement Date means [];

CDM Regulations means the Construction (Design and Management) Regulations 2015;

Change of Control means a change in the Control of the Tenant;

Control has the meaning given in section 450 of the Corporation Tax Act 2010;

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Conduit means a pipe drain sewer channel gutter cable wire or other conduit for the passage or transmission of water soil gas oil air smoke electricity communications information light or other thing and all ancillary structures and equipment in on or under the Site;

CPS means the Contracted Position Statement accepted by the Landlord in terms of the Option Agreement contained in Schedule Part 11;

Data means primary data, observations and metadata gathered and stored by or on behalf of the Tenant in relation to meteorological, aural, biological, sea user and geotechnical, geophysical, bathymetric, oceanographic, sedimentological, cultural and heritage investigations and monitoring on the Site or surrounding areas;

Development means the installation by or on behalf of the Tenant upon the Site of an offshore wind farm including (without limitation) wind turbine generators, cables between them, substation(s) energy storage equipment and supporting platforms and structures and ancillary structures and having an installed carrying capacity of not less than and no more than that specified in the Specification;

EML Consultant means a firm of insurance advisers of international repute with experience of the offshore wind industry jointly appointed by the Landlord and the Tenant in accordance with Schedule Part 5;

EML Study means a study performed by the EML Consultant pursuant to the terms of this Lease;

Estimated Maximum Loss means the estimated maximum loss arising from the worst-case credible scenario that could be expected to affect the Tenant's Works as determined in accordance with Schedule Part 5;

Force Majeure means fire storm tempest other exceptionally inclement weather conditions war hostilities rebellion revolution insurrection military or usurped power civil war labour lock-out strikes local combination of workmen and other industrial disputes riot civil commotion disorder decree of Government delay by a local authority or statutory undertaker in carrying out work in pursuance of its statutory obligations or failure by such authority to carry out such work or if the tests and procedures required to demonstrate that the Specified Works are capable of commercial operation cannot be carried out as a result of the Supply Cables not being connected or fully operational or any other cause or circumstance provided that in the case of any of the foregoing events, the event:

- a) adversely affects the completion of the installation of the Specified Works; and
- b) cannot be reasonably avoided or provided against by the Tenant or its contractors or professional team.

Funder means a bank or other financial institutions providing funding to the Tenant to implement the Development;

Generator Cables means the Conduits owned by the Tenant in on or under the Site for the passage of electricity generated by each of the Turbines to an offshore substation or other point of connection to the Supply Cables;

Implementation Date means the date the Tenant commences the installation of the Specified Works;

Index means the Consumer Prices Index (CPI) (or any identical index published under a different title) published by the Office of National Statistics or any successor body upon which the duties in connection with such an index devolve;

Indexed shall have the meaning given to it in clause 9;

Indexation shall have the meaning given to it in clause 9;

Insolvency Event means, with respect to the Tenant or any Security Provider, that it:

- a) is dissolved (other than pursuant to a consolidation, amalgamation or merger);
- b) becomes insolvent or is unable to pay its debts or fails or admits in writing its inability generally to pay its debts as they become due;
- c) makes a general assignment, arrangement or composition with or for the benefit of its creditors;
- d) institutes or has instituted against it, by a regulator, supervisor or any similar official with primary insolvency, rehabilitative or regulatory jurisdiction over it in the jurisdiction of its incorporation or organisation or the jurisdiction of its head or home office, a proceeding seeking a judgment of insolvency or bankruptcy or any other relief under any bankruptcy or insolvency law or other similar law affecting creditors' rights, or a petition is presented for its winding-up or liquidation by it or such regulator, supervisor or similar official;
- e) has instituted against it a proceeding seeking a judgment of insolvency or bankruptcy or any other relief under any bankruptcy or insolvency law or other similar law affecting creditors' rights, or a petition is presented for its winding-up or liquidation, and, in the case of any such proceeding or petition instituted or presented against it, such proceeding or petition is instituted or presented by a person or entity not described in paragraph d) above and:
 - i) results in a judgment of insolvency or bankruptcy or the entry of an order for relief or the making of an order for its winding-up or liquidation; or
 - ii) is not dismissed, discharged, stayed or restrained in each case within thirty (30) Working Days of the institution or presentation thereof;
- f) has exercised in respect of it one or more of the stabilisation powers pursuant to Part 1 of the Banking Act 2009 and/or has instituted against it a bank insolvency proceeding pursuant to Part 2 of the Banking Act 2009 or a bank administration proceeding pursuant to Part 3 of the Banking Act 2009;
- g) has a resolution passed for its winding-up, official management or liquidation (other than pursuant to a consolidation, amalgamation or merger);
- h) seeks or becomes subject to the appointment of an administrator, provisional liquidator, conservator, receiver, trustee, custodian or other similar official for it or for all or substantially all its assets (other than, for so long as it is required by law or regulation not to be publicly disclosed, any such appointment which is to be made, or is made, by a person or entity described in paragraph (d) above);
- i) has a secured party take possession of all or substantially all its assets or has an execution, attachment, sequestration or other legal process levied, enforced or sued on or against all or substantially all its assets and such secured party maintains possession, or any such process is not dismissed, discharged, stayed or restrained, in each case within thirty (30) Working Days thereafter;
- j) causes or is subject to any event with respect to it which, under the applicable laws of any jurisdiction, has an analogous effect to any of the events specified in paragraphs a) to i) above; or
- k) takes any action in furtherance of, or indicating its consent to, approval of, or acquiescence in, any of the foregoing acts

Intra Group Reorganisation means a Change of Control as a result of an intragroup reorganisation of the direct or indirect shareholders of the Tenant which has been intimated in writing to the Landlord;

Insured Risks means fire lightning explosion earthquake aircraft and other aerial devices dropped from them riot civil commotion storm impact by vessels subsidence landslip heave malicious damage terrorism and mechanical breakdown and such other risks as the Tenant may insure against and such other risks as the Landlord may reasonably require the Tenant to insure against;

Legal Obligation means an obligation imposed by or under or a requirement of any of the following (in so far as it relates to the Site or to their occupation or use or to the Tenant's Works or to the exercise of the Rights or to any substance or article upon in under or over the Site but irrespective of the person on whom such obligation is imposed or such requirement is made):

- (a) any present or future international convention or other international obligation or present or future legislation (whether an Act of Parliament European Union legislation or otherwise); or
- (b) any statutory instrument by law regulation direction order requirement notice plan code of practice or guidance note made under or pursuant to any of the matters referred to in clause (a) or by any Authority; or
- (c) any of the matters referred to in Schedule Part 1; or
- (d) any condition of a Necessary Consent;

Necessary Consents means:

- (a) all consents licences permissions orders exemptions and approvals required from any Authority (and shall include for the avoidance of doubt all assessments which may be required to be undertaken before the issue of any of the foregoing); and
- (b) those matters specified to be Necessary Consents in Schedule Part 3.

Net Assets means the fixed and current assets less the aggregate of the liabilities of the relevant entity based on financial statements prepared in accordance with the appropriate accounting policies and practices and as evidenced by its latest externally audited accounts;

Non-Statutory Decommissioning Programme means a programme for decommissioning activities for the removal of any equipment to be installed by the Tenant during the term of any Lease on Scottish Crown Estate Property and the restoration of any seabed and/or foreshore which does not fall within any Statutory Decommissioning Programme

OFGEM means the Office of the Gas and Electricity Markets Authority in the United Kingdom (or its successor Authority);

OFTO means:

- (a) the offshore transmission system owner appointed and licensed by OFGEM to acquire or (as the case may be) install and own the Supply Cables forming part of the offshore electricity transmission system; or
- (b) the Tenant where it has elected (in accordance with the relevant regulations and/or OFGEM guidance or policy) to install the Supply Cables forming part of the offshore electricity transmission system and it has notified the Landlord of such election.

[OFTO Works means the [Substation and ancillary structures equipment and Conduits (excluding Generator Cables) within the Substation Site] and] [●] Supply Cable(s) within the Designated Area together with any ancillary works owned and operated by the OFTO – **note: to be adjusted to reflect requirements]**

Oil and Gas Works means any pipelines platforms wellheads or other works for the exploration for or exploitation of oil and gas in respect of which the consents of the Secretary of State required under a licence issued pursuant to the Petroleum Act 1998 have been given;

Option Agreement means the option agreement dated [] made between the Landlord and the OFTO;

Plan means the plan attached to this Lease in Schedule Part 8;

Renewable Energy Zone means an area designated by an Order in Council made pursuant to Section 84(4) Energy Act 2004 within which the rights to which Section 84 Energy Act 2004 applies are exercisable, including any modification to the boundaries of that area as may from time to time be made by legislation or as may from time to time otherwise arise;

Rent means either (i) the Output Rent ascertained and payable as provided in Part 4 of the Schedule or (ii) from the Review Date, the Revenue Rent in the event of the Landlord so electing in terms of paragraph 7 of Part 4 of the Schedule;

REZ Site means that part of the bed of the sea within the Site which from time to time lies within a Renewable Energy Zone and references to the REZ Site include reference to any part of it which accommodate the Tenant's Works and Generator Cables together with any supporting structures or platforms for any supply transmission equipment;

Rights means the rights set out in Part 1 of the Schedule;

Scottish Crown Estate Property means any interest in land to which section 90B(5) of the Scotland Act 1998 applies;

Security Document means a guarantee or other form of credit support provided by the Tenant in a form as determined by the Landlord acting reasonably which may take the form of:

- (i) a guarantee from a guarantor, or guarantors, with an Acceptable Covenant; and/or
- (ii) a letter of credit or bond from a bank, financial institution or other organisation with an Acceptable Covenant;

and reference to Security Document shall include any permitted substitute security for the Tenant's obligations under this Lease;

Security Provider means a guarantor or any other bank, financial institution or other organisation with an Acceptable Covenant, providing security under any Security Document;

[Substation means the substation from time to time on the Substation Site;]

Site means the area shown for identification shaded pink on the Plan and more particularly described in the attached co-ordinates contained in Schedule Part 9 accommodating the Specified Works and references to the Site include reference to any part of it [but excluding for the avoidance of doubt the Sub-station Site – **note: include only if lease and OFTO lease granted simultaneously]**;

Specification means the specification prepared by the Tenant of the Tenant's Works attached to this Lease in Schedule Part 10;

Specified Works means *inter alia* [] Turbines together having a projected annual output of [] megawatt hours, scour protection material, energy storage equipment, substations and supporting structures and platforms, anemometry equipment, sub-structures, Generator Cables and Conduits within the Site (but excluding the Supply Cable(s)), the Specified Works being more particularly described in the Specification;

Statement of Commitment means a statement in the form contained in Schedule Part 8 (*Statement of Commitment*);

Statutory Decommissioning Programme means a decommissioning programme applicable to the Tenant's Works approved by the Secretary of State under the Energy Act 2004 including any modifications or conditions which the Secretary of State may from time to time specify;

[**Substation Site** means the part of the bed of the sea shown coloured [] on the Plan and references to the Substation Site includes references to any part of it]

Supply Cables means Conduits, substations and ancillary equipment owned by the OFTO for the passage or transmission of electricity generated by the Tenant's Works or otherwise required for the operation of the Tenant's Works (but excluding the Generator Cables);

Tenant where the context admits includes the Tenant's successors in title as tenant under this Lease;

Tenant's Works means the Specified Works, all renewals or replacements of them and all alterations or additions to them;

Term means a term of sixty (60) years commencing on (and including) the Commencement Date;

Termination of the Term means Termination of the Term of this Lease by expiry re-entry notice surrender or otherwise;

Territorial Limit means the seaward limit from time to time of the territorial seas adjacent to Great Britain;

Terrorism Estimated Maximum Loss means the estimated maximum loss arising from the worst-case terrorist scenario that could be expected to affect the Tenant's Works as determined in accordance with Part 5 of the Schedule;

Turbine means a wind turbine generator including (without limitation) foundations and/or other method of attachment to the seabed, tower and blades.

VAT means value added tax or other similar tax and unless otherwise expressly stated all Rent and other sums payable by the Tenant under this Lease are exclusive of any VAT charged or chargeable and the Tenant shall pay such VAT in addition to and at the same time as the sum in question;

Working Day means any day except Saturday Sunday and bank or other public holidays in Scotland and England;

Works Completion Date means the date on which occurs the satisfactory completion of such procedures and tests as from time to time constitute usual industry standards and practices to demonstrate that the whole of the Tenant's Works are capable of commercial operation.

- 1.2 The expression "alteration" when used in respect of the Tenant's Works includes (without limitation) removal of the Tenant's Works or any part of them.

- 1.3 The expression "decommission" when used in respect of the Tenant's Works has the meaning given in section 104 Energy Act 2004.
- 1.4 Words importing one gender include other genders.
- 1.5 Words importing the singular include the plural and vice versa.
- 1.6 References to persons include bodies corporate and vice versa.
- 1.7 Obligations of a party comprising more than one person are obligations of such persons jointly and severally.
- 1.8 Undertakings by the Landlord or implied on behalf of the Landlord are with effect from the date on which the Site ceases to form part of Scottish Crown Estate Property such undertakings shall be deemed to be made by the person from time to time who owns the Site and all liability on the part of Her Majesty and Her Successors or the Landlord in respect of any such undertakings shall cease as from such date.
- 1.9 An undertaking or obligation of the Landlord is made separately with Her Majesty and Her Successors and the Landlord and any person charged with the management of Scottish Crown Estate Property and the person from time to time that owns the Site.
- 1.10 An undertaking by the Tenant not to do something shall be construed as including an undertaking not to permit or knowingly to suffer it to be done by any other person.
- 1.11 A consent or approval to be given by the Landlord is not effective for the purposes of this Lease unless it is in writing and signed by or on behalf of the Landlord.
- 1.12 Reference to a statute directive or regulation includes any amendment modification extension consolidation or re-enactment of it and reference to any statute or directive includes any statutory instrument regulation or order made under it for the time being in force.
- 1.13 References to numbered clauses and schedules are references to the relevant clause or schedule to this Lease and references in any schedule to numbered paragraphs are references to the numbered paragraphs of that schedule.
- 1.14 The clause headings do not affect the construction of this Lease.

2 Demise

- 2.1 In consideration of the Tenant paying the Rent in accordance with the provisions of Part 4 of the Schedule the Landlord hereby grants and the Tenant accepts this Lease of the Site ***[Note: If the site is wholly within the REZ Site then only Rights are granted]*** and the grant of the Rights from the Commencement Date for the Term
- 2.2 EXCEPT AND RESERVING the matters set out in Part 2 of the Schedule.
- 2.3 TO HOLD the Rights to the Tenant for the Term.
- 2.4 SUBJECT TO:
 - 2.4.1 the public rights of navigation and fishing;
 - 2.4.2 the matters referred to in Part 3 of the Schedule;
 - 2.4.3 the rights of states or their nationals under rules of international law; and
 - 2.4.4 all other rights, servitudes, easements, wayleaves and quasi easements, licences, exercisable over the Site.

- 2.5 This Lease is warranted by the Landlord from fact and deed only and the Tenant will have no claim against the Landlord or Her Majesty in respect of any loss or damage caused by the exercise of any of the rights hereby reserved and the Landlord does not warrant that the Rights and the Site may lawfully be used or are otherwise suitable for any purpose authorised under this Lease.

3 Tenant's Obligations

The Tenant undertakes to the Landlord to observe and perform the obligations in this clause 3.

3.1 Rent and other payments

- 3.1.1 To pay the Rent in accordance with the terms of this Lease without deduction or set off (so long as the Site forms part of the Scottish Crown Estate) to the Landlord by electronic transfer to any account nominated by the Landlord and notified to the Tenant.
- 3.1.2 To observe and perform such of the provisions contained in Schedule Part 4 as are expressed as obligations on the Tenant's part.
- 3.1.3 If any Rent or other sum becoming payable under this Lease by the Tenant to the Landlord remains unpaid for more than twenty one (21) days after becoming due (whether formally demanded or not) then the Tenant shall (if required but without prejudice to the Landlord's right of termination or any other right or remedy of the Landlord) as from the date on which it becomes due until the date of actual payment pay interest on it (as well after as before any judgement) at the rate of three per cent (3%) per annum above the base lending rate from time to time of the Royal Bank of Scotland plc (or such other bank as the Landlord nominates from time to time) or if such base rates cease to be published at any time such other comparable rate of interest as the Landlord designates and the interest shall be deemed to be part of the Rent and recoverable in like manner as rent in arrears but shall not itself bear interest.
- 3.1.4 To pay all existing and future rates taxes assessments impositions duties charges and outgoings whatsoever payable whether by the owner or occupier in respect of the Tenant's Works or the exercise of the Rights except for taxes (other than VAT) payable by the Landlord on the receipt of the Rent or on any dealing with the Landlord's heritable interest as proprietor of the subjects of this Lease.
- 3.1.5 To pay and indemnify the Landlord against:
- (a) all VAT which is chargeable on the Rent or any other sum payable by the Tenant under this Lease upon receipt of a valid VAT invoice addressed to the Tenant; and
 - (b) all VAT incurred in relation to any costs or expenses which the Tenant is obliged to pay or in respect of which it is required to indemnify the Landlord under the terms of this Lease save where such VAT is recoverable or available for set off by the Landlord as input tax.

3.2 Installation of Specified Works

- 3.2.1 To use reasonable endeavours to procure that the Specified Works are designed using the reasonable skill care and diligence expected of appropriate professional designers experienced in designing projects of a similar size scope and complexity having due regard to the industry's knowledge and standards at the time of design and installation of the Specified Works.
- 3.2.2 To give to the Landlord at least seven (7) days prior written notice of the Implementation Date.

- 3.2.3 To obtain each Necessary Consent required for the installation and operation of the Specified Works as soon as it is required and to give all notices required to be given in connection with it.
- 3.2.4 To ensure that the Works Completion Date occurs by the sixth (6th) anniversary of the Commencement Date notwithstanding any event of Force Majeure.
- 3.2.5 To provide the Landlord, within fifteen (15) Working Days of receipt by the Tenant, with copies of the results of any tests carried out by or on behalf of the Tenant, its contractors and any OFTO that confirms that the Tenant's Works have been constructed satisfactorily in accordance with the Necessary Consents and the Specification.
- 3.2.6 In the event that any test carried out by the Tenant pursuant to clause 3.2.4 evidences that the Tenant's Works are not in accordance with the Necessary Consents and the Specification or are substandard or defective, the Tenant shall at its sole cost comply with the reasonable recommendations of the Landlord to remedy such defects or to ensure that the Tenant's Works comply with the Specification.
- 3.2.7 To notify the Landlord in writing immediately the Works Completion Date occurs and to provide the Landlord with such evidence as the Landlord may reasonably require to prove it occurred on the date notified.
- 3.2.8 As soon as reasonably practicable to provide to the Landlord a copy of any notice which must be given by any Authority before the operation of the Specified Works may lawfully commence and not to commence the operation of the Specified Works before such notice is given.
- 3.2.9 To provide to the Landlord from time to time on reasonable written request details of the consultants and contractors engaged by the Tenant and the principal suppliers of goods and services to the Tenant and the principal sub-contractors having design responsibility in connection with the Specified Works.
- 3.2.10 To provide to the Landlord as soon as reasonably practicable after the Works Completion Date plans and co-ordinates showing the location of the Specified Works as installed.

3.3 Alterations

- 3.3.1 Not to construct install erect fix or place on in over or under the Site any building erection structure works Conduit or materials except:
 - (a) the Specified Works;
 - (b) any renewal or replacement of the Specified Works (in materially the same form and layout); and
 - (c) any alteration or addition to the Tenant's Works in accordance with clause 3.3.2.
- 3.3.2 Not to make any alteration or addition to the Tenant's Works unless:
 - (a) the alteration/addition comprises the alteration or addition of Turbines and ancillary equipment structures and Conduits within the Site;
 - (b) the Tenant has obtained all Necessary Consents for the alteration/addition;
 - (c) the alteration/addition will not result in a reduction in the output capacity of the Tenant's Works below that stated in the definition of Specified Works other than:
 - (i) a temporary and unavoidable reduction while the alteration/addition is carried out;

(ii) a reduction (either temporary or permanent) in order to comply with a Legal Obligation or a proper health and safety requirement which cannot otherwise reasonably be complied with; or

(iii) the removal of Tenant's Works in respect of which clause 3.6.3 applies;

(d) the Tenant has submitted to the Landlord detailed plans and specifications showing the proposed alteration/addition; and

(e) the Tenant has obtained the Landlord's consent to carry out the alteration/addition (such consent not to be unreasonably withheld or delayed).

