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MMO Reference: DCO/2021/00003
Planning Inspectorate Reference: EN010130
Identification Number: 20048765

03 February 2025

Dear [redacted],

Planning Act 2008, GTR4 Limited, Proposed Outer Dowsing Offshore Windfarm Order

Deadline 4 Submission

On 02 May 2024, the Marine Management Organisation (the MMO) received notice under section 56 of the Planning Act 2008 (the PA 2008) that the Planning Inspectorate ("PINS") had accepted an application made by GTR4 Limited (the Applicant) for determination of a Development Consent Order (DCO) for the construction, maintenance and operation of the proposed Outer Dowsing Offshore Wind Farm (the DCO Application) (MMO ref: DCO/2021/00003; PINS ref: EN010130). The DCO includes Deemed Marine Licences (DMLs) in Schedules 10, 11, 12, 13, 14, 15 and 16.

The DCO Application seeks authorisation for the construction, operation and maintenance of Outer Dowsing offshore wind farm (OWF), comprising of up to 100 wind turbine generators together with associated onshore and offshore infrastructure and all associated development (the Project).

This document comprises comments in respect of the DCO Application, in response to Deadline 4.

This written representation is submitted without prejudice to any future representation the MMO may make about the DCO Application throughout the examination process. This representation is also submitted without prejudice to any decision the MMO may make on any associated application for consent, permission, approval or any other type of authorisation submitted to the MMO either for the works in the marine area or for any other authorisation relevant to the proposed development.

Yours sincerely,

[redacted]

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Marine Licensing Case Officer

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Contents

1. Responses to the Examining Authority's (ExA) further written questions and requests for information (ExQ2) (PD-020)

1.1 Operational Lifetime (Q2 GC 1.3)

'The applicant's response to ExQ1 DCO 1.9 [REP2-051] sets out that the applicant's assessments have assumed long-term impacts from the proposed development during its operational phase and that therefore its conclusions would apply for an operational lifetime that exceeds 35 years.

In this response the applicant also provided a high-level summary of the position for each of the assessments it has carried out.

The applicant's Environmental Impact Assessment Methodology [APP-060, paragraphs 50 and 51] determines the time period within which the ES has assessed that a given impact may be experienced. This methodology established that the operation period has been assessed as being up to 35 years.

The ExA notes that the applicant states in its response that it is not seeking a time-limited consent and the applicant's statement that it cannot precisely define the lifetime of the proposed development at this time. Nevertheless, the ExA requires clarity to establish what operational time period the applicant has assessed in its ES. For each of the topic areas listed in the applicant's response to ExQ1 DCO 1.9 [REP2-051] (as well as any others that may be relevant), provide signposting which indicates where an operational lifetime in excess of 35 years has been assessed in the ES and where the methodology for such an assessment is set out.

Relevant interested parties are also invited to comment on this matter, if appropriate.'

1.1.1. The MMO considers that the ES must be clear in the number of years that the assessment has considered operational impacts and the modelling in which the assessment has been based on will be time-limited. The MMO notes that the Applicant has provided a high-level summary in their response to ExQ1 DCO 1.9 (REP2-051) which confirms that the modelling for Marine Physical Process (APP-062) operational lifetime parameter is 35 years. The Applicant also confirms that the assessments for Offshore Intertidal Ornithology (AS1-040) which includes the Population Viability Analysis (PVA) has been conducted over 35 years.

1.1.2. The MMO notes the Applicant's comments relating to other offshore wind farm DCOs and the lack of definition of operational lifetime. The MMO is reviewing this issue. The MMO welcomes the ExA posing this question regarding the operational lifetime of the Project. The MMO will review the Applicant's response and will provide comments at Deadline 5.

1.2. Response to Natural England's concerns regarding herring and sandeel (Q2 FSE 1.1)

'Natural England (NE) in its RR, page 13 of [RR-045], has raised concerns about herring spawning grounds and preferential habitat for sandeel. However, NE defers to the technical expertise of Cefas. As no response was received to ExQ1 FSE 1.2 the ExA is asking again as to whether Cefas has any comments regarding the potential impacts of the Proposed Development on herring and sandeel that NE has identified? Please submit any comments you may wish to make by no later than Deadline 4.'

1.2.1. This question is directed to The Centre for Environment, Fisheries and Aquaculture Science (Cefas), who are not an interested party in this examination. The MMO reminded the ExA that Cefas are the scientific advisors to the MMO (REP2-092) and we requested that in future Examiner's Questions, please can comments directed at Cefas, be 'questions to' the MMO. This question was comprehensively answered in the MMO's Deadline 2 response (page 19 to 24 in REP2-092).

1.2.2. Cefas are not a statutory consultee, but are a technical advisor to the MMO. The MMO is supported in the evaluation and assessment of marine licensable activities by scientific experts at the Cefas. Cefas' role is to provide independent scientific / technical advice on an application to help the Licensing Authority (MMO), ensuring:

– environmental risks associated with application are identified

– the application and its supporting studies provide evidence to back up the prediction of impact

– the application has enough robust information

1.2.3. Cefas have no statutory responsibilities, and their advice is to assist MMO. Cefas' advice to the MMO is administered under a Service Level Agreement (SLA1) contract which is part of an overall Partnership Agreement between the MMO and Cefas. The terms of this are reviewed every three years. The contract is to provide advice to the MMO (not applicants or consultants) and this advice 'on demand' and case specific. Cefas' costs for providing advice are charged back to the MMO who in turn apply charges to the applicants via licencing fees. Therefore, Cefas only work at the explicit request of the MMO.

1.2.4. It will therefore be considered highly irregular for Cefas to respond directly to the ExA to answer examiners questions, and the MMO considers this to be wholly unnecessary. The MMO will be liaising with Natural England (NE) and requesting that NE provides the ExA with clarification that they meant that they defer to the MMO regarding Herring and not Cefas.

1.3. The Applicant's Mid Examination Principal Issues Tracker (Q2 HRA 1.3)

'Based on the colour codings used and their definitions, is the applicant painting an overly-optimistic picture in [REP3-052] in regard to the outstanding disagreements with organisations such as NE, RSPB and the MMO and the likelihood of these matters being resolved during the remaining course of the Examination? If not, then please explain why?'

1.3.1. To note, the MMO considers all comments to be still 'in discussion' unless otherwise agreed. The MMO has been engaging with the Applicant to come to an agreement regarding issues that have been raised, and will continue to do so and provide input into the Statement of Common Ground (SoCG) which will be submitted to the ExA at Deadline 5.

1.3.2. The MMO attended productive meetings with the Applicant on 16 January 2025 and 20 January 2025, to discuss the Herring matters and the DMLs respectively. There are still some key areas which the MMO and the Applicant are unlikely to come to an agreement on. These are listed below.

<u>Transfer of Benefit</u>

1.3.3. The MMO understands that from a developer's prospective, this is for the easiest transfer for Offshore Transmission Owners (OFTO). Even for granted offshore windfarm orders that include a form of the Benefit of the Order Article, the MMO has done multiple variations alongside the transfer of benefit to ensure the DML variation is issued as close to the approval from the SoS to ensure the correct undertaker is on the face of the DML and so that updates to the Marine Case Management system can be completed.

1.3.4. What falls out of the DCO process is a marine licence granted under MCAA which is distinct and separate to the DCO itself. The DML falls back to the MMO to further manage/regulate under the provisions of MCAA once the DCO is granted, to be regulated alongside and consistently with all the other marine licences we might issue. This is in part why s149A(4) says a person who fails to comply with a condition of the DML does not commit an offence

under the s161 of the Planning 2008 Act and why 149A(5) disapplies the notification of application and representations provisions of MCAA from the DCO process.

1.3.5. The reason that the DCOs only deem the Marine Licence to be granted, rather than bringing the ML into the DCO as it does for other permissions under s33 of the Planning Act 2008 is because the MMO was considered to be the expert in this area (see PINS note Annex 11 B - MMO). The MMO questions why now is the SoS best placed to consider the implications of the marine licence being transferred and what might need to change?

1.3.6. The MMO questions why it is ok to require the SoS to consult with the MMO? If the SoS fails to do this they commit and offence under s161(1)(b) of the Planning Act if the SoS does not have a reasonable excuse. This is another unintended consequence if the inclusion of the DML in this Article. 5. The article states that just a notice to the MMO of the transfer and does not include an official variation request to the MMO as required under Section 72 of the Marine and Coastal Access Act 2009. The MMO does not believe the SoS cannot amend the DML once consented. Therefore, the MMO would have to use their regulatory power to conduct a variation and vary the licence to ensure the correct undertaker is on the schedule, this could cause a potential delay the project as if the transferring of unvaried licence impacted on our ability to enforce during this time, the MMO may have to suspend the licence while the MMO conducted the variation.

1.3.7. This process could be delayed without the direct contact to the MMO to vary the DML. In addition to this the MMO has statute to charge for any variations and this is not covered by the current Article. This is an issue for two reasons, the Applicant would be getting work at a different rate as the consultation would be a statutory request from the SoS and this is not aligning with other marine licences as per PINS note Annex 11 B - MMO and [two] this puts the emphasis for the MMO to vary the licence once notified so there would still be an additional step for the MMO to take which adds in further timescales.

1.3.8. The MMO does not agree with the Applicant's reasoning to include Transfer of the Benefit and believes the inclusion causes more work and does not streamline the process.

1.3.9. The MMO believes that there will not be a resolution regarding transfer of benefit during examination.

Force Majeure

1.3.10. Further review is taking place on this in relation to liability concerns and when this would take place. Currently, the MMO maintains its position regarding Force Majeure, as it is not necessary to be included within the DMLs. It is not something that the MMO would include in standalone marine licences. PINS note Annex 11 B - MMO states that DMLs should be broadly consistent with standalone marine licences.

1.3.11. The MMO understands that Force Majeure is about events, situations and circumstances that arise which are outside of a person's control. Currently the condition wording used is drafted to apply for stress of weather or any other cause which is very broad. It could cover anything, including causes which are entirely within the master's control such as negligence matters. Currently the MMO believes Condition 12 in Schedules 10 and 11 (Condition 9 in Schedules 12 to 15, and Condition 7 in Schedule 16) do not meet the five tests as set out in the National Planning Policy Framework for a number of reasons:

- necessary;
- relevant to planning;
- relevant to the development to be permitted;
- enforceable;

- precise; and
- reasonable in all other respects.

1.3.12. Necessary

Section 86(1)(b) and 86(2) of Marine and Coastal Access Act 2009 (MCAA), states that for the defence to be relied on the person relying on it must inform the MMO that the act was carried out, tell it where it was carried out, the circumstances in which it was carried out, and what articles/objects were concerned. The inclusion of Condition 12 in Schedule 10 and 11 (Condition 9 in Schedules 12 to 15, and Condition 7 in Schedule 16) removes this defence and replaces it with a wider and less stringently controlled authorisation to deposit articles/substances and the MMO does not believe this is necessary.

1.3.13. Enforceable

The condition as it stands is too subjective and therefore unenforceable and this due to the fact that it is down to the master to determine whether it is necessary to make the deposit and there are no defined criteria.

1.3.14. Precise

The condition is also not restricted to Force Majeure situations or 'no fault situations', due to the inclusion of 'for any other cause'. The MMO questions this wording and why this has been included?

In effect the only obligation the master would have if Condition 12 in Schedules10 and 12 11 (Condition 9 in Schedules 12 to 15, and Condition 7 in Schedule 16) are included, is to notify the MMO within 48 hours that the deposits have been made. The MMO questions if this notification would be enough to allow enforceability and part 2 of the condition.

1.3.15. Reasonable

The test set in Condition 12 in Schedules 10 and 11 11 (Condition 9 in Schedules 12 to 15, and Condition 7 in Schedule 16) which must be met to allow these deposits to be made is a much lower threshold test to that set in Section 86 of MCAA. This is because the safety of human life and/or the vessel is threatened is not the same as for the purpose of saving life or securing the safety of the vessel. The MMO questions why these masters and vessels be treated more favourably than others in this situation?

The MMO also notes that 'any other cause' is the wording used in precedent licences, including the 2024 Sheringham and Dudgeon order and there is precedent set in other licences.

1.3.16. To summarise the MMO does not agree with the Applicant's reasons for including this provision. The condition should be removed, as the defence (Section 86 of MCAA) will apply if the Applicant or vessel masters needs to make a deposit for a Force Majeure reason. The MMO believes that this issue may not be resolved during examination.

Adaptive Management

1.3.17. The MMO understands that ODOW considers that the ES has assessed the worst-case scenario and that ODOW considers this blanket approach of the adaptive management suggested condition to be unreasonable. However, the MMO would like this on the face of the DML to ensure the approach is clear at this stage and the MMO does not have to review and complete a variation if the monitoring shows higher impacts than predicted. The monitoring plan is just to provide the monitoring and the MMO and other stakeholders, as well as the Applicant, need to be sure of what would happen if significant

impacts are found. It also gives the Applicant more control on the process of what would happen, in this scenario.

1.3.18. The MMO is reviewing any further comments from the Applicant and interested parties and may provide further justification at Deadline 5.

Decommissioning

1.3.19. The MMO is reviewing the requirement of having an Outline Decommissioning Plan at this stage within the DML and will provide further comments in due course. However, the MMO believes that the Applicant does not consider that an outline plan is necessary, and it is likely that this will remain as unagreed.

Approval periods

1.3.20. The MMO had requested to extend the approval period for the Monitoring Plan and Construction Method Statement to six months (REP1-034). The Applicant states that they previously revised the draft DCO to increase the approval period from four to six months for plans which may have particular complexities. However, the Applicant also notes that some licence conditions provide for an approval period of at least three months, unless otherwise stated, and that they are considering the MMO's comments. Therefore, we do not yet have agreement on this issue and that it remains open. However, the MMO welcomes that the Applicant has agreed, within our meeting dated 20 January 2025, to tabularise which documents they have included for 3 month approval and 6 month approval, for MMO to provide comments on.

1.4 Use of Noise Abatement Systems (Q2 MM 1.4)

'In its deadline 3 Risk and Issues Log [REP3-074] NE has maintained its view that a commitment should be made to the use of noise abatement systems (NAS) as a potential mitigation measure and that an adverse effect on integrity (AEoI) of the Southern North Sea SAC cannot be ruled out should such a commitment not be made. This is still marked with a red colour coding in [REP3-074].

In its response to ExQ1 MM 1.6 [REP2-051] the applicant has stated that: "The MMMP for piling activities will be submitted to the MMO for approval prior to construction, to allow for the most appropriate and best available technologies at the point of construction to be applied."

In its deadline 2 response in relation to ExQ2 MM 1.6 [REP2-092] the MMO has stated that it will "… keep a watching brief on this response." Furthermore, in [REP3-078] the MMO has noted that "… it is in the Applicant's interest to plan for noise abatement measures at the earliest opportunity and to incorporate such measures into relevant mitigation plans."

Given the contrasting positions between NE and the applicant on the level of commitment needed to the use of NAS at this stage, provide further clarification as to what the MMO's views currently are on this matter and whether the MMO considers that this commitment has been adequately secured in the dDCO?'

1.4.1. The Department for Environment Food and Rural Affairs (Defra) published the Reducing Marine Noise Policy on 21 January 2025 (Annex 1). This policy addresses the issue of marine noise in our increasingly busy seas and its effects on the marine environment.

1.4.2. The MMO is required under the Marine Strategy Regulations 2010, to take the necessary measures to achieve or maintain Good Environmental Status in UK waters. This includes achieving Good Environmental Status for underwater noise by reducing both impulsive and continuous noise to levels that do not adversely affect populations of marine animals, as laid out in the UK Marine Strategy. The MMO is also mindful of the government ambitions

to radically increase renewables deployment to deliver our Clean Power by 2030 Mission, however, this must also support thriving marine and coastal ecosystems.

1.4.3. The policy highlights that noise levels are anticipated to increase and the challenges of determining no adverse effects on site integrity for harbour porpoise Special Areas of Conservation (SACs). The policy identifies the need for changes from industry which includes the adoption of noise reduction methods. Included within the policy is a call for evidence from the offshore wind industry, during a pilot programme in 2025 and 2026, to gather data during piling activities to test and refine the outcomes of the initial consultation planned.

1.4.4. The MMO expects the Applicant to have a thorough consideration of noise reduction methods. Applicants can propose the use of any noise reduction method (primary, secondary, or a combination of methods) and it should be noted that technologies with more robust evidence regarding their efficacy and noise reduction capabilities are likely to face smoother consenting journeys with regard to noise related matters.

1.4.5. Applicants can propose alternative Effective Deterrent Range (EDR) values, provided they are supported by robust evidence. This will be considered by the MMO in consultation with the relevant Statutory Nature Conservation Bodies (SNCBs).

1.4.6. The MMO expects valid justification as to why applying noise reduction methods may not be considered a satisfactory alternative and it should be noted that the additional cost of a noise reduction system is unlikely to be a sufficient justification on its own merit to discount a satisfactory alternative, unless the cost renders the project financially unviable. The MMO would like to highlight that as technology develops, the justification of lack of supply chain is likely to become less valid.

1.4.7. The policy goes further to state that Defra and the devolved administrations will be considering noise threshold values for introduction across all UK waters for both impulsive and continuous noise sources. These threshold values would be levels below which Good Environmental Status on underwater noise is expected to be achieved, and these new values would be in addition to what currently exists in some harbour porpoise SACs.

1.4.8. The MMO advises that the Applicant considers the adoption of noise reduction methods in line with the policy now published. As part of this adoption the MMO would expect the following as a minimum to be included within the ES to ensure there is confidence in the NAS that would be used:

- Models of the effect of noise abatement (chosen worst case method (noting this could change post consent depending on availability) in terms of decibel reduction (e.g., the overall decrease in sound intensity). Any decibel reduction must be evidenced by the peer-reviewed literature.
- We would also expect consideration of the frequencies at which NAS can attenuate noise. Different marine species are sensitive to different frequency ranges. The Applicant should ensure that their chosen method effectively attenuates noise across the relevant frequencies to protect relevant marine life (noting the spectral attenuation could be shown). The worst-case scenario (no NAS) should be presented followed by the mitigated scenario, so the potential reduction in effect ranges is clear.

- If using NAS, it may be that a shorter duration of Acoustic Deterrent Devices (ADDs) is required, for example and any changes to the Outline Marine Mammal Mitigation Protocol (MMMP) and relevant documents should be updated.
- Monitoring will also have to be updated as a comprehensive noise monitoring plan would be required to confirm that the chosen NAS is effectively reducing underwater noise. The MMO would also review these results against the modelled results provided in the assessment and the Offshore In-Principal Monitoring Plan (IPMP) would also need to be updated.

1.4.9. The MMO does not consider that this commitment has been adequately secured in the draft DCO. The most recent MMMP for Piling (REP2-035) discusses the limitations of Noise Abatement in Section 4.4, and in particular the use of bubble curtains relative to water depth and consideration of minimum and maximum noise reduction efficacy. There is no commitment to the use of Noise Abatement Systems on the face of the DML which the MMO requests.

1.4.10. In addition to the above, the most recent Outline MMMP for UXO Clearance (REP2-037) discusses Noise Abatement in Section 4.4 and notes that the '*use of bubble curtains during high-order UXO clearance activities is now standard best-practise for UXO clearance campaigns for offshore wind projects.*' This section then goes on to discuss deflagration as an alternative approach. The MMO considers that where the Applicant has stated *'it is anticipated that a combination of MMOb* [Marine Mammal Observer]*, PAM* [Passive Acoustic Monitoring], *short-duration ADD* [Acoustic deterrent Devices] *for both low and high-order detonations, and bubble curtains for high-order detonations would be more likely to reduce UXO clearance associated noise impacts on marine mammals'* is not a commitment as such. The MMO requests that it is reworded to state that Noise Abatement will be used for all high order clearance.

2. Comments on the Applicant's update to the draft DCO

2.1. DCO/Deemed Marine Licence

Article 6 Transfer of Benefit

2.1.1. The MMO continues to have concerns regarding Transfer of Benefit of the Order. In addition to the above comments in points 1.3.3 to 1.3.9 the MMO has further comments below.