3.3.3 To comply with the provisions of clauses 3.2.1, 3.2.3, 3.2.4, 3.2.8 and 3.2.10 (*mutatis mutandis*) in respect of any renewal or replacement of the Specified Works or any alteration or addition to the Tenant's Works in so far as applicable.

3.3.4 Not to place affix or display any sign advertisement notice flag poster or other notification whatsoever within the Site except for such warning or other notices relating to the operation or use of the Tenant's Works as may either be required under any Legal Obligation or may be approved by the Landlord (such approval not to be unreasonably withheld or delayed).

3.4 **CDM Regulations**

3.4.1 The Tenant warrants that it has the competence to perform the duties imposed on a client by the CDM Regulations.

3.4.2 To comply with the provisions of the CDM Regulations in respect of the Tenant's Works including without limitation all requirements relating to the provision and maintenance of a health and safety file and to provide on request to the Landlord a copy of the health and safety file and any documents within it.

3.4.3 To supply all information to the Landlord that the Landlord reasonably requires to comply with the Landlord's obligations (if any) under the CDM Regulations.

3.4.4 Prior to commencing any Tenant's Works to confirm in writing to the Landlord who is to be the client for the purposes of the CDM Regulations in respect of those Tenant's Works which the parties agree, for the avoidance of doubt, shall not be the Landlord.

3.5 **Seabed Provisions**

3.5.1 Not to dig extract or remove any sand stone beach shingle or other minerals or mineral substances from the Site except in so far as is reasonably necessary for the installation of the Specified Works permitted under this Lease and the exercise of the Rights.

3.5.2 Not to cause waste spoil or destruction on the Site except in so far as is reasonably necessary for the installation of the Specified Works permitted under this Lease and the exercise of the Rights.

3.5.3 As soon as reasonably practicable following any disturbance of the seabed within the Site in the installation of the Specified Works permitted under this Lease or the exercise of the Rights to restore the same to a safe and (allowing for the presence of the Specified Works) proper condition and in accordance with all Legal Obligations.

3.5.4 Not to damage or interfere with the Supply Cables and Conduits referred to in Schedule Part 2.

3.6 **Repair**

3.6.1 To keep the Site and the Tenant's Works in good and safe repair and condition.

- 3.6.2 To keep the Tenant's Works properly maintained and in good working order.
- 3.6.3 The Tenant shall not be liable to comply with clauses 3.6.1 and 3.6.2 in respect of any part of the Tenant's Works which has broken down or been damaged to the extent that and for as long as it remains the case that it would not be economic in the reasonable opinion of a prudent operator of a project of similar size scope and complexity to the Tenant's Works to replace or repair the part of the Tenant's Works which is broken down or damaged taking into account the remainder of the design life of that part of the Tenant's Works, the unexpired residue of the Term and any notice given by the Tenant under clause 6 **Provided That:**
- (a) the Tenant shall not be relieved from liability by this clause 3.6.3 to the extent that the breakdown or damage is a consequence of any failure by the Tenant to comply with its obligations under this clause 3.6 prior to the date of breakdown or damage; and
 - (b) the Tenant shall remain liable to keep any part of the Tenant's Works to which this clause 3.6.3 applies in safe repair and condition.

3.7 Legal Obligations

- 3.7.1 At the Tenant's own expense to observe and comply with all Legal Obligations and not to do or omit to do in relation to the Tenant's Works or the exercise of the Rights anything by reason of which the Landlord may incur any liability under a Legal Obligation whether for penalties damages compensation costs or otherwise.
- 3.7.2 To do all works and things and to bear and pay all expenses required or imposed by any Legal Obligation and to use all reasonable endeavours to obtain all Necessary Consents required from time to time in order to install or operate the Tenant's Works.
- 3.7.3 If the Tenant receives from an Authority formal notice of a Legal Obligation forthwith to produce a copy to the Landlord and if such Legal Obligation is in the Landlord's reasonable opinion contrary to the Landlord's interests (but without prejudice to the requirements of clause 3.7.1 and 3.7.2) to make such objection representation or appeal against such Legal Obligation as the Landlord reasonably requires but at the Landlord's cost (except where such notice arises from the act neglect or default of the Tenant in which event any objection representation or appeal shall be made at the Tenant's cost).
- 3.7.4 Not to do or omit to do anything which may cause any Necessary Consent which has been obtained for the installation or operation of the Tenant's Works to be modified or revoked without the consent of the Landlord (which shall not be unreasonably withheld or delayed).
- 3.7.5 Following the Termination of the Term (unless a new lease is granted to the Tenant) the Tenant shall at any time if so required by the Landlord use reasonable endeavours (subject to reimbursement of the Tenant's reasonable and proper costs of doing so) to procure that any Necessary Consent for the installation and operation of the Tenant's Works (which does not automatically enure for the benefit of the Site) is transferred (in so far as it is transferable) to or is reissued or amended to be in favour of any person to whom a lease or option agreement is granted by the Landlord in respect of the Site.
- 3.7.6 Clauses 3.7.4 and 3.7.5 shall remain in full force and effect notwithstanding the Termination of the Term.

3.8 Use and Operation

- 3.8.1 After the Works Completion Date to keep the Tenant's Works in operation for the purpose of generating electricity at all times during the Term except:

- (a) insofar as the Tenant is prevented from doing so by an event or circumstance which is beyond its reasonable control including (without limitation) unsuitable weather conditions and safety reasons;
- (b) to the extent that temporary cessation of operation is necessary to carry out any inspection testing maintenance alteration repair enhancement or renewal of the Tenant's Works in accordance with the terms of this Lease;
- (c) in respect of any part of the Tenant's Works to which clause 3.6.3 applies;
- (d) to the extent and for such time only as National Grid - Electricity System Operator (or any successor organisation) requests the Tenant to cease or constrain the generation of electricity by the Tenant's Works; or
- (e) during the period reasonably required by the Tenant to decommission the Tenant's Works immediately prior to Termination of the Term;

Provided That in the circumstances set out in clauses 3.8.1(a) and (b) the Tenant shall use all reasonable endeavours to bring the Tenant's Works back into operation as soon as reasonably possible

3.8.2 Not to use the Site or exercise the Rights for any purpose except the installation of the Tenant's Works permitted under this Lease and the generation and storage of electricity by the Tenant's Works.

3.8.3 Not to do any act or allow any substance or article to remain on in under or over the Site or to exercise the Rights in a manner which:

- (a) may be or become or cause a danger nuisance (other than a nuisance which is not actionable by reason of statutory authorisation) damage or injury to the Landlord or any other person or premises; or
- (b) may cause pollution or harm to the environment or human health (except in so far as such pollution or harm is lawful by reason of the Necessary Consents for the purpose).

3.9 Diversion

To observe and perform the Tenant's obligations in respect of any diversion of any Generator Cables required under paragraphs 3 and 4 of Schedule Part 2.

3.10 Alienation

3.10.1 Not to assign or grant a charge over the whole or part of the Tenant's interest in the Lease and not to sublet part with or share the possession of or grant any licence in respect of the whole or part of the Tenant's interest in the Lease nor hold the Lease on trust for any other person;

3.10.2 Not to assign the whole of the Tenant's interest in the Lease without the consent of the Landlord such consent not to be unreasonably withheld or delayed provided that:

- (a) the Landlord shall not be regarded as unreasonably withholding its consent if it withholds it on the ground of any of the circumstances set out in clause 3.10.4; and
- (b) the Landlord shall not be regarded as giving its consent subject to unreasonable conditions if it gives its consent subject to any of the conditions set out in clause 3.10.5.

- 3.10.3 The provisos in clause 3.10.2 (a) and (b) shall operate without prejudice to the entitlement of the Landlord to withhold its consent on any other ground or grounds where such withholding of consent would not be unreasonable or to impose any further or subsequent condition or conditions upon the grant of consent where the imposition of such condition or conditions would not be unreasonable
- 3.10.4 The circumstances referred to in clause 3.10.2(a) are:
- (a) where in the reasonable opinion of the Landlord the proposed assignee is not of sufficient financial standing to enable it to comply with the Tenant's obligations under this Lease and a valid Security Document is not agreed to be provided to the Landlord from an agreed Security Provider; and
 - (b) the proposed assignee is not resident in the United Kingdom or in a jurisdiction where reciprocal enforcement of judgements exists.
- 3.10.5 The conditions referred to in clause 3.10.2(b) are:
- (a) that prior to the assignment the Tenant pays all arrears of Rent and other sums made payable under this Lease;
 - (b) that the proposed assignee executes and delivers an undertaking to the Landlord in such form as the Landlord may reasonably require to pay the Rent and observe and perform the covenants and the other provisions of this Lease to be observed and performed by the Tenant;
 - (c) that, where the proposed assignee is not incorporated in the United Kingdom, the proposed assignee procures a legal opinion letter from a firm of solicitors in the relevant jurisdiction addressed to and approved by the Landlord (acting reasonably) and provides to the Landlord an irrevocable address for service in the United Kingdom for notices under this Lease and proceedings with solicitors or other agents approved by the Landlord (acting reasonably);
 - (d) that all Necessary Consents for the installation and operation of the Tenant's Works are transferred or granted to the proposed assignee on or before the completion of the proposed assignment; and
 - (e) where the Landlord requires, the provision of a suitable Security Document.
- 3.10.6 Not to grant a charge over the whole of the Tenant's interest in this Lease without the consent of the Landlord such consent not to be unreasonably withheld provided that the consent of the Landlord shall not be required for a charge over the whole of the Tenant's interest in the Rights in favour of a reputable bank or other reputable and substantial financial institution provided that any chargee exercising a power of sale (or otherwise dealing with the Rights) shall be subject to the same terms and conditions relating to underletting or assignment as are set out in this clause 3.10.
- 3.10.7 Within one (1) month from their respective dates to send to the Landlord copies of all assignments of the Tenant's interest in the Lease, orders of court and other instruments affecting the devolution of this Lease or the Term and charges over it.
- 3.10.8 Any Change of Control (other than an Intra Group Reorganisation which has been notified to the Landlord in writing) of the Tenant is prohibited without the Landlord's prior written consent which shall not be unreasonably withheld or delayed. In deciding whether or not to grant their consent the Landlord shall have regard to the following factors (considered individually and collectively):
- (a) the impact of the Change of Control on the ability of the Tenant to timeously and safely progress the Development and the ability of the Tenant to comply with its obligations under this Lease in a timely and safe manner;

- (b) the selection process and factors taken into account by the Landlord in deciding to award the Option Agreement to the Tenant, including any special factors attributable to any shareholder whose ownership share of the Tenant will be reduced as a result of the Change of Control;
- (c) the impact of the Change of Control on the financial resources available to the Tenant to enable it to perform its obligations under this Lease;
- (d) whether the Change of Control would have an adverse effect on the capacity of the Tenant or otherwise available to the Tenant to enable it to perform its obligations under this Lease;
- (e) whether the Change of Control would have an adverse effect on the experience and capability of the Tenant or otherwise available to the Tenant to enable it to perform its obligations under this Lease;
- (f) whether the Tenant is in breach of its obligations under this Lease or any ancillary documents thereto;
- (g) that the entity taking on Control has delivered a Statement of Commitment to the Landlord validly signed by an officer of the relevant entity; and
- (h) such other material factors (not specified above) that may reasonably appear to the Landlord or are identified by the Tenant to be relevant at the time which may positively or negatively impact on the Landlord's assessment as to whether or not to grant consent to the Change of Control.

3.10.9 The Tenant may (but without prejudice to the other provisions of this Lease), permit any OFTO to carry out activities on the Site in connection with the transmission of electricity by the OFTO Works and the interface of the OFTO Works and the Tenant's Works including, without limitation, any of the following activities for those purposes:

- (a) installing, using, commissioning, maintaining, inspecting, accessing, removing, operating, modifying, altering, repairing and decommissioning equipment comprising part of the OFTO Works on the Site; and
- (b) providing services to the OFTO

but that subject to any such activities being carried out in accordance with the terms of the relevant interface agreement between the Tenant and the OFTO and no relationship of landlord and tenant being created or allowed to arise.

3.10A Under-letting of parts for the purposes of Aquaculture

1. Notwithstanding any other provision of this Lease including (but not limited to) clauses 3.8 and 3.10, this clause 3.10A shall have effect.
2. The Tenant may underlet part or parts of the Site for the purposes of Aquaculture in accordance with this clause 3.10A and with the consent of the Landlord (such consent not to be unreasonably withheld or delayed).
3. In the exercise of its consenting powers pursuant to clause 3.10A.2, the Landlord shall have regard to relevant policy measures promoting and otherwise dealing with co-existence and co-location as they apply to offshore windfarms.
4. The Tenant must not underlet part of the Site at a fine or premium.
5. In relation to any underlease granted by the Tenant, the Tenant must:
 - a. not vary the terms of the underlease nor accept a surrender of the underlease without the consent of the Landlord (such consent not to be unreasonably withheld or delayed); and
 - b. enforce the tenant covenants in the underlease and not waive any of them.

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3.11 **Indemnity**

3.11.1 To indemnify and keep the Landlord indemnified against all actions proceedings claims and demands brought or made and all proper costs and expenses (including reasonable legal fees and expenses) and all losses damages and liabilities incurred suffered or arising directly or indirectly in respect of or otherwise in connection with:

- (a) the grant of this Lease
- (b) the exercise or purported exercise of the Rights;
- (c) the installation existence or use of the Tenant's Works;
- (d) the state of repair and condition of the Site and the Tenant's Works;
- (e) any act neglect or default of the Tenant or anyone deriving title through or under the Tenant or anyone exercising the Rights with the express or implied authority of such persons;

- (f) any breach of any covenant or other provision of this Lease to be observed and performed by the Tenant; or
- (g) any Tenant's Works remaining on in or under the Site and/or the Cable Corridor after the Termination of the Term (whether or not in breach of clause 3.16 and whether or not the Tenant has been negligent) including (without limitation) any removal or disposal of those Tenant's Works pursuant to clause 10.3.2.

3.11.2 The following provisions apply to clause 3.11.1:

- (a) clause 3.11.1 shall not apply to the extent that any such actions proceedings claims and demands are brought or made or any losses damages costs expenses and liabilities are incurred or suffered as a consequence of the breach by the Landlord of its obligations under this Lease or the negligence of the Landlord or its servants agents and contractors;
- (b) the Landlord shall take reasonable steps to mitigate its losses in respect of which it claims an indemnity under clause 3.11.1;
- (c) the Landlord shall not make any admission of liability nor compromise or settle any actions proceedings claims and demands in respect of which it claims an indemnity under clause 3.11.1 without first notifying the Tenant and having due regard to the Tenant's timely representations;
- (d) the Tenant may with the consent of the Landlord (which shall not be unreasonably withheld) conduct on the Landlord's behalf any proceedings in respect of which the Landlord claims an indemnity under clause 3.11.1 in which case:
 - (i) the Tenant shall give full indemnity and security to the Landlord in relation to all costs expenses damages and liabilities incurred suffered or arising from such proceedings; and
 - (ii) the Tenant shall act so as to minimise any liability or other adverse effects on the Landlord;
- (e) clause 3.11.1 shall remain in full force and effect notwithstanding the Termination of the Term; and
- (f) the Landlord shall not be entitled under clause 3.11.1 to an indemnity in respect of the Landlord's loss of use loss of contracts and/or any other indirect loss of the Landlord but this limitation shall not apply to any other person's losses and shall not limit any other right or remedy of the Landlord apart from clause 3.11.1.

3.11.3 Notwithstanding the other terms of this Lease, the Tenant's liability to the Landlord but only in respect of actions, proceedings, claims and demands brought or made and all proper costs or expenses and all losses, damages and liabilities incurred suffered or arising directly or indirectly as referred to in clause 3.11.1 (a) to (f) shall not exceed the sum of [] POUNDS (£[]) Sterling (as indexed annually), in aggregate, exclusive of all if any VAT which shall be payable in addition if applicable but declaring that the Tenant's liability to the Landlord shall not be limited in any way in respect of:

- (a) death or personal injury caused by the Tenant's negligence or that of its directors, officers, employees, advisors, agents, consultants or contractors (including sub-contractors); and
- (b) Fraud or fraudulent misrepresentation by the Tenant or its officers or employees; and

- (c) any liability which cannot be excluded or limited by any laws and regulations.

3.11.4 Clauses 3.11.1 and 3.11.2 shall remain in full force and effect notwithstanding the Termination of the Term for a period of 5 years after the Termination of the Term.

3.12 **Costs**

3.12.1 To pay and indemnify the Landlord against all proper (and in the case of clause 3.11.1(a) reasonable) fees charges disbursements costs and expenses connected with incidental to consequent upon and (where appropriate) in proper contemplation of:

- (a) an application for the Landlord's consent (whether or not the consent is given or the application is withdrawn) unless such consent is unlawfully withheld or is subject to an unlawful qualification or condition because it is unreasonable or otherwise;
- (b) the inspection of the Site in accordance with paragraph 1.3 of Schedule Part 2 (where such inspection reveals a breach of the Tenant's covenants in this Lease) and the superintendence of any works required to remedy any breach of the Tenant's obligations under this Lease;
- (c) the recovery of arrears of Rent or other sums payable under this Lease; or
- (d) the enforcement of any obligation of the Tenant under this Lease.

3.12.2 Clause 3.12.1 shall remain in full force and effect notwithstanding the Termination of the Term.

3.13 **Insurance**

3.13.1 To effect and maintain the following insurances:

- (a) insurance of the Tenant's Works against destruction or damage by the Insured Risks in a sum equal to or in excess of the Estimated Maximum Loss (as Indexed) and Terrorism Estimated Maximum Loss (as Indexed) in accordance with normal insurance practice for offshore wind farms from time to time, approved by the Landlord (acting reasonably); and
- (b) third party and public liability insurance in respect of the Tenant's Works and the exercise of the Rights in the sum of £25,000,000, or in such other sum as the Landlord may from time to time reasonably require, in respect of each and every occurrence (except for pollution and product cover which may be on an annual aggregate basis if unavailable on an each and every occurrence basis), on terms in accordance with normal insurance practice for offshore wind farms from time to time.

3.13.2 The insurances required by clause 3.13.1 shall:

- (a) be with an insurer holding a credit rating of at least A- with Standard & Poor's Rating Group (or an equivalent credit rating from another internationally recognised credit rating agency):
 - (b) name the Landlord as co-insured;
 - (c) contain waiver of subrogation, separate policy provision and non-vitiating endorsements in a form acceptable to the Landlord (acting reasonably); and
 - (d) be on terms in accordance with normal insurance practice for offshore wind farms from time to time (including the level of any deductible) approved by the Landlord (acting reasonably).

- 3.13.3 The Tenant shall not be obliged to insure under clause 3.13.1(a) if and to the extent that such insurance is not available in the European insurance market on commercially reasonable terms or is only available at uneconomic rates.
- 3.13.4 To produce to the Landlord upon request from time to time (but no more frequently than once every twelve (12) months) a copy of or full details of each policy of insurance and evidence that each policy is in force.
- 3.13.5 Except to the extent clause 3.6.3 applies, if the Tenant's Works or any part of them are damaged or destroyed by an Insured Risk to apply for and use reasonable endeavours to obtain all Necessary Consents to reinstate the Tenant's Works and as soon as reasonably practicable after they are obtained to apply the insurance monies received under the policy of insurance in reinstating the Tenant's Works with all reasonable speed making up any shortfall out of its own resources.
- 3.13.6 To pay to the Landlord the premium and other costs which the Landlord may incur in effecting and maintaining any insurance which the Tenant fails to effect or maintain in accordance with the provisions of this clause 3.13.
- 3.13.7 To observe and perform the terms of any insurance policy effected pursuant to this clause 3.13 and all requirements from time to time of the insurers and not to do or fail to do anything which shall or may cause any such policy to be void or voidable or any monies payable under it to be irrecoverable.

3.14 **Health and Safety Reporting**

- 3.14.1 In this clause 3.14 the following expressions shall have the following meanings:

Health and Safety Incident means any incident which is reportable under this Lease at clause 3.14.2;

Health and Safety Requirements means all applicable health and safety obligations of the Tenant deriving from Legal Obligations and this Lease.