2.1.2. If you transfer a DML in part it makes it almost certain that a variation will be required, which the Secretary of State (SoS) cannot do, and the MMO would undertake this under the Marine and Coastal Access Act (MCAA) (2009). The MMO might have to suspend the licence whilst we do it, depending on the impact the transfer of part of a DML might have on enforceability, which defeats the whole purpose of this provision which is to ensure (according to the Applicant) that the benefit of the Order and the DMLs transfer at the same time.

Part 2: Article 6(3) states:

'The Secretary of State must consult the MMO before giving consent to the transfer or grant to another person of the benefit of any or all of the provisions of any of the deemed marine licences'

The MMO considers that it should be consulted about any transfer or any benefit of the order itself, in case it impacts on the DMLs.

2.1.3. Part 2: Article 6(4) states:

'Where an agreement has been made in accordance with paragraph (2) references in this Order to the undertaker, except in paragraph (5), (7), (8), (11) and (12) of this Article, include references to the transferee or lessee.'

The DML is not part of the Order so this wouldn't mean that references to the Undertaker in the DML would be read as including the transferee or the leasee which is an issue, and it may may force a variation to be initiated by the MMO. Including a reference to the transferee would mean that the Undertaker as it is defined in the Order (and the DML if another provision is added to include this) means the Undertaker would be the original undertaker and the transferee/leasee not or which is an issue for enforcement purposes.

2.1.4. Part 2: Article 6(6) states:
'This paragraph applies where—

(a) the transferee or lessee is a person who holds a licence under the 1989 Act; or

(b) the time limits for claims for compensation in respect of the acquisition of land or effects upon land under this Order have elapsed and—

(i) no such claims have been made,

(ii) any such claim has been made and has been compromised or withdrawn,

(iii) compensation has been paid in final settlement of any such claim,

(iv) payment of compensation into court has taken place in lieu of settlement of any such claim; or

(v) it has been determined by a tribunal or court of competent jurisdiction in respect of any such claim that no compensation is payable.'

This paragraph applies in the situations described in 6(a) and 6(b) but what is it that is actually being applied in these situations? The MMO queries whether there are some

missing words here or whether it should link to another paragraph? It does not appear to make sense.

2.1.5. The MMO agrees with the Applicant's comment regarding *'The MMO's comment that SoS consent is not required under paragraph (b) is therefore not entirely correct.'* The written consent from the SoS is needed for both 6(2)(a) and 6(2)(b) the difference between the two is that a transfer under 6(2)(a) is permanent, whilst moving the benefits under 6(2)(b) is time limited to the duration of a lease.

With regarding to this being included in other DCOs and setting a precedent, the MMO considers that it doesn't mean the provisions that are in other orders should be repeated here if there is good reason why they shouldn't be included or where they are reasons why something should not be included. The MMO had model provisions, we moved away from them, it's a little odd to be suggesting that just because it's in one order, it should follow through into the other orders.

2.1.6. Part 2: Article 6(3) states:

'The Secretary of State must consult the MMO before giving consent to the transfer or grant to another person of the benefit of any or all of the provisions of any of the deemed marine licences'

The MMO considers that it should be consulted about any transfer or any benefit of the order itself, in case it impacts on the DMLs.

2.1.7. Paragraph (8) states;

'Prior to any transfer or grant under this article taking effect the undertaker must provide written notification to the Secretary of State and, if such transfer or grant relates to the exercise of powers in their area, to the MMO and the relevant planning authority.'

The MMO would want to know about any transfer or grant of the Order and any grant or transfer of the DML. The MMO requests that this more clearly stated that the MMO will be notified where there is a transfer or grant of the DMLs (in whole or in part).

2.1.8. Paragraph (10) states:
'The date specified under paragraph (9)(a)(ii) must not be earlier than the expiry of 14 days from the date of the receipt of the notice.'

The MMO requests that this is reworded, as this notice has to be sent to the SoS and in some cases also to the MMO and the Relevant Planning Authority and it is not clear when the 14 days run from. Is this the date of the first of these different players receiving the notice or the last one receiving it? The word 'receipt' is not defined (what does this mean) and how does the notifier know it's been received?

2.1.9. It is the MMO's understanding that the Applicant wants the transfer of the DMLs to be only affected through this provision in the Order, that is the purpose of the Applicant disapplying 72(7) and (8) of MCAA so the MMO cannot exercise our powers under those provisions to transfer the DMLs.

It then seems that the Applicant wants to preserve the MMOs ability to vary a licence which is transferred under this provision, but only to amend (vary) the name of the undertaker in any DML so transferred.

The MMO queries why this is necessary given 6(4) is intended to require any references to the undertaker in the DMLs to be read as also including the transferee and/or leasee.

The MMO's main concern is that our power to vary under 72(7)(b) arises where we are transferring under 72(7)(a) following on from an application made by the licensee. If the

order disapplies our ability to transfer the licence then our power to vary doesn't arise so we cannot vary even if only to change the names of the undertaker.

2.1.10. Paragraph (13) states:

'A notice given under paragraph (8) is deemed to have been given in writing where it is sent electronically.'

The MMO queries whether this is necessary, and it is not specific in stating where this electronic notice is required to be sent. The MMO are specific in the DMLs as to where things should be sent and therefore this should also be specific here.

Maintain and Materiality

2.1.11. The MMO understands that the definition of maintain in this case, refers to "maintain" includes inspect, upkeep, repair, adjust, and alter and further includes remove, reconstruct and replace (including replenishment of cable protection), but does not include the removal, reconstruction or replacement of foundations associated with the offshore works, to the extent assessed in the environmental statement; and "maintenance" must be construed accordingly'.

The MMO notes the wording of paragraph 9 of the DMLs contained in Schedule 10 to 15 and paragraph 8 of the DML contained in Schedule 16. The MMO is satisfied with this wording and that this limits to what was assessed in the ES.

However, the provision in paragraph 29 of Schedule 1 allows the Planning Authority to make changes to the approved details of the authorised development. The MMO would expect that, to avoid divergencies coming in later, this needs to be consistent with the DMLs so either limited to the extent assessed in the EIA or to allow flexibility to allow changes providing the planners are satisfied there is no materially new or materially different effects than were assessed in the ES.

Determination dates

2.1.12. Condition 14(4) of Schedules 10 and 11 states

'(4) The MMO must determine an application for approval made under condition 13 within a period of four months commencing on the date the application is received by the MMO, unless otherwise agreed in writing with the undertaker.'

The Applicant has noted that the wording of condition 14(4) specifically allows the Applicant and the MMO to agree a different period, the Applicant would anticipate that, in the event of updated documentation being required, this would be requested by the MMO and a reasonable adjustment to the timescale would be made, rather than the application for approval being refused and the process recommenced causing unnecessary delay.

The MMO disagrees that this is the case, and it causes uncertainty for the Applicant in those cases in which we disagree on the timescales that documents should be provided; for example, the Site Integrity Plans (SIPs) within Schedules 12-15. It causes an obligation on the MMO to spend time pre-agreeing any extension to a decision, taking away the focus on the deliverable.

2.1.13. The MMO strongly considers that it is inappropriate to put timeframes on complex technical decisions of this nature. The time it takes the MMO to make such determinations depends on the quality of the application made, and the complexity of the issues and the amount of consultation the MMO is required to undertake with other organisations to seek resolutions. The MMO's position remains that it is inappropriate to apply a strict timeframe to the approvals the MMO is required to give under the conditions of the DML given this would create disparity between licences issued under the DCO process and those issued

directly by the MMO, as marine licences issued by the MMO are not subject to set determination periods.

Maintenance Reporting

2.1.14. The MMO is reviewing the Operations and Maintenance plan and its requirement to be updated every three years. The reason behind the request to have a yearly maintenance report is to know what activities have occurred during the year. A five year consolidation report is a reflection that everything is still valid and has been undertaken in line with the methodologies presented within the ES. This five year consolidated report enables the regulator and the Applicant to understand whether any of the Operations and Maintenance activities are causing any concerns. An update will be provided in due course, but the MMO is working with the Applicant on this.

Stages of construction

2.1.15. The MMO requested at Deadline 1 (REP1-056) that the following should have a six-month timescale stipulation in all of the DMLs; Marine Mammal Mitigation Protocol (MMMP), In Principle Monitoring Plan, SIP, Ornithological Plans and Operation and Maintenance Plans. Upon review of the draft DCO (REP3-006).

2.1.16. The MMO is satisfied that the MMMP requirement in Schedule 10 Condition 13(F), Schedule 11 Condition 13(F) states that the document is 'to be submitted to the MMO at least six months prior to commencement of piling activities.

2.1.17. The MMO is not satisfied with the three-month requirement for the MMMP to be submitted to the MMO within Schedule 12 Condition 11(e), Schedule 13 Condition 11(e), Schedule 14 Condition 11(e) and Schedule 15 Condition 11(e) for the ANS Structures.

2.1.18. The same comment stands for the SIP. The Applicant considers that for the ANS structures, the DML requirement for submission to the MMO is three months. There is a concern that the Applicant thinks that since the activities being undertaken under Schedules 12-15 are of a lesser extent to the piling being undertaken for the WTG foundations and therefore do not require the same amount of scrutiny within the SIP. The MMO would like to stress that the SIP is to evaluate the Project's in-combination effects with other Plans or Projects to ensure the avoidance of Adverse Effect on Integrity (AEOI) of the designated features of the SNS SAC, and as such, the requirement should be six months.

2.1.19. The MMO would like to make it clear that the six-month request for these documents is not to be a blocker for development, but instead to give enough time to agree the plans in advance of any activities in order to avoid any delays.

2.1.20. Currently, to manage noise within the Southern North Sea *(*SNS) SAC the MMO and the Offshore Petroleum Regulator for Environment and Decommissioning requests a 'call for information' in August/September the year prior to when the activities would take place. Although ANS piling has a smaller impact, if we receive the information at three months then the details may not have been included in the assessment/management discussions and the MMO may be unable to allow the ANS to be undertaken. The MMO does not want to be a blocker to the works and it is in the best interest of the Applicant to provide this as early as possible and this should be updated to six months.

Adaptive Management

2.1.21. Please see point 1.3.17. MMO is reviewing and may provide further justification at Deadline 5.

Force Majeure

2.1.22. This is not a force majeure clause, force majeure is about events, situations, circumstances that arise which are outside of a person's control. This clause is drafted to apply for stress of weather or any other cause which is so very wide that it would cover pretty much anything including causes which are entirely within the master's control including negligence matters. Please see points 1.3.10 to 1.3.16 above for detailed comments.

Deployment of Cable Protection for 10 Years Post Construction

2.1.23. The MMO is currently reviewing Schedule 11 Condition 21:

'21 - Any cable protection to be installed following completion of construction in locations where cable protection was not installed during construction must be deployed within 10 years of completion of construction unless otherwise agreed by the MMO in writing.'

2.1.24. The MMO is reviewing any comments made by Natural England in relation to the deployment of cable protection post construction, however it is noted that this is now becoming standard on DMLs.

Dropped Objects

2.1.25. The MMO is engaging with MCA regarding their requirement to be notified within 6 hours of an object being deposited. The MMO understands that the 6 hour requirement is directed towards those objects that are deemed as a danger or hazard to navigation.

2.1.26. The MMO notes that the Applicant has revised the condition wording to be as follows:

'10 - All dropped objects must be reported to the MMO using the Dropped Object Procedure Form as soon as reasonably practicable and in any event within 24 hours of the undertaker becoming aware of an incident. Immediate notification should be made to HM Coastguard via telephone where there is a perceived danger or hazard to navigation. On receipt of the Dropped Object Procedure Form, the MMO may require relevant surveys to be carried out by the undertaker (such as side scan sonar) if reasonable to do so and the MMO may require obstructions to be removed from the seabed at the undertaker's expense if reasonable to do so.

The MMO does not believe the update to the condition is enforceable. The MMO is in the process of updating the Dropped Object Procedure condition and form in discussions with MCA, so that it is clear for all parties. This will be shared with the Applicant and the ExA as soon as possible.

Chemicals

2.1.27. The MMO requests that the chemicals condition is updated to the following:

'11 - (1) Unless otherwise agreed in writing by the MMO, all chemicals and substances, including paints and coatings, used below MHWS for the undertaking of the licensed activities must be approved in writing by the MMO prior to use. Submission for approval to the MMO must take place no later than ten weeks prior to use, unless otherwise agreed by the MMO in writing.'

Disposal

2.1.28. The MMO requests to add the reference to disposal sites to Part 1 (2) once confirmed, and there may be a possible adjustment to the timing notification in Condition 11 (4).

Reporting of engaged agents, contractors and vessels

2.1.29. The MMO requests the following blue text is added to the condition:

'16.—(1) The undertaker must provide the following information to the MMO, unless otherwise agreed in writing by MMO —

(a) the name, company number (if applicable), address and function of any agent or contractor appointed to engage in the licensed activities within seven days of appointment; and

(b) each week during the construction of the authorised scheme a completed Hydrographic Note H102 listing the vessels currently and to be used in relation to the licensed activities, including the master's name, vessel type, vessel IMO number and vessel owner or operating company.

(2) Any changes to the supplied details must be notified to the MMO in writing prior to the agent, contractor or vessel engaging in the licensed activities.'

2.1.30. This will allow post consent grouping or arrangements of submission to reduce the burden on both the Applicant and on the MMO.

Impacts to Herring

2.1.31. The MMO is continuing discussions with the Applicant regarding the spatial refinement to the temporal piling restriction during the Banks herring spawning season. The MMO is awaiting further evidence on this matter from the Applicant in the form of a consultation, however, if the required supporting evidence to support a spatial refinement to the temporal restriction prior is not presented for review before the final examination hearing, then the MMO requests that the temporal piling restriction is added as DML conditions in the relevant Schedules and this may be an issue that may not be agreed.

Array area:
No piling of any type shall be permitted between 1 September and 16 October each year.
Reason: To protect spawning Banks herring and their eggs and larvae during their spawning season.

North Artificial Nesting Structure (ANS):
No piling of any type shall be permitted between 1 September and 16 October each year.
Reason: To protect spawning Banks herring and their eggs and larvae during their spawning season.

Please note that the UWN modelling presented by the Applicant has demonstrated that a temporal restriction on piling at the Offshore Reactive Compensation Platform (ORCP) and South-Eastern ANS is not required during the Banks herring spawning season.

Applicant's changes to condition wording

2.1.32. Table 1 below summarises MMO's comments on changes to condition wording within the DMLs.

Table 1 - Deemed marine licence – Applicant Amendments					
DCO Reference	**Stakeholder**	**Comments from Stakeholder / Rationale for Change**	**Change Made**	**DCO Version**	**MMO comments**
General	Applicant	As a result of the review of the use of the terms "authorised project" and authorised development" in response to ISH1 Action Point 2 (EV5-008), it was noted that "authorised project" or "authorised development" were being used in the deemed marine licences, where that should have been a reference to the "authorised scheme" as defined in each deemed marine licence. In order to rectify the noted inconsistency, the Applicant has made a number of changes to the deemed marine licenses to ensure the appropriate term is used consistently.	The Applicant has amended a number of instances of "authorised development" and "authorised project" to "authorised scheme" throughout the deemed marine licences.	Not noted	The MMO notes this change and has no further comments.
Schedule 10, Part 1, Paragraph 1 Schedule 11, Part 1, Paragraph 1 Schedules 12 and 13, Part 1, Paragraph 1	Applicant, Maritime and Coastguard Agency	Following consultation with the Maritime and Coastguard Agency, the primary point of contact details for the Maritime and Coastguard Agency have been updated.	*(4) Except where otherwise notified in writing by the relevant organisation, the primary point of contact with the organisations listed below and the address for returns and correspondence are—* *…* *(e) Maritime and Coastguard Agency* *UK Technical Services* *Navigation ~~Safety~~* *~~Branch Bay 2/20 Spring~~* *~~Place~~* *Spring Place* *105 Commercial Road* *Southampton* *SO15 1EG* *Tel: 020 3817 2426/2433* *Email: navigationsafety@mcga.gov.uk;*	6	The MMO notes this change and has no further comments.

DCO Reference	Stakeholder	Comments from Stakeholder / Rationale for Change	Change Made	DCO Version	MMO comments
Schedule 10, Part 1, Paragraph 5 Schedule 11, Part 1, Paragraph 5 Schedules 12 and 13, Part 1, Paragraph 5 Schedules 14 and 15, Part 1, Paragraph 5 Schedule 16, Part 1, Paragraph 5	Applicant	The Offshore Order Limits and Grid Coordinates Plan (document reference 2.8) has been updated to reflect the updated position of the mean low and mean high water marks. As a result, the grid co-ordinates specified within the Draft DCO have been updated.	Grid coordinates updated.	2	The MMO notes this change and has no further comments.
Schedule 10, Part 1, Paragraph 5 Schedule 11, Part 1, Paragraph 5 Schedules 12 and 13, Part 1, Paragraph	Applicant	The Offshore Order Limits and Grid Coordinates Plan (document reference 2.8) has been updated to reflect the removal of the northern offshore export cable corridor (ECC) route option between the western extent of the Inner Dowsing, Race Bank and North Ridge SAC and Wolla Bank and the associated ORCP area. As a result, all of the grid co-ordinates specified within the Draft DCO have been updated.	Grid coordinates updated.	3	The MMO notes this change and has no further comments.

5 Schedules 14 and 15, Part 1, Paragraph 5 Schedule 16, Part 1, Paragraph 5					

DCO Reference	Stakeholder	Comments from Stakeholder / Rationale for Change	Change Made	DCO Version	MMO comments
Schedule 10, Part 2, Condition 1(5) Schedule 11, Part 2, Condition 1(5)	Applicant	The Applicant has introduced a restricted build area in which no surface piercing infrastructure will be installed as mitigation to reduce impacts from the presence of WTGs (and offshore platforms) on auk species (specifically common guillemot and razorbill) and which also has the effect of reducing shipping and navigation impacts. A new condition has been inserted into the DML to secure this.	*(2) No wind turbine generator or offshore accommodation platform forming part of the authorised scheme shall be erected within the area hatched black and marked "offshore restricted build area" on the works plans, whose coordinates are specified below and shown on the offshore order limits and grid coordinates plan—* *Point — Latitude — Longitude* *150 — 53° 34' 31.492" N — 001° 04' 32.616" E* *151 — 53° 36' 34.077" N — 001° 08' 26.916" E* *152 — 53° 39' 12.689" N — 001° 28' 43.588" E* *845 — 53° 33' 59.545" N — 001° 03' 36.079" E* *846 — 53° 33' 59.382" N — 001° 03' 35.074" E* *847 — 53° 34' 09.033" N — 001° 03' 52.365" E* *848 — 53° 34' 31.223" N — 001° 04' 32.133" E* *849 — 53° 36' 37.559" N — 001° 19' 54.519" E* *850 — 53° 38' 07.792" N — 001° 29' 20.432" E* *851 — 53° 34' 27.499" N — 001° 06' 28.034" E*	3	The MMO notes this change and has no further comments.

DCO Reference	Stakeholder	Comments from Stakeholder / Rationale for Change	Change Made	DCO Version	MMO comments
Schedule 10, Part 2, Condition 7 Schedule 11, Part 2, Condition 7 Schedules 12 and 13, Part 2, Condition 5 Schedules 14 and 15, Part 2, Condition 5	Applicant, Maritime and Coastguard Agency, regional fisheries organisations	Following consultation with the Maritime and Coastguard Agency, the Applicant has agreed to update condition 7 to include regional fisheries organisations in the list of parties to be notified in the event of damage to the authorised scheme / exposure of cables.	*(11) In case of damage to, or destruction or decay of, the authorised scheme seaward of MHWS or any part thereof, excluding the exposure of cables, the undertaker must as soon as reasonably practicable and no later than 24 hours following the undertaker becoming aware of any such damage, destruction or decay, notify MMO, MCA, Trinity House, Kingfisher Information Service ~~and~~, the UK Hydrographic Office and regional fisheries organisations.*	6	The MMO welcomes this addition and will review comments from the Maritime and regional fisheries organisations.
Schedule 11, Part 2, Condition 7	Applicant, Maritime and Coastguard Agency, regional fisheries organisations	Following consultation with the Maritime and Coastguard Agency, the Applicant has agreed to update condition 7 to include regional fisheries organisations in the list of parties to be notified in the event of damage to the authorised scheme / exposure of cables.	*(12) In case of exposure of cables on or above the seabed, the undertaker must, within three days following identification of a cable exposure, notify mariners by issuing a notice to mariners and by informing Kingfisher Information Service of the location and extent of exposure. Copies of all notices must be provided to the MMO, MCA, Trinity House ~~and~~, UK Hydrographic Office and regional fisheries organisations within five days.*	6	The MMO welcomes this addition and will review comments from the Maritime and regional fisheries organisations.

DCO Reference	Stakeholder	Comments from Stakeholder / Rationale for Change	Change Made	DCO Version	MMO comments
Schedule 10, Part 2, Condition 9 Schedule 11, Part 2, Condition 9 Schedules 12 and 13, Part 2, Condition 7 Schedules 14 and 15, Part 2, Condition 7	Applicant, Maritime and Coastguard Agency, Trinity House.	Following consultation with the Maritime and Coastguard Agency, the Applicant has updated condition 9(1) for clarity.	*(1) ~~The~~ Except as otherwise required by Trinity House the undertaker must ~~colour~~ paint all structures forming part of the authorised scheme yellow (colour code RAL 1023) from at least ~~highest astronomical tide~~ Highest Astronomical Tide to a height ~~directed by Trinity House, or must colour the structure~~ as directed by Trinity House ~~from time to time~~.*	6	The MMO welcomes this change and will review comments from the Maritime and Coastguard Agency and Trinity House.

DCO Reference	Stakeholder	Comments from Stakeholder / Rationale for Change	Change Made	DCO Version	MMO comments
Schedule 10, Part 2, Condition 11 Schedule 11, Part 2, Condition 11 Schedules 12 and 13, Part 2, Condition 8 Schedules 14 and 15, Part 2, Condition 8 Schedule 16, Part 2, Condition 6	Applicant, Maritime and Coastguard Agency	Following consultation with the Maritime and Coastguard Agency, the Applicant has agreed to update condition 11 (10) (and 6 (5) for Schedule 16) to include an additional requirement to immediately notify HM Coastguard where there is a perceived danger or hazard to navigation.	*All dropped objects must be reported to the MMO using the Dropped Object Procedure Form as soon as reasonably practicable and in any event within 24 hours of the undertaker becoming aware of an incident. Immediate notification should be made to HM Coastguard via telephone where there is a perceived danger or hazard to navigation. On receipt of the Dropped Object Procedure Form, the MMO may require relevant surveys to be carried out by the undertaker (such as side scan sonar) if reasonable to do so and the MMO may require obstructions to be removed from the seabed at the undertaker's expense if reasonable to do so.*	6	The MMO notes this change and has provided comments in points 2.1.25-2.1.26 in the main body of this letter.
Schedule 10, Part 2, Condition 13(1)(a) Schedule 11, Part 2, Condition 13(1)(a)	Natural England	In its Relevant Representation, Natural England requested to be a consultee in respect of the approval of the design plan and so the Applicant has updated the Draft DCO to address this.	*(a) A design plan at a scale of between 1:25,000 and 1:50,000, including detailed representation on the most suitably scaled admiralty chart, to be approved in writing by the MMO in consultation with Trinity House, the MCA, ~~and~~ UKHO and the relevant statutory nature conservation body which shows—*	3	The MMO welcomes this change and will review comments from Natural England.

DCO Reference	Stakeholder	Comments from Stakeholder / Rationale for Change	Change Made	DCO Version	MMO comments
Schedule 10, Part 2, Condition 18 Schedule 11, Part 2, Condition 18	Applicant, Maritime and Coastguard Agency, Trinity House	The Applicant has updated condition 18(5) following consultation with Trinity House and the Maritime and Coastguard Agency.	*(5) Construction monitoring must include vessel traffic monitoring ~~including the provision of reports on the results of that monitoring~~ ~~periodically as requested by the MMO in consultation with~~ by automatic identification system for the duration of the construction period. An appropriate report must be submitted to the MMO, Trinity House and the MCA at the end of each year of the construction period.*	6	The MMO notes this change and will review comments from the Maritime and Coastguard Agency and Trinity House. Further updates may be required to ensure the condition meets the five tests.
Schedule 10, Part 2, Condition 19(2) Schedule 11, Part 2, Condition 19(2)	Applicant, Maritime and Coastguard Agency, Trinity House	The Applicant has updated condition 19(2)(e) following consultation with Trinity House and the Maritime and Coastguard Agency.	*(2) The post-construction surveys referred to in sub-paragraph (1) must, unless otherwise agreed with the MMO, have due regard to, but not be limited to, the need to undertake—* *…* *(e) post-construction traffic monitoring ~~including the provision of reports~~ ~~on the results of that monitoring periodically as requested by the MMO~~ ~~in consultation with,~~ which includes vessel traffic monitoring by automatic identification system for a duration of three consecutive years following the completion of construction of the authorised scheme, unless otherwise agreed in writing by the MMO. An appropriate report must be submitted to the MMO, Trinity House and the MCA at the end of each year of the three year period.*	6	The MMO notes this change and will review comments from the Maritime and Coastguard Agency and Trinity House. Further updates may be required to ensure the condition meets the five tests.

DCO Reference	Stakeholder	Comments from Stakeholder / Rationale for Change	Change Made	DCO Version	MMO Comments
Schedule 10, Part 2, Condition 23	Applicant, Maritime and Coastguard Agency, Trinity House	The Applicant has updated condition 23(1) following consultation with Trinity House and the Maritime and Coastguard Agency.	*(1) The undertaker must submit a close out report to the MMO, MCA ~~and,~~ UKHO ~~and,~~ the relevant statutory nature conservation body and Trinity House within three months of the date of completion of construction. The close out report must confirm the date of completion of construction and must include the following details—* *(a) the final number of installed wind turbine generators; ~~and~~* *(b) the installed wind turbine generator parameters relevant for ornithological collision risk modelling.;* *(c) as built plans;* *(d) latitude and longitude coordinates of the centre point of the location for each wind turbine generator and the offshore accommodation platform provided as Geographical Information System data referenced to WGS84 datum; and* *(e) latitude and longitude coordinates of the array cable routes provided as Geographical Information System data referenced to WGS84 datum.*	6	The MMO welcomes this change and will review comments from the Maritime and Coastguard Agency and Trinity House.

DCO Reference	Stakeholder	Comments from Stakeholder / Rationale for Change	Change Made	DCO Version	MMO Comments
Schedule 11, Part 2, Condition 23	Applicant, Maritime and Coastguard Agency, Trinity House	The Applicant has added condition 23 following consultation with Trinity House and the Maritime and Coastguard Agency.	***Completion of construction*** *23.—(1) The undertaker must submit a close out report to the MMO, MCA, UKHO, the relevant statutory nature conservation body and Trinity House within three months of the date of completion of construction. The close out report must confirm the date of completion of construction and must include the following details—* *(a) as built plans;* *(b) latitude and longitude coordinates of the centre point of the location for each offshore transformer station, offshore reactive compensation platform and the offshore accommodation platform provided as Geographical Information System data referenced to WGS84 datum; and* *(c) latitude and longitude coordinates of the offshore export cable route provided as Geographical Information System data referenced to WGS84 datum.* *(2) Following completion of construction, no further construction activities can be undertaken under this licence.*	6	The MMO notes this change and will review comments from the Maritime and Coastguard Agency and Trinity House. Further updates may be required to ensure the condition meets the five tests.

DCO Reference	Stakeholder	Comments from Stakeholder / Rationale for Change	Change Made	DCO Version	MMO Comments
Schedules 12 and 13, Part 1, Paragraph 1 Schedules 14 and 15, Part 1, Paragraph 1 Schedule 16, Part 1, Paragraph 1	Applicant	Following engagement with Historic England, the Applicant has inserted a new condition which requires the submission of a written scheme of archaeological investigation which must accord with the outline marine archaeological written scheme of investigation and so a definition of the outline plan has been included within these DMLs.	*"outline marine archaeological written scheme of investigation" means the document certified as the outline marine archaeological written scheme of investigation by the Secretary of State for the purposes of the Order under article 40;*	3	The MMO notes this change and will review comments from Historic England.
Schedules 12 and 13, Part 1, Paragraph 1 Schedules 14 and 15, Part 1, Paragraph 1	Applicant	Following engagement with Historic England which resulted in the inclusion of the condition referred to above, Historic England advised that Historic England's Birmingham office address should be included in these DMLs as the primary point of contact for Historic England.	*(4) Except where otherwise notified in writing by the relevant organisation, the primary point of contact with the organisations listed below and the address for returns and correspondence are—* *…* *(f)* *Historic England* *The Foundry* *82 Granville Street Birmingham* *B1 2LH* *Tel: 0121 625 6888.*	4	The MMO notes this change.

DCO Reference	Stakeholder	Comments from Stakeholder / Rationale for Change	Change Made	DCO Version	MMO Comments
Schedules 14 and 15, Part 1, Paragraph 1 Schedule 16, Part 1, Paragraph 1	Applicant	Following engagement with Historic England which resulted in the inclusion of the condition referred to above, Historic England advised that Historic England's Birmingham office address should be included in these DMLs as the primary point of contact for Historic England.	*(4) Except where otherwise notified in writing by the relevant organisation, the primary point of contact with the organisations listed below and the address for returns and correspondence are—* *…* *(g)* *Historic England* *The Foundry* *82 Granville Street Birmingham* *B1 2LH* *Tel: 0121 625 6888.*	4	The MMO notes this change.
Schedules 12 and 13, Part 2, Condition 10	Applicant Defence Infrastructure Organisation	Following comments from the Defence Infrastructure Organisation that they will require to chart all structures above 50m LAT, which includes the Artificial Nesting Structures, the Applicant has updated the deemed marine licences to include a new condition 10.	*Aviation safety* *10. The undertaker must notify the Defence Infrastructure Organisation Safeguarding, at least 14 days prior to the commencement of the licensed activities, in writing of the following information—* *(a) the date of the commencement of construction of the licensed activities;* *(b) the date the artificial nesting structure is brought into use;* *(c) the maximum height of any construction equipment to be used;* *(d) the maximum heights of the artificial nesting structure to be constructed;* *(e) the latitude and longitude of the artificial nesting structure to be constructed,* *and the Defence Infrastructure Organisation*	5	The MMO notes this change and will review comments from the Defence Infrastructure Organisation.

			Safeguarding must be notified of any changes to the information supplied under this paragraph and of the completion of the construction of the licensed activities. Copies of notifications must be provided to the MMO within five days of the notification to the Defence Infrastructure Organisation Safeguarding.		
DCO Reference	**Stakeholder**	**Comments from Stakeholder / Rationale for Change**	**Change Made**	**DCO Version**	**MMO Comments**
Schedules 12 and 13, Part 2, Condition 11	Applicant	On review of the DCO, the Applicant has identified and corrected minor typographical errors in condition 11(g)(vi).	*(vi) a requirement for the undertaker to ensure that a copy of any agreed archaeological report is deposited with the Archaeological Data Service, by submitting an OASIS (Online AccesS Access to the Index of archaeological investigationS Archaeological Investigations) form with a digital copy of the report within six months of completion of construction of the authorised scheme, and to notify the MMO and Historic England that the OASIS form has been submitted to the Archaeological Data Service within two weeks of submission;*	6	The MMO notes this change.

DCO Reference	Stakeholder	Comments from Stakeholder / Rationale for Change	Change Made	DCO Version	MMO Comments
Schedules 12 and 13, Part 2, Condition 11 Schedules 14 and 15, Part 2, Condition 11	Applicant, Trinity House	Following consultation with Trinity House, the Applicant has agreed to update condition 11 to include a requirement for an aids to navigation management plan, as consistent with the same requirement in the DMLs relating to the offshore transmission and generation assets.	*(1) The licensed activities or any part of those activities must not commence until the following (as relevant to that part) have been submitted to and approved in writing by the MMO-* *…* *(h) An aids to navigation management plan to be approved in writing by the MMO, following consultation with Trinity House, to include details of how the undertaker will comply with the provisions of condition 6 for the lifetime of the authorised scheme.*	6	The MMO notes this change and will review comments from Trinity House.
Schedules 14 and 15, Part 2, Condition 10 Schedule 16, Part 2, Condition 8	Applicant, Historic England	Following engagement with Historic England, the Applicant has agreed to include a new condition within these DMLs which requires the submission of a written scheme of archaeological investigation prior to commencement of licensed activities.	***Pre-construction plans and documents*** *(1) The licensed activities or any part of those activities must not commence until the following (as relevant to that part) have been submitted to and approved in writing by the MMO—* *…* *(g) A written scheme of archaeological investigation in relation to the offshore Order limits seaward of mean high water, which must be submitted to the statutory historic body at least four months prior to commencement of the licensed activities and to the MMO at least three months prior to commencement of the licensed activities and which must accord with the outline marine archaeological written scheme of investigation and industry good practice, in consultation with the statutory historic body to include—* *(i) details of responsibilities of the undertaker, archaeological consultant and contractor;* *(ii) a methodology for further site investigation*	3	The MMO notes this change and will review comments from Historic England.

			including any specifications for geophysical, geotechnical and diver or remotely operated vehicle investigations; *(iii) archaeological analysis of survey data, and timetable for reporting, which is to be submitted to the MMO within four months of any survey being completed;* *(iv) delivery of any mitigation including, where necessary, identification and modification of archaeological exclusion zones;* *(v) monitoring of archaeological exclusion zones during and post construction, where required;* *(vi) a requirement for the undertaker to ensure that a copy of any agreed archaeological report is deposited with the Archaeological Data Service, by submitting an OASIS (Online AccesS to the Index of archaeological investigationS) form with a digital copy of the report within six months of completion of construction of the authorised scheme, and to notify the MMO and Historic England that the OASIS form has been submitted to the Archaeological Data Service within two weeks of submission;* *(vii) a reporting and recording protocol, including reporting of any wreck or wreck material during construction, operation and decommissioning of the authorised scheme; and* *(viii) details of responsibilities of the undertaker, archaeological consultant and contractor;* *(ix) a methodology for further site investigation including any specifications for geophysical, geotechnical and diver or remotely operated vehicle investigations;* *(x) archaeological analysis of survey data, and timetable for reporting, which is to be submitted to*		

			the MMO within four months of any survey being completed; *(xi) delivery of any mitigation including, where necessary, identification and modification of archaeological exclusion zones;* *(xii) monitoring of archaeological exclusion zones during and post construction, where required;* *(xiii) a requirement for the undertaker to ensure that a copy of any agreed archaeological report is deposited with the Archaeological Data Service, by submitting an OASIS (Online AccesS to the Index of archaeological investigationS) form with a digital copy of the report within six months of completion of construction of the authorised scheme, and to notify the MMO and Historic England that the OASIS form has been submitted to the Archaeological Data Service within two weeks of submission;* *(xiv) a reporting and recording protocol, including reporting of any wreck or wreck material during construction, operation and decommissioning of the authorised scheme; and* *(xv) a timetable for all further site investigations, which must allow sufficient opportunity to establish a full understanding of the historic environment within the offshore Order limits and the approval of any necessary mitigation required as a result of the further site investigations prior to commencement of licensed activities.* *…* *(3) Pre-construction archaeological investigations and pre- commencement material operations which involve intrusive seabed works must only take place in accordance with a specific written scheme of archaeological investigation which is*		

			itself in accordance with the details set out in the outline written scheme of investigation (offshore), and which has been submitted to and approved by the MMO in consultation with the statutory historic body.		
DCO Reference	**Stakeholder**	**Comments from Stakeholder / Rationale for Change**	**Change Made**	**DCO Version**	**MMO Comments**
Schedules 14 and 15, Part 2, Condition 10	Applicant Defence Infrastructure Organisation	Following comments from the Defence Infrastructure Organisation that they will require to chart all structures above 50m LAT, which includes the Artificial Nesting Structures, the Applicant has updated the deemed marine licences to include a new condition 10.	***Aviation safety*** *10. The undertaker must notify the Defence Infrastructure Organisation Safeguarding, at least 14 days prior to the commencement of the licensed activities, in writing of the following information—* *(a) the date of the commencement of construction of the licensed activities;* *(b) the date the artificial nesting structure is brought into use;* *(c) the maximum height of any construction equipment to be used;* *(d) the maximum heights of the artificial nesting structure to be constructed;* *(e) the latitude and longitude of the artificial nesting structure to be constructed,* *and the Defence Infrastructure Organisation Safeguarding must be notified of any changes to the information supplied under this paragraph and of the completion of the construction of the licensed activities. Copies of notifications must be provided to the MMO within five days of the notification to the Defence Infrastructure Organisation Safeguarding.*	5	The MMO notes this change and will review comments from Defence Infrastructure Organisation.

3. Environmental Statement (ES)

3.1. General Comments

3.1.1. The MMO welcomes the Applicant's commitment to updating all ES documentation by Deadline 5.

3.2. Coastal Processes

3.2.1. The MMO considers that the potential impacts from sediment that would be mobilised due to erosion occurring during scour development is not fully assessed. Please can the Applicant provide signposting to the ES where it considers that the assessment has been made. The Applicant is requested to provide predictions for secondary scour, however the MMO notes that the Applicant will be updating the Outline Scour and Cable Protection Management Plan at Deadline 4.

3.2.2. Any scour protection method used should be submitted for review and approved prior to use.

3.2.3. The MMO agrees with the proposed monitoring plan for physical processes within Table 3.1 of the Offshore In-Principle Monitoring Plan (IPMP) (APP-276). Please see detailed comments regarding the IPMP in points 3.7.5 to 3.7.9.

3.2.4. The MMO agrees with the mitigation plan according to which all the cleared material will be returned to their local sedimentary system in each case, then over time active sediment transport processes will drive bedform recovery towards their local equilibrium state. The Applicant has indicated that once a specific area of sandwaves are cleared then all dredged sediment will be deposited within the Order Limits within an area of similar sediment characteristics, in close proximity to the dredge location in order to retain sediment within the sediment transport system (Schedule of Mitigation, APP-287). In particular, any sediment dredged for sandwave clearance within the designated Special Area of Conservation (SAC) will be retained within the same area (Schedule of Mitigation, APP-287).

3.2.5. Please see table 2 below, which details the MMO's response to the Applicant's comments at Deadline 3 for Coastal Processes

Table 2: The MMO's response to the Applicants comments at deadline 3 – Coastal Processes

Coastal Processes			
Ref	**MMO Deadline 2 Response (REP2-092)**	**Applicant Deadline 3 Response (REP3-037)**	**MMO Response**
REP2-092 1.3.1	The MMO agrees that subsea cable burial is the preferred option for cable protection.		No response required. Comment now addressed.
REP2-092 1.3.2	For scour protection, a variety of options are listed, such as, rock/gravel placement, concrete mattresses, flow energy dissipation devices, protective aprons or coverings, ecological based solutions and bagged solutions. The MMO would like to highlight that ecological based solutions for scour protection options should be prioritised and all options should be set out in the Outline Scour and Cable Protection Management Plan.	The Applicant will update document 8.21 Outline Scour and Cable Protection Management Plan (APP-295) to include prioritisation of ecological based solutions for scour protection, and subsequently the Schedule of Mitigation (REP2-039) to reflect this at Deadline 4.	The MMO welcomes the Applicant's commitment to updating the Outline Scour and Cable Protection Management Plan and the Schedule of Mitigation. The MMO will review the changes once submitted.

3.3. Dredge, Disposal and Chemical Use

3.3.1. The mitigations measures proposed within the Schedule of Mitigation (REP2-040) are appropriate and are expected for the Project.