HSI Notification means the form of notification set out at Schedule Part 6 to this Lease.

RIDDOR Reportable Incident means a Health and Safety Incident giving rise to reporting requirement under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013;

Serious Incident means any fatal RIDDOR Reportable Incident or Health and Safety Incident which involves serious threat to life, harm or damage to the environment or property including but not limited to vessel collisions, structural collapses, explosions or fires, releases of flammable liquids and gases, hazardous escapes of substances.

Incident Reporting

- 3.14.2 The Tenant shall notify the Landlord of the following incidents occurring at the Site using the HSI Notification as follows:
- (a) in relation to a non-fatal RIDDOR Reportable Incident within one (1) month; and
 - (b) in relation to a Serious Incident as soon as reasonably practicable and, in any event, within forty-eight (48) hours.
- 3.14.3 The Tenant shall co-operate with the Landlord's reasonable written requests for information relating to any Health and Safety Incident at any time, save that the Tenant shall in no event be required to disclose any documentation or other information which is subject to legal privilege.

3.14.4 In the event of a Serious Incident occurring:

- (a) the Tenant must comply with its reporting obligations pursuant to Clause 3.14.2(b);
- (b) the Tenant shall notify the Landlord in the event that it proposes to release a press/public statement in connection with the same and shall provide a copy to the Landlord for information or in the event that it is not practicable to notify the Landlord in advance the Tenant shall notify the Landlord as soon as reasonably practicable following release of the press/public statement;
- (c) the Landlord shall notify the Tenant in the event that it wishes to release a press/public statement in connection with the same and shall provide a draft copy in advance of release to the Tenant for review and approval and the Landlord shall not be entitled to so release a press/public statement without the prior written approval of the Tenant (not to be unreasonably withheld or delayed) save where the Landlord considers acting reasonably and in good faith, that a press/public statement urgently requires to be made and that the approval of the Tenant may not be obtained timeously.

3.15 **Encroachments**

To use reasonable endeavours to prevent all encroachments and unlawful acts on the Site which may prejudice the Landlord's title to them and if any claim is made to the Premises or to any right profit or easement in or out of or affecting them forthwith to give notice of it to the Landlord and not to admit or acknowledge it in any way whatsoever.

3.16 **Decommissioning**

3.16.1 Prior to the Termination of the Term:

- (a) to decommission the Tenant's Works and to restore the Site in accordance with the Statutory Decommissioning Programme; and
- (b) if and to the extent that the Statutory Decommissioning Programme does not apply to any element of the Tenant's Works, to remove those Tenant's Works (unless the Landlord agrees otherwise in writing) in accordance with the Non-Statutory Decommissioning Programme

in both cases in accordance with all Legal Obligations;

3.16.2 On the Termination of the Term to deliver up the Site to the Landlord in good and safe order and condition in accordance with the Tenant's covenants in this Lease; and

3.16.3 To comply with the provisions of the Statutory Decommissioning Programme and all other Legal Obligations relating to the Tenant's Works which continue to apply after the Tenant has complied with clause 3.16.1 (including (without limitation) those relating to post decommissioning monitoring maintenance and management of the Site) and this obligation shall continue in full force and effect after the Termination of the Term for as long as any such provision of the Statutory Decommissioning Programme or Legal Obligation continues to apply.

3.17 **Data**

3.17.1 If the Landlord, acting in good faith, considers that it would be beneficial to the development of the offshore wind energy industry in Scotland, the Tenant shall provide the Data to the Landlord.

3.17.2 The Data shall be provided as follows:

- (a) in reports provided at such intervals as the Landlord may from time to time reasonably require (but no more frequently than annually) the first report during the Term to contain Data gathered since the Commencement Date and the subsequent reports to contain Data gathered since the previous report;
- (b) the Data shall be provided in each report in any format which the Landlord reasonably require from time to time and which:
 - (i) uses appropriate standards and protocols for data (including metadata) handling and archiving;
 - (ii) is in digital format which can be transmitted electronically;
 - (iii) can be entered into geographical information systems; and
 - (iv) is either geographically or library referenced;

and for the avoidance of doubt the Tenant acknowledges and agrees that it has no interest or right (including copyright and database rights) in any format or database in which Data is put stored or processed whether by the Tenant pursuant to its obligation under this clause 3.17, by the Landlord.

3.17.3 Subject to clause 4.4 the Tenant grants to the Landlord (and shall procure all necessary third party consents to enable it to do so) a perpetual non-exclusive right and licence to use and make publicly available for any purpose or in any manner or form Data provided to them pursuant to this clause 3.17.

3.17.4 This clause 3.17 shall remain in full force and effect notwithstanding the Termination of the Term in respect of Data gathered in connection with monitoring carried out in connection with the Tenant's obligations under clause 3.17.3.

3.18 Bribery

The Tenant shall comply and use all reasonable endeavours to ensure that any person employed by or acting on behalf of the Tenant or any of their representatives comply, whether with or without the knowledge of the Tenant, with all the requirements of the Bribery Act 2010 and any form of Guidance issued in respect of the Bribery Act 2010.

3.19 Disposal Premium

The Tenant shall pay any Disposal Premium (as defined in the Option Agreement) that falls due after the Commencement Date all in terms of the Option Agreement.

4 Landlord's Obligations

4.1 The Landlord undertakes to the Tenant that the Landlord shall not:

- 4.1.1 exercise the rights reserved in paragraph 1.2 of Schedule Part 2 to install Conduits other than to an OFTO in respect of the Supply Cables;
- 4.1.2 carry out or grant any licence or consent for the dredging or removal of minerals within the [Site/REZ Site]; or
- 4.1.3 install or permit the installation of any wind farm within a distance of five (5) kilometres from the boundary of the Site

without the consent of the Tenant (such consent not to be unreasonably withheld or delayed). **[note: to be discussed if phased projects]**

4.2 Clause 4.1 shall not apply to the exercise of any right granted pursuant to the matters referred to in Schedule Part 3.

- 4.3 The Landlord undertakes to the Tenant that they will not do or fail to do anything which shall or may cause any policy of insurance maintained under clause 3.13.1(b) to be void or voidable or any monies payable under it to be irrecoverable.
- 4.4 The Landlord undertakes to the Tenant not to disclose any Data relating to wind resource provided under clause 3.17 to any third party for a period of three (3) years after the date on which that Data was gathered except:
- 4.4.1 to employees of the Landlord and to government departments agencies or other government bodies and their respective employees;
- 4.4.2 to national repositories for data provided that any such repository does not publish or distribute the Data in its entirety or only uses the Data in aggregation with other data for the production of charts or for the purposes of research and keeps the source of the Data confidential;
- 4.4.3 as required by law or parliamentary questions;
- 4.4.4 where, in the absolute discretion of the Landlord, disclosure is required under the Freedom of Information (Scotland) Act 2002 (**FOISA**), or the Environmental Regulations (Scotland) 2004 (**EIRs**) and the Tenant acknowledges and agrees that the Landlord may, acting in accordance with the codes of practice (**Codes**) issued and revised from time to time under Section 60 of the FOISA and regulation 18 of the EIRs, disclose such data either in certain circumstances as described in the Codes, without consulting the Tenant, or following consultation with the Tenant and taking its views into account in accordance with the Codes;
- 4.4.5 in so far as already in the public domain through no default of the Landlord; or
- 4.4.6 as agreed by the Tenant;
- and where disclosure is made under clause 4.4.1 or 4.4.2 the Landlord shall notify the person to whom the information is disclosed of the confidentiality of the information and shall take reasonable steps to ensure that such person observes the restrictions on disclosure in this clause 4.4.
- 4.5 The Landlord covenants with the Tenant that it shall compensate the Tenant for any actual direct loss, costs and expenses (including any liability for loss of income incurred by the Tenant as a result of the Landlord requiring an OFTO to divert any Supply Cables (which at the time of the diversion are actually transmitting electricity generated by the Tenant's Works or otherwise required for the operation of the Tenant's Works) or any part of such Supply Cable (and which loss could not have been reasonably avoided or is not too remote) with the Tenant taking all reasonable and appropriate steps to mitigate against such loss.
- 4.6 Clause 4.5 shall not apply where the Landlord requires an OFTO to divert any Supply Cables or any part of a Supply Cable which, at the time of the diversion, are not actually transmitting electricity generated by the Tenant's Works nor otherwise required for the operation of the Tenant's Works.
- 4.7 The Landlord's obligations under this clause 4 shall cease upon Termination of the Term.

5 Termination on default

- 5.1 The Landlord may at any time after the occurrence of any of the following events exercise any of the rights set out in clause 5.3:
- 5.1.1 if any Rent remains unpaid twenty-one (21) days after it is due (whether formally demanded or not);

- 5.1.2 if any undertaking or provision in this Lease which is to be observed or performed by the Tenant is not observed or performed;
- 5.1.3 if the Works Completion Date has not occurred by the sixth (6th) anniversary of the Commencement Date whether or not the Tenant is in breach of any covenant or provision in this Lease and whether or not there is or has been an event of Force Majeure;
- 5.1.4 the occurrence of an Insolvency Event in respect of either the Tenant or any Security Provider;
- 5.1.5 any Disposal Premium (as defined in the Option Agreement) that may become due in terms of the Option Agreement after the Commencement Date remains unpaid twenty- one (21) days after it is due (whether formally demanded or not); or
- 5.1.6 any Security Document ceases to be valid, binding and enforceable for any reason or, if applicable, the Security Provider ceases to hold an Acceptable Covenant and the Tenant has not procured a replacement Security Document in accordance with clause 8 within thirty (30) Working Days.
- 5.2 the Tenant, or any person employed by or acting on behalf of the Tenant (whether or not with the Tenant's knowledge), has offered or given or agreed to give to any person any gift or consideration of any kind as an inducement or reward for doing or refraining from doing or for having done or refrained from doing any action in relation to the obtaining or complying with the Tenant's obligations under the Lease or any other contract with the Landlord.
- 5.3 Subject to the terms of clause 5.4 of the Lease, the Landlord may at any time after the occurrence of the events detailed in Clause 5.1.1 to 5.1.5 bring this Lease to an end on giving written notice to that effect to the Tenant whereupon the Lease shall cease and terminate (but without prejudice to any rights and remedies of the Landlord in respect of any arrears of Rent or any antecedent breach of this Lease and the continuing operation of any provision of this Lease which is expressed to continue to apply or remain in force and effect after or notwithstanding termination of the Lease) but which irritancy is hereby declared to be contractual and not penal and will not be purgeable at the Bar.
- 5.4 In the case of the occurrences detailed at Clauses 5.1.2 to 5.1.5 the Landlord will not be entitled to terminate the Lease as aforesaid unless it will have first given written notice of the breach to the Tenant and each Security Provider and to every creditor in any then existing standard security or floating charge (so far as the grant of such standard security or floating charge has been notified to the Landlord) affecting the Lease prescribing a time which is reasonable in the circumstances (such circumstances not including the financial position of the Tenant) within which such breach must be remedied and the Tenant (or any such creditor or Security Provider) will have failed to remedy the breach within the time prescribed in the notice and declaring that where the breach is the failure to pay any sum of money, a reasonable time will be a period of not less than fifteen (15) Working Days and that in the case of a breach of clause 5.1.2 will be not less than three (3) months and (b) in the case of the Tenant going into liquidation or suffering an administrative receiver, receiver or an administrator to be appointed the Landlord will allow the liquidator or administrative receiver, receiver or administrator (as the case may be) and any such creditor as aforesaid a period of one year in which to dispose of the Tenant's interest in the Lease and will only be entitled to terminate the Lease if the liquidator or administrative receiver, receiver or administrator or such creditor as the case may be will have failed to dispose of the Tenant's interest at the end of the said period provided always that the liquidator or administrative receiver, receiver or the administrator or such creditor as the case may be will accept in probative writing within one (1) month of the date of appointment or of such creditor's entry into possession of the Site and implement full responsibility for payment of the Rent (whether due in respect of a period occurring before or after the date of liquidation or receivership or administration or entering into possession as the case may be) and for the performance of all other obligations of the Tenant under the Lease from the date of liquidation or receivership or administration or the date of such creditor's entry into possession as the case may be to the date of disposal or termination of the Lease including settlement of any arrears of the

rents and the performance of any outstanding obligations which may subsist at the date of liquidation or receivership or administration or such creditor's entry into possession as the case may be and will if requested by the Landlord find caution for such payment and performance in an amount acceptable to the Landlord. And it is hereby declared that the Landlord will deal with any request for consent to assign the Lease made by such liquidator, administrative receiver, administrator or creditor as the case may be in the same manner as if the request had been made by the Tenant. The provisions relating to a liquidator, administrative receiver or administrator hereinbefore narrated will apply mutatis mutandis to a trustee in sequestration and a trustee under a trust deed for the benefit of creditors if the Tenant is an individual or individuals or a partnership or an unincorporated body.

6 Tenant's Right of Termination

- 6.1 The Tenant may terminate this Lease after the Works Completion Date and after a Break Event occurs on not less than twelve (12) months and not more than five (5) years written notice given to the Landlord within twelve (12) months after the Break Event occurs and specifying the date on which the Tenant intends this Lease to terminate (**Intended Date of Termination**).
- 6.2 The Tenant may terminate this Lease on or at any time after the 22nd anniversary of the Works Completion Date but in any event before the 37th anniversary of the Works Completion Date by serving on the Landlord not more than 5 years and not less than 2 years written notice which may be served on or at any time after the 20th anniversary of the Works Completion Date but must always be served before the 35th anniversary of the Works Completion Date specifying the proposed date of termination (**Intended Date of Termination**) but such Intended Date of Termination shall never be earlier than the 22nd anniversary of the Works Completion Date.
- 6.3 This Lease shall only terminate as a result of notice given by the Tenant under clause 6.1 or 6.2 on the date specified in the notice as the Intended Date of Termination if on that Intended Date of Termination the Tenant has:
- 6.3.1 paid all Rent due under this Lease up to (and including) the Intended Date of Termination;
- 6.3.2 complied with clauses 3.16.1 and 3.16.2 in all material respects;
- 6.3.3 given vacant possession of the Site to the Landlord; and
- 6.3.4 in respect of any termination of this Lease pursuant to Clause 6.2, the Tenant has paid (in cleared funds) the Break Fee to the Landlord on or before the Intended Date of Termination.
- 6.4 Any Break Fee under this Lease shall be calculated in accordance with the following formula:

$$BF = (5-N) \times \text{Minimum Rent}$$

Where

BF = Break Fee

N = Notice Period; and

Minimum Rent = means the net present value of the annual rent calculated and based upon the Rent payable by the Tenant in the Generation Period immediately preceding the date of the notice served by the Tenant pursuant to clause 6.2 assuming that the Output is twenty five per cent (25%) of the Minimum Output (as defined in Schedule Part 4) and which may be expressed as (Rent for that Generation Period x 4) with such aggregate sum being discounted by five per cent (5%) per annum per year of Minimum Rent

calculated pursuant to this Clause 6.4 and payable by the Tenant pursuant to Clause 6.3.4. Schedule Part 7 (*Break Fee – Worked Example*) provides worked examples showing how the Break Fee will be calculated

- 6.5 If a valid notice is given by the Tenant under clause 6.1 or 6.2 and this Lease does not determine on the Intended Date of Termination specified in the notice because of the Tenant's failure to comply with any of the conditions set out in clause 3 then:
 - 6.5.1 the Tenant may determine this Lease on giving written notice to the Landlord at any time after the Intended Date of Termination specifying a revised intended date of termination (**Revised Intended Date of Termination**) (which notice is not required to be of any particular length) but this Lease shall only determine as a result of notice given by the Tenant under this clause 6.5.1 if on the Revised Intended Date of Termination the Tenant has paid all Rent due under this Lease up to the Revised Intended Date of Termination and has complied with the conditions set out in clauses 6.3.2 and 6.3.3; and
 - 6.5.2 the Landlord may terminate this Lease with immediate effect on giving written notice to the Tenant at any time after the Intended Date of Termination specified in a notice given by the Tenant under clause 6.1 or 6.2.
- 6.6 The Landlord may in its absolute discretion waive compliance with all or any of the conditions or obligations set out in clause 6.2 but unless otherwise expressly agreed in writing such waiver shall not release the Tenant from liability to comply with the relevant condition or obligation.
- 6.7 Upon termination of this Lease under this clause 6 the Term shall cease and determine but without prejudice to either party's rights and remedies in respect of any antecedent breach by the other of this Lease and the continuing operation of any provision of this Lease which is expressed to continue to apply or remain in force and effect after or notwithstanding Termination of the Term.
- 6.8 Any notice given under this clause 6 shall be irrevocable.
- 6.9 Time is of the essence in respect of this clause 6.

7 Landlord's Right of Termination for Oil and Gas Works

- 7.1 The Landlord may at any time and from time to time during the Term terminate this Lease in respect of the Site or any part or parts of it by giving reasonable prior written notice to the Tenant specifying the Site or the part or the parts of it in respect of which the notice is given.
- 7.2 The Landlord shall not give notice under clause 7.1 unless the Secretary of State for the purposes of the Petroleum Act 1998 has requested the Landlord to determine this Lease in respect of the Site or the part or parts of it specified in the notice because the Site or the part or parts of it specified in the notice are required for Oil and Gas Works or rights are required over the Site or the part or parts of it specified in the notice in connection with Oil and Gas Works.
- 7.3 If notice is given under clause 7.1 in respect of the whole Site then upon the expiry of that notice this Lease shall determine but without prejudice to the rights and remedies of the Landlord in respect of any antecedent breach by the Tenant of its obligations under this Lease.
- 7.4 If notice is given under clause 7.1 in respect of a part or parts of the Site then upon expiry of that notice:
 - 7.4.1 this Lease shall terminate in respect of the part or parts of the Site specified in the notice;
 - 7.4.2 this Lease shall from that date take effect as if the part or parts of the Site specified in the notice were no longer part of the Site and/or REZ Site (as the case may be); and

- 7.4.3 such termination shall be without prejudice to:
- (a) the rights and remedies of the Landlord in respect of any antecedent breach by the Landlord of its obligations under this Lease in respect of the part or parts of the Site specified in the notice; and
 - (b) the continuing operation of this Lease in respect of the remainder of the Site.
- 7.5 The Tenant shall comply with the obligations under clauses 3.16.1 and 3.16.2 in respect of the Site or such part or parts of it as are specified in a notice given under clause 7.1 prior to the expiry of that notice.
- 7.6 Except as provided in clause 7.7 termination under this clause 7 does not give rise to any abatement of the Rent or liability of the Landlord to pay compensation to the Tenant for such termination.
- 7.7 Upon termination of this Lease in respect of a part or parts of the Site pursuant to a notice given under this clause 7 the Minimum Output shall be reduced by such proportion as shall be fair and reasonable (if any) having regard to the proportion of the Tenant's Works which the Tenant is required to remove as a consequence of that notice and the proportion of the Tenant's Works remaining.
- 7.8 Any difference arising between the Landlord and the Tenant as to the reduction in the Minimum Output pursuant to clause 7.7 may be referred by either the Landlord or the Tenant on notice to the other for determination by an independent electrical engineer acting as an expert as provided in clause 10.2 and who shall be nominated by the Landlord and approved by the Tenant (such approval not to be unreasonably withheld) or in default of agreement be nominated by the President of the Institution of Engineering and Technology or other acting chief officer for the time being on the application of either the Landlord or the Tenant.
- 7.9 The Tenant shall enter into such deeds and documents as the Landlord may reasonably require to give effect to any notice given under clause 7.1.

8 Replacement Security Document

- 8.1 On each anniversary of the Commencement Date the Tenant shall (if requested by the Landlord) deliver evidence in a form satisfactory to the Landlord (acting reasonably) that the Security Provider continues to have an Acceptable Covenant.
- 8.2 If a Security Document ceases to be valid, binding or enforceable for any reason or the Security Provider ceases to have an Acceptable Covenant then the Tenant shall provide the Landlord with a replacement Security Document (which shall be subject to a maximum value or cap on liability no less than the Cap) within thirty (30) Working Days of any Security Document ceasing to be valid, binding or enforceable or the Security Provider ceasing to have an Acceptable Covenant.