Ref	Mitigation Measure commitment summary	Mitigation measure detail	Outline Document (where relevant)	Means of Implementation
1	Provision of Cable Specification and Installation Plan	Where possible, subsea cable burial will be the preferred option for cable protection. Cable burial will be informed by the cable burial risk assessment (CBRA) – which will take account of the presence of designated sites – and detailed within the Cable Specification and Installation Plan (CSIP). An outline CSIP has been prepared in support of the Application (document reference 8.5), which will be finalised post-consent.	Outline Cable Specification and Installation Plan (Document Reference: 8.5)	DCO Schedule 10, Part 2 - Condition 13(1)(d)(ii) DCO Schedule 11, Part 2 - Condition 13 (1)(d)(ii)
2	Scour protection	The installation of scour protection where required for engineering purposes. Scour protection may take the form of rock/gravel placement, concrete mattresses, flow energy dissipation devices, protective aprons or coverings, ecological based solutions and bagged solutions.	Outline Scour Protection and Cable Protection Management Plan (Document Reference: 8.21)	DCO Schedule 10, Part 2 - Condition 13 (1) (d)(iii) DCO Schedule 11, Part 2 - Condition 13 (1) (d)(iii)
5	Provision of a Project Environmental Management Plan	A Project Environmental Management Plan (PEMP) will be developed post-consent and adopted, which will cover the construction and O&M phases of the Project. This will be secured through a Condition in the deemed Marine Licence. This PEMP will include a Marine Pollution Contingency Plan (MPCP), which provides protocols to cover accidental spills and potential contaminant release, and provide key emergency contact details.	Outline Project Environmental Management Plan (Document Reference: 8.4)	DCO Schedule 10, Part 2 - Condition 13 (1)(e), DCO Schedule 11, Part 2 - Condition 13(1)€ DCO Schedules 12, 13, 14, and 15, Part 2 – Condition 10(1)(d)
8	Provision of a Construction Method Statement	A Construction Method Statement (CMS) which will confirm construction methods and the roles and responsibilities of parties engaged in construction. It will detail any construction-related mitigation measures.	-	DCO Schedule 10, Part 2 - Condition 13(1)(d) DCO Schedule 11, Part 2 - Condition 13(1)(d) DCO Schedule 12, Part 2 - Condition 10(1)(c) DCO Schedule 13, Part 2 - Condition 10(1)(c) DCO Schedule 14, Part 2 - Condition 10(1)(c) DCO Schedule 15, Part 2 - Condition 10(1)(c) DCO Schedule 16, Part 2 – Condition 8(1)(c)
35	Decommissioning Plan	Development of, and adherence to, a Decommissioning Plan and Programme.	-	DCO Schedule 1, Part 3 – Requirement 7

Table 3: Offshore Schedule of Mitigation relevant to Chapter 8: Marine Water and Sediment Quality, obtained from Table 1.1 in the Schedule of Mitigation (REP2-039).

3.3.2. The use of plastics in scour protection should be minimised as much as possible. Some scour protection options (use of mattresses and gabion baskets/scour bags) use concrete mattresses with linked polypropylene rope lattice, and artificial fronds mattresses made of continuous lines of overlapping buoyant fronds consisting of polypropylene or similar. The frond lines are secured to a polyester webbing mesh base that is itself secured to the seabed by a weighted perimeter or anchors pre-attached to the mesh base. The MMO requests the Applicant considers the risks of placing any plastic infrastructure into the marine environment should they degrade.

2.4.1. Please see table 4 below, which details the MMO's response to the Applicant's comments at Deadline 3 for Dredge, Disposal and Chemical Use

Table 4: The MMO's response to the Applicant's comments at Deadline 3 - Dredge, Disposal and Chemical Use

Dredge, Disposal and Chemical Use			
Ref	MMO Deadline 2 Response (REP2-092)	Applicant Deadline 3 Response (REP3-037)	MMO Response
REP2-092 1.4.1	RR-042.039, 040,043-047, 050-052 and 054 (PD1-071): The MMO is satisfied that the Applicant has noted these comments.	This comment is noted by the Applicant.	No response required. This comment can be considered as closed.
REP2-092 1.4.2	RR-042.041 and 042 (PD1-071): The Applicant has noted our comments and has stated that that all chemicals proposed for use will be listed within the Chemical Risk Assessment (CRA) produced post-consent. The MMO considers that this is appropriate.	The Applicant welcomes the MMO's agreement on the CRA.	No response required. This comment can be considered as closed.
REP2-092 1.4.3	RR-042.048 and 049 (PD1-071): The Applicant has noted our comments and has stated that the issues raised do not change the conclusions of the Environmental Statement (ES) which the MMO agrees with, however any document that will be certified should be correct to ensure anyone who reviews this document at a later date has full understanding of what is written. This should be either updated in the chapter or be part of the Errata document on the ES documents.	The Applicant intends to make the updates to the Environmental Statement chapters at Deadline 5 on the basis that: (a) an update at this stage would reflect the greatest number of potential changes to third party projects for the purposes of the cumulative assessment; and (b) the chapters would be updated to incorporate only information that is already in Examination, for the purposes of having a single-source document.	The MMO notes that the ES chapters will be updated at Deadline 5.
REP2-092 1.4.4	RR-042.053 (PD1-071): The MMO notes that the Applicant will provide the MMO with a Scour Protection and Cable Protection Management Plan for approval post-consent, the MMO are currently reviewing the outline plan and will provide more comments at Deadline 4.	This comment is noted by the Applicant. The Applicant intends to update the Outline Scour Protection and Cable Protection Management Plan at Deadline 4.	The MMO notes that the Outline Scour Protection and Cable Protection Management Plan will be updated at Deadline 4.
REP2-092 1.4.5	RR-042.055 and 056 (PD1-071): The Applicant has noted our comments and has stated that all chemicals proposed for use will be detailed within the Project Environment Management Plan to be presented to the MMO for approval post-consent. The Applicant's response does not explicitly state that there will be no future references to the Offshore Chemical Notification Scheme (OCNS) which would be welcomed.	The Applicant previously confirmed that all chemicals proposed for use on the Project would be listed within the Project Environmental Management (PEMP) that would be provided to the MMO for approval, whether or not these chemicals are listed on the OCNS. The Applicant does not intend to make further references to the OCNS within the Application documents.	Although the CRA will include consideration of whether chemicals are approved for use, it should be noted that the use of the 'Cefas definitive ranked lists of registered products' is not a list of pre-approved chemicals, and all chemicals with a pathway to the marine environment used on the OWF (not on vessels, or in closed systems unless requiring regular top up) should be notified to the MMO for approval prior to their use together with all their relevant persistence bioaccumulation or toxicity evidence (PBT).

			As the Applicant has stated that ‘all’ chemicals and substances will be listed within the CRA and that the MMO has recommended previously inclusions of chemicals not covered in the ES. The MMO has requested an updated chemicals condition in the DML. Please see point 2.1.27 in the main body of this letter.

3.4. Benthic Ecology

3.4.1. Please see table 5 below, which details the MMO's response to the Applicant's comments at Deadline 3 for Benthic Ecology.

Table 5: The MMO's response to the Applicant's comments at Deadline 3 – Benthic Ecology

Benthic Ecology			
Ref	MMO Deadline 2 Response (REP2-092)	Applicant Deadline 3 Response (REP3-037)	MMO Response
REP2-092 1.5.1	The MMO welcomes the Applicant's commitment to pre-construction surveys to provide understanding on the distribution and presence of potential *Sabellaria spinulosa* reef within the Project array and Offshore Export Cable Corridor (ECC) This could feed into baseline assessment monitoring impacts on this feature.	The Applicant welcomes the MMO's agreement on this point.	No response required.
REP2-092 1.5.2	RR-042.059 (PD1-071): The MMO notes that further information is needed to support the Applicant's conclusions regarding the potential spread of invasive non-native species (INNS) before it can be determined whether monitoring of INNS is required irrespective of the structure used.	The Applicant would like to understand what further information is considered by the MMO to be required. The Applicant holds it position that the effect of adding new hard substrate as part of the Application will increase the overall amount of existing hard substrate rather than create a new stepping stone; in this respect the increased risk of facilitating the spread of INNS is minimal and would not make an appreciable difference to an in-combination impact.	Please see comment 1.5.4 in this table below.
REP2-092 1.5.3	RR-042.057 (PD1-071): The MMO notes the mitigation measures outline in the Schedule of Mitigation, Outline Cable Specification and Installation Plan, and Outline Biogenic Reef Mitigation Plan appear to be appropriate. However, the methodology for any preconstruction surveys must be agreed with the MMO and advisors prior to their commencement to ensure suitable evidence is provided as per condition 13(1)(c)(i) of the DML within Schedule 11 of the DCO. It would be welcomed if it could be clear in the outline offshore in-principle monitoring plan that drop-down video at the previous areas where substantial low and medium reef was observed in still images as it is known to be difficult to distinguish reef from the	The Applicant welcomes the MMO's agreement on the mitigation measures, Outline Cable Specification and Installation Plan, and Outline Biogenic Reef Mitigation Plan. The final methodology for any pre-construction surveys will be submitted to the MMO for approval prior to the surveys being carried out. This will include details of the proposed survey locations and type of equipment to be used at each location. In line with industry best-practice, existing data will be reviewed to aid in the proposed locations for any surveys, including any data previously acquired on the Project, such as areas where S. spinulosa were previously recorded. The Applicant will update the Outline Offshore In-Principle Monitoring Plan (APP-276) at Deadline 4 to confirm this.	The MMO welcomes the commitment to update the Outline Offshore In-Principle Monitoring Plan (APP-276) at Deadline 4 and will review and provide comments in due course.

	surrounding coarse/mixed sediments (see Jenkins et al 2015, 2018).		
REP2-092 1.5.4	RR-042.058 (PD1-071): The MMO remains unconvinced that the impact on the spread of INNS will be negligible based on the Applicant's assertion that the Project is to be positioned within a previously unused area of seabed. The MMO requires more detailed information regarding the number of other developments in the area that introduce artificial hard seabed, the proximity of their structures to the Project, and the surface area of hard habitat introduced by the Project in comparison to the other developments. This should be provided in map format.	The Applicant has produced Figure 1 in Appendix A to demonstrate the location of other developments in the area that introduce artificial hard seabed, the proximity of these structures to the Project, and gives a good indication of the surface area of hard habitat introduced by the Project in comparison to the other developments within the wider southern North Sea. The Applicant maintains its position that the effect of adding new hard substrate as part of the Application will increase the overall amount of existing hard substrate rather than create a new stepping stone; in this respect the increased risk of facilitating the spread of INNS is minimal and would not make an appreciable difference to an in-combination impact.	The Applicant maintains their conclusion that the impact of the proposed development on the potential spread of INNS will be negligible and has supported this by providing a figure showing the location of the proposed development in relation to other developments in the area that introduce artificial hard habitat (see Appendix A in REP2-053). Whilst the MMO agrees that there are other artificial hard structures in the area, the MMO does not think the location and distribution of the ODOW wind turbine generators (WTGs) in relation to the other hard structures suggests that the Project will not facilitate the spread of INNS in the region. To the contrary, it seems plausible that the ~90 WTGs and foundations could increase connectivity between OWFs that are closer to the shore (e.g. the Triton Knoll and Race Bank) and further offshore (e.g. Hornsea Projects 1-4). Given the uncertainty regarding the potential role of the Project in facilitating the spread of INNS, the MMO considers that the colonisation of WTG foundations must be monitored over time, irrespective of the type of foundation that is used. This could potentially be carried out using imagery collected for other purposes (e.g. inspections or maintenance work using remote operates vehicles), though the feasibility of collecting samples (e.g. by scraping) should also be considered if evidence of INNS becoming established on the foundations is obtained.
REP2-092 1.5.5	RR-042.063 (PD1-071): The MMO acknowledges the difficulties highlighted by the Applicant in distinguishing Sabellaria spinulosa reef signatures from the surrounding sediment (coarse/mixed) in acoustic data when the reef has low-medium elevation and is patchy. The MMO does not question the review and interpretation of these data reported by the Applicant. The MMO would	The Applicant can confirm the approach stated by MMO was used in the reanalysis of the data and that patchiness was assessed throughout the video transect and averaged accordingly as per the guidelines from Gubbay (2007). For ECC_VID_66 we can confirm that the patches did not exceed an average of 'Low Reef'. The Applicant will supply all the images of Sabellaria aggregations in cases where they were observed at consecutive points	The Applicant's responses regarding the methodology for upcoming surveys and their approach to determining reefiness along transects allay concerns previously raised by the MMO. Based on the information provided, it appears that reefiness did not exceed 'low' in the most recent survey when it was averaged over each contiguous patch of reef, rather than over full transects. No further actions are required relating to this query, but the Applicant

	like to clarify that the comment related to the imagery data and do not suggest the Applicant should consider each single data point where Sabellaria aggregations were observed as reef, but rather that elevation and patchiness (% cover) should be averaged for contiguous 'patches' of reef. For example, in ECC_VID_66, there are several patches (3-5 observations at consecutive points along the transect) of low/medium reef interspersed with areas assigned as 'not a reef' or no Sabellaria (pages 300-301 in Chapter 9 Benthic and Intertidal Ecology, Volume 3 Appendices, Appendix 9.2. Rev 1.0, March 2024. (Document reference: 6.3.9.2)). It appears that this approach has now been carried out in a reanalysis of the data, and that the patches did not exceed an average of 'Low Reef'. The Applicant should confirm whether this is the case. The Applicant should also provide the images of Sabellaria aggregations in cases where they were observed at consecutive points along a transect (i.e. the contiguous patches of reef) for review.	along a transect (i.e. the contiguous patches of reef) for review at Deadline 4.	should commit to taking the patch-based approach to assessing reefiness using seafloor imagery going forward. The MMO welcomes that the Applicant will supply all images of Sabellaria aggregations observed along contiguous patches of reef for review at Deadline 4 and the MMO will review these and provide comments in due course.
REP2-092 1.5.6	The MMO welcomes the Applicant's approach to assessing the area of Sabellaria patches using the straight-line distance between non-reef data points either side of a potential reef segment. However, based on the information provided, it is unclear how many consecutive observations of Sabellaria aggregations would be required to be indicative of potential reef (i.e., ≥ 25 square metres (m^2) for 'Low' reef). To clarify this, the Applicant should provide information on the spacing of data points along the transect (i.e. the distance travelled between each 10 second screengrab image) and the area in m2 implied if Sabellaria aggregations are observed at 1, 2, 3, etc consecutive points. If the distance between	The Applicant can confirm that Sabellaria screenshots were taken using an automated function at a set time interval (10 seconds), with alternative screenshots taken manually at the closest time when the automated screenshot is unsuitable (i.e. seabed not sufficiently visible). As such, there isn't a standard distance between screenshots as this depends on vessel speed, although the actual distance appears to generally range between approximately 1.5m and 2.5m (mean = 1.7m, min 0.14m, max 12.02m). Should single records of Sabellaria exceed 5.6m straight-line distance on a transect (where they aren't consecutive), then they are likely to only just exceed the low threshold for Sabellaria reef extent (>=25m2), if the transect was that length, and will certainly not meet the medium	Please see comment 1.5.5 in this table above.

	points is variable along a transect, then the minimum and maximum distance between adjacent points could be used instead. We note that if the distance between two non-reef data points either side of a single observation of a Sabellaria aggregation equates to an area of ≥ 25 m², then a single observation of a Sabellaria aggregation could indeed be indicative of potential 'Low' reef.	threshold for Sabellaria reef extent (min. transect distance of 112.8m to give est. circular area ≥10,000m2). It is believed that the consecutive approach analyses are still the more reliable way of analysing reef extent. All instances of single screenshots showing Sabellaria were classified as having low reef structure, which means that they cannot be classified as anything other than low overall Sabellaria reefiness, regardless of their calculated/estimated extent.	
REP2-092 1.5.7	A report on an independent analysis of the seafloor imagery by Envision, which used both video footage and stills and was supported by grab and sidescan sonar data, has been provided by the Applicant (Envision (2024) Outer Dowsing Offshore Wind – Offshore Export Cable Corridor Sabellaria Spinulosa Reanalysis and Report. Rev 1.0, September 2024. (PD1-095)). It appears that the approach here was also to take the average of elevation and patchiness (% cover) over entire transects, in which case the same issue above would apply. Some example images of Sabellaria are provided for each transect in the report, but it's unclear based on the information provided whether these images are representative.	The Applicant can confirm that the images presented within the report are representative of the analyses. The Applicant will supply all the images of Sabellaria aggregations in cases where they were observed at consecutive points along a transect (i.e. the contiguous patches of reef) for review at Deadline 4.	Please see comment 1.5.5 in this table above.
REP2-092 1.5.8	Whilst we recognise the difficulties in distinguishing Sabellaria reef signatures from the surrounding sediment when reefiness is 'Low', it is our understanding that 'Low' reef is nonetheless considered as Annex I reef by Natural England. The MMO defers to Natural England on this point but would be happy to discuss possible options for mitigating and monitoring impacts on 'Low' reef, if required.	The Applicant welcomes MMO's comments and would also welcome any technical input on monitoring and mitigation when the Applicant is finalising the Offshore Monitoring Plan (in accordance with the Offshore In-Principal Monitoring Plan (APP-276)) and the Benthic Mitigation Plan (in accordance with the Outline Benthic Mitigation Plan (PD1-067)) at the post-consent phase.	Please see comment 1.5.5 in this table above.
REP2-092 1.5.9	In summary, previously raised issues concerning the spread of INNS and the approach to identifying Sabellaria reef using	This comment is noted by the Applicant.	For benthic ecology receptors, the main issues addressed by the Applicant's comments relate to ongoing discussions on the approach to identifying

	seafloor imagery remain unresolved. The MMO's position on these points remain unchanged.		Sabellaria reef using seafloor imagery and the potential role of the Project in facilitating the spread of INNS. The MMO's previous concerns regarding the former issue have been allayed. The MMO still considers that uncertainty remains around the latter issue and that this can be resolved by monitoring WTG foundations for potential INNS colonisation.

3.5. Fish Ecology

3.5.1. No monitoring of fisheries or fish habitat is proposed in the In-Principle Monitoring Plan (APP-276) on the basis that no significant adverse effects greater than minor significance were predicted for the Project in the Environmental Statement. The MMO agrees that additional fisheries-specific monitoring is not required for the purpose of addressing evidence gaps or uncertainties relating to fish populations. However, please see the comment below (point 3.5.2) on other monitoring requirements.

3.5.2. The MMO is aware of Natural England's concerns relating to the potential impacts to sandeel as they are an important prey species for certain marine predators that have been designated as features of marine protected areas in the region. With this in mind, there may be some merit in considering some pre-and post-construction monitoring of sandeel habitat within the Project boundary to determine whether the sediment composition has significantly changed as a result of the Project's construction. This type of monitoring would require the collection of sediment samples using a grab which would undergo particle size analysis (PSA). The PSA data could then be used to determine whether the sediment composition had changed from/to 'suitable', 'marginal' or 'unsuitable' sandeel habitat. Hence this type of monitoring has many limitations for the purpose of informing on impacts to marine predators as it would only provide evidence of sandeel habitat suitability but would not provide any information on whether sandeel were present in the area or how abundant they are.

3.5.3. The Applicant's comments outlined in the table below, do not change the MMO's position regarding the requirement for a temporal restriction during the Banks herring spawning season. The MMO notes that discussions with the Applicant are ongoing. Our most recent meeting with the Applicant was held on 16 January 2025 when preliminary discussions were held on the matter of spatially refining the temporal piling restriction during the Banks herring spawning season. The MMO is awaiting further evidence on this matter from the Applicant in the form of a consultation. The discussions remain ongoing.

3.5.4. If the required supporting evidence to support a spatial refinement to the temporal restriction prior is not presented for review before the final examination hearing, then the MMO considers that the following conditions should be captured in the DML which could then be reviewed/refined post-consent, subject to the necessary supporting evidence from the Applicant:

<u>For the Array area:</u>

No piling of any type shall be permitted between 1st September and 16th October each year.

Reason: To protect spawning Banks herring and their eggs and larvae during their spawning season.

<u>For the North Artificial Nesting Structure (ANS):</u>

No piling of any type shall be permitted between 1st September and 16th October each year.