9 Indexation

- 9.1 Where in this Lease an amount is to be increased by **Indexation** or **Indexed** the amount shall be that amount multiplied by $(CPI1 \div CPI2)$, where:

CPI1 is the higher of:

- (a) the value of the Index published in respect of the month two (2) months prior to the relevant calculation date; and
- (b) the highest value of the index published after the date of this Lease; and

CPI2 is [**to be the same as CPI2 in the Option Agreement**]

9.2 If the reference base used to compile the Index changes after the date of this Lease the figure taken to be shown in the Index after the change is to be the figure that would have been shown in the Index if the reference base current at the date of this Lease had been retained.

9.3 If after the date of this Lease:

9.3.1 the Index ceases to be published; or

9.3.2 it otherwise becomes impossible to operate the formula in clause 9.1 by reference to the Index

the Landlord and Tenant shall consult together with a view to agreeing an alternative index or method of adjusting the amounts stated to Indexed which as closely as possible gives effect to the purpose and intent of the parties as set out in this Agreement but in the event of any failure to agree or if any other dispute or difference arises between the Landlord and Tenant with respect to the calculation of the amounts stated to Indexed either party may require the matter to be determined by an expert to be appointed either by agreement between the parties or, in the absence of agreement, by the President of the Royal Institution of Chartered Surveyors (or the next senior officer).

10 Miscellaneous

10.1 Except where and to the extent that any statutory provision prohibits the Tenant's right to compensation being reduced or excluded by agreement the Tenant shall not be entitled on quitting the Site to claim any compensation from the Landlord on any ground.

10.2 If there is any dispute or matter in this Lease expressed to be referable to an expert for determination:

10.2.1 the relevant expert shall be instructed to accept written representations and counter representations within such time as he shall direct as being reasonable having regard to the nature of the dispute or matter and the need for its timely resolution and in any event shall be instructed to seek to reach his decision within twenty eight (28) days (or such further time as he shall determine to be reasonable having regard to the nature of the dispute or matter) of his appointment;

10.2.2 the costs of the reference to the relevant expert and of his determination (including his own fees and expenses the fees and expenses of any other professional consulted in accordance with clause 10.2.3 and the costs of the Landlord and the Tenant) shall lie in his award;

10.2.3 the relevant expert shall be entitled to seek the opinion of another professional of an appropriate different experience and qualification if he shall be concerned that he lacks relevant or sufficient experience or expertise;

10.2.4 the relevant expert shall be required to give reasons for his decision and his decision will be final and binding save in case of manifest error; and

10.2.5 if a relevant expert shall die or otherwise be incapable of resolving the dispute either the Landlord or the Tenant may request (in default of agreement) a replacement person and the foregoing will apply.

10.3 The following provisions apply in respect of the Tenant's Works:

10.3.1 the Tenant's Works are the property of the Tenant and shall remain the property of the Tenant notwithstanding Termination of the Term; and

10.3.2 where any of the Tenant's Works remain on in or under the Site and/or the Cable Corridor after the Termination of the Term (whether or not in breach of clause 3.16) the Landlord may (save where prohibited by a Statutory Decommissioning Programme) in its absolute

discretion retain remove and dispose of those Tenant's Works as it sees fit without any liability whatsoever to the Tenant and without prejudice to the Landlord's rights and remedies in respect of any breach by the Tenant of clause 3.16 and the continuing operation of clause 3.11.

- 10.4 The Landlord shall incur no liability to the Tenant by reason of any approval given to or inspection made of the Tenant's Works or any drawing plan or specification of them nor shall any such approval or inspection in any way relieve the Tenant from its obligations under this Lease.
- 10.5 Any notice must be in writing and will be properly given if sent by Recorded Delivery or Registered post in the case of a notice by the Tenant to the Landlord addressed to them at Quatermile Two, 2nd Floor, 2 Lister Square, Edinburgh EH3 9GL (or at such other address as the Landlord may from time to time intimate in writing to the Tenant) and in the case of the Tenant and any Security Provider to its registered office or last known place of business if such registered office or last known place of business is Scotland, England or Wales or otherwise and in the case of the Security Provider only to any agent specified in the relevant Security Document declaring that all notices will be deemed to be received at the same time two (2) Working Days after posting and any omission to send by recorded delivery or registered post will not be pleadable where the notice has received an acknowledgement.
- 10.6 Nothing contained or implied in this Lease gives the Tenant the benefit of or the right to enforce or prevent the release or modification of any covenant agreement or condition relating to other premises.
- 10.7 It is not intended that any third party shall be entitled to enforce any term of this Lease pursuant to the Contracts (Rights of Third Parties) (Scotland) Act 2017.

11 Supply Chain and Contracted Position Statement

Supply Chain

- 11.1 In order to maximise efficiencies in the supply chain (whether on a local or national basis) required for the construction and subsequent maintenance and operation of the Tenant's Works to be constructed in terms of this Lease, the Tenant (whether alone or in partnership with other offshore wind farm developers) shall
- 11.1.1 use reasonable endeavours to engage with and meet regularly local and national business forums relevant supply chain organisation(s) and relevant economic development agencies with a view to ensuring their requirements for the efficient facilitation of the construction and subsequent maintenance and operation of the Tenant's Works are understood by such forums and organisations and to inform them of progress, concerns and opportunities regarding their region or companies which they account manage; and
- 11.1.2 advertise all opportunities for sub-contractors and suppliers in a way which ensures suppliers for which the opportunities may be relevant, are aware of procurement activities related to the Development.
- 11.2 Where applicable, the Tenant shall provide the Landlord with all Supply Chain Plan information at the time it is submitted as part of the Contract for Difference eligibility process.

Contracted Position Statement

- 11.3 Within two (2) weeks of every 2nd anniversary of the Commencement Date until the 6th anniversary thereof, the Tenant shall provide the Landlord with a written report on the delivery of the CPS Commitments contained within the CPS and thereafter the Tenant

shall provide such written report every five (5) years commencing on the 10th anniversary of the Commencement Date.

- 11.4 The report referred to in clause 11.3 shall be in a form approved by the Landlord and which aligns with other relevant supply chain measures across the UK, such as supply chain plans linked to Contracts for Difference (as defined in Schedule Part 4) and the Offshore Wind: Sector Deal published by the Department for Business, Energy & Industrial Strategy on 7 March 2019.
- 11.5 The Landlord may publish information from the report referred to in clause 11.3 as the Landlord considers appropriate.

12 Proper Law

- 12.1 This Lease shall be governed by and construed in accordance with the Laws of [Scotland](#) [England and Wales insofar as they apply to Wales](#) and the Site is to be regarded as if it were incorporated in the body of a county of [Scotland](#)[Wales](#).
- 12.2 The Tenant irrevocably agrees for the exclusive benefit of the Landlord that the courts of [Scotland](#) [England and Wales](#) shall have jurisdiction over any claim or matter arising under or in connection with this Lease and that accordingly any proceedings in respect of any such claim or matter may be brought in such courts. Nothing in this clause shall limit the right of the Landlord to take proceedings against the Tenant in any other court of competent jurisdiction, nor shall the taking of proceedings in any one or more jurisdictions preclude the taking of proceedings in any other jurisdiction or jurisdictions, whether concurrently or not, to the extent permitted by the law of such other jurisdiction or jurisdictions.

13 Further Assurance

The Parties agree that each shall and shall use reasonable endeavours to procure that any third party shall execute such documents and perform such acts as may be required to implement the OFTO regime or any equivalent replacement regime.

14 Direct Agreement

- 14.1 The Landlord acknowledges that the Tenant may require funding from a Funder to implement the Development and in arranging such finance a Funder may require, as a condition of the availability of that finance to enter into a direct agreement with the Landlord to cover (without limitation) the following principal matters:
- 14.1.1 an acknowledgement by the Landlord of any security taken by the Funders over the Tenant and its assets (including over the Lease);
- 14.1.2 an obligation to give notice to the Funder in the terms of clause 5.1 of the Lease;
- 14.1.3 an obligation on the Landlord not to take any action to wind up, appoint an administrator or sanction a voluntary arrangement (or similar) in relation to the Tenant without first giving a prescribed period of notice to the Funder;
- 14.1.4 a step in right (without giving rise to any express or implied assignment) to allow the Funder to ensure that the obligations of the Tenant are complied with as to prevent any circumstances arising under which the Landlord could seek to determine) the Lease; and
- 14.1.5 provisions regulating the application of insurance proceeds in the event that all or part of the Tenant's Works is destroyed or damaged which provisions will permit the Funder to recalculate financial ratios and conduct other economic tests (in respect of which the Funder will take account of the Landlord's reasonable representations) relating to the fundamental financial viability of the Development and fundamental ability of the Development to meet debt service after the occurrence of a major insurable event and will further provide that if the specified economic tests are not satisfied, then any insurance proceeds received in respect of such insurable event shall be applied in

repayment of amounts owing under any funding agreements rather than reinstatement of the relevant part or parts of the Tenant's Works.

- 14.2 The Landlord further acknowledges that they will act in good faith (at the cost and expense of the Tenant) to negotiate such a direct agreement where reasonably requested by the Tenant.

15 Consent to Registration

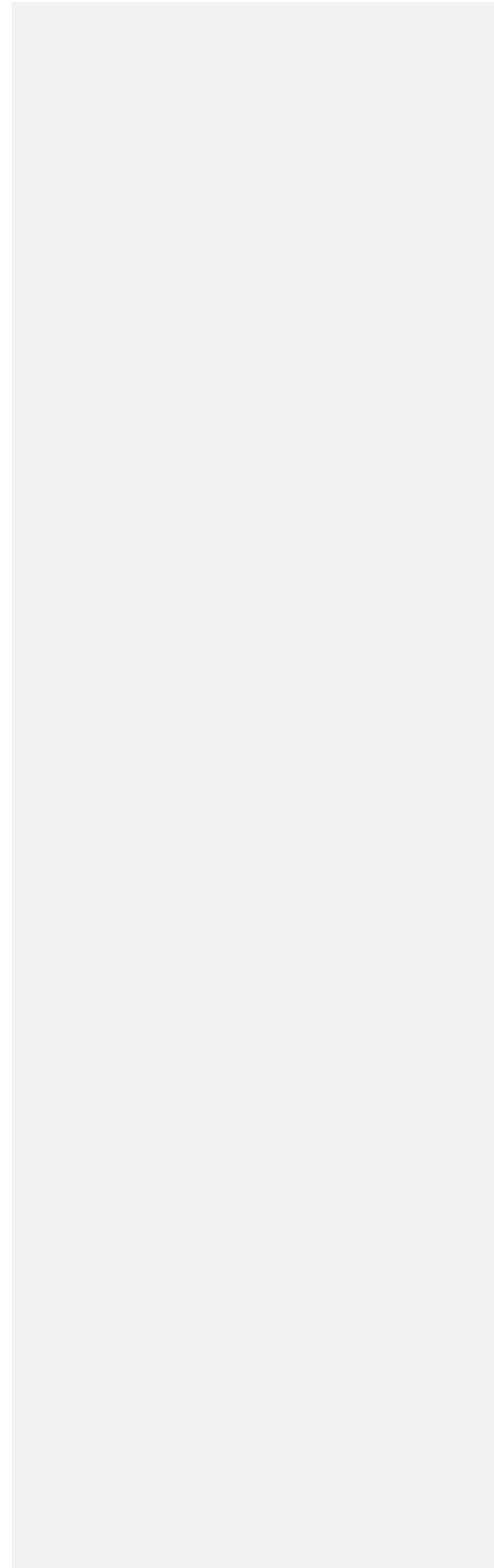
The parties hereto consent to registration hereof for preservation and execution: IN WITNESS WHEREOF these presents consisting of this and the preceding pages together with the Schedule attached are executed as follows:

They are subscribed for and on behalf of Crown Estate Scotland

At.....
On
By Authorised Signatory
..... Full Name
before this witness
..... Witness Signature
..... Witness Full Name
..... Witness Address
.....

And they are subscribed for and on behalf of the said []

At.....
On
By Director Signature
..... Director Full Name
.....
..... Witness
..... Full Name
..... Witness Address
.....



This is the Schedule referred to in the foregoing Lease by Crown Estate Scotland in favour [] of the wind farm site on seabed at []

Schedule Part 1 - Rights

- 1 The following rights are granted to the Tenant:
 - 1.1 the exclusive right to install use operate inspect maintain repair renew and remove Tenant's Works within the Site together with such ancillary rights as may be necessary to enable the Tenant to comply with its obligations under this Lease in respect of the Site;
 - 1.2 the rights granted under paragraph 1.1 in respect of the REZ Site shall not exceed the rights exercisable by virtue of any Order or Orders in Council from time to time made pursuant to Section 84(4) Energy Act 2004 designating the Renewable Energy Zone in which the REZ Site is located;
 - 1.3 to install Generator Cables and to use inspect maintain repair renew and remove Generator Cables from time to time laid by the Tenant on in under or over the Site and to divert any Generator Cables from time to time laid by the Tenant where entitled to do under this Lease; and
 - 1.4 to connect any Generator Cables to any transmission or substation equipment within the Site and to inspect maintain repair renew and remove any such connection for the purposes of carrying out any routine maintenance or repair work.

Schedule Part 2 - Exceptions and Reservations

- 1 The following are excepted and reserved to the Landlord and all others from time to time authorised by the Landlord (including, without limitation, any OFTO) or otherwise entitled:
 - 1.1 all mines minerals and mineral substances within the Site;
 - 1.2 the right to install and use (without interruption or interference save for routine maintenance or repair work) within the Site one or more substations (or supporting platforms including the footings of any such platform to accommodate any substation) and Supply Cables and any required Conduits for the purposes of transmitting electricity generated by the Tenant's Works or by any other wind farm or otherwise and to connect into and use any Conduits belonging to the Tenant and to use connect into inspect maintain repair renew and remove any such substations, Supply Cables and Conduits (not forming part of the Tenant's Works); and
 - 1.3 the rights to:
 - 1.3.1 enter the Site to exercise the rights referred to in paragraphs 1.2, 1.3.2 and 1.3.3;
 - 1.3.2 inspect the Site and the Tenant's Works; and
 - 1.3.3 carry out scientific research within the Site.
 - 1.4 the right to install works on the seabed outside the Site in such manner as it sees fit irrespective of whether the works affect or diminish the light air or wind which may now or at any time be enjoyed by the Site or the Tenant's Works subject only to the Landlord complying with the obligations under clause 4 (where relevant) provided that the Landlord will not install or suffer or permit the installation of any wind farm within an area of 2.5 km from the boundary of the Tenant's Works as shown on the plan provided pursuant to clause 8.1 of the Option Agreement (the **Exclusion Zone**) and where there is to be an adjacent wind farm the Landlord shall procure that a similar exclusion zone be included for such wind farm so that the total exclusion zone is 5 km provided further that this exclusion shall not apply where the Landlord, the Tenant and any relevant third party agree an alternative arrangement which would permit such use of the Exclusion Zone.
- 2 The rights granted under paragraphs 1.1 and 1.3 of Schedule Part 1 are subject to the following:
 - 2.1 the right of the Landlord to carry out and grant leases licences and consents for the carrying out of works on in over or under the Site are subject only to the Landlord complying with the obligations under clause 4 (where relevant);
 - 2.2 the rights of the Landlord under paragraph 3;
 - 2.3 the Tenant complying with its obligations under clauses 3.2, 3.3 and 3.5; and
 - 2.4 where the relevant works are not carried out by or on behalf of the OFTO for the purpose of accepting and transmitting electricity generated by the Tenant's Works, the Landlord shall pay to the Tenant reasonable compensation for any loss of income which the Tenant sustains as a direct consequence of such works and which could not have reasonably been avoided
 - 2.5 The Landlord's rights under paragraph 3 of this Part of the Schedule
- 3 The Landlord may from time to time upon giving at least twelve (12) months' notice to the Tenant:

- 3.1 require the Tenant to divert any or all Generator Cables and Conduits within the Site to such alternative position or positions within the Site as the Landlord may reasonably require; and/or
- 3.2 require the OFTO to divert any or all Supply Cables and Conduits within the Site (and the Cable Corridor) to such alternative position or positions within the Site (and the Cable Corridor) as the Landlord may reasonably require; and/or
- 3.3 require the OFTO to alter the position of the Site (and the Cable Corridor) and divert the Conduits and Supply Cables within it to such alternative positions within the Site (and the new Cable Corridor) as the Landlord may reasonably require.
- 4 Where the Landlord exercises its rights under paragraph 3:
 - 4.1 the Tenant shall carry out the diversion required under paragraph 3 prior to expiry of the notice given under paragraph 3; and
 - 4.2 the Landlord shall pay to the Tenant the costs and expenses reasonably incurred by the Tenant in carrying out such diversion under paragraph 3 and reasonable compensation for any loss of income which the Tenant sustains as a direct consequence of any such diversion and which could not have reasonably been avoided.
- 5 The exceptions and reservations under paragraph 1 are subject to the following terms:
 - 5.1 in exercising the rights under paragraph 1.3 and/or 1.4, the Landlord shall take all reasonable steps not to interrupt the operation of the Tenant's Works and shall make good any damage caused to the Tenant's Works in the exercise of the rights as soon as reasonably practicable and to the reasonable satisfaction of the Tenant or if the Tenant shall reasonably require the Tenant may after giving written notice to the Landlord make good the damage to the Tenant's Works caused by the exercise of the rights under paragraph 1.3 or 1.4 and the Landlord shall reimburse the Tenant for all reasonable costs and expenses incurred by the Tenant in making good the damage to the Tenant's Works;
 - 5.2 when exercising the right under paragraph 1.3.2, the Landlord shall where it is reasonably practical to do so take reasonable steps to enable the Tenant to provide a representative in whose presence the inspection is to be carried out;
 - 5.3 when exercising the right under paragraph 1.3.2, the Landlord shall where it is reasonably practical to do so engage for the purpose one of the contractors on the approved list of contractors from time to time supplied by the Tenant to the Landlord or (where it is not practicable to do so or no list is provided) use all reasonable endeavours to engage a contractor experienced in offshore wind farm developments for the purpose;
 - 5.4 the Landlord shall exercise the rights under paragraph 1.3.3 in accordance with a method statement which has been approved by the Tenant (such approval not to be unreasonably withheld); and
 - 5.5 where the rights referred to in paragraph 1.3.1 are exercised in respect of a Conduit installed pursuant to a consent under clause 4.1.1 then the terms of the consent shall apply in place of paragraph 1.2.

Schedule Part 3 - Title Matters

Part 1

The following are licences and leases granted by the Landlord where the Landlord have given undertakings to obtain the consent of the licensee/tenant specified below or where agreement with an existing tenant or licensee (in a form reasonably acceptable to the Landlord (acting reasonably) is required to allow co-location of uses or rights (each such consent being a Necessary Consent for the purpose of this Agreement):

| Date | Tenant/Licensee | Works |
|------|-----------------|-------|
| | | |

Part 2

The following are licences and leases granted by the Landlord where no consent need be obtained from the licensee/tenants specified below before the Specified Works are carried out in the vicinity of the works specified below:

| Date | Tenant/Licensee | Works |
|------|-----------------|-------|
| | | |
| | | |
| | | |

Part 3

The following are works that are not authorised by the Landlord to the extent that they lie outside the Territorial Limit of the United Kingdom but of which the Landlord are aware and in respect of which consent from the owners and/or operators of such works may need to be obtained:

[]

Schedule Part 4 - Rent

1 Definitions and Interpretation

In this part of the Schedule:

Contract for Difference means a Contract for Difference which is entered into pursuant to a direction made by the Secretary of State under Section 10 of the Energy Act 2013 (or any replacement support scheme which may be receivable by the Tenant);

Fee means the sum of £1.07 (Indexed on the Commencement Date and each anniversary of that date thereafter);

Forecasted Output means the anticipated Output in megawatt hours of electricity that may be generated by the Tenant's Works in each Forecast Year (or part thereof);

Forecast Year means each year of the Term commencing on 1 April

Generation Certificate means a certificate signed by a duly authorised officer of the Tenant addressed to the Landlord certifying for the relevant Generation Period:

1. the Output; and
2. the Output Rent payable

Generation Date means the date on which the Tenant's Works or any part of them first commence to generate and export electricity;

Generation Period means a period of 3 months commencing on (and including) 1 January, 1 April, 1 July and 1 October in each year provided that:

1. the first Generation Period shall be the period commencing on (and including) the Generation Date up to following first following 1 January, 1 April, 1 July or 1 October; and
2. the last Generation Period shall be the period commencing on (and including) the last 1 January, 1 April, 1 July or 1 October during the Term up to the Termination of the Term;

Minimum Output means (subject to paragraph 4 [●] [*Note: this will be seventy per cent (70%) of the annual Projected Output fixed under clause [8.5 and 8.6] of the Option Agreement*]) megawatt hours as revised from time to time under paragraph 4;

Output means the greater of:

1. either the amount in megawatt hours of Loss Adjusted Metered Output (as reported by Elexon) generated by the Tenant's Works during the relevant Generation Period or, where there is no Contract for Difference receivable by the Tenant in respect of the Tenant's Works, the amount of Net Electrical Output during the relevant Generation Period; and
2. twenty-five per cent (25%) of the Minimum Output;

Net Electrical Output means the amount in megawatt hours of electricity generated by the Tenant's Works during the relevant Generation Period less the amount in megawatt hours of electricity generated by the Tenant's Works but used by the Tenant in the operation of the Tenant's Works;

Output Rent means, for each Generation Period the sum calculated by the formula:

R = Fee x Output

Output Rent Commencement Date means the date forty eight (48) months after the Commencement Date

Payment Date means (subject to paragraphs 2.3 and [*link to review if reviewed*]) the date fourteen (14) days after the end of each Generation Period;

Records means all meter readings and other documents and records (including computer tapes discs and other storage systems) which are or ought in the reasonable opinion of the Landlord to be kept by the Tenant or its predecessors in title for the purpose of ascertaining the Output or that are or may in the reasonable opinion of the Landlord be relevant for that purpose;

Review Date means the date of the end of the Generation Period in which the thirtieth (30th) anniversary of the Commencement Date occurs

2 Output Rent

The Output Rent shall be ascertained and paid as provided in this paragraph 2;

- 2.1 From the Commencement Date, the Tenant shall pay to the Landlord rent in the sum of £1 per annum (if demanded).
- 2.2 From the earlier of (i) the Generation Date and (ii) the Output Rent Commencement Date up to (but excluding) the Review Date, the Tenant shall pay the Output Rent for each Generation Period in arrears on the Payment Date immediately following the relevant Generation Period.
- 2.3 The following provisions apply to the calculation and payment of the Output Rent for the last Generation Period (whether at expiry or earlier termination of this Lease or the Landlord electing to review the rent in accordance with paragraph 7):
 - 2.3.1 where the first and/or last Generation Periods are not a period of three months (3), the Minimum Output shall be the figure which bears the same proportion to the figure stated in the definition of Minimum Output above (as revised from time to time under paragraph 4) as the number of days in the first and/or last Generation Periods (as the case may be) bears to 91.25; and
 - 2.3.2 for the last Generation Period (where it is not a period of three (3) months), the Payment Date shall be the last day of that Generation Period.

3 Certificates and Records of Output

- 3.1 The Tenant shall notify the Landlord immediately that the Generation Date has occurred and provide such evidence as the Landlord may reasonably require to prove that it occurred on the date so notified.
- 3.2 On or before each Payment Date the Tenant shall deliver to the Landlord a Generation Certificate for the Generation Period which has just ended.
- 3.3 The Tenant warrants to the Landlord that each Generation Certificate will be true and accurate in all respects.
- 3.4 The Tenant shall maintain the Records fully and accurately throughout the Term and shall make them available for inspection at all reasonable times by an employee of the Landlord.
- 3.5 The Landlord may at its discretion cause an audit of the Records to be made by a professionally qualified person appointed by the Landlord and if it is established by such

audit that the Output for any Generation Period or the Gross Revenue for any Period has been understated then the cost of the audit shall be borne by the Tenant.

- 3.6 If it shall appear from any such inspection or audit or from any other circumstances that any further Output Rent for a Generation Period (or the Revenue Rent if applicable in terms of paragraph 7 below) for any Period is payable then such Output Rent shall be paid by the Tenant on demand and for the purpose of clause 3.1.3 of the foregoing Lease, such further Output Rent (or Revenue Rent if applicable) shall be deemed to have been due on the Payment Date (or Revenue Rent Payment Date if applicable) immediately following the Generation Period for which such further Output Rent (or Period for which such further Revenue Rent if applicable) should have been paid.
- 3.7 If any dispute or question shall arise between the Landlord and the Tenant with respect to the amount of the Output Rent (or Revenue Rent), either of them may by notice to the other require the matter in dispute to be determined by an independent chartered accountant acting as an expert as provided in clause 10.2 and who shall be nominated by the Landlord and approved by the Tenant (such approval not to be unreasonably withheld) or in default of agreement be nominated by the President of the Institute of Chartered Accountants of Scotland or other acting chief officer for the time being on the application of either the Landlord or the Tenant

4 Increase in Minimum Output

- 4.1 If and each time the Tenant carries out any alterations or additions to the Tenant's Works the Minimum Output shall be revised in accordance with this paragraph 4.
- 4.2 The Minimum Output figure used in calculating the Rent for each Generation Period commencing after the carrying out of the alteration or addition shall be the Minimum Output figure applying immediately prior to the carrying out of those alterations or additions or (if greater) seventy per cent (70%) of the anticipated annual electricity production of the Tenant's Works following the carrying out of the alteration or addition expressed in megawatt hours.
- 4.3 The Tenant shall provide to the Landlord such evidence and analysis of that evidence of the anticipated annual electricity production of the Tenant's Works following the carrying out of the alterations or additions to the Tenant's Works as the Landlord reasonably requires.
- 4.4 Any difference arising between the Landlord and the Tenant as to the anticipated annual electricity production of the Tenant's Works following the carrying out of the alterations or additions may be referred by either the Landlord or the Tenant on notice to the other for determination by an independent electrical engineer acting as an expert as provided in clause 10.2 and who shall be nominated by the Landlord and approved by the Tenant (such approval not to be unreasonably withheld) or in default of agreement be nominated by the President of the Institute of Engineering and Technology or other acting chief officer for the time being on the application of either the Landlord or the Tenant.

4.5 This paragraph 4 does not apply to any removal of the Tenant's Works or part of them required pursuant to clause 3.16.

5 Late Ascertainment of Output Rent (or Revenue Rent if applicable)

Where the Output Rent or Revenue Rent applicable to any Generation Period or Period (as applicable) is not ascertained before the relevant Payment Date or Revenue Rent Payment Date (as applicable), interest shall be paid on any Output Rent or Revenue Rent Payment Date (as applicable) payable in accordance with clause 3.1.3 of the foregoing Lease from the due date until actual receipt by the Landlord.

6 Forecasted Output

6.1 At least eighteen (18) months prior to the date on which, in the Tenant's reasonable opinion the Generation Date will fall, the Tenant shall provide to the Landlord a written estimate of the Forecasted Output calculated on a month to month basis for the period commencing on the anticipated Generation Date to the following 31 March;

6.2 On or prior to 1 August in every year throughout the Term commencing in the year the Generation Date is forecasted to occur in terms of paragraph 6.1, the Tenant shall provide to the Landlord a written estimate of the Forecasted Output calculated on a month to month basis for the immediately following Forecast Year (or part thereof in the final year of the Lease if applicable).

7 Rent Review

7.1 In this paragraph 7:

Base Rent means the average of the Output Rent payable by the Tenant in the 5 calendar years immediately preceding the Review Date (apportioned on an annual/daily basis if necessary for any such year) as agreed between the Landlord and the Tenant or in the event of dispute with respect to the calculation of the Base Rent either of them may by notice to the other require the matter to be determined by an independent chartered accountant acting as an expert as provided in clause 10.2 and who shall be nominated by the Landlord and approved by the Tenant (such approval not to be unreasonably withheld) or in default of agreement be nominated by the President of the Institute of Chartered Accountants of Scotland or other acting chief officer for the time being on the application of either the Landlord or the Tenant

Base Rent Commencement Date means in the event of the Landlord electing to review the Rent in accordance with this paragraph 7, the Review Date;

Base Rent Payment Dates means [], [], [] and [] *[insert dates every 3 months starting on the Review Date]* commencing on the Base Rent Commencement Date;

Certificate means, in relation to each Period, a certificate of Gross Revenue for that Period;

Gross Revenue means the gross income received or receivable by Tenant during the relevant Period for the electricity generated by the Tenant's Works and/or at the Site including but not limited to income received from (i) a Contract for Difference or any replacement support scheme which is received by the Tenant in respect of the Tenant's Works from time to time and/or (ii) the sale of electricity, (less any sum which the Tenant is obliged to pay to (a) the relevant counterparty under a Contract for Difference or (b) any other party under any replacement support scheme which is received by the Tenant in respect of the Tenant's Works from time to time) (iii) in the event of cessation of or constraint on the generation of electricity by the Tenant's Works (either partial or complete) as a direct consequence of the Tenant complying with a request made by National Grid Electricity Transmission plc or their successors ("NGET") to cease or constrain the generation of electricity by the Wind Farm in accordance with NGET's or their foresaids' role in procuring balancing services or equivalent replacement or similar

scheme that provides income to the Tenant, any income received by the Tenant to the extent directly attributable to the cessation or constraint on the generation of electricity by the Tenant's Works as a result of such request by NGET or their foresaids less (a) any VAT and (b) the cost of any electricity imported to the Tenant's Works and (iv) the storage of electricity at the Site;

Gross Revenue Certificate means a certificate prepared by the Tenant or auditors of the Tenant and furnished by the Tenant to the Landlord specifying the amount of and giving all relevant details of the Gross Revenue and the Revenue Rent payable in respect of the relevant Period which certificate shall contain all reasonably necessary information as the Landlord and his professional advisors may reasonably require to enable the Landlord to cross check and calculate the Gross Revenue and the Revenue Rent payable and how same has been attained and calculated;

Period means each year of this Lease, starting on the Base Rent Commencement Date, except that the last Period shall start on the relevant anniversary of the Rent Commencement Date and end on the last day of this Lease;

Revenue Rent means, for each Period, the greater of (i) £1 and (ii) two per cent (2%) of the Gross Revenue for the relevant Period, less the Base Rent paid for that Period;

Revenue Rent Payment Date means the date [20] Working Days after the end of each Period;

Records means all documents and records (including computer tapes discs and other storage systems) which are or ought in the reasonable opinion of the Landlord to be kept by the Tenant or its predecessors in title for the purpose of ascertaining the Gross Revenue or that are or may in the reasonable opinion of the Landlord be relevant for that purpose.

- 7.2 At least six (6) months prior to the Review Date the Tenant shall provide to the Landlord a statement setting out the Tenant's projection of the Revenue Rent ("Revenue Rent Statement") containing such information as is reasonably required by the Landlord to allow the Landlord to reach a decision as to whether to continue to receive the Output Rent or to change to the Revenue Rent. The Tenant shall act reasonably and diligently in preparing such Revenue Rent Statement.
- 7.3 Within three (3) months of the Review Date (or if later within three months of receipt by the Landlord of the Revenue Rent Statement) the Landlord shall give written notice to the Tenant as to whether it elects to receive the Output Rent or the Revenue Rent in respect of the period from the Review Date for the remainder of the Term. In the event that the Landlord does not give written notice to the Tenant as aforesaid, provided that the Tenant has provided the Revenue Rent Statement timeously, the Landlord shall be deemed to have elected to continue to receive the Output Rent for the remainder of the Term.
- 7.4 If the Landlord has elected (or is deemed to have elected) to receive the Revenue Rent from the Review Date then the Tenant shall pay the Base Rent quarterly in advance in equal instalments on the Base Rent Payment Dates commencing on the Base Rent Commencement Date.
- 7.5 Within twenty (20) Working Days of the end of each Period the Tenant shall provide a Gross Revenue Certificate to the Landlord and if the Revenue Rent for the relevant Period exceeded the Base Rent then the Tenant shall pay to the Landlord a sum which represents the amount by which the Revenue Rent exceeded the Base Rent for relevant Period within forty (40) Working Days of the end of the relevant Period. Any payments received or receivable by the Tenant following termination of the Lease will be treated as having been received in the last year of the Lease and the Tenant shall account to the Landlord for any additional Revenue Rent arising as a result of such payments.
- 7.6 The Tenant warrants to the Landlord that each Gross Revenue Certificate will be true and accurate in all respects.

8 **Miscellaneous**

- 8.1 Time shall not be of the essence for the purposes of this Part of the Schedule unless otherwise expressly stated.
- 8.2 The provisions of this Part of the Schedule shall continue to apply notwithstanding the expiry or earlier termination of the Lease
- 8.3 All figures stated in this Part of the Schedule are exclusive of VAT which shall, if appropriate, be payable in addition thereto in exchange for a valid VAT invoice.

Schedule Part 5 - Determination and Review of Estimated Maximum Losses

2 Initial Estimated Maximum Losses under this Lease

- (a) Within fourteen (14) days of the Commencement Date the Tenant shall appoint an EML Consultant to perform an EML Study in order to derive the Estimated Maximum Loss and the Terrorism Estimated Maximum Loss. The Tenant shall deliver the completed EML Study to the Landlord.
- (b) The appointment of an EML Consultant and any EML Study delivered by the EML Consultant will not discharge the Tenant's obligations under paragraph 1(a) unless the identity of the EML Consultant and his terms of appointment have been approved by the Landlord (such approval not to be unreasonably withheld).
- (c) In performing the EML Study the EML Consultant shall be required to:
 - (i) act impartially;
 - (ii) have due regard to the Tenant's Works and the location of the Tenant's Works;
 - (iii) use the "as low as reasonably practicable principle";
 - (iv) have due regard to "Sue and Labour", "Removal of Wreck" and "Vessel Costs"; and
 - (v) include all ancillary costs, professional fees and VAT.
- (d) The Estimated Maximum Loss and Terrorism Estimated Maximum Loss as derived from an EML Study shall be final and binding upon the Tenant and the Landlord save in the case of manifest error or fraud.
- (e) The cost of appointing the EML Consultant under this paragraph 2 shall be borne solely by the Tenant.
- (f) Following a determination under this paragraph 2, the Estimated Maximum Loss and Terrorism Estimated Maximum Loss for the purposes of clause 3.13.1(a) shall be the amount so determined by the EML Consultant.

3 Reviewing the Estimated Maximum Losses

- (a) On one occasion during each five (5) year period during the Term, either party may by notice to the other propose that an EML Consultant is appointed to perform a further EML Study to assess the Estimated Maximum Loss and Terrorism Estimated Maximum Loss at that time.
- (b) Any notice under paragraph 2(a) shall propose the identity of the EMC Consultant and the terms of appointment of the EMC Consultant.
- (c) Within thirty (30) days of such request (save where there is a dispute concerning the identity and/or terms of the appointment), the Tenant shall appoint the EML Consultant to perform a further EML Study. In performing that EML Study the EML Consultant shall be required to act in the same manner as that set out in paragraph 1(c)(i) to paragraph 1(c)(v) (inclusive).
- (d) The Estimated Maximum Loss and Terrorism Estimated Maximum Loss as derived from that EML Study shall be final and binding on the Landlord and the Tenant, save in the case of manifest error or fraud.

- (e) The cost of appointing the EML Consultant shall be borne by the Party which requested that the EML Study be performed.
- (f) Following a determination under this paragraph 2, the Estimated Maximum Loss and Terrorism Estimated Maximum Loss for the purposes of 3.13.1(a) shall be adjusted to the amount so determined by the EML Consultant.

Schedule Part 6 - Form of HSI Notification

Details of business or undertaking notifying the incident

| | | |
|-------------------------|-------------|---------|
| Legal name of business: | | |
| Name of site: | | |
| Business address: | | |
| Contact phone number: | Work hours: | Mobile: |
| Business email address: | | |

Incident details

| | | |
|------------------------------------------------------------------------------------------------|-------------------------------------------|---------------------------------------------------------------|
| Incident type | | |
| This is to notify of : | <input type="checkbox"/> Serious Incident | <input type="checkbox"/> Non-fatal RIDDOR Reportable Incident |
| Provide a brief explanation of the type of incident (i.e. fall from height, vessel collision): | | |
| | | |
| Incident date, time and location | | |
| Date of incident: | Location of incident: | |
| Time of incident: | | |
| Description of the incident Please provide as much detail as possible | | |
| | | |
| Do you propose to release a press/public statement in connection with the incident? | | |
| <input type="checkbox"/> Yes <input type="checkbox"/> No | | |

Notifier's details

| | | | | | | | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|--------------------------|-----|--------------------------|------|--------------------------|----|------------------------|-----------------------|
| <input type="checkbox"/> | Mr | <input type="checkbox"/> | Mrs | <input type="checkbox"/> | Miss | <input type="checkbox"/> | Ms | First Name: | Last Name: |
| | | | | | | | | Position at workplace: | Contact phone number: |
| | | | | | | | | Email: | |
| Is this the person that should be contacted for further information? | | | | | | | | | |
| <input type="checkbox"/> Yes <input type="checkbox"/> No If no, please provide the name and contact details of the appropriate person should further information be required | | | | | | | | | |
| <input type="checkbox"/> | Mr | <input type="checkbox"/> | Mrs | <input type="checkbox"/> | Miss | <input type="checkbox"/> | Ms | First Name: | Last Name: |
| | | | | | | | | Position: | Contact phone number: |

Schedule Part 7 - Break Fee Worked Example

We set out below two worked examples of how a payment will be calculated following the service of a break notice under a lease and in accordance with the following formula:

Any Break Fee under this Lease shall be calculated in accordance with the following formula:

$$BF = (5 - N) \times \text{Minimum Rent}$$

Where:

BF, N and **Minimum Rent** have the definitions given to them in Clause 6.