Reason: To protect spawning Banks herring and their eggs and larvae during their spawning season.

3.5.5. Please note that the UWN modelling presented by the Applicant has demonstrated that a temporal restriction on piling at the Offshore Reactive Compensation Platform (ORCP) and South-Eastern ANS is not required during the Banks herring spawning season.

3.5.6. In our most recent meeting with the Applicant (meeting held on 16 January 2025) preliminary discussions were held on the matter of spatially refining the temporal piling restriction for part the Array area. The MMO is awaiting further evidence on this matter from the Applicant in the form of new modelling (again based on 135 dB).

3.5.7. The MMO considers that the discussions remain ongoing. Until such time that the revised modelling is presented to determine the effectiveness of a spatially applying the piling restriction, the MMO maintains the recommendation for the piling restrictions outlined in point.3.5.4.

3.5.8. Please see table 6 below which details MMO's response to the Applicant's comments at Deadline 3 for Fish Ecology.

Table 6: The MMO's response to the Applicant's comments at Deadline 3 – Fish Ecology

Chapter 10 Fish and Shellfish Ecology			
Fish ecology			
Ref	MMO Deadline 2 Response (REP2-092)	Applicant Deadline 3 Response (REP3-037)	MMO Response
REP2-092 1.6.1	The MMO has reviewed the Applicant's Schedule of Mitigation (PD1-058) and notes that within the offshore mitigation plan, provision will be made for a Cable Specification and Installation Plan, a Project Environmental Management Plan, burial of cables, a Marine Mammal Mitigation Protocol, a Fisheries Liaison and Co-existence Plan, and a Decommissioning Plan. The MMO supports these proposals. However, as per the MMO's comments below, refer to points 1.6.8 – 1.6.17. we recommend that additional mitigation is required to protect spawning herring and their eggs and larvae during the spawning season. We advise that no pilling is permitted during the Banks herring spawning season between 1 September and 16 October each year.	The Applicant does not agree that further mitigation is necessary for herring above that previously proposed, as no significant effects have been concluded within the Environmental Impact Assessment (EIA) (APP-065). Further detail as to the Applicant's position on this matter is set out in response to MMO comments 1.6.2 – 1.6.17.	The MMO notes that discussions with the Applicant are ongoing. Our most recent meeting with the Applicant was held on 16 January 2025 when preliminary discussions were held on the matter of spatially refining the temporal piling restriction during the Banks herring spawning season. The MMO is awaiting further evidence on this matter from the Applicant in the form of a consultation. The discussions remain ongoing. If the required supporting evidence to support a spatial refinement to the temporal restriction prior is not presented for review before the final examination hearing, then the MMO considers that the following conditions should be captured in the DML which could then be reviewed/refined post-consent, subject to the necessary supporting evidence from the Applicant: *For the Array area:* *No piling of any type shall be permitted between 1 September and 16 October each year. Reason: To protect spawning Banks herring and their eggs and larvae during their spawning season.* *For the North Artificial Nesting Structure (ANS):* *No piling of any type shall be permitted between 1 September and 16 October each year. Reason: To protect spawning Banks herring and their eggs and larvae during their spawning season.* Please note that the UWN modelling presented by the Applicant has demonstrated that a temporal restriction on piling at the Offshore Reactive Compensation

			Platform (ORCP) and South-Eastern ANS is not required during the Banks herring spawning season.
REP2-092 1.6.2	RR-042.068 (PD1-071): The MMO maintains its position on the 135 decibels (dB) Single Strike Sound Exposure Level (SELss) threshold from Hawkins et al., (2014) which is the best current scientific evidence from which a quantitative threshold can be derived for the purposed of modelling behavioural responses in herring. This threshold has been widely used in Underwater Noise (UWN) modelling to inform the impact assessment for herring for many OWF and construction developments, and in the absence of an alternative quantitative threshold, it is considered the best available. The Applicant is aware of our current position on the use of a 135 dB threshold, which is recommended consistently for projects of a similar nature, and in reviewing the Applicant's response, our position remains unchanged and the MMO requests that this threshold is applied and updated information relation to this is supplied.	As noted by the MMO comment 1.6.5 onwards, the Applicant has previously provided additional figures showing the modelled outputs for the 135dB SELss as supporting figures (PD1-082) to the Schedule of Changes to Plans (REP1-003). The Applicant reiterates that the 135dB threshold was considered as part of the Application; however, and as set out in paragraph 222 of APP-065, the Applicant considers that this threshold has no scientific validity for the purposes of the EIA and hence it was not further discussed. In response to the MMO's Relevant Representation (RR-042), the modelling results of the 135dB threshold were presented as part of the Offshore Restricted Build Area documentation (Figure 3.1 in PD1-082). These figures demonstrate the lack of any overlap between the 135dB contour and the main spawning area of the Bank's stock at Flamborough Head. The Applicant understands from the comment and below (comment 1.6.3) that the MMO is requesting that a "without-prejudice" assessment is provided including the use of the 135dB threshold. The Applicant has previously provided the figures showing the overlap and consider this sufficient information. The Applicant further considers that were this information to be contained within a "without- Applicant's Comments on Deadline 2 Submissions Deadline 3 Page 35 of 81 Document Reference: 20.2 December 2024 ID Deadline 2 Submission Applicant Response prejudice" assessment, it would confirm the assessment as set out in APP-065 with no demonstrable overlap with the key spawning ground for Banks herring (off Flamborough Head) and as such the "low" magnitude previously determined would remain valid. This would therefore not alter the conclusion	The Applicant has presented modelling using the 135 dB threshold to determine behavioural responses in herring. The modelling showed that the range of effect from piling at the North Artificial Nesting Structure (ANS) and the Array area overlaps the herring spawning ground. For this reason we recommended the following restrictions: *For the Array area:* *No piling of any type shall be permitted between 1 September and 16 October each year. Reason: To protect spawning Banks herring and their eggs and larvae during their spawning season.* *For the North Artificial Nesting Structure (ANS):* *No piling of any type shall be permitted between 1 September and 16 October each year. Reason: To protect spawning Banks herring and their eggs and larvae during their spawning season.* However, the UWN modelling using 135dB also demonstrated that a temporal restriction on piling at the Offshore Reactive Compensation Platform (ORCP) and South-Eastern ANS is not required during the Banks herring spawning season. In our most recent meeting with the Applicant (meeting held on 16 January 2025) preliminary discussions were held on the matter of spatially refining the temporal piling restriction for part the Array area. The MMO is awaiting further evidence on this matter from the Applicant in the form of new modelling (again based on 135 dB).

		of a minor effect significance, which is not significant in EIA terms. Therefore, there would be no need for further mitigation (including in the form of a seasonal restriction). The Applicant has proposed a meeting with the MMO and it's advisors to discuss this matter and is hoping to meet in early January 2025. Updates will be provided to the ExA at Deadline 4 of the outcomes of that meeting.	The MMO considers that the discussions remain ongoing. Until such time that the revised modelling is presented to determine the effectiveness of a spatially applying the piling restriction, the MMO maintains the recommendation for the piling restrictions outlined above.
REP2-092 1.6.3	The MMO would highlight to the Applicant that in many Examinations the Examining Authority (ExA) request information on a without prejudice basis. The MMO would advise the Applicant provides the information requested at the earliest opportunity and not leave this to the latter Deadlines of examination to ensure there is enough time to review and provide comments to the ExA.	This is noted by the Applicant and has been responded to in RR-042.122 in table 1.42 of the Applicant's responses to Relevant Representations (PD1-071.	The MMO notes that discussions with the Applicant are ongoing. Our most recent meeting with the Applicant was held on 16 January 2025 when preliminary discussions were held on the matter of spatially refining the temporal piling restriction during the Banks herring spawning season. The MMO is awaiting further evidence on this matter from the Applicant in the form of a consultation. The discussions remain ongoing.
REP2-092 1.6.4	RR-042.069 (PD1-071): In respect of the Applicant's comments on the change in the impulsiveness of piling noise over distance (becoming less impulsive), it is recognised that impulsive sound will likely lose its impulsive nature as the sound propagates and whilst there have been a few studies which speculate about the distance over which this occurs, there has been nothing concrete published or agreed to date. Thus, our recommendation is that until further criteria or guidance on this issue is published in peer-reviewed literature, the most relevant and recent noise exposure criteria should still be applied.	The Applicant maintains its position that the behavioural response of herring to a 135dB impulsive noise (from Hawkings et al., 2014), where herring are close to the noise source, is likely to be different to the herring response to a 135dB noise generated by an impulsive source many kilometres away. Whilst there is no definitive distance at which an impulsive sound becomes non-impulsive, studies to date (Hastie et al., 2019; ORJIP, 2024) agree that the impulsivity of a sound is much reduced within 5 – 10km of the source. Whilst the sound source may contain elements of impulsivity at this distance, based on the results of Hastie et al. (2019), only one out of four impulsivity characteristics would still be present at this range. As such, assuming that a sound is fully impulsive at 45km from the source (the maximum predicted range of the 135dB contour for the Project) is overly conservative and unrealistic.	Please see the MMO comments in points 3.5.4 to 3.5.7 in the main body of this letter above.

REP2-092 1.6.5	RR-042.075 (PD1-071): The MMO thanks the Applicant for providing revised figures showing International Herring Larvae Survey (IHLS) 'heat' maps for the most recent 10 years pf IHLS data, up to the year 2023/2024.	This comment is noted by the Applicant..	No response required.
REP2-092 1.6.6	RR-042.079 - RR-042.090 (PD1-071): The MMO maintains its position regarding the comments on the sensitivity and magnitude of impact for herring as a receptor. However, in light of the revised modelling and figures presented following the introduction of the Offshore Restricted Build Area (ORBA), the MMO has revised our original recommendation for a piling restriction (RR-042), to reflect the reduced range of impacts from piling. Please see points 1.6.8 – 1.6.17 for further details.	This comment is noted by the Applicant..	No response Required.
REP2-092 1.6.7	RR-042.091 – 093 (sandeel) (PD1-071): The MMO thanks the Applicant for presenting the modelled noise contours for the effects of mortality and potential mortal injury (219 dB cumulative sound exposure level (SELcum)), recoverable injury (216 dB SELcum) and temporary threshold shift (TTS) (186 dB SELcum) for sandeel habitat from simultaneous piling of jacket (pin-pile) foundations and monopile foundations in Figures 3.9 and 3.10 respectively (Offshore Restricted Build Area and Revision to the Offshore Export Cable Corridor Appendix A Figures, Part 1 of 2 – PD1-082). As stated in (RR-042, Section 4.5.28) disturbance to sandeel caused by piling noise and combined with the physical disturbance of their habitat (e.g. sandwave clearance) during the construction of Outer Dowsing OWF will result in adverse impacts to sandeels in the area, particularly during	This comment is noted by the Applicant..	No response Required.

	their winter hibernation period and spawning period.		
REP2-092 1.6.8	As previously stated, the project is located within a much wider area of sandeel habitat, so we do not believe that further mitigation to prevent significant impacts to sandeels at a population scale is necessary. The MMO notes the Applicant's comment that indirect impacts on protected marine mammal and bird species due to impacts on prey availability (i.e. sandeel) have been assessed in the ES in chapter 11: Marine Mammals, 12: Offshore and Intertidal Ornithology, and in the Report to Inform Appropriate Assessment (RIAA) and defers to the relevant Statutory Nature Conservation Body (SNCB) for further comments on this.	This comment is noted by the Applicant..	No response required.
REP2-092 1.6.9 The Main Outstanding Issue	The MMO highlights the main outstanding issue regarding our request on pilling during the Banks herring spawning season. The MMO's position on the requirement of a pilling seasonal restriction condition remains. However, it is not necessary to implement a project wide restriction, as the modelling demonstrates that in some areas where piling will occur the impacts of noise will not extend into 'active' herring spawning habitat. Hence, we have recommended a spatial element could be applied to the temporal piling restriction. Please see points 1.6.8 – 1.6.17 below for further details.	As set out in response to comments 1.6.1 – 1.6.4, the Applicant does not consider that a seasonal restriction of any form is required. The Applicant has proposed a meeting with the MMO and its advisors to discuss this matter and is hoping to meet in early January 2025. Updates will be provided to the ExA at Deadline 4 of the outcomes of that meeting.	Please see comment 1.6.1 in this table above.
REP2-092 1.6.10	The MMO has reviewed the Schedule of Changes to Plans (REP1-003), Environmental Report for the ORBA and Revision to the ECC (PD1-081) and supporting Figures (PD1- 082). In light of the changes from the ORBA, the Applicant	The Applicant welcomes the MMO's agreement that the ORBA reduces the impact ranges for both foundation types.	No response required.

	has undertaken revised UWN modelling which takes into account the new north-east (NE) foundation piling location. The modelled results presented in Table 4.1 (of Section 4.3) present the impact ranges for simultaneous piling of monopile foundations and pin piles for jacket foundations at the northeast (NE) and south-west (SW) piling locations. Table 4.1 compares these impact ranges to the ones modelled and presented in the ES, prior to the ORBA, to demonstrate that overall, the impact ranges for both foundation types are reduced with the implementation of the ORBA. Figures 3.1 – 3.6 (of Annex 1) present the mapped UWN contours for piling scenarios using jacket foundations (hammer energy of 3,500 (Kilo Jules (kJ) and 5m diameter pile) and monopile foundations (hammer energy of 6,600 kJ and 14m diameter pile)) based on either sequential or simultaneous piling. The figures are presented over mapped IHLS data that show larval abundance over a cumulative 10-year period (2012/3 – 2023/4). Comments on each figure have been provided below.		
REP2-092 1.6.11	Figure 3.1 of PD1-082 (Figure 1, Annex 1 of this document) - Sequential Piling of Jacket Foundations within the Array Area: For the NE modelled pile location, the noise contours for the effects of mortality and potential mortal injury (207 dB SELcum), recoverable injury (203 dB SELcum) and TTS (186 dB SELcum) overlap an area of historic herring spawning ground, based on Coull et al. (1998), but do not overlap the area of larval abundance based on IHLS data. For the NW and SW modelled pile locations, the	This comment is noted by the Applicant.	No response required.

	noise contours for the effects mortality and potential mortal injury, recoverable injury and TTS overlap historic herring spawning ground (Coull et al., 1998) and also overlap an area showing a low area of larval abundance based on the IHLS data. This area of low larval abundance is an extension to the main Banks herring spawning ground at Flamborough head, and is used as a herring spawning ground intermittently, as is demonstrated by Figures 3.7 and 3.8 (of Annex 3) (PD1-082) which present the mapped IHLS larval abundance broken down by each survey year.		
REP2-092 1.6.12	Figure 3.2 of PD1-082 (Figure 2, Annex 1 of this document) - Sequential Piling of Monopile Foundations within the Array Area: For the NE modelled pile location, the noise contours for the effects of mortality and potential mortal injury, recoverable injury and TTS overlap an area of historic herring spawning ground, but do not overlap the area of larval abundance based on IHLS data. For the NW and SW modelled pile locations, the noise contours for the effects mortality and potential mortal injury, recoverable injury and TTS overlap historic herring spawning ground and also overlap the area of low larval abundance based on the IHLS data. As per Figure 3.1, this area of low larval abundance is used intermittently as a herring spawning ground.	This comment is noted by the Applicant.	No response required.
REP2-092 1.6.13	Figure 3.3 of PD1-082 (Figure 3, Annex 1 of this document) - Simultaneous Piling of Jacket Foundations within the Array Area: For the NE modelled pile location, the noise contours for the effects of mortality	This comment is noted by the Applicant.	No response required.

	and potential mortal injury, and recoverable injury overlap an area of historic herring spawning ground, but do not overlap the area of larval abundance based on IHLS data. For the SW modelled pile location, the noise contours for the effects mortality and potential mortal injury and recoverable injury overlap historic herring spawning ground and overlap the area of low larval abundance based on the IHLS data. The noise contour for TTS from simultaneous piling at the NE and SW locations also overlaps the historic herring spawning ground and the area of low larval abundance based on the IHLS data. The TTS overlap with the area of low IHLS larval abundance is driven by piling noise at the SW location.		
REP2-092 1.6.14	Figure 3.4 of PD1-082 (Figure 4, Annex 1 of this document) - Simultaneous Piling of Monopile Foundations within the Array Area: The resulting noise contours are similar to those of Figure 3.3.	This comment is noted by the Applicant.	No response required.
REP2-092 1.6.15	Figure 3.5 of PD1-082 Figure 5, Annex 1 of this document) - Piling of jacket foundations in the Array Area, Offshore Reactive Compensation Platforms (ORCP) and Artificial Nesting Structures (ANS) search areas: This figure presents noise contours in 5 dB increments, but essentially, the key noise contour of relevance to this discussion is 135 dB (shown as a pink contour), which is used to provide a quantitative threshold value for determining behavioural responses in herring, based on Hawkins et al. (2014). For the SE ANS pile location, the 135 dB noise contour overlaps an area of historic spawning ground only. For the ORCP pile	This comment is noted by the Applicant.	No response required.

	location, 135 dB noise contour overlaps an area of historic spawning ground and a slight overlap with an area of very low IHLS larval abundance. For the NE Array pile location, 135 dB noise contour overlaps an area of historic spawning ground and a slight overlap with an area of very low IHLS larval abundance. For the North ANS pile location and the NW and SW pile locations, the 135 dB noise contour there is extensive overlap with the historic spawning ground and the area of very low IHLS larval abundance. The 135 dB noise contours for the North ANS pile location and the NW and SW pile locations also extend across most of the low larval IHLS abundance area which is used a herring spawning ground intermittently.		
REP2-092 1.6.16	Figure 3.6 of PD1-082 (Figure 6, Annex 1 of this document) - Piling of monopile foundations in the Array Area, ORCP and ANS search areas: The resulting noise contours are similar to those of Figure 3.5.	This comment is noted by the Applicant.	No response required.
REP2-092 1.6.17 Requests	Figures 3.1 – 3.6 of PD1-082 (Figures 1 to 6, Annex 1 of this document) indicate that impacts of mortality and potential mortal injury, recoverable injury, TTS and behavioural responses are expected to occur in areas of herring spawning ground during piling activities which means that there is a risk of impact to spawning herring and their eggs and larvae if piling were to be carried out during their spawning season. The MMO has previously recommended that the following licence condition to protect spawning Banks herring and their eggs and larvae during their spawning season was included in the DML for Outer Dowsing OWF: No piling of	The Applicant has acknowledged within the Fish and Shellfish impact assessment (APP-065) that there would be some mortality and potential mortal injury, recoverable injury, TTS and behavioural responses within the Banks spawning ground from piling activities. However, as discussed within APP-065, the magnitude is determined to be low at a population level as there is no overlap with the key actively used part of the Banks spawning ground off Flamborough Head. The Fish and Shellfish chapter concluded that there would be no significant effects and as such, no additional mitigation is required.	Please see comment 1.6.1 in this table above.

	any type shall be permitted between 1 September and 16 October each year. However, having reviewed the UWN modelling in Figures 3.1- 3.6, it is recognised that the impacts to herring and their eggs and larvae will only occur from certain locations where piling is carried out. For example, there is little to no overlap of the noise contours from piling at the ORCP and SE ANS sites with 'active' spawning areas (based on IHLS data) and hence, piling at these locations does not require any temporal mitigation during the herring spawning season. Whereas noise contours from piling at the North ANS location and the NW and SW pile locations in the Array show an extensive overlap with the 'active' spawning area (based on IHLS data), so for these areas, temporal mitigation during the herring spawning season is still recommended. Given that the overlap of noise contours from piling in the array with the area of 'active' spawning ground is driven by piling in the western portion of the array, the MMO considers that the recommended temporal mitigation can be applied spatially, so that piling within the eastern portion of the array can be carried out at any time. This is likely to require some additional modelling to determine an east/west 'boundary' within the array which can be applied to the DML condition and attached as work plans. This is likely to require further discussion between the Applicant and the MMO and we will work with the Applicant to move this forward as much as possible. The MMO notes it would be in the best interest of the Applicant to engage in this process and provide additional information for the ExA and		

	Secretary of State (SoS) to consider as part of the determination process.		
REP2-092 1.6.18	8 For the North ANS as a standalone site, the MMO requests the following condition to protect spawning Banks herring and their eggs and larvae during their spawning season: No piling of any type shall be permitted between 1 September and 16 October inclusive.	As set out in response to comments 1.6.1 – 1.6.17, the Applicant does not consider that a seasonal restriction of any form is required. The Applicant has proposed a meeting with the MMO and its advisors to discuss this matter and is hoping to meet in early January 2025. Updates will be provided to the ExA at Deadline 4 of the outcomes of that meeting.	Please see comment 1.6.1 in this table above.
REP2-092 1.6.19	Please note that the duration of the requested piling condition is shorter than that typically recommended for the Banks herring spawning season (August to October inclusive). The requested condition is proportionate to the licence condition for Triton Knoll (TK) OWF (DCO/2013/00004), located ~10km west of Outer Dowsing OWF, and reflects the timing of when herring spawning typically occurs in this southerly part of the Banks spawning ground, relative to those areas of spawning ground further north, e.g. Flamborough Head. This refined spawning period was identified through interrogation of IHLS data during the consenting stage for TK OWF, and through the understanding that herring migrate through the North Sea from north moving south during their spawning season (Cushing and Bridger 1966, and Burd, 1978). The MMO has previously requested that the Applicant considers the use of additional noise abatement systems for piling, such as bubble curtains (see Würsig et al. (1999)), or other alternative measures, as these may reduce the range of impact from piling, and could potentially allow for greater flexibility with regards to the spatial element of the temporal piling	As set out in response to comments 1.6.1 – 1.6.17, the Applicant does not consider that a seasonal restriction of any form is required. The Applicant has proposed a meeting with the MMO and its advisors to discuss this matter and is hoping to meet in early January 2025. Updates will be provided to the ExA at Deadline 4 of the outcomes of that meeting.	Please see comment 1.6.1 in this table above.

	restriction. If this was provided by the Applicant or within a plan the MMO could update the condition wording to remove the restriction post consent if the correct evidence was provided. The MMO is open to further discussions on this point.		