Examples:

1. If five (5) years notice is served then the break fee will be nil because:

$$BF = (5-5) \times \text{Minimum Rent}$$

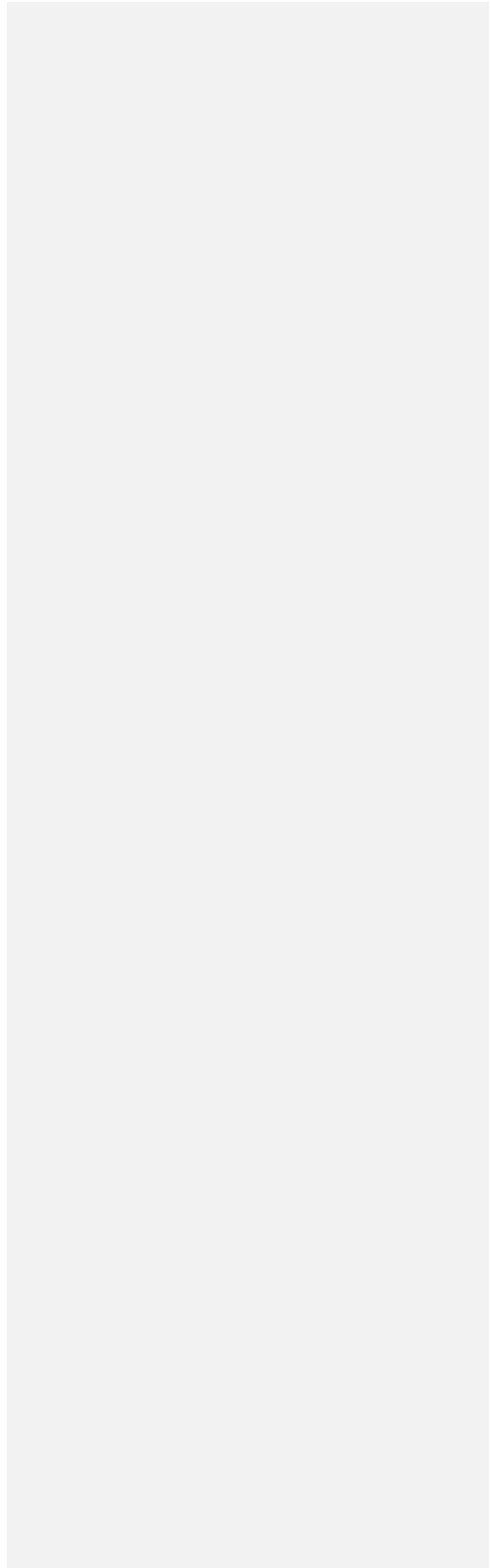
$$BF = 0 \times \text{Minimum Rent}$$

2. If less than five (5) years notice is given, then a break fee will apply:

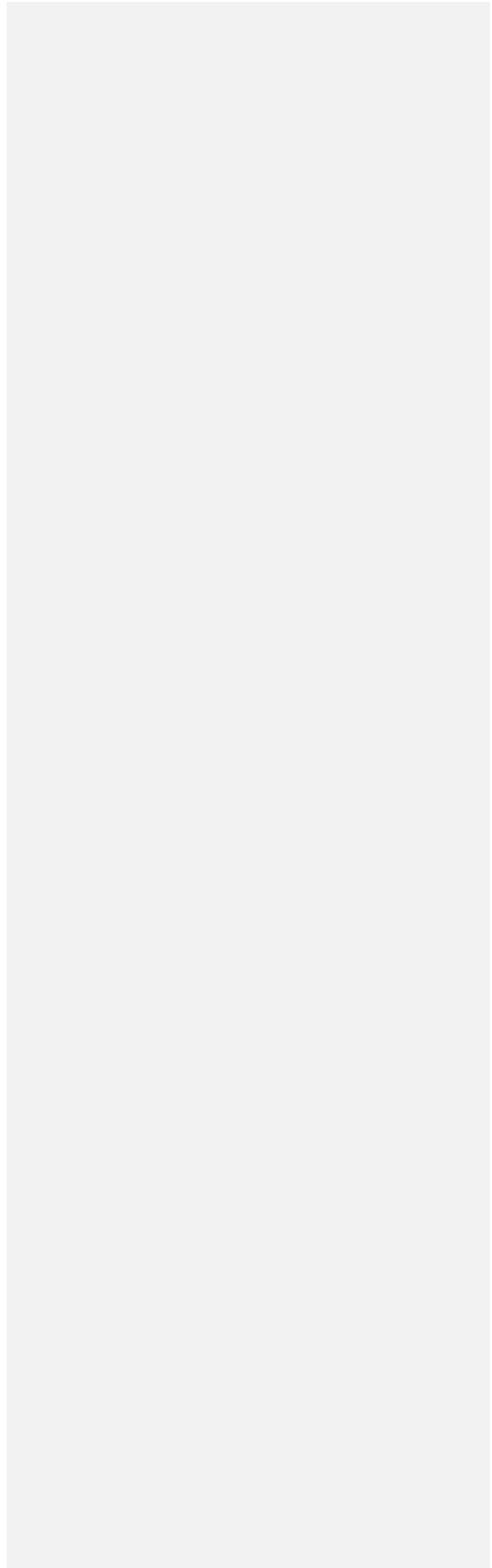
Assuming Minimum Rent (on an annual basis) at the point the Break Notice is served is £2,000,000 then, applying a five per cent (5%) discount rate yields the following Break Fees:

| Notice Period (Years) | Break Fee (NPV) | Comment |
|-----------------------|-----------------|---------------------------------------------------|
| 5 | £0 | See 1. above. |
| 4 | £1,904,762 | 5-4 = 1 years Minimum Rent, discounted at 5% p.a. |
| 3 | £3,718,821 | 5-3 = 2 years Minimum Rent, discounted at 5% p.a. |
| 2 | £5,446,496 | 5-2 = 3 years Minimum Rent, discounted at 5% p.a. |
| 1 | £7,091,901 | 5-1 = 4 years Minimum Rent, discounted at 5% p.a. |
| 0 | £8,658,953 | 5-0 = 5 years Minimum Rent, discounted at 5% p.a. |

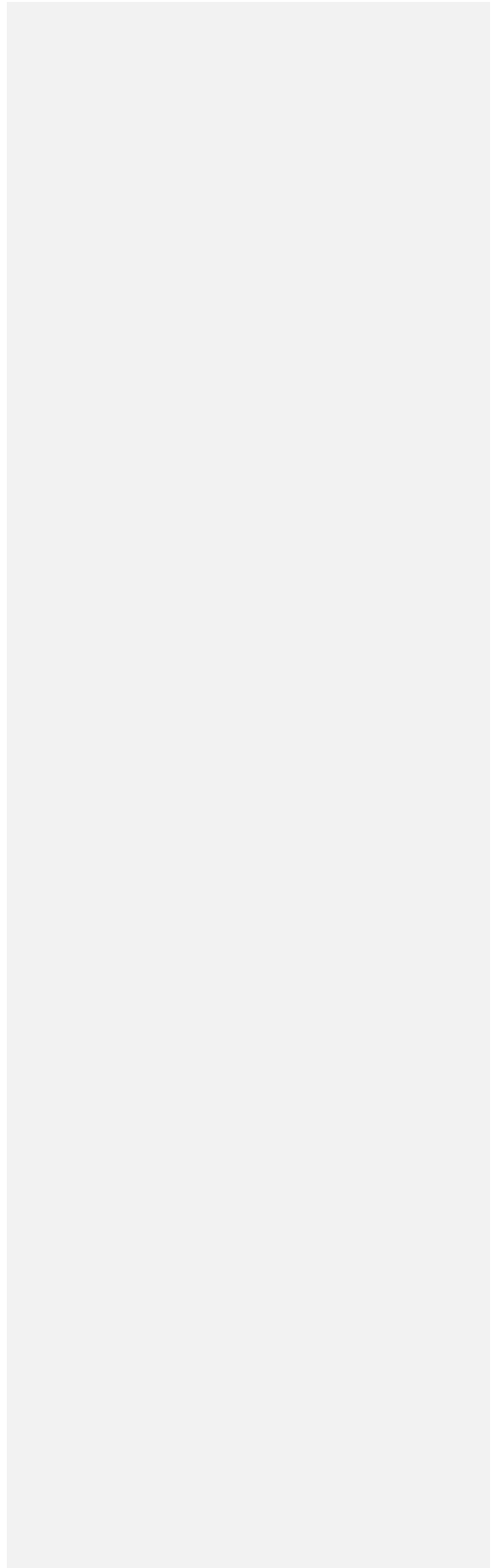
Schedule Part 8 - Plan



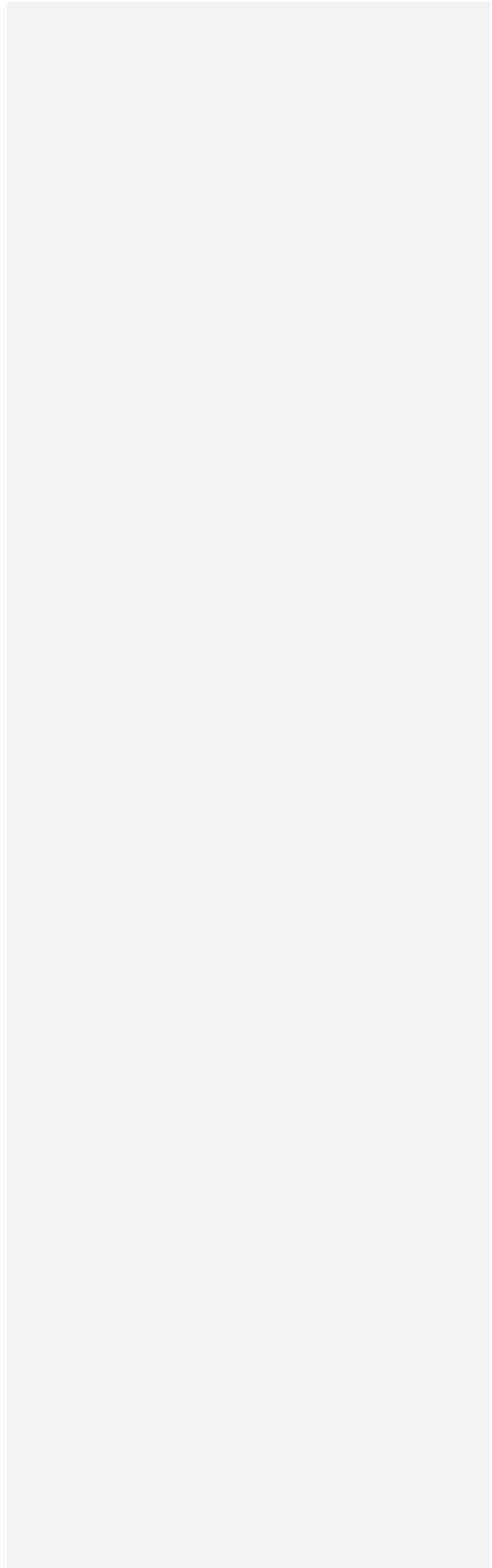
Schedule Part 9 - Co-ordinates



Schedule Part 10 - Specification



Schedule Part 11 - Contracted Position Statement



Schedule Part 12 - Statement of Commitment

Dear Sirs

Statement of Commitments re: [] (“the Development”)

We,

[•] [name, company no. (if applicable) and registered office of organisation] refer to the abovementioned Development and now confirm the following to Crown Estate Scotland:

1. We are aware of, and are willing to participate in the Development which is the subject of this letter. A brief summary of our proposed involvement in the Development is [•];
2. Insofar as information provided in this letter relates to this organisation, we are aware that Crown Estate Scotland are acting in reliance on this information in assessing whether or not to consent to our proposed involvement and confirm that it is comprehensive, accurate and up to date; and
3. The acceptance of our involvement in this Development does not present a reputational risk to Crown Estate Scotland in that neither this company/organisation nor any office holder or person with powers of representation, decision or control within this company/organisation have been convicted of any of the types of unlawful conduct described in full in Appendix 1 to this letter. If at any time this company/organisation or any office holder or person with powers of representation, decision or control within this company/organisation is convicted of an offence under replacement/amendment legislation to that listed in Appendix 1, we understand that this requires to be disclosed to Crown Estate Scotland;

Yours faithfully,

Signed for and on behalf of [•] [name of company/organisation] by:

Please formally sign for and on behalf of your organisation here and provide full details of signature to confirm how your company/organisation is bound by this letter as shown at Appendix 1.

Template Letter Appendix 1 – Reputational confirmation

- i) Conspiracy relating to participation in a criminal organisation or an offence relating to involvement in/directing serious organised crime (Criminal Justice and Licensing (Scotland) Act 2010);
- ii) Corruption (within the meaning of the Public Bodies Corrupt Practices Act 1889 or the Prevention of Corruption Act 1906)
- iii) Bribery or corruption (within the meaning of the Criminal Justice (Scotland) Act 2003)
- iv) Bribery (within the meaning of the Bribery Act 2010)
- v) Cheating the Revenue
- vi) Common law fraud
- vii) Common law theft/ fraud
- viii) Fraudulent trading (within the meaning of the Companies Acts 1985/ 2006)
- ix) Fraudulent evasion (within the meaning of the Customs and Excise Management Act 1979 or the VAT Act 1994)
- x) Offence re: taxation (Criminal Justice Act 1993)
- xi) Common law uttering (Scots law term for fraud)
- xii) Common law attempting to pervert the course of justice
- xiii) Offences under Counter-Terrorism Act 2008

- xiv) Money laundering (within the meaning of the Proceeds of Crime Act 2002)
- xv) Proceeds of criminal conduct (within the meaning of the Criminal Justice Act 1988)
- xvi) Human trafficking (Human Trafficking and Exploitation (Scotland) Act 2015)
- xvii) Proceeds of drug trafficking (Drug Trafficking Act 1994)

Any other offence that is set out as an exclusion ground in the Directive 2014/24/EU of the European Parliament and of the Council on public procurement or any subsequent legislation which replaces that.

ANNEX 4

**Aquaculture & Blue Growth The Crown Estate Perspective,
November 2023**

and

**Oceans Future to 2050: Marine Aquaculture Forecast, DNV (Det
Norske Veritas), 2024**

Aquaculture & Blue Growth The Crown Estate Perspective

Aquaculture for a Thriving Future

November 2023





THE CROWN ESTATE



Dating back more than 260 years, The Crown Estate is a unique business with a diverse portfolio that stretches across the country



Established by The Crown Estate Act of 1961
As an independent commercial business with accountability to Parliament.



Return our net revenue profit to the Treasury
>£3 bn generated in the last 10 years for public spending



Active owners and managers of land and seabed
We seek to leverage our scale and convening power to make a meaningful difference.









With a new purpose
To create lasting and shared prosperity for the nation



And an ambitious approach
Guided by our purpose and informed by major trends impacting our business, we seek to create broad financial, environmental and social value for our stakeholders, customers and the nation.

About TCE Marine: As custodian of the marine environment TCE leads the sustainable development of the seabed to deliver value for the nation

OUR PAN-SECTORAL VIEW

| | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  Energy Offshore wind Energy conversion Marine energy |  Storage CCUS Hydrogen Natural gas |
|  Infrastructure Power & Telco Cables Pipelines |  Minerals Reclamation Aggregate dredging Marine mining |
|  Coastal Ports and harbours Aquaculture Leisure |  Habitats Habitat creation Biodiversity Nature recovery |

OUR OFFSHORE AND ONSHORE FOOTPRINT

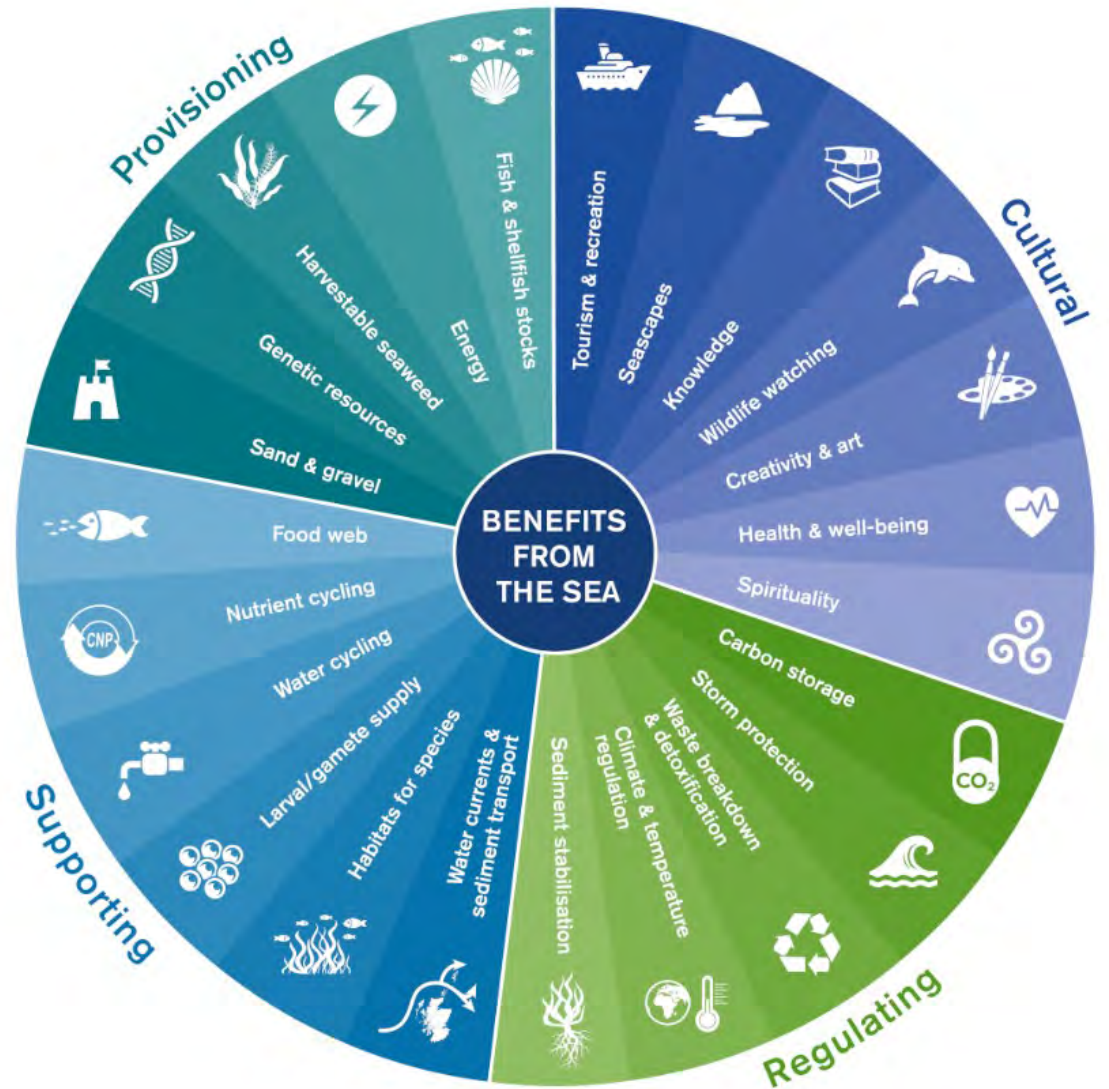


OUR CAPABILITIES

- ✓ Our deep **expertise and experience** (incl. multi-sector knowledge, data & spatial insight)
- ✓ Our **ability to look across sectors** (e.g. energy, minerals, nature) balancing competing and complementary demands
- ✓ Requirement and purpose to **deliver greatest value for the nation**
- ✓ **Statutory independence** and our ability to take an objective **long-term view**
- ✓ Our **power to convene** and partner with others to bring the marine vision to life

Valuing our Natural Assets

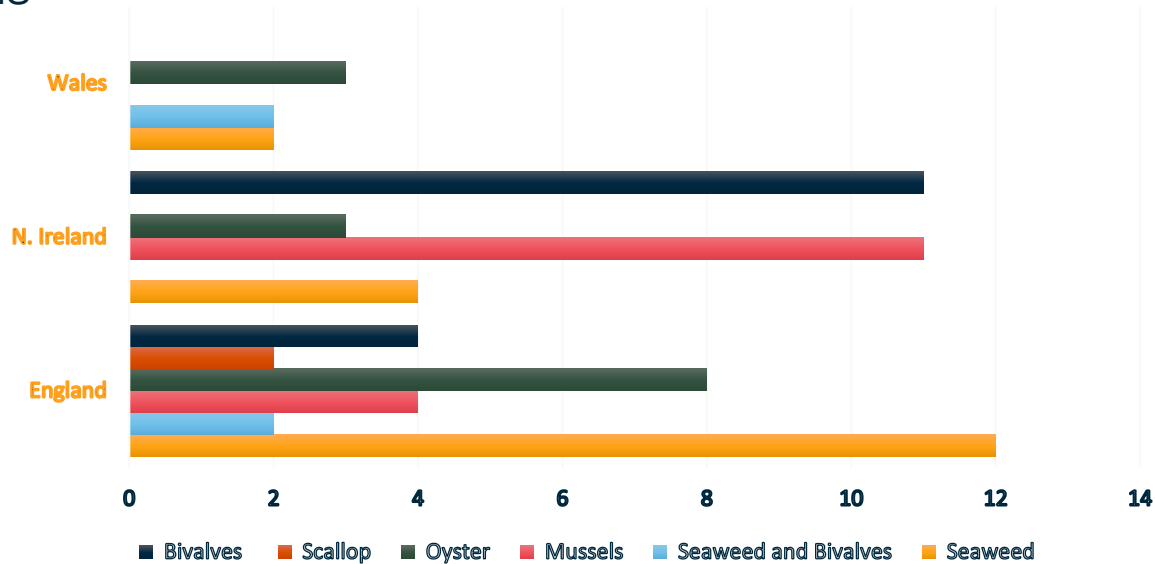
- Work is underway (by ourselves and others) to map and assess the natural capital value of the different areas of The Crown Estate seabed and foreshore
- Huge variety of habitat types delivering associated ecosystem services
- Linked to separate work on understanding Whole Life Carbon and other social and environmental impacts associated with marine sectors
- Supporting the definition and scope of a roadmap to guide a whole-systems approach to sustainable marine management, including delivery of the nation's net zero and nature recovery goals
- Underpinned by robust and trusted data and evidence to improve strategic decision making
- Creating better balance for competing demands on the seabed and space for blue growth