3.6. Shellfish Ecology

3.6.1. The MMO considers that all comments relating to shellfish can be considered as resolved.

3.6.2. There are no new concerns in relation to shellfish for this application at this stage.

3.6.3. Please see table 7 below, which details the MMO's response to the Applicant's comments at Deadline 3 for Shellfish Ecology.

Table 7: The MMO's response to the Applicant's comments at Deadline 3 – Shellfish Ecology

Shellfish Ecology			
Ref	MMO Deadline 2 Response (REP2-092)	Applicant Deadline 3 Response (REP3-037)	MMO Response
REP2-092 1.7.1	The mitigation measures proposed, in relation to shellfish receptors include "implementation of evidence-based mitigation in line with Fishing Liaison with Offshore Wind and Wet Renewables guidelines, following procedures to be set out within the outline Fisheries Liaison and Coexistence Plan" for the UK potting fishery. Additional mitigation measures are the burial of subsea cables as the preferred option, a Project Environmental Management Plan (PEMP) which will include a Marine Pollution Contingency Plan (MPCP) and minimising the risk of introduction or spread of marine invasive non-native species. The MMO agrees with all mitigation measures proposed.	The Applicant welcomes the MMO's agreement on the proposed mitigation measures.	No response required.
REP2-092 1.7.2	The MMO appreciates the comments addressed by the Applicant (Page 169, RR-042.099 of PD1-071). The Applicant has resolved the comment raised that the baseline data relating to shellfish species is outdated and does not cover the array or cable corridor. The Applicant directed us to the evidence provided for the presence of commercially important shellfish species within the array and surrounding areas (Volume 3, Appendix 10.1: Fish and Shellfish Ecology Technical Baseline, GoBe, 2024, V.1.0) from MMO landings data between 2018 to 2021, species identified include brown	The Applicant welcomes the MMO's comment.	No response required.

	crab, common whelk, common cockle, scallop, European lobster and brown shrimp. The MMO considers this to be sufficient as supporting information to address the comments.		
REP2-092 1.7.3	The MMO reiterates that it is recommended that the Applicant addresses typographical errors within their application and provides the correct Latin species names. The Applicant has acknowledged this comment (Page 169, RR-042.105 of PD1-071) and responded that they consider the common names to be sufficient in identifying the species name, without requiring the alteration of the Latin name. The MMO considers that it is best practice to provide the correct Latin species names but notes this is for the ExA to request.	This comment is noted by the Applicant.	No response required.
REP2-092 1.7.4	The MMO acknowledges that the Applicant has provided sufficient information to address the previous comments and evidenced the use of MMO landings data for commercially important shellfish species between 2018-2021.	The Applicant welcomes the MMO's comment.	No response required.

3.7. Underwater Noise

3.7.1. Provided that the Applicant is clear that bubble curtains will need to be deployed for ALL high order detonations, including those under 50 kilograms (kg), then previous comments raised regarding UXO weight can be considered closed.

3.7.2. The MMO has previously raised comments regarding concerns the 5 km EDR for low order UXO clearance used. The MMO maintains that any EDR should be backed by empirical data, as there are no EDRs specified for low order clearance in the SNCB (JNCC, 2020) guidance. The suggested EDR for high order UXO clearance is based on the monopile EDR of 26 km. A conservative approach might adopt a 15 km EDR, similar to that recommended for abated piling. Although a 5 km EDR for low order detonation may be reasonable and could be supported by extrapolating published data, it is the developer's duty to provide evidence. However, the MMO notes that the Marine Noise Registry Tool recommends a 5 km EDR for low order clearance. The MMO also notes that EDRs are currently being reviewed, and an update should be published by the end of 2025. At this stage the MMO considers the content for this comment to be closed, recognising the need going forward for empirical data to support EDRs and that UXO clearance will be subject to a separate marine licence.

3.7.3. The MMO maintains its position that it is not appropriate to use TTS onset thresholds as a proxy for disturbance. It is appropriate that the Applicant has also considered the 26 km EDR in their assessment of disturbance from high-order clearance. Our recommendations for assessing disturbance are set out below:

3.7.4. For quantifying the risk of behavioural responses, we recommend that assessments apply dose-response curves for proximity to the sound source and received sound level (Dunlop et al., 2017). Approaches based directly on the “distance of effect” reported for in situ behavioural studies (e.g., Merchant et al., 2018) can also be used as an empirical estimate of the risk of behavioural responses (Gomez et al., 2016), provided that the sound level of the noise source in the cited study is not substantially exceeded in the assessment scenario. Similarly, the SNCB guidance (JNCC, 2020) lays out advice on the assessment of significant disturbance in UK SACs for harbour porpoise. The advice is to use fixed disturbance distances (in the form of EDRs) for different activities, based on empirical evidence. These EDRs could also be used in impact assessments in the absence of more bespoke scientific evidence for the species and noise source concerned. Since harbour porpoise are relatively skittish and sensitive to underwater noise, the EDRs are likely to be conservative for other marine mammal species and are therefore a suitably precautionary option in the absence of other data (unlike using TTS as a proxy for disturbance).

<u>Offshore In-Principle Monitoring Plan (APP-276)</u>

3.7.5. The IPMP (APP-276) has been produced to provide the basis for delivering the monitoring measures required by the conditions of the DMLs contained within the draft DCO. The monitoring plan is to be submitted to the MMO for approval post consent must accord with this IPMP. Final detailed plans for monitoring work will be produced post consent closer to the time that the actual work will be undertaken, in line with the conditions proposed within the DMLs.

3.7.6. The MMO has engaged a range of stakeholders, including SNCB’s, industry, and Renewable UK to identify standards, and are currently finalising a list of agreed standards across 6 receptors: marine mammals, underwater noise, ornithology, fish and shellfish, benthic and geophysical monitoring.

3.7.7. We request that the IPMP be updated to reference this project, where any of these

receptors are applicable. The project can be referenced as (MMO Standardisation of Offshore Wind Post-Consent Monitoring, forthcoming). We also request that the IPMP include a general commitment to ensuring that any standards or best practice adhered to during monitoring, is outlined clearly within the relevant monitoring reports. The MMO will engage with the Applicant to ensure that this reference is included

3.7.8. Paragraph 31 (section 3.5.2) appropriately identifies that if piled foundations are used in the final project design, underwater noise monitoring of the first four piles of each piled foundation type will be undertaken with the methods agreed with the MMO and relevant SNCBs in the pre-construction period. This is in keeping with the standard monitoring requirements for offshore wind farms. Monitoring of the first four piled foundations (during the construction phase) is required for validation purposes to check whether the noise predictions in the ES are reasonable/appropriate. The MMO is currently discussing changes to this requirement and condition after issues raised by the SNCBs. The MMO requests that two of the four piles are the worst case scenario piles.

3.7.9. The MMO notes that the plan includes monitoring (in the form of Marine Mammal Observers (MMOb), and Passive Acoustic Monitoring (PAM) will also be undertaken in order to manage to the risk of auditory injury to marine mammals from underwater noise.

Outline Marine Mammal Mitigation Protocol for Piling Activities (REP2-035)

3.7.10. The MMO notes that some minor updates have been made to the current version (Revision 3) including additional information in Section 4.3.3 on Acoustic Deterrent Device (ADD) Choice and Specification.

3.7.11. Paragraph 35 (page 21): *"The ADD activation will also ensure that animals are beyond the injury zone based on instantaneous sound levels from the initial hammer strikes.*" The term 'ensure' in the context to ADDs suggests a guarantee that all marine mammals will be deterred, though not all animals may respond to these devices. For example, Brandt et al. (2013) observed total deterrence only up to 1.9 km, with porpoises occasionally seen as close as ~800 m, indicating variability in porpoise reactions depending on individual sensitivity or behavioural context (Brandt et al., 2013). Additionally, Brandt et al. (2012) found some porpoises within 750 m of the source. Future reports should phrase statements carefully and the MMMP should be updated.

Outline Marine Mammal Mitigation Protocol for Unexploded Ordnance Clearance (REP2-037)

3.7.12. The document has been updated (currently Revision 3.0) with minor edits and additions. As with the Piling MMMP, additional information has been provided regarding the 'ADD Choice and Specification'. The MMO has no major comments on this updated version, other than to highlight that Paragraph 31 (which was previously Paragraph 27 in the original document) still states that *"Technologies are available which attenuate the amount of noise emitted at the source (noise abatement). The use of bubble curtains during high-order UXO clearance activities is now standard best-practise for UXO clearance campaigns for offshore wind projects, with all projects since East Anglia One being required to use bubble curtains (subject to certain environmental limitations) for UXO detonations with combined charge sizes of greater than 50 kg (TNT-equivalent)".* The MMO considers that bubble curtains should be deployed for all high-order detonations, including those under 50 kg.

3.7.13. As per comment reference 1.8.7 in the table below, the Applicant is not committing to the use of NAS based on the conclusion of no Adverse Effect on Integrity (AEoI) within the Report to Inform Appropriate Assessment (RIAA). The Applicant states that they are aware of the policy direction of NAS but until a policy position is published, it is not possible for the Applicant to determine the type of NAS that would be required, or how it would need to be implemented on the Project, if it was necessary to do so. Without a published policy

document to allow the Application to determine these points, it is difficult to incorporate the use of NAS in funding and procurement considerations. Nevertheless, the Applicant is confident that following the publication of NAS policy documents, the Applicant will be able to incorporate the use of NAS post-consent, if required.

Please note that the policy papers have now been published by Defra. Please refer to section 1.4 above. However, the MMO respectfully disagrees with the assertion that a policy paper is required for the implementation of NAS. NAS has been successfully deployed in various European countries to date. Given the proven track record of NAS in reducing noise pollution, it is important to consider its implementation proactively.

3.7.14. Lastly, it would be helpful if additional context (i.e., bathymetry and coordinates) could be shown on the report figures (for future reports).

3.7.15. Please see table 8 below, which details MMO's responses to the Applicant's comments at Deadline 3.

Table 8: The MMO's response to the Applicant's comments at Deadline 3 – Underwater Noise

Underwater Noise			
Ref	MMO Deadline 2 Response (REP2-092)	Applicant Deadline 3 Response (REP3-037)	MMO Response
REP2-092 1.8.1	As advised in point 5.3.2 of RR-042, the MMO recommends that bubble curtains are deployed for all high-order detonations, including those under 50 kilograms (kg). The MMO expects this to be clear in future iterations of the Marine Mammal Mitigation Protocol (MMMP) for Unexploded Ordinance (UXO). The MMO would like to reiterate that the final mitigation plans for piling and UXO clearance will need to be agreed post-consent to consider appropriate mitigation for cumulative noisy activities occurring at the time of construction.	This comment is noted by the Applicant. The Applicant is not intending to consent the clearance of UXO through the DCO, as is typical for offshore wind farms, and as supported by the MMO at Deadline 1 (comment 1.3.2 of REP1-056). As such, a full, separate Marine Licence Application will be made to the MMO under Part 4 of the Marine and Coastal Access Act 2009 post-consent, but prior to any works taking place. The mitigation measures proposed within that Marine Licence Application will be based on best-practice at that time. The Applicant is consequently not proposing to resubmit the Outline MMMP for UXO (PD1-046).	Comment acknowledged. Provided that the recommendations are clear and understood by the Applicant at this stage, then the MMO welcomes the submission of a full separate Marine Licence Application.
REP2-092 1.8.2	The MMO does not support the use of TTS as a proxy for disturbance. The assessment for UXO clearance should appropriately consider the potential risk of permanent threshold shift (PTS), TTS and disturbance.	The Applicant's assessment of disturbance arising from UXO within the Marine Mammals chapter (APP-066) included consideration of disturbance occurring over the range of the underwater noise modelling for TTS-onset, alongside the use of two further thresholds widely used across the offshore wind industry; the 26km Effective Deterrence Range (EDR) for high-order clearances and the 5km EDR for low-order clearances. It is noted that it is the impact range associated with TTS which was used to inform an assessment of disturbance, rather than TTS having been considered as a direct proxy for disturbance. As such, the Applicant has considered PTS, TTS and disturbance appropriately and in line with previous EIA's.	The MMO does not have any further comments to note but maintains its position regarding the use of TTS (or the associated TTS impact range) as a proxy for disturbance. Nonetheless, it is appropriate that the EDR has been considered; this is the approach the MMO would recommend for assessing disturbance.

REP2-092 1.8.3	RR-042.122: The MMO appreciates that the co-ordinates and specific bathymetry values of the modelling locations are provided within a table in the report. The MMO would find it helpful if more context could be added for future reports for better understanding about the bathymetry and locations across the modelled domain. The MMO believes this is a reasonable request we previously raised regarding this additional information to be included on the first map of the report. The co-ordinates should also be provided in the figure, particularly since the maps currently lack a shoreline or land, and adding coordinates to any axis enhances any figure, rather than cluttering it.	The Applicant notes the request, although it is thought that the addition of coordinates within the clearly defined site boundaries is not expected to provide much additional useful context, and has never been previously requested. However, we will look to include this in the future.	Comment not addressed: This comment has not been addressed; specifically, no amendments have been made to the underwater noise modelling report as requested. Although not a major issue, it would be helpful if this additional information could be provided in future reports. Without this context, the current figures provide little value to the report. As all documents are to be certified the information should be correct. This will reduce confusion or issues if the document was reviewed at the post consent stage.
REP2-092 1.8.4	The MMO thanks the Applicant for the additional clarification regarding point RR-042.112 in PD1-071 and are content that this has been addressed. However, the MMO notes the following comment (RR-042.112 in PD1-071): "…in the Offshore Restricted Build Area and Revision to the Offshore Export Cable Corridor Appendix C Underwater Noise Modelling Report (PD1-085), a bathymetry colour scale has been added to the two relevant figures" but we cannot see any bathymetry colour scale on these figures.	The Applicant will update the figures within the Underwater Noise Assessment (APP-161) to include a colour scale at Deadline 5.	Comment acknowledged and the MMO thanks the Applicant for their forthcoming updates.
REP2-092 1.8.5	The MMO agrees with the Applicant that in the case of instantaneous effects, the noise disturbance contours (based on the "single strike" sound exposure level thresholds) do not combine or increase	The Applicant agrees with the MMO that the principle that the worst case as a maximum area is covered by the scenarios modelled, e. With regards to potential effects on herring spawning grounds, the Applicant would like to refer to Figure 3.3 to Figure 3.6 within	Comment acknowledged. Please note that the MMO and the Applicant are still in discussion regarding impacts to fish species.

	with exposure from multiple locations. Thus, in this regard, the effective worst-case location is indeed an overlay that leads to the greatest geographical area (NE and SW) (e.g. maximum separation between piles will likely lead to the greatest risk of disturbance). Thus, the MMO agrees with the Applicant that for simultaneous piling, overlaying noise contours from separate piling events to assess effects is acceptable. However, this comment was not solely concerning simultaneous piling. The salient point we were raising was that there may be WTGs situated closer to important habitats than those locations modelled in the assessment. Thus, if this is the case then we may expect a greater overlap of noise with these habitats.	Document 15.9A - Offshore Restricted Build Area and Revision to the Offshore Export Cable Corridor Appendix A Figures Part 1 of 2 (PD1-082), which shows the locations modelled in the assessment. The worst-case locations for piling effects to herring spawning grounds are the NW location and the north-ANS, which both have been modelled. All the modelling locations used to inform the Environmental Statement were agreed through the Expert Technical Groups, and those used for ES match those used at PEIR, which the MMO were content with.	
REP2-092 1.8.6	The MMO acknowledges the response regarding pile diameters from the Applicant (RR042.115 in PD1-071). However, the MMO highlights the importance of recent and relevant findings from the peer-reviewed literature. The von Pein study used finite element models (FEM) to simulate the acoustic emissions from pile driving, and these models were then validated against real-world measurement data. Thus, it is important to note that the scaling laws presented in von Pein et al. (including the dependency on pile dimeter) are derived from theoretical considerations verified against results of a state-of-the-art finite element model for pile driving noise	The Applicant recognises that this paper is a useful addition to the literature. However, the Applicant believes that empirical data is generally preferable to FEM, state-of-theart or otherwise, which will necessarily have to extrapolate from known data to create a scaling coefficient. The INSPIRE model has been used to extrapolate beyond empirical data in almost every one of its implementations in OWF noise assessments, and has led to good agreement in subsequent monitoring exercises, and thus the Applicant stands by its predictions.	The MMO has no further comments, noting that no further action was required by the Applicant as such. The MMO raised these comments for awareness and to highlight recent findings in the peer-reviewed literature.