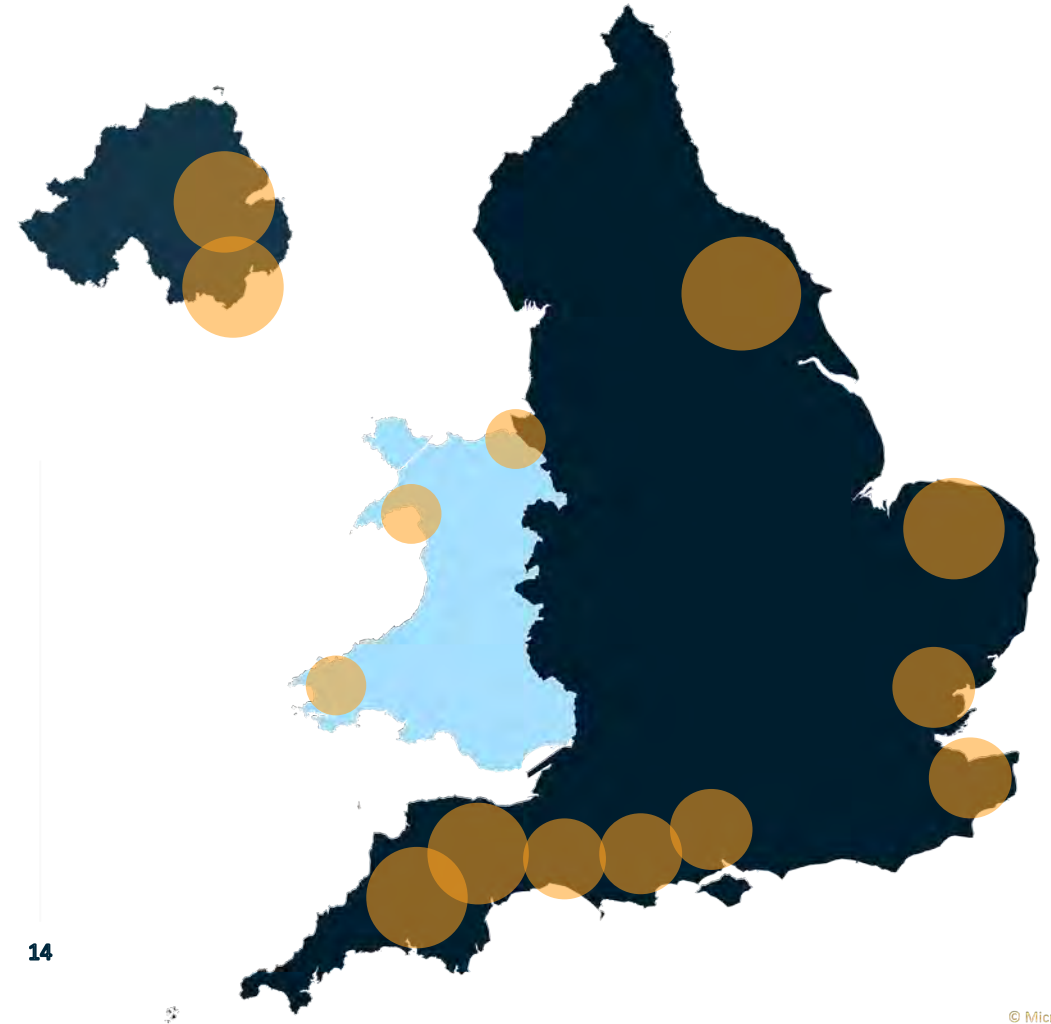
Source: Nature Scot

Aquaculture Activity Update

- Aquaculture activity in England, Northern Ireland and Wales has been on a steady growth trajectory for some years.
- The majority of projects are located in near/inshore waters around England; loughs in Northern Ireland and growing number around the coast of Wales
- Growing interest in deeper water/offshore options



Current Aquaculture leases (seaweed, shellfish, multi-tropic) in England, Northern Ireland and Wales

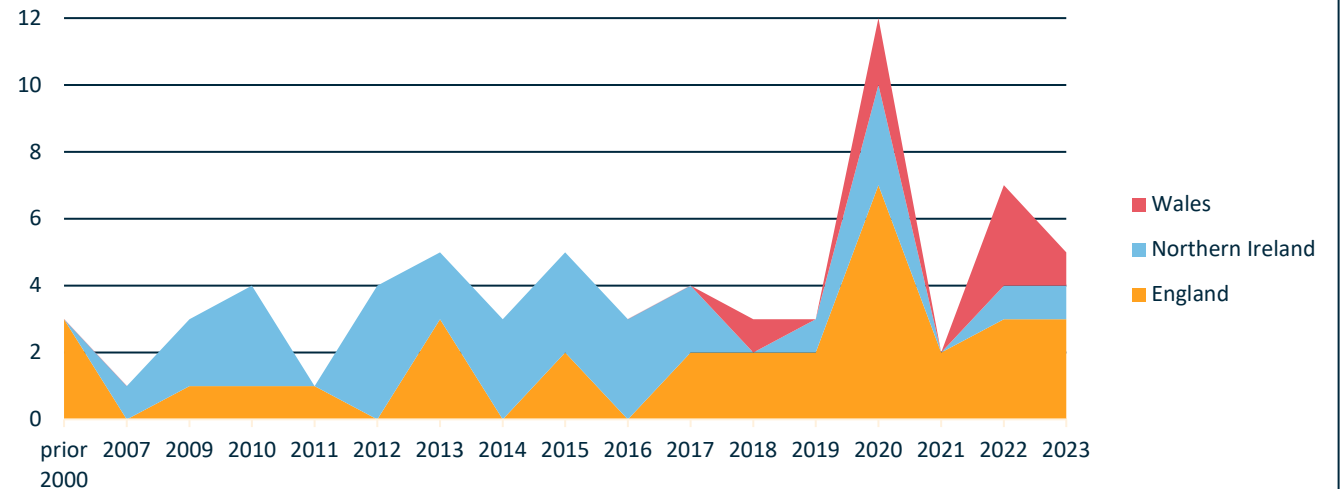


Aquaculture Activity Update

- Mix of shellfish and seaweed aquaculture – no finfish operations
- Increasing enquiries and applications for seabed access for aquaculture activities – growing demand from industry
- High interest in seaweed – range of approaches
- Changing nature of activities – looking towards multi trophic aquaculture, blending in ecosystems services revenue potential and natural capital market opportunities

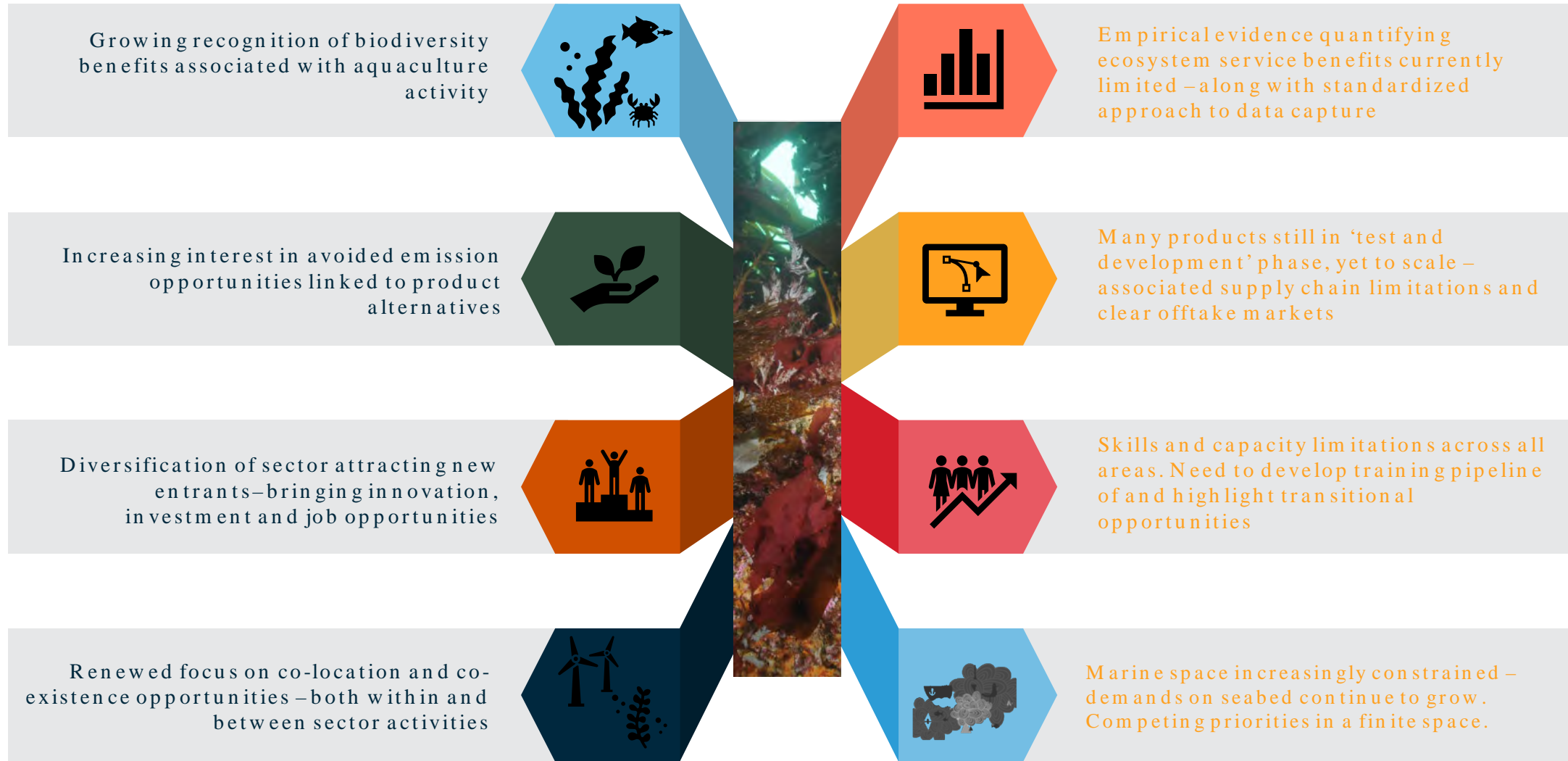


Increase of Aquaculture leases over time



Expanding and diversifying sector, delivering multi-value outcomes

Challenges & Opportunities



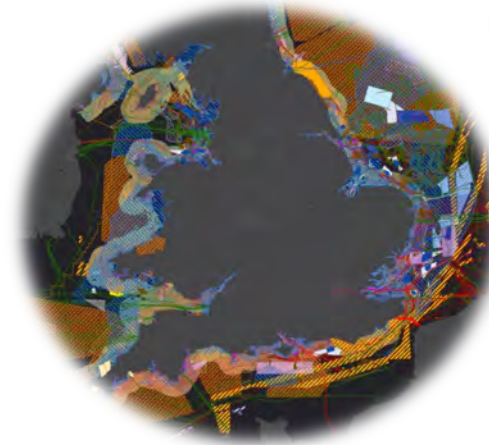
Unlocking Potential For Blue Growth

- TCE is working to help address barriers and accelerate progress
- Understanding what can be achieved where – and what this looks like within the context of other maritime activities
- Building data and evidence to understand how best to accelerate progress, adapt approaches and monitor outcomes
- Addressing barriers to growth – mapping, skills, finance, supply chain, etc.
- Evolving TCE policy to prioritise the right activities in the right locations, in the right way
- Creating space for ‘learning through doing’ and building consensus around an adaptive approach (i.e. not letting perfect be the enemy of the good)



Addressing Barriers - Projects & Process

- Improving mapping to better understand key resource areas for aquaculture activity – help focus opportunities
- Supporting research to improve data around ecosystem services and environmental benefits e.g. SuMMeR CDT PhD seaweed farming and ecosystems services
- Developing new licence/lease products to support evolving/emerging sector activities e.g. trial licence, multi-revenue stream licence
- Testing new concept approaches to explore routes to market e.g. AEZ
- Engaging with policy and statutory bodies to simplify and streamline where possible



Marine
Biological
Association



UNIVERSITY OF
PLYMOUTH



Foreshore and estuary
ownership map



Collaboration & Partnership

- Contributing to industry led projects e.g. Seaweed in East Anglia, Sea the Value
- Co-funding WWF, Hatch, MEP study on The Future Value of Seaweed Farming in the UK
- High-Integrity Marine Natural Capital Markets Roadmap work (Finance Earth, Pollination, Blue Marine Foundation, Crown Estate Scotland, Esmée Fairburn)
- Supporting funding bids for innovative and exploratory co-location projects
- Engaging with projects linking habitat restoration supply chain opportunities to aquaculture infrastructure e.g. nursery facilities

Seaweed in East Anglia

The project brings together local businesses, investors and local authorities to understand how to develop a sustainable and viable seaweed industry in the East of England.

The project focuses on 3 key areas:

- Identifying farming methods, species and co-location opportunities for seaweed aquaculture.
- Understanding Norfolk's capability to produce seaweed-based products.
- Developing a roadmap for a thriving industry and supply chain.

THE SEAWEED INDUSTRY

Seaweeds could be an important future feedstock for the UK with wider applications in food, fertilisers, animal feed, biofuels, bioplastics and more!

THE BIGGER PICTURE

The seaweed industry has the potential to support:

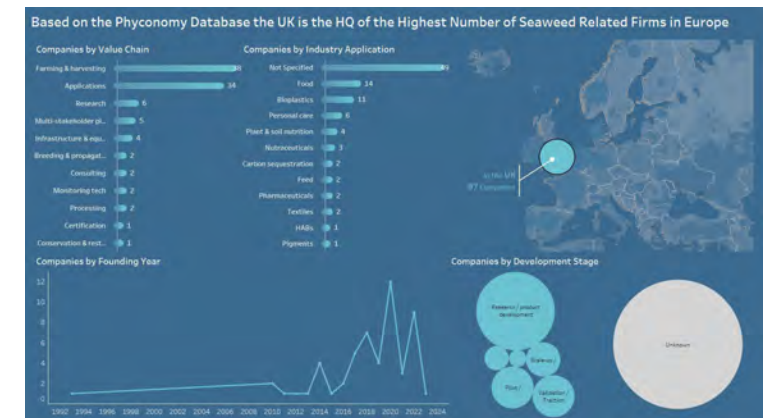
- Businesses and employment
- Net-zero targets
- Ecosystem services
- Food security

Partners: Hethel Innovation, UEA, Cefas



Offshore Wind Industry Council

Pathways to Growth (P2G)



SEA THE VALUE

MARINE BIODIVERSITY BENEFITS FOR A SUSTAINABLE SOCIETY

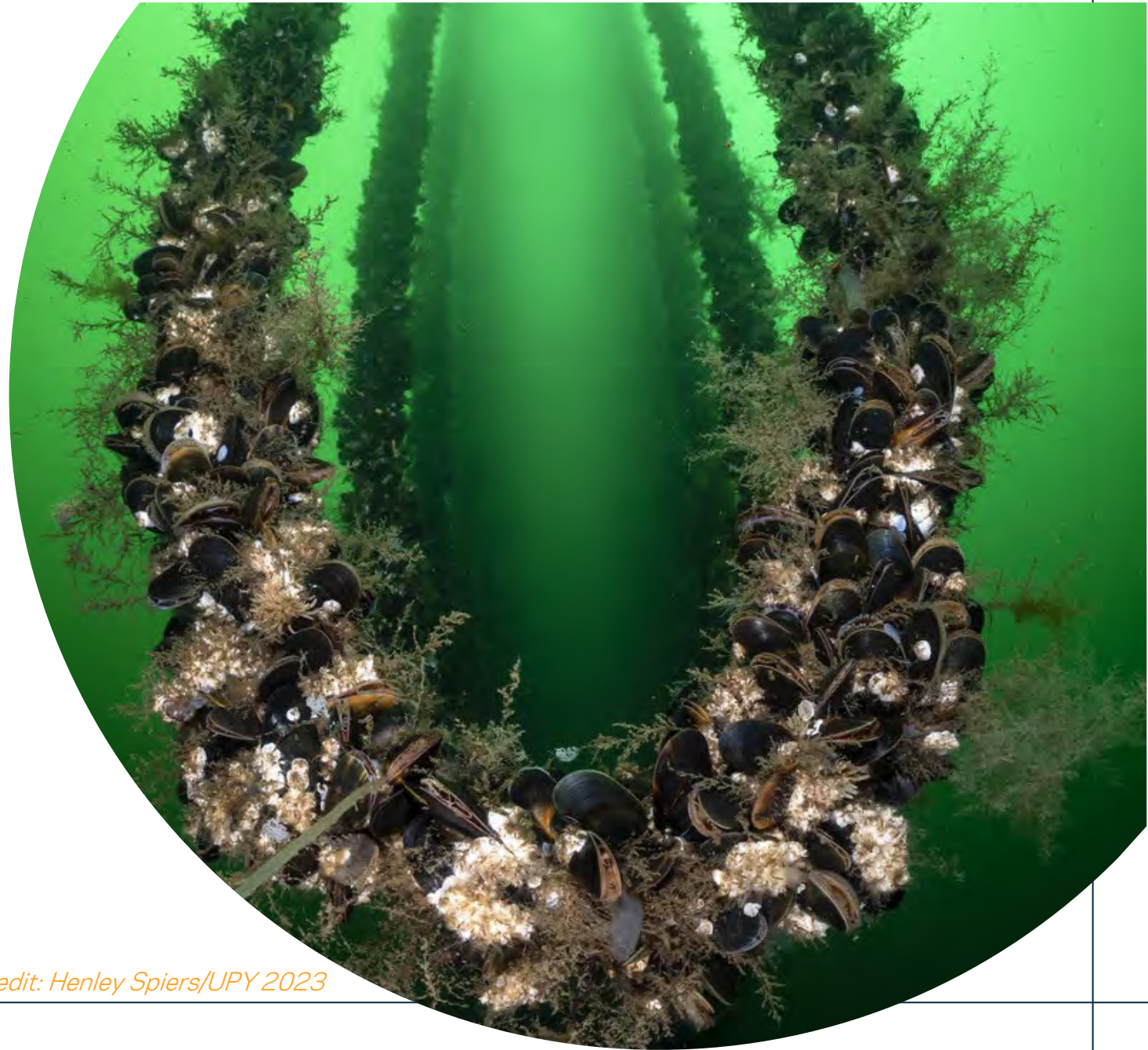


MACALISTER ELLIOTT & PARTNERS LTD

HATCH Innovation Services

Next Steps - Blue Futures

- Industry engagement and representation – better data, more access and information
- Continue making space for aquaculture – TCE WoS programme & engagement with statutory marine planning process
- Further development of seabed access options
- Additional research areas
 - Skills & transitional opportunities
 - Circularity
 - Deployment infrastructure review
- Support co-location opportunities – seabed optimisation etc
- Convene, catalyse & champion!



Credit: Henley Spiers/UPY 2023

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Ryan Pratt
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Interim Head of Nature & Environment
(Marine)
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Oceans' future to 2050

Marine Aquaculture Forecast

Explore how and where marine aquaculture production will develop and meet growing demand through to 2050

[Highlights](#)[Context](#)[Demand](#)[Production](#)[Technologies](#)[Download](#)

Marine aquaculture is set to play a critical role in securing supplies of food for a global population that will exceed nine billion by 2050.

For the industry to grow sustainably, operators, governments and investors need trusted information on which to base business cases, supportive policies, and financial and technical due diligence.

This first [Marine Aquaculture Forecast](#) from DNV responds to that need by delivering our 'best estimate' of the future.

Our analysis considers population growth and changes in living standards to estimate future demand for food. We also consider growing concerns about health and sustainability, which will impact food preferences. It then forecasts the role of marine aquaculture in meeting this demand through the main species and technology options involved.