	radiation (rather than based on empirical observations). These theoretical / numerical scaling laws are illustrated in Figure 2 in the paper (von Pein et al (2022)), while Figure 7 serves only as an overall validation of the laws. Deriving empirical trends directly from observations (e.g., zooming in at the observed difference between 4 metres (m) and 8 m piles, or beyond 6.5 m with the aim of discerning what would constitute a trend detail) would require much more comprehensive datasets for such trends to be established with confidence. We also note that von Pein et al. acknowledged the various limitations of their modelling and analysis (including limitations of the available validation datasets). The MMO highlights this is due to the potential impact of diameter scaling law on the modelling predictions of the received levels and impact magnitude.		
REP2-092 1.8.7	The MMO strongly believes that the need to reduce noise at source (noise abatement) is especially pressing given the wider context of the current ramp up of offshore wind development at unprecedented scale in the North Sea. We maintain that reducing noise at source is the most effective measure to reduce the risk of potential impact. The MMO considers that it is in the Applicant's interest to plan for noise abatement measures at the earliest opportunity and to incorporate such measures into relevant mitigation plans, especially as policy is	The Applicant is not committing to the use of Noise Abatement Systems (NAS) based on the conclusion of no AEoI within the RIAA [AS1-095]. The Applicant is aware of the ramp up of offshore wind in the southern North Sea and as a result the primary measure outlined in the Outline Southern North Sea Special Area of Conservation Site Integrity Plan [PD1-048] to mitigate for in-combination effects is the co-ordination of timings so that the Statutory Nature Conservation Bodies' (SNCBs) daily and seasonal thresholds are not exceeded for harbour porpoise. This mitigation measure has been demonstrated as successful for extant	While the MMO appreciates the explanation regarding the use of NAS, the MMO respectfully disagrees with the assertion that a policy paper is required for their implementation. NAS has been successfully deployed in various European countries to date, and given the proven track record of NAS in reducing noise pollution, it is important to consider its implementation proactively. Furthermore, even if the current assessment concludes no significant impact, it is important to recognise that environmental

	moving in this direction. The MMO believes that noise abatement should be included at this stage to ensure the project has suitable funding and programming and procurement can be built into the project at this early stage.	projects which have undertaking piling in the 2023 and 2024. However, Section 4.3 of the Outline SNS SAC SIP [PD1-048], outlines measures that will be considered during the development of the final SIP submitted at the post consent stages, including the potential implementation of NAS. The Applicant is aware of the policy direction of NAS but until a policy position is published, it is not possible for the Applicant to determine the type of NAS that would be required, or how it would need to be implemented on the Project, if it was necessary to do so. Without a published policy document to allow the Application to determine these points, it is difficult to incorporate the use of NAS in funding and procurement considerations. Nevertheless, the Applicant is confident that following the publication of NAS policy documents, the Applicant will be able to incorporate the use of NAS post-consent, if required.	impact assessments often involve subjective judgments. These assessments can be influenced by various factors, including the selection of methodologies and the interpretation of data. Proactively implementing NAS can provide an additional layer of protection for marine life. The MMO will review any updates from the Applicant on the back of reviewing the policies.
REP2-092 1.8.8	The MMO welcomes the response and confirmation from the Applicant regarding an error within the Outline Marine Mammal Mitigation Protocol (MMMP) for Piling Activities (APP279). The correct number of multi-leg pin piled jackets installed in a day is 12 when assuming simultaneous piling, 2 rigs with 6 pin piles. The Applicant has amended the error in the Outline Marine Mammal Mitigation Protocol (MMMP) for Piling Activities (document reference 8.6.1). The MMO is satisfied that this comment has been addressed.	The Applicant welcomes the MMO's agreement on the updates to the Outline Marine Mammal Mitigation Protocol [REP2-035].	Comment has been addressed. No further action required.
REP2-092 1.8.9	Since completing the original noise modelling for the Environmental Impact	This comment is noted by the Applicant. The Offshore Restricted Build Area (ORBA) was	Comment acknowledged. The original comment was primarily an observation and

	Assessment, as summarised above, the north edge of the Array has been designated an ORBA. Thus, the previously modelled North East location (NE) is no longer situated inside the area where WTGs or OPs will be installed. Figure 1-1 shows the layout of the Project along with the updated modelling locations. Appendix C Underwater Noise Modelling Report (PD1-085) presents the updated impact ranges for the new NE location and should be considered in parallel with the modelled results presented in the previous report.	accepted by the ExA on 3rd December 2024 (PD-015), therefore the results of Appendix C Underwater Noise Modelling Report (PD1-085) should be considered going forwards.	no action as such was required by the Applicant.
REP2-091 Noted as 1.8.9, but this should be 1.8.10.	Notwithstanding the new NE modelling location, all modelling undertaken has used the same model (INSPIRE v5.1), same parameters, same flee speeds, and the same impact criteria as the previous modelling report, with just the modelling location being altered.	This comment is noted by the Applicant.	As above, the original comment was primarily an observation and no action as such was required by the Applicant. However, it is highlighted that in some instances, the ranges for the new NE location are slightly smaller than those predicted for the previous NE location. The report highlights that this is due to the shallower water present at the updated modelling location. The largest marine mammal impact ranges are predicted for the monopile scenario, with maximum Permanent Threshold Shift (PTS) ranges of up to 5.0 km predicted for Low Frequency (LF) cetaceans using the cumulative sound exposure (SELcum) criteria. For fish, the largest recoverable injury ranges (203 dB) are predicted to be 8.8 km assuming a stationary receptor for the six sequential jacket pile scenario. The largest Temporary Threshold Shift (TTS) impact ranges (186 dB) for fish are predicted for the six sequential jacket pile scenario, with maximum ranges of up 24 km predicted for stationary receptors.

4. Comments on the Applicant's update to the Statements of Commonality of Statements of Common Ground (REP3-036)

4.1.1. The MMO agrees that discussions are ongoing with the Applicant with regards to the Statement of Common Ground. The MMO welcomes the progress made to date and thanks the Applicant for continued discussions and in particular our meetings held on 16 January 2025 and 20 January 2025, to discuss the Herring matters and the DMLs respectively.

5. Comments on other submissions received at Deadline 3

5.1. Offshore Export Cable Corridor Sabellaria Spinulosa Reanalysis and Report (REP3-035)

5.1.1. The MMO notes that this document has been updated with the insertion of Appendix A which detail the Applicant Responses to Natural England's Deadline 1 response (REP1-059).

5.2. Lincolnshire County Council (REP3-057)

5.2.1. The MMO notes that the District Councils are agreeable to Lincolnshire County Council being defined as the relevant planning authority.

5.2.2. The MMO notes that Lincolnshire County Council have concerns regarding the Outline Written Scheme of Investigation (WSI) (REP3-025) in that that it fails to prescribe a quantum of trial trenching, insufficient baseline evidence for archaeological mitigation, and that it should be updated once further trail trenching has been undertaken. The MMO maintains a watching brief for matters relating to the intertidal area.

5.3. Natural England (NE) (REP3-066)

5.3.1. The MMO notes that NE has focused their Deadline 3 response on offshore ornithology impacts with the introduction of the Offshore Restricted Build Area (ORBA) and that NE have requested updates to ES chapters to reflect the ORBA. These include Offshore Ornithology and Marine Processes, along with the Report to Inform Appropriate Assessment (RIAA).

5.3.2. The MMO welcomes NE providing their preferred approach to calculating the number of breeding pairs required for seabird compensation measures (REP3-071).

5.3.3. The MMO notes that NE considers that, even with micrositing, there may still be lasting change/loss of supporting habitat for Annex I *Sabellaria spinulosa* reef from the placement of cable protection. NE has stated that they advise an updated derogations case for the Inner Dowsing Race Bank and North Ridge (IDRBNR) SAC as an adverse effect cannot be excluded. The MMO welcomes the further information provided by NE in Annex C2 (REP3-067) and C3 (REP3-068). The MMO maintains a watching brief on this matter.

Appendix E2 Appendix E2 Natural England's comments and updated advice on Marine Mammals

5.3.4. The MMO notes that NE considers their position regarding NAS to be unchanged and that noise should be reduced at source, particularly owing to the declining Harbour Seal population in the Wash and North Norfolk Coast (WNNC) SAC. Please see our comments in Section 1.4 in support of this approach.

Appendix F2 Natural England's Advice on Offshore and Intertidal Ornithology following Acceptance of the ORBA (REP3-070)

5.3.5. The MMO notes that NE has requested that updated population viability assessments (PVA) where necessary. However, for some species, even without the updated PVA, NE

are able to agree with the conclusion of no significant adverse impact/Adverse Effect on Integrity (AEOI) alone for these species with the introduction of the ORBA.

5.3.6. The MMO welcomes that although NE hold some concerns that collision risk modelling has not been re-ran, NE is able to conclude that for all species, the impacts are at a level that would result in no significant adverse impacts at the EIA scale from the Project alone. However, NE is concerned with cumulative impacts at EIA and have requested an updated cumulative assessment.

5.3.7. The MMO welcomes NE's detailed comments regarding impacts to species in the Flamborough and Filey Coast (FFC) Special Protected Area (SPA), highlighting that they have concerns over the level of impact for Razorbill and Red-Throated Diver from the Project Alone. NE has highlighted concerns regarding a range of species (kittiwake, guillemot, razorbill and breeding seabird assemblage) in-combination for this SPA.

Appendix L Natural England's comments on the Offshore In Principle Monitoring Plan (REP3-075)

5.3.8. The MMO agrees with NE that the Offshore IPMP a live document which is updated throughout the examination process and post consent to include all monitoring. Please see the MMO's detailed comments regarding the IPMP in points 3.7.5 to 3.7.9.

5.3.9. NE has highlighted that further detail is needed in relation to hypothesis of monitoring, timings of surveys, considerations points for when monitoring is no longer required and if impacts are greater than predicted.

5.3.10. The MMO agrees with NE's comment stating that the *'monitoring should be effective in providing sufficient evidence pre-construction to inform the deployment of mitigation measures and similarly demonstrate the efficacy of mitigation measures during construction and post-construction.'*

5.3.11. The MMO notes that NE does not agree to the IPMP not detailing any marine mammal monitoring and that NE have requested further detailed discussions. The MMO will maintain a watching brief on this.

5.3.12. The MMO notes that NE has provided advised monitoring in Table 1, which includes sandwave/sandbank pre and post-construction monitoring, post-consent ornithological monitoring, and the monitoring of infrastructure within the IDRBNR SAC.

Yours sincerely,

[redacted]

[redacted]
Marine Licensing Case Officer

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6.References

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7. Annex 1 - Underwater Noise Policy

7.1. The Underwater Noise policy below has been submitted into examination to inform both the Applicant and the ExA. The policy has been taken from https://www.gov.uk/government/publications/reducing-marine-noise/reducing-marine-noise and has been added to this Deadline 4 response for reference. In addition, this Annex includes the updated UXO position statement taken from https://www.gov.uk/government/publications/marine-environment-unexploded-ordnance-clearance-joint-position-statement/marine-environment-unexploded-ordnance-clearance-joint-position-statement#:~:text=This%20joint%20statement%20sets%20out,relation%20to%20commercial%20marine%20developments
and the NE/JNCC/Cefas joint position on Noise Abatement take from here https://hub.jncc.gov.uk/assets/e1d38ce8-9bc6-4fb5-b867-f7f595caa25a.

Contents

1 Scope of Document

The UWN policy papers have been published. These set out the direction of travel into reducing the noise at source for piling, although heavily Offshore wind focused other activities are part of the scope. For UXO it sets of further detail on how UXO licences may be assessed and what cases could be prioritised over others (dependant on low order technology used).

2.1 Reducing Marine Noise

2.1.1 The Issue

Our seas are becoming increasingly busy. They support our fisheries, tourism, and shipping industries, as well as being a crucial source of renewable energy.

Our seas are also home to diverse and precious marine life including a breadth of marine mammals that play a vital role in maintaining a healthy ecosystem. This includes 28 species of cetacean which have been recorded in the UK. Twelve are regularly seen, including:

- harbour porpoise
- bottlenose dolphin
- killer whale
- humpback whale

We are home to around 38% of the global population of grey seals and up to an estimated 449,000 harbour porpoise. As such, the UK government has pledged to protect the marine environment.

Marine mammals are facing a range of pressures. A key concern is the level of noise generated from a range of human activities including:

- pile driving for offshore wind farm foundations
- seismic surveys
- the detonation of unexploded ordnance from the seabed
- shipping

There is also a growing recognition that noise is impacting upon a wide range of other species, including fish and invertebrates.

In May 2023, international experts came together in a call for governments to take action to reduce man-made noise in our oceans.

2.2 What we mean by ‘marine noise’

Natural sound is an important cue within the marine environment. It is used by animals to:

- navigate
- communicate
- find food
- locate mates
- avoid predators

Sounds made by human activities, here referred to as ‘marine noise’, are increasing and can interfere with or obscure the ability of marine animals to hear natural sounds.

Marine noise is made up of impulsive and continuous noise.

2.2.1 Impulsive Noise

Impulsive noise is characterised by sounds of short duration and high peak sound pressures (levels) across a broad frequency range. They can be generated by certain human activities such as:

- geophysical surveys
- impact pile driving
- active sonar
- acoustic deterrent devices
- explosive use

2.2.2 Continuous Noise

Continuous noise refers to sounds of long duration in the marine environment, such as shipping or the operation of wind turbines.

Both impulsive and continuous noise have the potential for negative effects on marine mammals.

The UK government's ambition is to be a global leader in managing and reducing marine noise. We want UK waters to be a safe haven for the wealth of marine mammals and noise sensitive species that are resident in our seas.

2.3 The UK's Commitment

The UK government has pledged to protect the marine environment and has made a number of commitments.

We have a target to restore at least 70% of protected features in relevant Marine Protected Areas to a favourable condition by 2042, with the rest in a recovering condition under the Environmental Targets (Marine Protected Areas) Regulations 2023. For marine noise, to maintain favourable conditions in harbour porpoise Special Areas of Conservation, we aim to keep noise disturbance below set thresholds.

Under the Marine Strategy Regulations 2010, we are required to take the necessary measures to achieve or maintain Good Environmental Status in UK waters. This includes achieving Good Environmental Status for underwater noise by reducing both impulsive and continuous noise to levels that do not adversely affect populations of marine animals, as laid out in the UK Marine Strategy.

As the UK is a contracting party to the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR), we have commitments to reduce anthropogenic underwater noise to levels that do not adversely affect the marine environment as set out in the North-East Atlantic Environment Strategy 2030.

More recently, the Kunming-Montreal Global Biodiversity Framework was adopted in 2022. It sets out an ambitious pathway to reach the global vision of a world living in harmony with nature by 2050. One target is to reduce the negative impact of pollution from all sources by 2030 to levels

that are not harmful to biodiversity and ecosystem functions and services. Noise is considered to be a source of marine pollution.
We have ambitious targets to meet and therefore are setting out here Defra's ongoing work and upcoming plans to minimise noise in our seas.

2.4 What we've done so far

Across the UK, we are taking action to tackle marine noise.

2.4.1 Managing noise in harbour porpoise Special Areas of Conservation in England, Wales and Northern Ireland

The UK government is committed to ensuring an ecologically coherent and well-managed network of Marine Protected Areas. This means working to ensure the conservation objectives for each protected area are met. The UK has seven Special Areas of Conservation for harbour porpoise, the species often regarded as the most sensitive to marine noise.
To support the existing licensing regime for regulated activities, guidance was published by our statutory nature conservation bodies (SNCBs) in 2020. The guidance introduced noise disturbance thresholds in harbour porpoise Special Areas of Conservation in England, Wales and Northern Ireland and recommended Effective Deterrent Ranges representing the spatial extent of harbour porpoise disturbance from different noisy activities. Recent scientific evidence shows that adherence to the noise disturbance thresholds should avoid a potential adverse effect on the integrity of the protected area.
To maintain the habitat, it is essential that all licensing authorities and industries work together, and industry operates in line with their licence conditions and the mitigation hierarchy to avoid, reduce and mitigate impacts. This includes industries working together to consider the noise they are producing, both individually and collectively, to ensure noise levels do not breach the thresholds.

2.4.2 Preventing harmful blasts at sea

After both World Wars, large numbers of explosives were left undetonated in the marine environment. An increase in marine development is leading to greater detail on the location of these unexploded ordnance (also termed UXO) which need to be cleared to protect human life and infrastructure.

UXO clearance has previously been undertaken through high order detonation. The resulting blast can produce high levels of energy which can result in considerable impacts on the marine environment, including seabed damage, and injury and disturbance to marine species from the associated noise.

In 2021, Defra worked together with devolved governments, licensing authorities and SNCBs to provide the first UK government Joint Position Statement on minimising environmental impacts from UXO clearance. In 2024, a revised Joint Position Statement was

published that set out stricter expectations in relation to high order detonations. The Joint Position Statement and its associated guidance should be considered ahead of any marine licence application related to UXO clearance from the seabed.

There are low noise alternatives to high order detonation that are safe, commercially available and cause less environmental harm. As set out in the revised Joint Position Statement, low noise methods of clearance should be the default method used to clear any type of UXO in the marine environment.

If there are extraordinary circumstances which mean a low noise method of clearance cannot be undertaken, applicants should discuss this with the appropriate licensing authority and SNCBs at the earliest opportunity.

The following UK marine licensing authorities have confirmed that they expect to take this general approach when determining marine licence applications for activities relating to UXO clearance:

- Marine Management Organisation (MMO)
- Marine Directorate of the Scottish Government
- Natural Resources Wales
- Department of Agriculture, Environment and Rural Affairs in Northern Ireland
- Offshore Petroleum Regulator for Environment and Decommissioning.

2.4.3 Monitoring and Research

Monitoring programmes established since 2012 have provided an improved understanding of the levels of impulsive and continuous noise pollution in UK waters, with the UK Marine Noise Registry recording data on impulsive noise sources since 2015.

Defra has been working closely with scientists and advisors to deliver a dedicated programme of research. Since 2021, over 30 noise-related research projects have been funded through the Offshore Wind Enabling Actions Programme, with many more projects being steered and overseen through Defra's involvement in a wide variety of other initiatives and programmes across the UK. This will continue to build our understanding of marine noise impacts on a wide range of species and identify where interventions are required. This will provide valuable evidence to support our decision-making.

The research reports published to date can be viewed online:

- Impacts of underwater noise from offshore wind - ME5610
- Management of underwater noise from offshore wind - ME5611

2.5 Next Steps

It is vital that biodiversity is protected whilst meeting the important commitments to achieving net zero and supporting thriving industry. The UK government encourages all marine industries to take all necessary steps to reduce their noise. We plan to implement a series of further actions to support this which are set out below.

2.5.1 Reducing noise from offshore wind

The UK government has ambitions to radically increase renewables deployment to deliver our Clean Power by 2030 Mission whilst effectively supporting thriving marine and coastal ecosystems. In Defra, we recognise the impact construction on such a large scale can have on our environment, including through noise generated from piling during the installation of wind turbine foundations and offshore substations.

Due to the increased levels of noise anticipated over the coming years, it will be increasingly more difficult to determine no adverse effects on site integrity for harbour porpoise SACs. Industry should expect to see changes in the way noise is managed in the marine area. Industry's adoption of noise reduction methods during piling will be vital for ensuring that licensing authorities can continue consenting works to go ahead, whilst remaining below the noise disturbance thresholds.

The UK government intends to consult on an offshore wind piling noise limit. Significantly reducing the noise produced during the construction of offshore wind developments will contribute to ensuring our Clean Power by 2030 Mission is delivered sustainably and in a way that continues to protect and enhance our marine environment.
Following the consultation on an offshore wind piling noise limit, Defra intends to work with offshore wind developers throughout 2025 and 2026 to gather data during piling activities to test and refine the outcomes of the consultation. We would welcome offshore wind developers joining this pilot programme. For further information, email: offshorewind@defra.gov.uk.

From January 2025, given the expected increase in noise levels over the coming years, and the above outlined policy commitments, we expect that all offshore wind pile driving activity across all English waters will be required to demonstrate that they have utilised best endeavours to deliver noise reductions through the use of primary and/or secondary noise reduction methods in the first instance.

Primary methods aim to reduce noise emissions at the source through modifications of the piling process (for example, alternative hammer types, alternative foundation types). Secondary methods aim to reduce the noise propagated through the water column during pile driving by employing systems such as casings, resonators and bubble curtains.

Applicants can propose the use of any noise reduction method (primary, secondary, or a combination of methods) in their marine licence application and/or their post-consent requirement discharge request. Technologies with more robust evidence regarding their efficacy and noise reduction capabilities are likely to face smoother consenting journeys with regard to noise related matters. Furthermore, given the current evidence gaps regarding harbour porpoise disturbance, developers can propose alternative Effective Deterrent Range values in their licence applications and/or post-consent requirement discharge requests, provided they are supported by robust evidence appropriate to the case in question. This will be considered by the relevant regulator during application determination in consultation with the relevant SNCBs. The greater the level of evidence provided to support justification of a lower Effective Deterrent Range, the more likely this will be accepted by the regulator. Early engagement with the relevant regulator is strongly encouraged. It remains the case that any and all applications for marine licences will be determined on a case-by-case basis, on the basis of the application that has been made and the individual circumstances.

Amongst other things, a wildlife licence may also be required to undertake piling and may only be granted where the licensing authority is content that it meets the legislative tests: for example, where there is no satisfactory alternative and the activities licensed are not detrimental to the maintenance of the population of the species concerned, at a favourable conservation status in their natural range.