DIVE DEEPER



Dive deeper

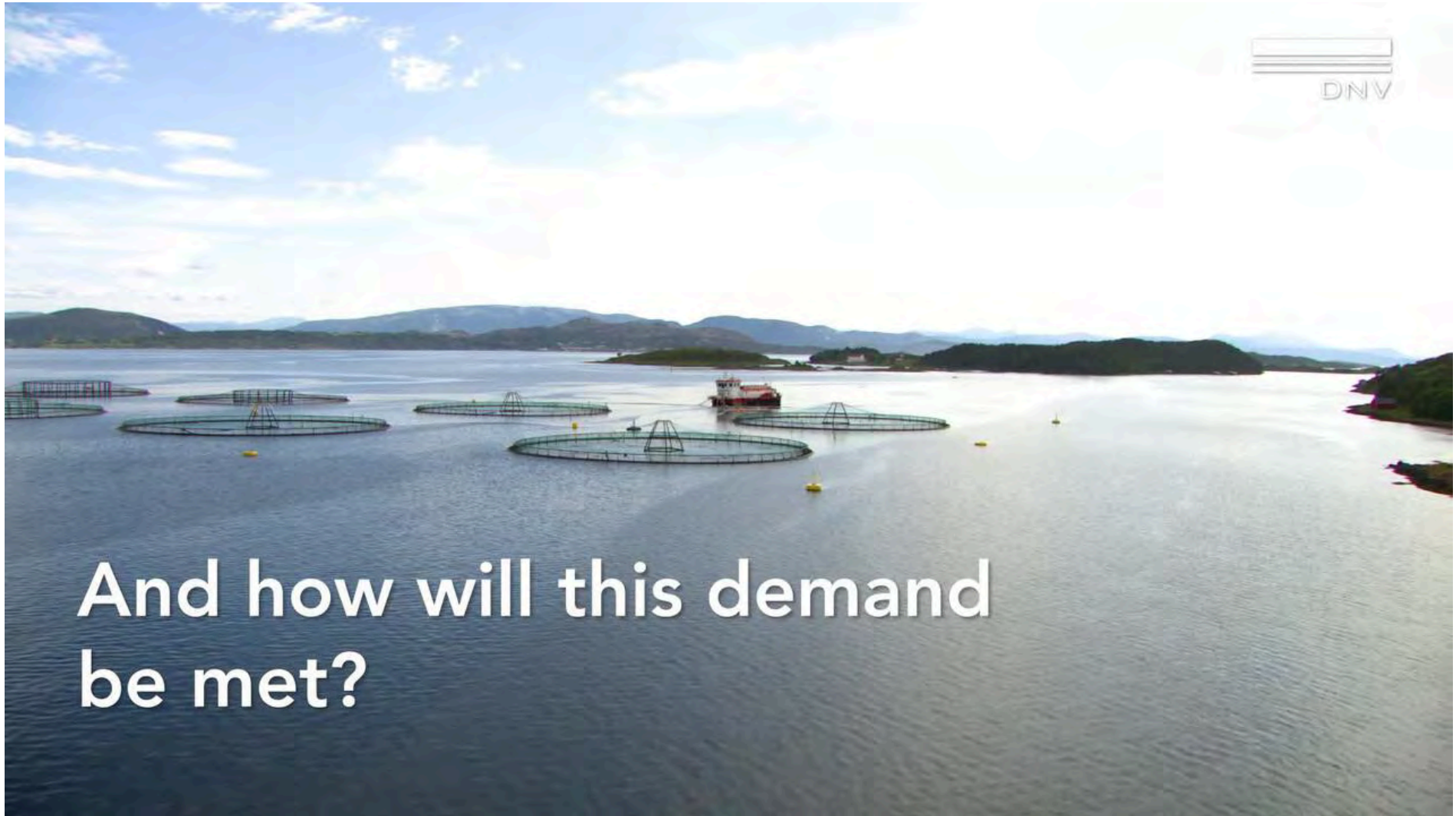
DOWNLOAD COMPLETE
ANALYSIS & GRAPHS



The forecast supports our view that future demand for seafood can only be met sustainably with a wave of technological innovation in marine aquaculture. Reaching these production levels requires innovation on many fronts, including technologies to intensify production.

Remi Eriksen, Group President & CEO, DNV

Marine Aquaculture Forecast to 2050 key findings



**And how will this demand
be met?**

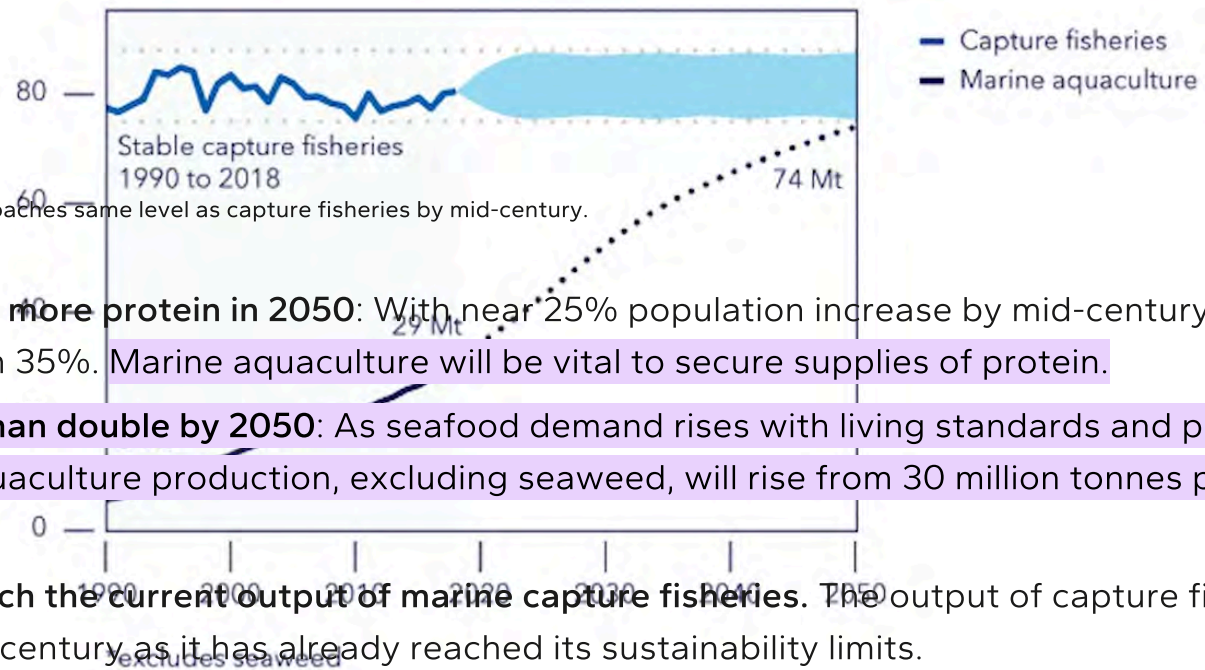
Key findings

How will demand for marine aquaculture develop, and how will this demand be met? See the highlights and download DNV's Marine Aquaculture Forecast to 2050.

0:34

1. Farmed seafood increasing its contribution to world food supply

Units: million tonnes (Mt) in live weight*



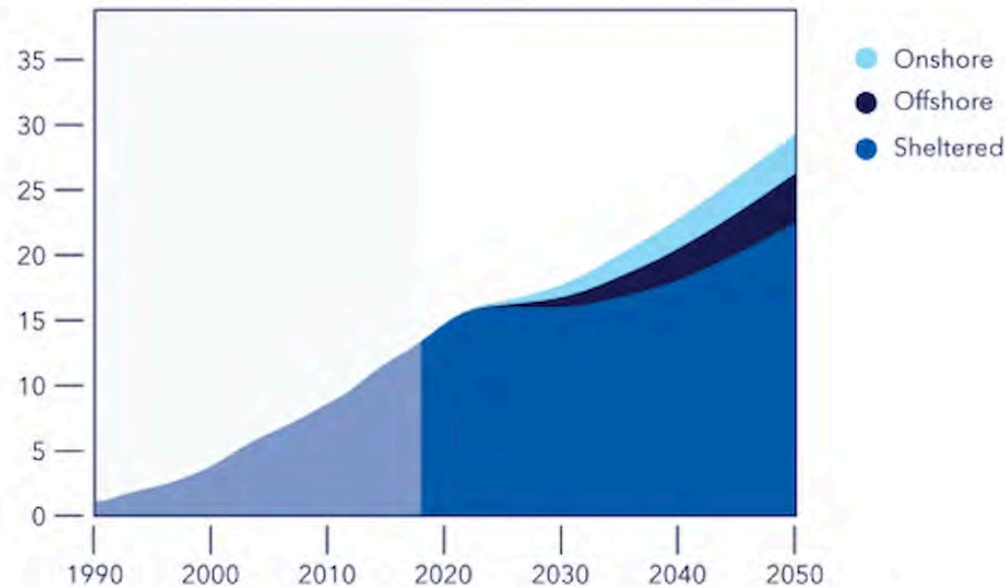
Graph: Global marine aquaculture production approaches same level as capture fisheries by mid-century.

- **People will on average eat 10% more protein in 2050:** With near 25% population increase by mid-century, protein consumption will rise more than 35%. Marine aquaculture will be vital to secure supplies of protein.
- **Marine aquaculture will more than double by 2050:** As seafood demand rises with living standards and population growth, we forecast marine aquaculture production, excluding seaweed, will rise from 30 million tonnes per year (Mt/yr) live weight to 74 Mt/yr.
- **Marine aquaculture will approach the current output of marine capture fisheries.** The output of capture fisheries is set to remain stable from now to mid-century as it has already reached its sustainability limits.

2. Innovation is needed to meet demand sustainably

Globally installed finfish production capacity

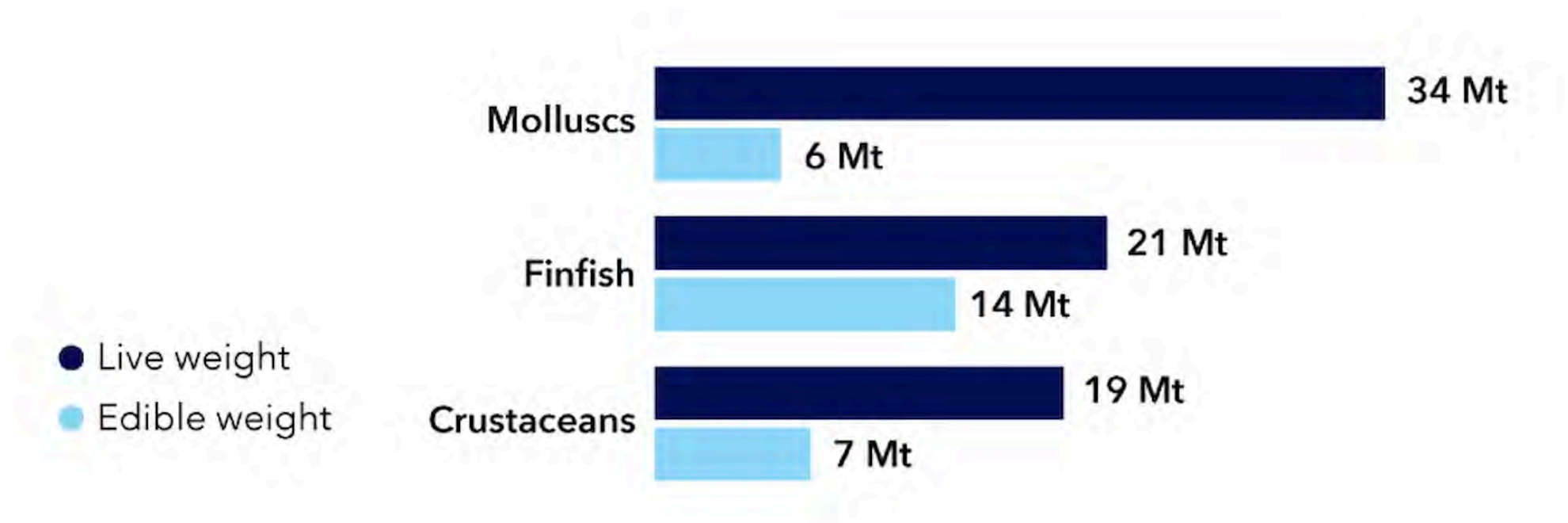
Units: million tonnes



Graph: Globally installed finfish production capacity.

- **Production onshore and further offshore will gain traction and market share.** High-value finfish will increasingly be farmed in closed systems on land, and in larger production units in more exposed offshore locations. We predict 13% of farmed marine finfish production capacity being offshore in 2050, and 10% onshore.
- **Lower costs due to accumulated experience will drive technology uptake.** Initial investments will be incentivized by favourable licensing schemes as new technologies address concerns such as fish health, pressure on inshore marine space, and environmental impacts.
- **New offshore technologies for finfish can increase yield and reduce space requirements:** The total area is reduced by half in 2050 compared to if all production remained sheltered. By scaling offshore production of finfish, the average finfish food production per km² can increase by around 10% to 850 tonnes per km².
- **Transparency and traceability remain key to growth:** Our findings underline how policies, mechanisms, and technologies encouraging and enabling transparency and traceability throughout the value chain are needed to accelerate sustainable growth of marine aquaculture production.

3. Contribution to food supply



Graph: Marine aquaculture production by species in 2050.

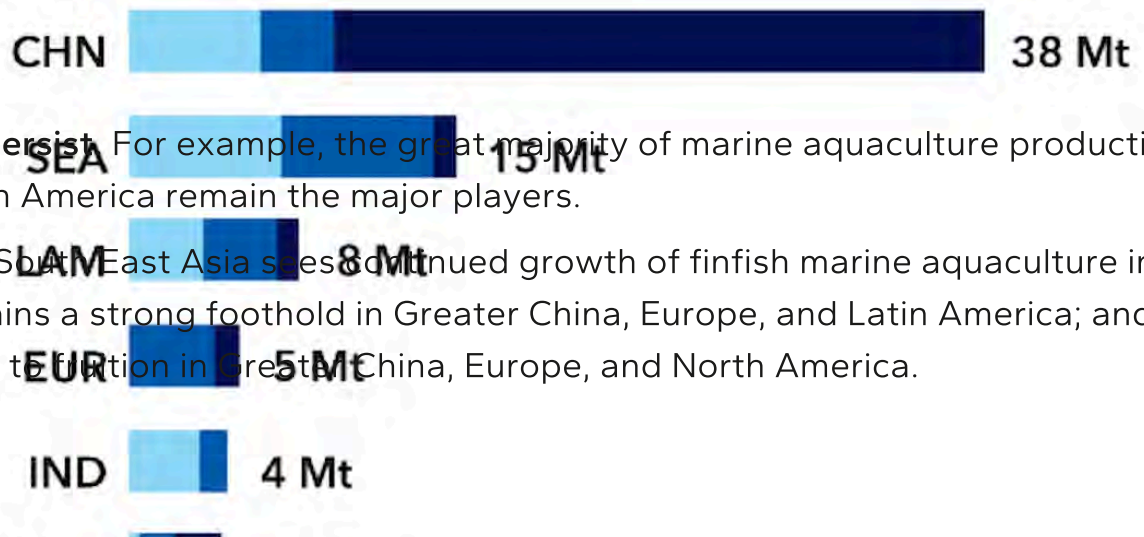
- **Farmed finfish is the most important contributor to world food supply from marine aquaculture.** It has the most favourable live-to-edible weight ratio and the highest protein content. With new production technologies, and lowering

costs, we believe that future focus will be on these high value species. Molluscs will remain the most farmed species by live weight.

- **Growth in industrialized seaweed production hinges on technology.** There is growing interest in seaweed production in developed, high-cost countries where new technologies that reduce manual labour costs will be needed for the industry's development.

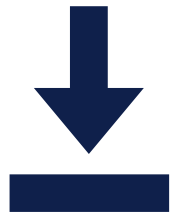
4. Regional trends

Graph: Regional production in live weight in 2050.



- **Large regional differences in output will persist.** For example, the great majority of marine aquaculture production will be in Asia, beyond which Europe and Latin America remain the major players.
- **Selected other regional forecast include:** South East Asia sees continued growth of finfish marine aquaculture in sheltered waters; offshore fish farming gains a strong foothold in Greater China, Europe, and Latin America; and, onshore farming of marine species comes to fruition in Greater China, Europe, and North America.

● Molluscs
● Crustaceans



Dive deeper: download the full Marine Aquaculture Forecast

PDF, 46 pages >>

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WHEN TRUST MATTERS

ANNEX 5

Crown Estate Bidding and Project Areas for Round 4 and Bidding Areas for Round 5

The four Bidding Areas are:

Bidding Area 1

Dogger Bank
Comprising the Dogger Bank region.

Bidding Area 2

Eastern Regions
Comprising the Southern North Sea region, the eastern part of The Wash region, and the East Anglia region.

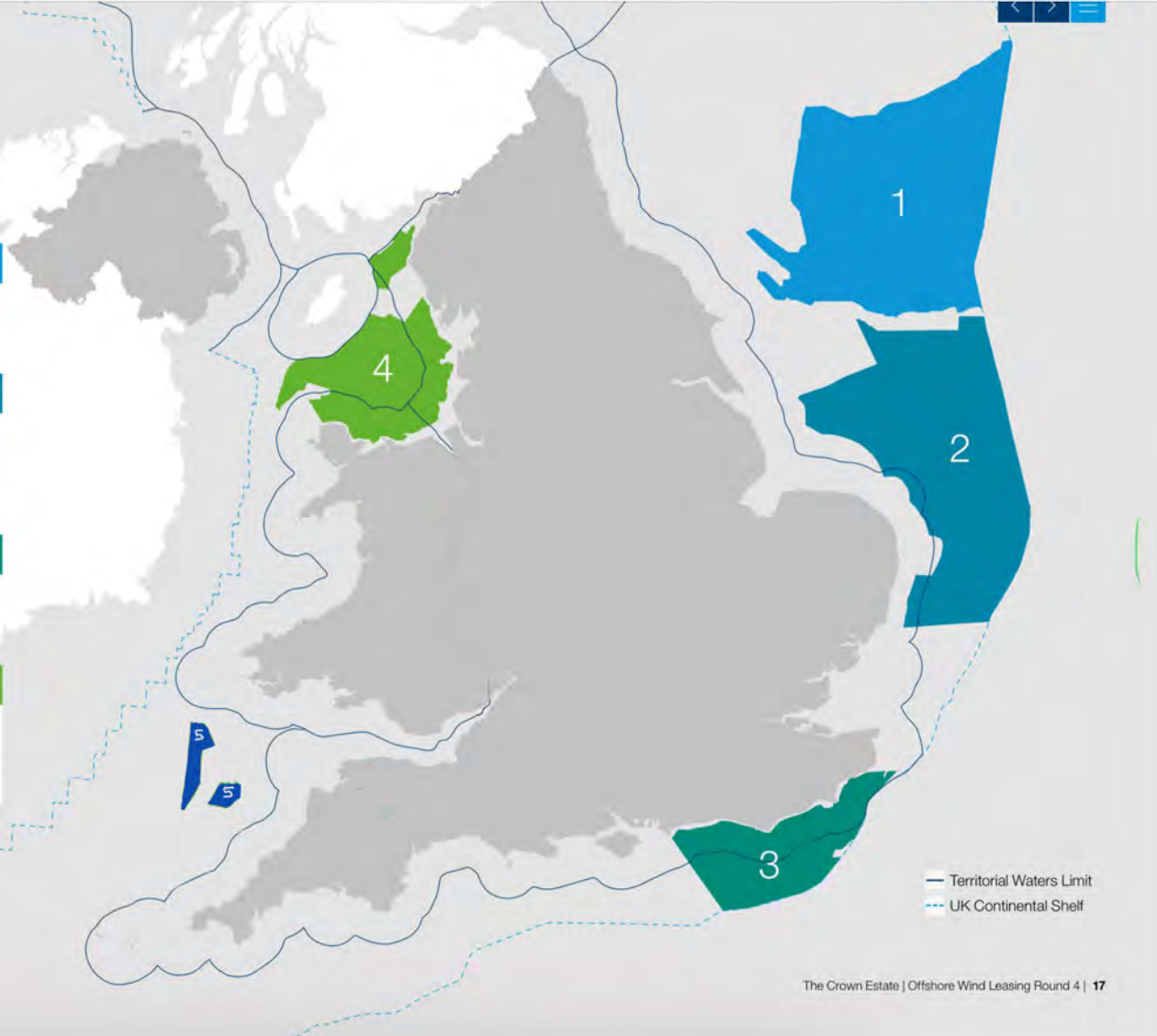
Bidding Area 3

South East
Comprising the South East region.

Bidding Area 4

Northern Wales and Irish Sea
Comprising the North Wales region, The Irish Sea region, and the northern part of the Anglesey region.

You can read more about regions on [pages 18 – 19](#).



— Territorial Waters Limit
- - - UK Continental Shelf



Offshore Wind Leasing Round 4 projects

- 1 Dogger Bank South (West) - RWE Renewables
1500 MW capacity
- 2 Dogger Bank South (East) - RWE Renewables
1500 MW capacity
- 3 Outer Dowsing - TotalEnergies and Corio Generation, a portfolio company of the Green Investment Group
1500 MW capacity
- 4 Mona - Consortium of EnBW and BP
1500 MW capacity
- 5 Morecambe - Morecambe Offshore Windfarm Ltd, a joint venture between Cobra Instalaciones y Servicios, S.A (Cobra) and Flotation Energy Ltd.
480 MW capacity
- 6 Morgan - Consortium of EnBW and BP
1500 MW capacity

The four seabed Bidding Areas

- Dogger Bank
- South East
- Eastern Regions
- Northern Wales & Irish Sea