Thorough consideration of noise reduction methods should therefore be undertaken by the applicant, including justification as to why applying noise reduction methods to your activity may not be considered a satisfactory alternative. The additional cost of a noise reduction system is unlikely to be a sufficient justification on its own merit to discount a satisfactory alternative, unless the cost renders the project financially unviable. Any additional justification such as lack of supply chain, contractual obligations, financial milestones, or technological incompatibility should be provided to explain why noise reduction systems are not a satisfactory alternative. Note that as technology develops and the supply chain improves, these arguments are likely to become less valid. This should be submitted to the relevant licensing authority for their consideration when undertaking a review of any application for a wildlife licence.

Developers who have secured the greatest possible noise reductions are less likely to face requests to further explore satisfactory alternatives and therefore delays in consenting, as they have demonstrated they have utilised best endeavours to secure a satisfactory alternative. Any applications for wildlife licences will be determined on a case-by-case basis, on the basis of the application that has been made and the individual circumstances.
Read the joint statement from statutory advisors.

2.5.2 Reducing noise from other sources

Defra recognises the impact that both continuous noise and impulsive noise from other sources can have on marine mammals and is committed to minimising these impacts. Innovations across all industries to minimise noise impacts are therefore encouraged.

We are supportive of the International Maritime Organisation's Revised guidelines for the reduction of underwater radiated noise from shipping to address adverse impacts on marine life . We will be working across UK government and through research and industry engagement to understand where improvements and changes can be made. As per the Maritime and Coastguard Agency's Marine Information Note, ships are encouraged to use the International Maritime Organisation's guidelines in order to minimise the effects of underwater radiated noise and provide feedback on their use, where possible.

We are considering where improvements can be made across all industries undertaking geophysical and seismic surveying activities so that impacts are minimised as far as possible.

2.5.3 Consideration of the UK wide noise threshold values

As part of ongoing work to meet our commitments through the UK Marine Strategy to achieve or maintain Good Environmental Status on underwater noise, Defra and the devolved administrations will be considering noise threshold values for introduction across all UK waters for both impulsive and continuous noise sources.

These threshold values would be levels below which Good Environmental Status on underwater noise is expected to be achieved. These new values would be in addition to what currently exists in some harbour porpoise SACs. Introduction of such new threshold values may lead to changes to how activities are managed in the future, to keep noise below such levels.

We will be working together with devolved administrations, licensing authorities, SNCBs and scientific advisors such as the Centre for Environment, Fisheries and Aquaculture Science to evaluate options for these thresholds. Future introduction of thresholds across all UK waters would cement our existing commitments to reduce marine noise and protect UK waters.

2.5.4 International Cooperation

Many of the cetaceans found in UK waters are part of much larger populations whose range extends beyond UK waters. It is therefore important that we work together with other nations to take action. The UK government will continue working with all other contracting parties to OSPAR to agree a regional action plan for the North-East Atlantic by 2025, setting out a series of national and collective actions to reduce underwater noise pollution.

Outside of the North-East Atlantic, we are working closely with our international counterparts including the US and Australia through international multilateral fora to share information and collaborate on scientific, technological, and regulatory issues as they relate to marine noise.

2.6 Who we are working with

We will continue to work closely across the UK government, devolved governments, licensing authorities and SNCBs, as well as international organisations such as OSPAR, to develop and implement deliverable, robust and effective policies.

To develop and refine our work, Defra engages with relevant:

- licensing authorities
- SNCBs
- scientific advisors
- a wide range of industries
- environmental non-governmental organisations
- charities
- research institutions and academics

We will be engaging with industries to determine where noise reductions or modifications can be made. We look forward to continuing to work closely with all interested parties.

3. Marine environment: unexploded ordnance clearance Joint Position Statement

The UK government and devolved governments have national and international commitments relating to the management of our seas and the protection of habitats and species. We are committed to taking the necessary measures to achieve and maintain good environmental status of our waters through the UK Marine Strategy.

We recognise the impacts clearance of unexploded ordnance (UXO) can have on our marine environment. After both World Wars, large numbers of explosives were left undetonated in the marine environment. An increase in marine development is leading to the discovery of a great number of UXOs, which need to be cleared to protect human life and infrastructure.

Clearance has previously been undertaken by placing explosive donor charges next to the UXO. When this donor is detonated, it causes the UXO to detonate through a process referred to as high order detonation. This blast can produce high levels of energy which can result in considerable impacts on the marine environment. These impacts can include seabed damage, and injury and disturbance to marine species from the associated noise.

There are low noise alternatives to high order detonation that are safe, commercially available and cause less environmental harm. Those currently available still require the use of a donor charge to carry out clearance (although this charge is much smaller than those typically used for high order clearance), but they render the UXO safe without resulting in a high order detonation. As less energy is emitted into the marine environment, the potential for environmental impacts is lower than for high order clearance.

The methods available to clear UXOs are evolving, as is the available evidence supporting claims of their reduced environmental impact. This joint statement sets out the collective position of the UK government, devolved governments and associated bodies on the use of low noise methods of clearing UXOs within the UK marine environment, in relation to commercial marine developments. The following position statement replaces the interim position statement first published in November 2021 (updated in January 2022). This, and the accompanying guidance, aims to reduce environmental impacts during UXO clearance in the marine environment.

A marine licence is required for UXO clearance activities. This position statement sets out how the signatories expect to approach marine licensing for these activities and provides guidance to potential applicants as to how best to undertake applications for such marine licences, in the context of this general approach.

It remains the case that any and all applications for marine licences will be determined on a case-by-case basis, on the basis of the application that has been made and the individual circumstances. The approach that the signatories generally expect to take with regards to marine licensing for UXO clearance, as set out in this document, is in no way to be taken as the signatories pre-determining whether or not a marine licence will be granted or pre-determining what conditions will be applied to such marine licences.

This revised statement does not apply to military applications, which are exempt from statutory licensing processes. The Ministry of Defence works closely with environmental regulators and

legislators to ensure it is aligned with relevant aspects of UXO policy and is committed to minimising the environmental impacts of its activities wherever possible.

3.1 Low noise methods should be the default method of clearance

Low noise methods of clearance should be the default method used to clear any type of UXO in the marine environment.

If there are extraordinary circumstances which mean low noise clearance cannot be undertaken, applicants should engage with the appropriate licensing authority and statutory nature conservation bodies (SNCBs) at the earliest opportunity to discuss.

Extraordinary circumstances are those in which high order clearance is the only viable option and it is clear that low noise methods cannot be attempted. Such circumstances might include those where the factors of the UXO or of its location (such as depth, level of degradation or shell thickness) far exceed the expected or demonstrated capabilities of any known low noise clearance tools such that any attempt to use low noise tools would not be feasible.

3.2 High order clearance methods should always be the last resort

High order clearance methods should always be the last resort. It is not acceptable to expect a high order contingency for every confirmed UXO required to be cleared.

Unless there are extraordinary circumstances which mean low noise clearance cannot be undertaken, a high order clearance method should only be included as a contingency option in a marine licence application. This should be discussed with the appropriate licensing authority and SNCBs before submitting the marine licence application. The licensing authority will consider the location and timing of the campaign, and the UXOs that require clearing.

Applicants should demonstrate what measures will be applied to ensure high order clearances are avoided as far as possible. This contingency should only be applied to a UXO where the following conditions are met:

The most appropriate low noise method has failed after a minimum of 3 attempts.

All best practice has been demonstrably applied.

There is prior agreement with the appropriate licensing authority.

Applicants should also consider whether a potential UXO could be a training device with no explosive charge, which would not require high order clearance.

If high order clearance methods are used as a contingency, evidence should be provided in any post-clearance report demonstrating that a low noise method was attempted, with detail of what investigations were undertaken between each low noise attempt to ascertain why it failed and what changes were made to get the low noise method to work in the following attempt.

3.3 Additional information to be provided when applying for a marine licence

Marine licence applicants should provide a total number of UXOs to be cleared. This should be as accurate as possible. Ideally, the location and type of each UXO should also be provided. This will enable the licensing authority to best assess the application and the need for any marine licence conditions.

The brand of clearance tool to be used and the operator which will conduct the clearance should be specified. A detailed methodology for deploying the chosen tool should be provided, demonstrating its suitability for the UXOs to be cleared.

This is not an exhaustive list of all information that should be provided in a marine licence application.

All marine licence applications will be determined by the appropriate licensing authority on a case-by-case basis.

For further guidance on marine licence applications to clear UXO in English, Welsh and Northern Irish waters, view the UXO supporting guidance.

For further guidance on marine licence applications to clear UXO in Scottish waters, view the Marine environment: licensing and consenting requirements.

General marine licensing guidance is also available from each licensing authority.

3.4 Evidence to support claims of reduced noise levels

To be used at sea, tools claiming to produce a low noise method of clearance should have evidence to demonstrate that their use will result in sufficiently reduced noise levels (compared to equivalent high order clearance).

Robust evidence from a controlled environment is the minimum level that should be provided in a marine licence application.

For more information on what evidence is recommended or might be required by the licensing authority as a condition of consent in English, Welsh and Northern Irish waters, view the UXO Supporting Guidance.

Licensing authorities might choose to process an application for a marine licence to clear UXO in accordance with the proposed method of clearance and the level of supporting evidence available to support claims of reduced impacts for the chosen tool, using the following hierarchy of preference where Category A is the preferred option:

- Category A: clearance using a low noise tool proposed; robust evidence provided from both controlled testing and at-sea clearances, supporting claims of reduced environmental impacts compared to high order clearance

- Category B: clearance using a low noise tool proposed; robust evidence available from controlled testing to support claims this method will result in reduced environmental impacts; no, or limited, at-sea data available
- Category C: clearance using high order detonation proposed for use under extraordinary circumstances only, with clear justification as to why this is the only option
- Category D: clearance using high order detonation proposed; insufficient justification as to why this is the only option

This hierarchy is based on the primary method of clearance proposed, so any contingency usage of high order clearance is considered separately and should be discussed with the appropriate licensing authority and SNCBs. For more information on the categories and their likely impact on licence applications, licence conditions and mitigation requirements in English, Welsh and Northern Irish waters, view the UXO Supporting Guidance.

3.5 Mitigation of impacts

Regardless of the clearance tool or method used, all applicants should avoid, reduce and mitigate environmental impacts as far as possible. The marine licence application should therefore be supported by a mitigation plan demonstrating how potential environmental impacts of the UXO clearance will be reduced as far as possible, to be considered by the licensing authority.

As a minimum, this plan should consider impacts to marine mammals, but it may be suitable to consider impacts to other species and habitats, depending on the location of the clearance activity.

The level of mitigation required will be proportionate to the risk posed by the chosen clearance tool and the level of robust evidence available to support its use. Once the mitigation plan is approved, compliance with it may be a condition of any marine licence issued.

For more information on how evidence demonstrating reduced environmental impacts will inform mitigation requirements in English, Welsh and Northern Irish waters, view the UXO Supporting Guidance.

For more information on marine mammal mitigation, view the JNCC web page.

3.6 Monitoring requirements

It is important to demonstrate that results from controlled experiments of low noise tools will transfer to open water.

Licensees may be required, as a condition of the marine licence, to undertake underwater noise monitoring to support claims in their marine licence application that a particular clearance method or tool results in lower noise levels compared to high order clearance.

Monitoring requirements will be considered on a case-by-case basis at the application determination stage and monitoring results may be made publicly available by the licensing authority.

For more information on potential monitoring requirements in English, Welsh and Northern Irish waters, view the UXO Supporting Guidance.

3.7 Technology development and testing

The development of new methods of clearance with reduced environmental impacts (compared to high order clearance), and new tools that utilise known low noise methods, is welcomed and encouraged. However, applicants are expected to ensure only those clearance tools that are proven to be effective in rendering a UXO safe are proposed in marine licence applications.

Defra is supporting a final phase of controlled trials of suitable novel clearance tools in 2024. Beyond this, we expect evidence from controlled testing to be acquired independently.

3.8 Guidance

Further guidance to support those applying for marine licences to clear UXO is available:

- Guidance to support minimising environmental impacts from unexploded ordnance clearance - this is applicable in English, Welsh and Northern Irish waters only.
- For Scottish waters, see Marine environment: licensing and consenting requirements and Marine environment: overview for guidance on marine licensing.
- JNCC marine mammal mitigation guidelines for UXO clearance.

3.9 Who we are

The following UK government departments, devolved governments and associated bodies have collaborated to develop this joint position statement.

3.5.1 Department for Environment, Food and Rural Affairs

The Department for Environment, Food and Rural Affairs (Defra) is the ministerial department, supported by 34 agencies and public bodies, that is responsible for improving and protecting the marine environment. Defra's mission is to restore and enhance the environment for the next generation, leaving it in a better state than we found it. This includes reducing the underwater noise impacts from UXO detonation. Defra has led the development of this statement, with the support and agreement of the organisations below.

3.5.2 Department for Energy Security and Net Zero

As the Department with lead responsibility for low carbon electricity generation, the Department for Energy Security and Net Zero (DESNZ) is working closely with Defra, The Crown Estate, Crown Estate Scotland, industry and wider stakeholders to better understand the potential environmental impacts of increased offshore wind deployment and develop strategic solutions to mitigate and compensate for them. This includes the underwater noise impacts from UXO detonation. DESNZ is also responsible for the development, administration and enforcement of the offshore oil and gas environmental and decommissioning regulatory regime (including offshore gas

unloading and storage and carbon dioxide storage, gas storage and hydrogen) through the Offshore Petroleum Regulator for Energy and Decommissioning (OPRED). DESNZ has developed and agreed to this statement in conjunction with Defra.

3.5.3 Marine Management Organisation

The Marine Management Organisation (MMO) was created in 2009 by the Marine and Coastal Access Act to protect and enhance our marine environment and support UK economic growth by enabling sustainable marine activities and development. The MMO assesses and determines licence applications for a range of marine activities including for UXO clearance. The MMO also works as an Interested Party on Development Consent Order (DCO) applications for Nationally Significant Infrastructure Projects and manages and enforces any consequential Deemed Marine Licences forming part of DCO consent. The MMO has developed and agreed to this statement in conjunction with Defra.

3.5.4 Scottish Government

The Scottish Government is responsible for the integrated management of Scotland's seas. On behalf of Scottish Ministers, the Marine Directorate – Licensing Operations Team (MD-LOT) assess applications for marine licences for licensable marine activities, including the deposit or use of explosive substances or articles within the Scottish marine area and Scottish offshore region either in the sea or on or under the seabed (UXO removal), European Protected Species (EPS) licences and basking shark licences. The Marine Directorate have developed and agreed to this statement in conjunction with Defra.

3.5.5 Welsh Government

Welsh Government is the devolved government of Wales. Welsh Ministers have national and international obligations relating to the management of Welsh waters and the protection of habitats and species. The Welsh Ministers are the marine licensing authority for Welsh waters, the administration of marine licences is carried out by Natural Resources Wales, acting on their behalf. The Welsh Government is responsible for marine licensing policy and legislation and ensure it remains fit for purpose to support the sustainable use of Welsh waters. The Welsh Government has developed and agreed to this statement in conjunction with Defra.

3.5.6 Natural Resources Wales

Natural Resources Wales (NRW) works with the Welsh Government and its partners to ensure Wales can survive and thrive against the backdrop of the nature, climate and pollution emergencies. NRW provides statutory nature conservation advice to Welsh Government, as well as industry and the wider public. It also has regulatory responsibilities for a wide range of activities including European protected species licensing and marine licensing, including UXO clearance.

NRW acts on behalf of Welsh Ministers when determining marine licence applications. The impacts associated with these activities are assessed by NRW on a

case-by-case basis. NRW have developed and agreed to this statement in conjunction with Defra.

3.5.7 Department of Agriculture, Environment and Rural Affairs

The Department of Agriculture, Environment and Rural Affairs (DAERA), Marine and Fisheries Division carry out licensing and enforcement functions in Northern Ireland territorial waters, under the Marine and Coastal Access Act 2009. Current marine licensing legislation applies to the Northern Ireland inshore region and allows sensible and necessary development to go ahead in a manner that minimises adverse impacts on the environment, human health and users of the sea. DAERA has developed and agreed to this statement in conjunction with Defra.

3.5.8 Joint Nature Conservation Committee

The Joint Nature Conservation Committee (JNCC) is an impartial scientific authority on UK and international nature conservation. They provide statutory advice to licensing authorities on the likely environmental impacts including those from UXO clearance in offshore waters and have developed and agreed to this statement in conjunction with Defra.

3.5.9 Natural England

Natural England was established in 2006 and they are the UK government's adviser for the natural environment in England. Their purpose is to help conserve, enhance and manage the natural environment for the benefit of present and future generations, contributing to sustainable development. They advise on marine licence applications for a range of activities, including UXO clearance and have developed and agreed to this statement in conjunction with Defra.

3.5.10 NatureScot

NatureScot, the operating name of Scottish Natural Heritage, is Scotland's nature agency with 30 years of advising Government. NatureScot works to enhance Scotland's natural environment and inspire everyone to care more about it. They advise on marine licence applications for a range of activities, including UXO clearance and have developed and agreed to this statement in conjunction with Defra and Marine Directorate.

3.5.11 Ministry of Defence

The Ministry of Defence (MOD) has responsibility for the protection and security of the United Kingdom. The MOD domestic UXO clearance activity is conducted at the request of UK civil authorities where safety of life and property are threatened, and a rapid response is required. The MOD maintains small teams with limited workforce and equipment necessary for agile deployment. MOD requires flexibility in how it undertakes these operations and is necessarily excluded from statutory marine activity licensing regimes. Consequently, MOD is not a signatory to this statement.

When conducting reactive Maritime UXO evolutions, MOD operators are required to consider the environmental impact of the available options alongside the risks to life and property; endeavouring to keep all as low as is reasonably practicable.

MOD explosive ordnance disposal policy and doctrine directs all operators to fully consider a range of environmental impacts when devising the most appropriate course of action as part of their support to civil authorities.

Operators undergo regular training and their competency in risk and impact assessment is validated annually. The MOD works closely with environmental regulators and legislators to ensure it is aligned with relevant aspects of UXO policy and is committed to minimising environmental impacts of its activities wherever possible.

The capabilities of the UXO response teams are reviewed routinely and new technologies or procedures will be adopted if they are affordable and suitable for emergency UXO response.

4. JNCC, Natural England and Cefas position on the use of quieter piling methods and noise abatement systems when installing offshore wind turbine foundations 2025

Growing concerns over the effects of unabated pile driving noise on marine protected species have led the Joint Nature Conservation Committee (JNCC), Natural England (NE) and the Centre for the Environment, Fisheries and Aquaculture Science (Cefas) to, in their capacities as statutory and/or scientific advisors, take a fresh look at the scientific evidence and regulatory process relevant to offshore windfarm construction.

Standard marine mammal mitigation measures (e.g. pre-piling searches and acoustic deterrents) are used during pile driving to reduce potential injury effects from underwater noise. However, the risk of disturbance resulting from piling noise occurs at much greater distances than can be mitigated with standard measures.

This joint position has considered a review of available scientific evidence alongside industry engagement. These confirm that options for using quieter installation methods and noise abatement systems (NAS) are logistically feasible throughout UK shelf seas and are available to developers undertaking impact piling in UK waters.

This statement focusses on offshore renewables due to the large number of projects planned to be installed in the coming years and the scale of piling that may be associated with them. We are aware other industries may use impact piling when installing infrastructure and recommend they also consider whether quieter installation methods and/or NAS are needed when undertaking this piling.

A copy of a review undertaken by Cefas on evidence on the efficacy of underwater noise abatement (Cefas 2024) is also provided.

These resources may not be fully accessible for all users. If you need copies in a different or more accessible format, please contact Communications@jncc.gov.uk.

5. References

Cefas (2024) *EVIDENCE ON THE EFFICACY OF UNDERWATER NOISE ABATEMENT* [Online] Evidence on the efficacy of underwater noise abatement [Accessed 23/01/2025].

JNCC, Natural England and Cefas (2025) JNCC, *Natural England and Cefas position on the use of quieter piling methods and noise abatement systems when installing offshore wind turbine foundations*. JNCC, Aberdeen.